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A Study of Grammatical Constraints on Code-switching in Norwegian-English Bilinguals.

MA Thesis in English Language

Trondheim, May 2014

NTNU

Abstract:

This MA thesis looked into grammatical constraints of code-switching in English-Norwegian bilinguals. Three types of grammatical constraint were studied; the equivalence constraint, the free morpheme constraint and the closed-class constraint. The study carried out consisted of a questionnaire, containing 60 sentences in which the three grammatical constraints of code-switching mentioned previously were both adhered to and violated. This questionnaire has been given to a number of Norwegian-English bilinguals. By asking these bilinguals to judge the acceptability of the sentences, it was assumed that where the constraints had been adhered to those sentences would be deemed acceptable, whereas the sentences which violate the constraints would be deemed unacceptable. The study asked 6 participants to complete the questionnaire, as well as a form with basic information about their linguistic background, i.e. if they use both languages often, or if one is used more than the other. The participants also took part in an informal interview based on the topic of this thesis and their own reflections on their language use. The thesis then went on to discuss theories about code-switching and concluded that the hypothesis did not hold. The results suggested that, although in general the participants agreed with the constraints, their answers all gave particularly low levels of acceptability regardless of whether or not a sentence adhered to these three constraints, suggesting that these constraints are not particularly strong in CS between English and Norwegian.

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Symbols and Abbreviations

Aux	Auxiliary
CS	Code-switching
DET	Determiner
LS	Likert scale
MA	Master's
NP	Noun phrase
NTNU	Norwegian University of Science and Technology
PDF	Portable Document Format
WOE	Word order equivalence

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1 Introduction

The study of code-switching[1] can encompass many things, depending on the theoretical background of the researcher. Researchers from different traditions have different aims when it comes to CS. The simplest way of defining CS is to call it the alternate use of two or more languages, or varieties of language, within the same conversation. Gardner-Chloros provides an example of CS within one language (dialectal CS):

> "I can do *aught* when you're with me, I can do anything", said a male speaker in his sixties from Sheffield in a Radio 4 interview, talking to his wife in an aside. *Aught* is Northern dialect, which he then repeats in Standard English, *anything*. (Gardner-Chloros, 2008: 4)

Examples of CS between two languages can be found anywhere – for example, in 2012 there was an advertisement on the bus services in Trondheim, Norway, run by Pepsi Max, with the

Figure 1: Pepsi advertisement from 2012 in Trondheim[2]

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[1] Throughout the rest of this thesis the term code-switching will be referred to as CS, unless in a quotation or paraphrasing others who tend to use a different form.

[2] Figure 1: http://kreativtforum.no/artikler/nyheter/2012/12/amerikansk-pris-til-norsk-pepsi-kampanje (Last accessed 03.03.2014, 10:09am)

following text:

(1) Wanted for: Den beste smaken, forfriskende og helt sukkerfri!

    Wanted for: The best taste, refreshing and completely sugar-free!

These examples show how easily CS can occur, whether it takes place within the same language or between two different languages. CS is an important area of research with regards to understanding how languages interact with each other, and how people make use of them.

This dissertation will focus on CS between languages, in particular English and Norwegian. CS, as with most other areas in language, is governed by a set of rules, or constraints. The purpose of this thesis is to investigate three constraints in particular, and the extent to which these constraints govern English/Norwegian CS in bilinguals. The three constraints that will be studied are the Equivalence constraint, the Free Morpheme constraint and the Closed-class constraint. Briefly, the Equivalence constraint suggests that the language on either side of a code-switch will adhere to its respective grammatical rules. The Free Morpheme constraint states that bound morphemes cannot be switched i.e. prefixes or suffixes cannot be used as the point of switch. Finally, the Closed-class constraint suggests that closed classes such as prepositions cannot be switched either. More details about these constraints can be found in section 2.4.

These constraints will be investigated by asking Norwegian-English bilinguals to participate in a questionnaire, where they will be asked to judge the acceptability of examples of CS. More information about the participants can be found in section 5.2.2.

The hypothesis of this thesis is that bilinguals of English and Norwegian will find examples of CS acceptable when they adhere to the afore-mentioned grammatical constraints, and that examples defying the constraints will be deemed unacceptable. The major issues that will be addressed will be how strongly the rules apply; to what extent do the constraints govern CS?

1.1 Terminology

Over recent decades, there has been an explosion of interest in code-switching (CS). CS was more or less "'invisible' in research on bilingualism until the work of Gumperz and his

associates in the 1960s and early 1970s." (Gardner-Chloros, 2008: 10) According to Myers-Scotton, CS is the selection of forms from one language in utterances of another language during a conversation by bilinguals or multilinguals (Myers-Scotton, 1995). Code-switching terminology, however, can be somewhat troublesome. According to Clyne there are three main methods of conceptualising code-switching:

> "i. in contrast to 'borrowing';
>
> ii. subsuming 'borrowing';
>
> iii. with indexical (or other discourse) function only, for instance indicating group membership or 'otherness' (in conversational analysis, in contrast to language switching)" (Clyne, 2003: 70)

The term 'switching' is different from the term 'borrowing' (or importation), where borrowing suggests the use of words from one language being used to substitute gaps in the knowledge of one's other language. In 1964, Gumperz introduced the term '*code*-switching' for switching with a function in discourse. Over time, however, the term became increasingly used for any kind of switching (Clyne, 2003). This explanation of the term 'borrowing' refers to only one type of borrowing – 'lexical gap' borrowing. More information about borrowing can be found in section 2.5.

The development of this field as an area of research has grown from being non-existent, where CS was "considered part of the performance of the imperfect bilingual, motivated by inability to carry on a conversation in the language on the floor at the moment"(Myers-Scotton, 1995: 47) to a wide-spread field of study in its own right.

2 Theory

This Chapter will provide a background of relevant theories about and related to code-switching, starting with bilingualism before moving on the motivations for CS. The chapter will then go on to discuss reasons for studying CS, before providing information about the three constraints that are under investigation in this study. Finally, this chapter presents theories on concepts such as borrowing and functional separation, comparing and contrasting them to CS.

2.1 Bilingualism

"Languages in contact, that is bilingualism at the societal level and bilinguality, its counterpart at the individual level, are an integral part of human behaviour."(Hamers and Blanc, 2000: 1) It can be difficult to provide an adequate definition of the terms 'bilingual' and 'bilingualism'. In order to provide the most similar and reliable results for this investigation, these terms are of great importance; if the participants are all different types of bilingual then there is no steady base from which to compare the results of the questionnaire.

There are different types of bilingualism. D'Acierno describes three types of bilingualism: compound bilingualism, coordinate bilingualism and sub-coordinate bilingualism. Compound bilinguals are individuals who learn two languages in the same environment so that he/she acquires one notion with two verbal expressions; a coordinate bilingual acquires the two languages in different contexts (i.e. at home and in school), so the words of the two languages belong to separate and independent systems, and in a sub-coordinate bilingual, one language dominates the other. (D'Acierno, 1990)

Two other forms of bilingualism are 'additive bilingualism' and 'subtractive bilingualism'. The former means that the learning of a second language does not interfere with the learning of a first language; both languages are developed. The latter means that the second language is added at the expense of the first language and culture; a consequence of which is that the first language then diminishes.

All of the participants who have taken part in this investigation have similar language backgrounds – they have all grown up hearing English and Norwegian from their parents (one of which was a native speaker of English; one of Norwegian). The participants are all

examples of either compound or coordinate bilinguals. More detailed information about the participants can be found in section 3.2.2.

2.2 Motivations for Code-switching

"CS begins with conceptually activated discourse-level decisions whose consequences play a significant role in structural outcomes."(Nicol, 2001: 86) In other words, CS is a choice made by bilingual speakers. However, the use of the word 'choice' can be misleading – it is not the case that all occurrences of CS are conscious acts. Reasons for switching between languages can vary. Gumperz and Hernandez-Chavez "noted that mixing was easily possible in some contexts, but not so much in others."(Muysken, 2000: 12) CS can arise in many different situations, and for a variety of reasons. In instances of language contact among immigrants, for example, CS can be common. Gumperz and Henandez have found that CS can be found "each time minority language groups come into contact with majority language groups under conditions of rapid social change"(Gardner-Chloros, 2008: 20)

Lara writes that one reason for code-switching can be 'lexical need'; bilingual individuals use CS for a number of reasons. It is often supposed that they lack the lexical item in the language that they are using. (Lara, 1989: 278) Other reasons for the use of CS could be for rhetoric effect, to add emphasis, "[repeating] statements in the other language to emphasize the message or to get the listener's attention."(Lara, 1989: 279) Other reasons can be to create other effects, such as humour, or in order to accommodate for a participant in the conversation. If two people are conversing in Norwegian, for example, and they both also speak English, if a monolingual English-speaker then joins them they may switch to English in order to include the English-speaker in the conversation. This is known as 'situational switching'(Gumperz and Hymes, 1972). According to Myers-Scotton and Lake, before talking, speakers "consider the socio-political and psycholinguistic possibilities and consequences of mapping intentions onto language."(Nicol, 2001: 86) So the use of CS can depend upon the anticipated response of the listener. Proficiency can also play a part regarding the use of CS. If one feels that they have a high proficiency of a language, and they feel that their conversational partner is also proficient, then it is quite possible that CS will be more acceptable. On the other hand, if one speaker is very proficient in two languages and the other is only proficient in one, or less proficient in one of them, then CS could be deemed inappropriate, because then only one participant of the discourse may understand what is

being said. However, it may be seen as acceptable and helpful, if the highly proficient speaker was attempting to help the other speaker improve their proficiency.

Another reason why someone may choose to use CS is to preserve their cultural/social identity, as the next section will discuss.

2.2.1 Social motivations

Social motivations for CS can be particularly strong. In London for example, a study of speakers of London English and Creole has shown that Creole arguably has a "'we-code function' and CS is described as an 'insider activity'. Creole is almost certainly preserved by being used this way"(Gardner-Chloros, 2008: 28) The use of CS in this case is a conscious attempt at preserving identity, putting up a boundary, in a sense, between speakers of Creole and speakers of other languages (Le Page and Tabouret-Keller, 1985). Gardner-Chloros describes another example of CS as a method of preserving a language and an identity – the magazine Latina in the US is aimed at Hispanic women, and contains a great deal of CS. In this context, CS is used to assert a bilingual identity that cannot be misunderstood; linguistic needs are not the reason behind the level of CS used (Gardner-Chloros, 2008). One could argue that, although linguistic necessity may not be the driving force in this example, it can be useful for newly arrived immigrants who are learning English.

> The characteristic ways in which bilinguals combine their languages in a particular community constitute a way of expressing their group identity – like a characteristic accent. Both the languages themselves *and* the sociolinguistic environment play a role in the patterns which emerge. (Gardner-Chloros, 2008: 5)

Through studying the social motivations for CS one can see that the role of identity plays an important part. Identity and its preservation are strong motivational factors for using CS. By switching between languages, a person can show their identity and their connection to a culture that may differ from the dominating culture of the environment that they live in.

2.3 Reasons for studying CS

There are a wide variety of theories and concepts focusing on CS and on linguistics. This thesis will discuss a few of them. First of all, however, one needs to understand why CS

is worth investigation and study. A few reasons for studying this have been presented clearly by Ellen Woolford:

> First... the code-switching process constitutes a significant advance; many of the surface constraints on code-switching that have been proposed... can be shown to follow from the manner in which monolingual grammars cooperate to produce hybrid sentences under this model. Second... code-switching promises to provide a fertile new source of evidence bearing on a wide range of questions in current grammatical theory. (Woolford, 1983: 520)

CS is governed by a large quantity of grammatical rules, or constraints. This thesis investigates three constraints in particular (see 2.4). Gardner-Chloros describes CS as a "signpost, pointing at where the difficult issues may arise, and paving the way towards a better understanding of grammar."(Gardner-Chloros, 2008: 5) By studying CS one can hope to gain more insight into grammar, and how different grammars connect and intertwine with each other. This in turn can lead to a better understanding of the way in which languages interact with each other.

2.4   Grammatical constraints of Code-switching

There are many proposed constraints of CS. This thesis will focus on three of them, in particular the Equivalence constraint, the Closed-class constraint and the Free Morpheme constraint.

2.4.1   The Equivalence Constraint

The theory of equivalence suggests that when CS occurs, the grammar of each language before and after the switch is correct in its own language. The main assumption is that equivalence between the grammars of two languages facilitates bilingual usage, whether it is second language learning, CS or borrowing (Milroy and Muysken, 1995: 192).

Example:

(2) We're taking fergen over sjøen. [3]

We're taking the ferry across the sea.

The grammar before and after the point of CS in this example is correct in its respective languages. The English in the sentence follows the grammatical rules of English, and the Norwegian NP adheres to the Norwegian rules of grammar.

There can be different forms of equivalence, such as categorical equivalence. Categorical equivalence suggests that there can be equivalence of categories, i.e. lexical elements, phonemes and phrase structure nodes, between languages. This is in contrast to word-order equivalence (the form of equivalence studied in this thesis), where there can be equivalence of relations between categories, such as word-order or agreement rules (Milroy and Muysken, 1995).

For the purpose of this thesis the form of equivalence investigated is word order equivalence (WOE). According to Poplack, the equivalence constraint states that "the order of sentence constituents at a switch point must not violate the grammar of either language involved." (Poplack, 1988: 53) This suggests that code-switching is "the juxtaposition [...] of sentences or sentence fragments, each of which is internally consistent with the morphological and syntactic [...] rules of the language of its provenance"(Muysken, 2000: 14)

So, when switching between languages one must make sure to switch at a point which does not disturb the grammar of either language. Theory suggests then, that if the grammar of one of these languages was disturbed then CS would be judged unacceptable. This is part of the aim of this thesis – to discover if such an example of CS would be deemed acceptable or not by born bilinguals of English and Norwegian.

2.4.2 The Closed-class Constraint

The closed-class constraint presumes that closed word classes, such as prepositions, cannot be used as the point of a switch between languages, i.e.

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[3] See appendix 3.

(3) *Some chairs-*war*.

   * Some chairs-on.

   'On some chairs'.   (MacSwan, 1999: 42)

This example shows an unacceptable (according to the closed-class constraint) example of CS between English and Marathi. According to the closed-class constraint this sentence would be unacceptable for bilinguals. Joshi (1983) states that closed class items such as determiners, quantifiers, prepositions, possessives, etc. cannot be switched.

<u>Example:</u>

(4) Den datamaskinen er ikke min.

   That computer is not mine.

(4.1) *Den computer is not mine.

(4.2)*That datamaskinen er ikke min.

Example (4.1) is ungrammatical because the Norwegian DET (Den), when used as a definite article, requires the noun to take on a suffix, i.e. -en, -et, or -a (depending on whether the noun is masculine, feminine or neutral). (4.3) violates the closed-class constraint, switching the Norwegian DET with the English 'that'.

<u>Example:</u>

(5) <u>Den</u> datamaskin<u>en</u>.   (5.1) <u>Det</u> hus<u>et</u>.
   That computer.   That house.

In English, definite articles demand no such altercation of the noun. Therefore, when switching closed classes such as determiners, sentences become ungrammatical.

(4.1)*Den computer is not mine.
   That computer is not mine.

2.4.3 The Free Morpheme Constraint

The third and final constraint that this thesis investigates is the Free Morpheme constraint. This constraint suggests that CS does not take place within a word between a free morpheme and a bound morpheme. This constraint rules that CS cannot occur between bound morphemes and lexical stems. Nartey quotes Poplack's definition of the free morpheme Constraint; "Codes may be switched after any constituent in discourse provided that constituent is not a bound morpheme. This constraint holds true for all linguistic levels but the phonological..."(Nartey, 1982: 184). An example of a sentence which the free morpheme constraint would deem unacceptable would be:

(6) * *estoy* eat-*iendo*.

   Am   eat-ING

   'I am eating.'   (MacSwan, 1999: 41)

This example (6) of English/Spanish CS shows the English stem 'eat' attached to the affix '-iendo' in Spanish. Unless the morpheme 'eat' has been integrated into the Spanish language then the free morpheme constraint would say that this example of CS would not hold.

According to Nartey, then, bound morphemes such as prefixes and suffixes cannot be used as points of CS; it would "block code-switching involving a root of one language and a bound morpheme of another..." (Nartey, 1982: 184). Nartey's work suggests therefore that if a sentence violates the free morpheme constraint then it would be unacceptable. However, although it may be ungrammatical, such an example may still be judged an acceptable utterance; the ungrammaticality can be overridden by accepting the form as a loan word. This however, is not CS. Loan words come under the concept of borrowing, which is discussed below in section 2.5.

2.5 Borrowing and Functional Separation vs. CS

The concept of borrowing is closely linked to the concept of CS. Therefore it is important to distinguish between the two concepts, so as to avoid confusion when analysing the data from the investigation. The notion of borrowing may also be used to explain possible deviations that may occur in the results of this investigation's questionnaire.

Borrowing is the taking of a word from one language and using it in another. The main difference between borrowing and CS is that borrowing is not a temporary occurrence – borrowed words and phrases are integrated into the receiving language. Matras provides a clear distinction between the two concepts; borrowing refers to the process in which a language enriches its vocabulary, whilst CS is more a case of spontaneous language mixing in bilingual conversation, carried out by the speaker (Matras, 2009: 106). It is important to note that not all researchers make this same distinction. Poplack distinguishes between CS and borrowing, but many, such as Myers-Scotton and Gardner-Chloros, have a different view of CS vs. Borrowing – they see this diachronically; meaning that it is difficult to distinguish between the two at any given time. However, judgments can be made diachronically (Gardner-Chloros, 2008).

Kowner and Rosenhouse state that "English has come to serve many languages as a source for intensive lexical borrowing."(Rosenhouse and Kowner, 2008: 4) The English language is a rich language, with words and terminologies which may not exist in other languages. With the advancement of technology and science comes the need for new words; a large amount of scientific/technological breakthroughs occur in English-speaking countries or environments, and so English is often the first language to create names and terms for these advances (Rosenhouse and Kowner, 2008: 277). This is sometimes known as cultural borrowing, when borrowed elements fill in a lexical gap, often accompanying a new 'thing' or concept. On the other hand, English has also borrowed from many other languages. One example is the French word "rouge", or the word "macho" from Spanish.(Hock and Joseph, 2009: 241)

The term borrowing has different connotations to that of the term borrowing in the real world – lexical items are taken and not returned, although occasionally they can be 're-borrowed' – an example is the signal 'Mayday Mayday Mayday', used by ships and planes to request help in emergencies. Originally borrowed from the French *venez m'aider* (come and help me) the English 'Mayday' has now been re-borrowed to French and many other languages as an international signal for emergency (Pulcini et al., 2012: 11). However, the language from which words are taken does not lose anything.

One could say that the difference between borrowing and CS is that borrowing involves the weaving of words and expressions of one language into a conversation occurring primarily in another language. In contrast to this, CS involves switching from one complete

system to another (Field, 2002a). In a situation where borrowing occurs, words are generally the first element to be borrowed; as two languages come into more intense contact, more elements can be borrowed, such as phonological, syntactical or morphological borrowing (Jacobson, 2001a: 78). Gardner-Chloros writes that the major distinction between borrowing and CS is based on the speakers of a language; if a speaker makes use of elements of another language in a discourse, this can be called CS, whereas if it is often used in that community then it is likely to be a loan word (or at least it is becoming a loan word) (Jacobson, 2001b: 162).

The concept of borrowing encompasses various elements, such as 'loanwords', 'loanblends' and 'loanshifts' or loan translations. A loanword is an example of the integration of form and meaning, with elements of phonological integration as well. Loanblends show a combination (or hybrid) of foreign and native forms, and lastly loanshifts show a foreign meaning (concept) which is represented by a native form (Field, 2002b: 8). It should be mentioned here that the terminology may vary between writers, but for the purpose of this thesis these are the terms that will be used.

There are different types of borrowing, two of which are importation and substitution. If a loan is similar enough to the language that a native speaker would accept it as their own, the borrowing speaker may be said to have imported the loan into his own language (Haugen, 1950: 212). On the other hand, if the loan is too dissimilar then the speaker has most likely substituted a pattern from their own language (Haugen, 1950: 212). Loan translations, also known as calques, are closely linked to semantic loans. It is possible with semantic loaning that the only visible evidence of loaning is the meaning- morphological and phonological elements are not loaned at all.

2.5.1 Functional separation

Functional separation is a term connected to forms of bilingualism. Coordinate bilinguals develop their languages through experience in different linguistic communities where languages are rarely interchanged. The coordinate bilingual develops separate meanings for each of their alternative symbols, or lexicons (Lambert et al., 1958: 240). So, where compound bilinguals have two alternatives for one lexical meaning, coordinate bilinguals have to separate alternatives and two meanings.

Another aspect of functional separation is the choices bilinguals might make. Fishman states that only one of the theoretically co-available languages will be chosen by the speaker; this choice will be affected by the type of interlocutor, the situation and the topic of discussion (Fishman, 1972). Based on the context, a bilingual may make use of one of their languages instead of the other, depending on the topic of conversation, the other participants in the conversation or the environment they are in. This can provide an explanation for why participants judge certain sentences to be unacceptable and others acceptable. This can also provide an explanation for differences between the participants – why some sentences of CS receive high levels of acceptability from some participants, and low scores from other participants. There is a high possibility that not all of the participants use the same language in the same situation. One participant might for example speak English at work and Norwegian at home, whereas another may do the opposite.

3 Method

Chapter 3 will lay out the methodology behind this study, beginning with an account of Acceptability Judgments and why this particular method was chosen, before providing an account of how the investigation was carried out. After this there will be a section regarding qualitative and quantitative methods; a section providing details about the participants; a section discussing the use of a questionnaire and the interviews, and then finally a section suggesting the expected outcome of the investigation.

3.1 Acceptability Judgments

In order to determine the strength of grammatical constraints of CS, one must collect data. It was decided that the most effective method of doing so was to collect acceptability judgments from bilinguals of English and Norwegian. For a number of reasons it was decided that it would be best to perform a quantitative method of data collection for this investigation, allowing the use of a larger number of participants, leading to the possibility of comparing their results to each other focusing on the set variables: the equivalence constraint, the fee morpheme constraint and the closed-class constraint.

> A typical quantitative variable (i.e. a variable that can be put into numbers) in linguistic research is the occurrence of a particular phonological or syntactic feature in a person's speech. Assume we are interested whether speakers of group A are more likely to drop the /h/ than speakers of group B. When analyzing our data, we would hence count all the instances in which /h/ is produced by the speakers… as well as all the instances in which /h/ is omitted. (Rasinger, 2013a: 10)

Due to the fact that CS is such an open and widely individual phenomenon, the strength of the grammatical constraints in question could arguably best be determined by using a quantitative method; in this case an acceptability judgment test. This investigation makes use of such a test, asking participants to judge whether or not sentences containing CS between English and Norwegian are acceptable. Such tests require the participants to state explicitly (in this case by numbering) their judgment of the acceptability of particular strings of words, deciding if a "string of words is a possible utterance of their language" (Schütze and Sprouse, 2014: 2).

It must be noted, however, that the way in which this investigation was carried out is first and foremost a qualitative method, relying on a small number of participants and acquiring qualitative data. Participant perceptions form the basis for their acceptability

judgments. It is near impossible to directly measure these perceptions, just as it is not possible to directly measure other perceptions (i.e. pain, brightness or loudness); it is therefore necessary to make use of indirect methods of measurement with which participants can report some of their perceptions.(Schütze and Sprouse, 2014: 3) This is often carried out by using some sort of scale. For the purpose of this study the participants will be asked to judge the acceptability of the sentences based on a Likert-scale. In tasks involving a Likert scale,

> "[P]articipants are given a numerical scale, with the endpoints defined as acceptable or unacceptable, and asked to rate each sentence along the scale. The most commonly used scales usually consist of an odd number of points (such as 1–5 or 1–7) because odd numbers contain a precise middle point."(Schütze and Sprouse, 2014: 8)

The use of such a scale is believed to be more difficult than it appears, however; making a judgment may be more difficult for participants than it would be to place a sentence on a given scale where one end is clearly stated as more negative and the other more positive. Dabrowska states that one of the advantages with using a Likert-scale with set values is that it is more natural than other types of measurement scales. This is due to the fact that participants then need only determine whether a sentence is "good" or "bad" rather than focusing on different degrees of "better" or "worse" in comparison to other sentences, which can make judging more difficult.(Dabrowska, 2010: 8) When one makes use of the Likert-scale variation of an acceptability test, the test becomes a quantitative method interested in the size of the differences between the responses. (Schütze and Sprouse, 2014: 6) There are, however, certain problems with this method. One such problem is the difficulty involved in judging the exact value of the scale and the distance between the given numbers. For example, is the distance between 1 and 2 on the scale the same as the distance between 3 and 4? (Dabrowska, 2010: 8) In addition to this, individuality can lead to the issue that the number 3 in one participant's perception may be the same as another participant's perception of number 2. This is almost impossible to make allowances for, although the risk can be minimized by adding 'anchors'- examples of the two ends of the scale in order to establish some points along the scale.(Schütze and Sprouse, 2014: 9) To reduce the risk of this problem, the participants were given 'anchors' for each of the ends of the scale, both orally and in writing, before they began the questionnaire.

The advantages of using an acceptability test are many. Firstly, acceptability tests are a practical method of gathering data- the test is relatively low cost, information can be retrieved from just a few participants (or many, it is an adaptable method in this respect), and it can be

carried out almost anywhere (providing the conditions are the same each time) so the use of a laboratory is not necessary. Also, there are no requirements for special equipment, and the test can be adapted for any area of research that requires it. For the purpose of this thesis the key advantage of using the acceptability test is that it is not a time-demanding process. Once the questionnaire has been created it is simply a case of asking participants to complete it.

Another reason for using an acceptability test is that it has more advantages than methods such as using spontaneous data. For example,

> "[Spontaneous data could] include some proportion of production errors (slips of the tongue/pen/keyboard, etc.), the vast majority of which will be judged as ill-formed by the very speakers who produced them, and which therefore should not be generated by the grammar."(Schütze and Sprouse, 2014: 29)

The method used in this investigation removes the possibility of errors such as 'slips of the tongue', and so the only sentences which would possibly be judged as ill-formed are the sentences which violate the constraints (according to this investigation's hypothesis).

3.2 The procedure

In order to investigate whether or not CS is governed by grammatical constraints, data is needed. This investigation relies on the results given by completed questionnaires and background information about the participants' language background. In addition, after the participants had completed the questionnaire, they were informally interviewed in a discussion about the study.

Initially, all participants were contacted either via email or personally, and asked if they would be willing to take part in the study. Once confirming that they were eligible participants (that is, that they were born with a parent who was a native speaker of English and a parent who was a native speaker of Norwegian), a time and place was arranged in order to complete the questionnaire. There was a reason for meeting in person rather than sending the questionnaire via email; besides a more secure protection of the participants' anonymity, the instructions were more easily explained orally than in writing, and any questions that the participants had could be answered immediately. Also, this provided an opportunity to informally interview each participant.

After gaining their consent (for using their data), the participants were given the questionnaire. It was then explained to them how to proceed in filling out the questionnaire; there was a scale of acceptability (previously discussed) where 1 was unacceptable and 5 was acceptable. This scale was explained by providing an example of each end of the scale, i.e. a sentence which would be unacceptable would be as follows:

1.   * Cat dog the likes chase the to.

An example of an acceptable sentence would be

2.   The dog likes to chase the cat.

These examples were given both orally and in writing. There was an example at the top of the questionnaire, explaining how to complete it:

3.   It is på tida å vaske på kjøkkenet.   (It is time to clean the kitchen)

Unacceptable 1   2   3   4   ⑤ Acceptable[4]

In order to reduce the risk of affecting the participants' judgments, the participants were all asked to follow their initial intuitions when reading each sentence; that each sentence should be read carefully, but without thinking too much about it. The aim of the investigation was not fully revealed to them until after they had finished answering the questionnaire. After completing this they were then asked to complete a form with some personal particulars, such as their age and gender; how often they speak English; if they learnt one language before the other, etc.[5]

The interview was carried out informally, where participants discussed the topic of the questionnaire after having filled it out. This discussion revolved around the topic of CS and their own experiences and reflections on how they make use of CS. This discussion varied in length depending on the participant – some found the topic very interesting and had a lot of comments, whereas others had less to say. Most of what was said was quite similar for all of

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[4] See appendix 3.
[5] See appendix 2.

the participants; they had grown up speaking two languages, but most of them grew up speaking them separately.

3.2.1 Qualitative vs. Quantitative investigation

There is a tradition in the social sciences of dividing research into qualitative or quantitative methods. These are often presented as two separate forms, where qualitative methods are regarded as inductive, whilst quantitative methods are considered exclusively deductive.(Postholm and Jacobsen, 2011: 41)[6] Some criticise qualitative research by saying that

> "When using qualitative research one enters the periphery of science: one has to make do with 'soft' data and, inevitably, it will be difficult to prevent vagueness in the description of one's findings."(Heyink and Tymstra, 1993: 291)

However, qualitative methods aim "pre-eminently at clarification, interpretation and, to a certain degree, at explanation."(Heyink and Tymstra, 1993: 293). Quantitative research focuses more on "[investigating] phenomena by collecting numerical data and analyzing those data statistically."(Schütze and Sprouse, 2014: 116) Rasinger states that "we can put quantitative data into numbers, figures and graphs, and process it using statistical (i.e. a particular type of mathematical) procedures."(Rasinger, 2013b: 10)

Quantifiable data is generally considered reliable, where once a method is established it is expected to produce the same results over and over again. In linguistics, however, this is not necessarily as simple as it sounds- even if one was to test the same participants in identical conditions again and again,

> "people change, the environment changes, and even if people are identical, they are unlikely to respond to the same test in exactly the same way again – be it because they have the experience of having done the test before or because they quite simply have had a bad day."(Rasinger, 2013b: 28)

Rather than being regarded as opposing methods of collecting data, qualitative and quantitative methods of data-collection should be considered as complementary, as ways of

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[6] Original text: Ofte blir disse fremstilt som motsetninger, der kvalitative metoder betraktes som induktive, mens de kvantitative betraktes utelukkende som deduktive.

'fulfilling' or 'completing' each other. They provide different types of information and can lead to further reflection and discussion. (Postholm and Jacobsen, 2011: 41)[7] The combination of qualitative and quantitative investigation would provide strong and reliable data. The questionnaire in this investigation, although traditionally a quantitative method of collecting data, incorporates qualitative aspects, and therefore one can assume that the results will be reliable. The questionnaire collects numerical data about the three grammatical constraints in question, but it makes use of just a small group of participants. By and large, then, this study is a qualitative study which makes use of numerical data in order to analyse and compare the results.

3.2.2   The participants

This section will provide information about the participants and their language backgrounds. For the purpose of anonymity the participants' names will be exchanged for numbers. The study has gathered results from six participants, male and female. Each participant is aged between 20-45, with varying occupations and language experience.

Participant 1 is a 27 year-old female who grew up in Trondheim, Norway. This participant has two English-speaking parents, but she moved to Norway when she was just over one year of age. Participant 1 speaks both English and Norwegian on a daily basis.

Participant 2 is a 44-year old male, who grew up in Trondheim. Participant 2 has one English-speaking parent, and one Norwegian-speaking parent. He learnt to speak English first, and up until the age of around 35 he spoke English on a daily basis. Participant 2 has lived in the UK and in the US for different periods of time.

Participant 3 also grew up in Trondheim, with an English-speaking and a Norwegian-speaking parent. Participant 3 is a 25 year-old female who speaks English and Norwegian on a daily basis. She speaks English to family members. When talking to her partner, however, Participant 3 speaks Norwegian.

Participant 4 is a 28 year-old female from Trondheim. She learnt both languages at the same time, and now speaks both daily. However, she claims that she speaks English about 60% of the time at home, less at work. When speaking to other family members, participant 4

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[7] Original text: I stedet bør den kvalitative og den kvantitative metoden ses som komplementære, at de utfyller hverandre, gir ulike typer informasjon, og at de kan inspirere til ytterligere refleksjon og diskusjon.

speaks English to members from the English family and Norwegian to the Norwegian members.

Participant 5 is a male from Oslo, Norway, aged 26. He learnt both languages at the same time, although now he speaks English a few times a week, when talking to family members. He speaks Norwegian on a daily basis.

The final participant, Participant 6, is a 22 year-old female, who has grown up in Vestnes, Norway. She has always considered Norwegian to be her mother tongue, even though she spoke English to her father whilst growing up. Once she became an adult, however, she now speaks Norwegian to her father, and speaks English only on occasions when it is necessary. When speaking to her partner she speaks Swedish.

Most of the participants have been born and raised in Norway, although a few of them have lived abroad for various amounts of time. Participant 6 lived in Newcastle (in the UK) for one year, and participant 2 has lived in Southampton (in the UK); Boulder, Colorado (USA) and in Atlanta, Georgia (USA) for different amounts of time. The participants are mostly coordinate or compound bilinguals, as mentioned in section 2.1.

3.3   The questionnaire

The questionnaire is composed of 60 sentences, each of which contains an example of CS. The sentences have been divided into three sections (with 20 sentences in each section), one section for each grammatical constraint; each section is divided further into two groups. These groups contain sentences which either adhere to or defy one of the grammatical constraints. For example, a sentence which adheres to the Equivalence constraint would be

(7) Turn left at the *veikryss*.[8]

The questionnaire contains 10 sentences which adhere to the Equivalence constraint, and 10 which do not. The same applies to the Closed-class constraint and the Free Morpheme constraint. The three sections are not labelled, and the sentences were randomized, so as to prevent any possible affectation on the participants.

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[8] See appendix 3.

3.3.1 Advantages and disadvantages of using a questionnaire

A questionnaire is typically a method for collecting data quantitatively. However, by using a Likert-scale in a questionnaire this method becomes a very effective method of gaining the participants' perceptions in a way which can then be compared and analysed. Nonetheless, attempting to gather qualitative data via a typically quantitative method requires that the participants are similar enough (with regards to their linguistic background) that their results can be analysed without the issue of having too wide a variation of sources at the starting point.

An advantage of using a questionnaire as a method of collecting data is that

"[T]he question is clear, and the answers are set. The latter means that those who answer the questions cannot answer in their own words, rather they have to check the pre-defined categories. These categories can be transferred into numbers which can be treated statistically."(Postholm and Jacobsen, 2011: 86)[9]

On the other hand, as mentioned in section 4.2.2 questionnaires can, on occasion, be unreliable. Because the two ends of the scale were 'acceptable' or 'unacceptable', this may be deemed as either 'positive' or 'negative'. As Rasinger mentions, "many people have the habit of answering questionnaires with a particular manner and tendency: they tend to either more agree or more disagree, or, in the worst case, have a 'neutral' opinion."(Rasinger, 2013b: 30) This difficulty was countered by explaining to each participant before they answered the questionnaire that the study was only interested in their intuitions; there was no right or wrong answer.

3.3.2 Advantages and disadvantages of informal interviews

As mentioned previously, the participants were interviewed in an informal manner. The participants were all met in person, and after they had completed the questionnaire a conversation was had regarding the topic of the investigation. In addition to this there was a discussion about their own reflections on CS their language backgrounds. Some of the participants had not thought about the topic before, whilst others had apparently thought about

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[9] Original text: Spørsmålet er klart, og svaralternativene er faste. Det siste betyr at de som svarer på spørsmålene, ikke kan svare med egne ord, men må krysse av på forhåndsdefinerte kategorier. Disse kategoriene kan så omdannes til tall som kan behandles statistisk.

this before (in such cases it was said that they had thought about situations when they switch, but none had discussed CS previously from a scholarly perspective).

A disadvantage of using interviews, especially informal interviews, is that people are often highly unreliable when it comes to personal observation of language use. For example, in section 4.1.3 Participant 1 stated that, after self-reflection, she only switched between sentences rather than within sentences. Such observations, although sometimes useful, are not particularly dependable.

Postholm & Jacobsen write that the advantage of unstructured (informal) interviews is that they attempt to understand the complexity of the situation within a predetermined focus – in this case, the complexity of the topic of investigation, CS (Postholm and Jacobsen, 2011). The aim of the informal interview is to make the participants feel relaxed and at ease, so as to reduce the issue that they begin to focus too much on the topic and begin to attempt to 'help' the investigation.

3.4 Expected outcome

After having researched relevant theories, the expected outcome of this investigation would be that the examples which adhere to the grammatical constraints would be deemed acceptable by the participants, and that the examples which defy the constraints will be unacceptable. For example, a sentence which adheres to the Equivalence constraint:

(8) We're taking *fergen over sjøen*[10]

Should be considered an acceptable utterance by the participants, because it follows the rules of the constraint; the grammar of the sentence is correct in each language before and after the point of change. A sentence such as

(9) Han bestilte *ticket[11]*

would be considered an unacceptable sentence, because the grammar is not correct on both sides of the switch. Translated into English, the sentence would read

(10)*He bought ticket.

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[10] See appendix 3.
[11] See appendix 3.

This sentence is lacking the determiner 'a', as in 'he bought *a* ticket'. In Norwegian, this determiner is not needed, and would read

(11)Han bestilte billet.

This is a violation of the Equivalence constraint, and should therefore be deemed unacceptable, according to theory. Judging by this, it is expected that the constraints hold strong throughout the questionnaire.

4   Discussion

This Chapter will begin with presenting the results of the investigation before moving on to a discussion of the theories outlined in Chapter 2, in light of the findings from the investigation.

4.1   The Results

This section will present the findings of the investigation, taking the results for each grammatical constraint individually.

4.1.1   The equivalence constraint

The results of the questionnaire show that the sentences adhering to the equivalence constraint (Figure 2) are generally considered more acceptable than sentences which violate it (figure 3).
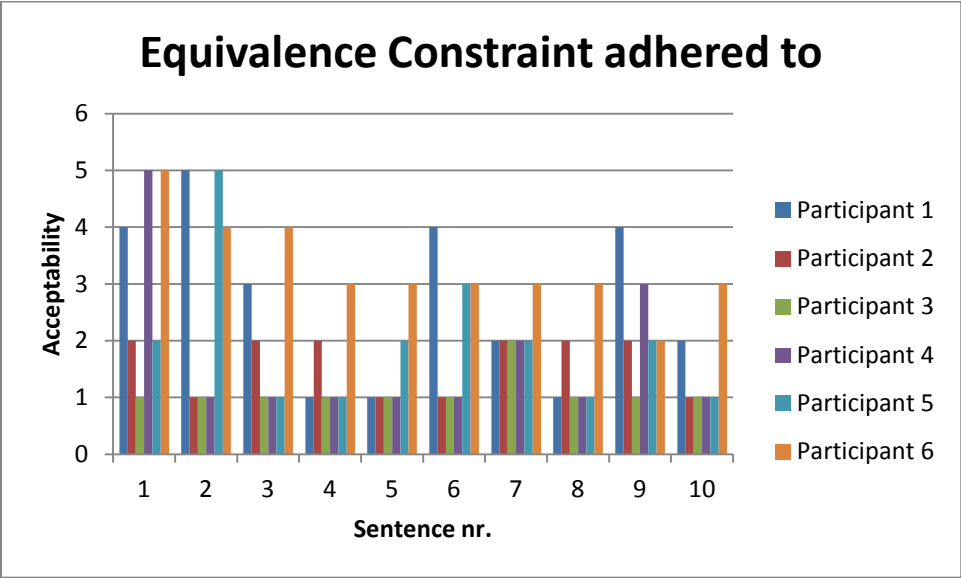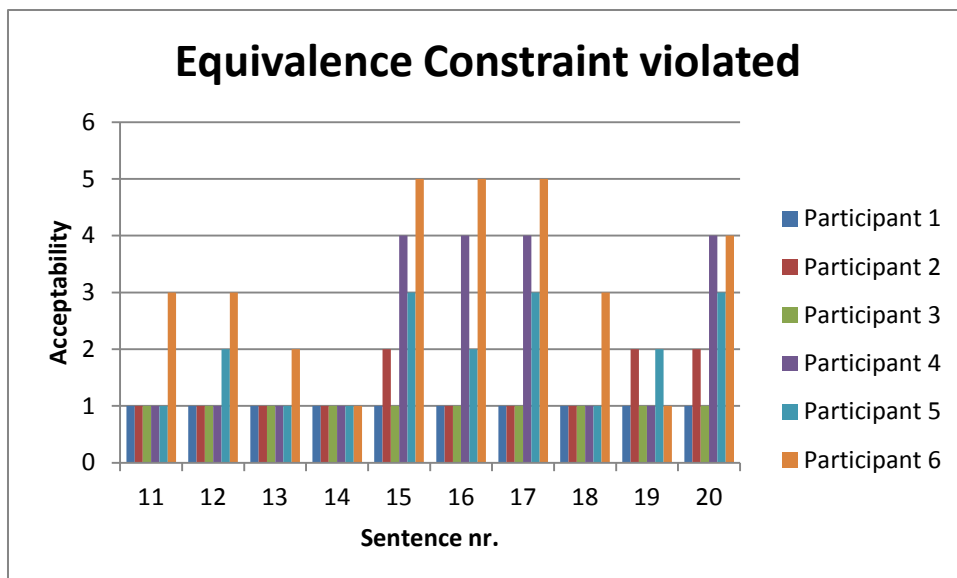

Figure 2: Participants' response with regards to the sentences adhering to the Equivalence Constraint.

Figure 3: Participants' response with regards to violations of the Equivalence Constraint.

It is interesting to see that, on the whole, the sentences which adhered to the constraint were considered more acceptable than those which were violations. However, sentences 15, 16, 17 and 20 (respectively, examples 9, 10, 11 and 12 below) which were technically violations of the constraint, received higher scores of acceptability than many of the sentences which adhered to the Equivalence constraint.

(12) 15. De deler apartment.

    *   They share apartment.

(13) 16. Petter er twin.

    *   Petter is twin.

(14) 17. Hun ble sjekket av doctor.

    *   She was checked by doctor.

(15) 20. Han er teacher.

    *   He is teacher.

The reason that these examples violate the equivalence constraint is that they all lack English determiners, i.e. "a" or "an". These determiners are not required in Norwegian, but in English they are necessary in order to make grammatical sense. This may explain why these particular sentences received high scores of acceptability from some of the participants. The participants who gave these higher scores (participants 4, 5 and 6) gave higher scores throughout most of the questionnaire. This may be because their first intuition was that CS was acceptable in most circumstances. On the other hand, this may be connected to their

linguistic backgrounds. As mentioned in section 3.2.2, participant 4 uses both English and Norwegian on a daily basis and often makes use of CS. Participants 5 and 6, on the other hand, state that they speak Norwegian much more often than they do English. Participant 6 states that she views Norwegian as her native language above English. Due to the fact that Norwegian does not require determiners in these examples, it is possible to argue that the participants saw the CS as insertion of loan words rather than as code-switching.

4.1.2 The free morpheme constraint

The participants' answers all suggest that this constraint is particularly strong; most sentences adhering to the constraint are deemed reasonably acceptable. On the other hand, two sentences which violate the Free Morpheme Constraint are considered to be more acceptable than most of the sentences which adhere to it. Sentences 41 and 49 are respectively

(16)*Han er lang-*ish*.

   He is tallish.

(17)*Hun er den tynn-*est* jenta på laget.

   She is the thinnest girl on the team.[12]

In all probability, these two suffixes are examples of morphemes which have been integrated into the Norwegian language. The suffix "*ish*" has no directly translatable Norwegian equivalent; the use of one simple suffix 'borrowed' from English is an easier option than rephrasing an entire sentence. To avoid confusion it should be noted that the Norwegian language also has a suffix '-est'. In (17) above, the suffix is the English '-est'; this is the point of CS in this sentence. This may be a reason why this sentence received relatively high scores on the acceptability test. It is possible that some of the participants read this sentence as a completely Norwegian sentence despite being told before starting the questionnaire that every sentence had an example of CS (these were shown in italics on the questionnaire).

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[12] See appendix 3.
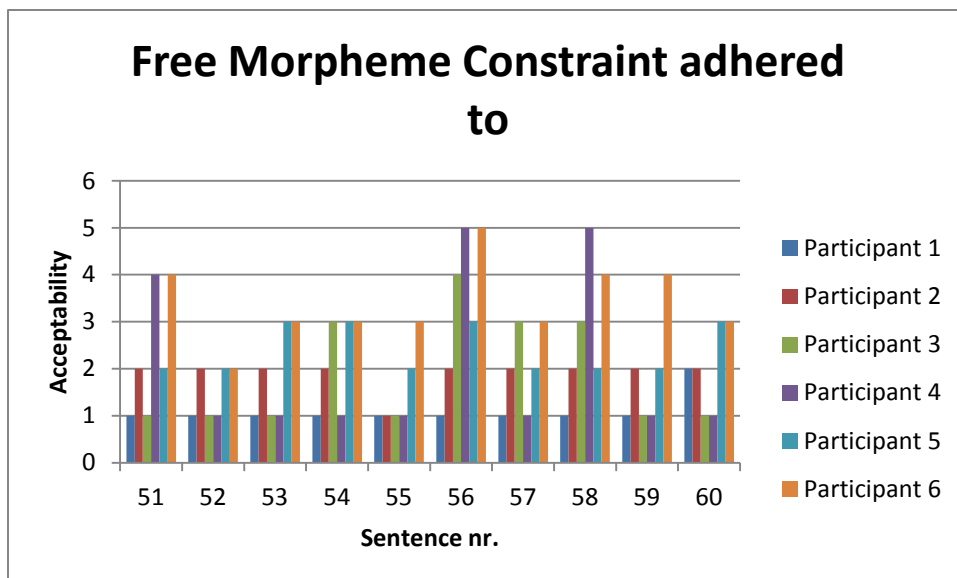
Free Morpheme Constraint adhered to

Figure 4: Participants' response to sentences adhering to the Free Morpheme Constraint.

The English suffix '-est' is similar in both spelling and pronunciation to its Norwegian counterpart '-este', i.e.

> (18) Hun er den tynn<u>este</u> jenta på laget.
>
> She is the thinnest girl on the team.

It makes sense therefore that (17) is deemed to be acceptable, because of its suffix's similarity to the Norwegian suffix. Participant 2 gave particularly low scores throughout this section of the questionnaire. This deviation may be explained by his background. During the informal interview, Participant 2 said that he grew up learning to keep the two languages separate when at home. As mentioned earlier, however, such personal observations are usually unreliable – firstly there is no guarantee that he kept the two languages separate. Secondly, there is the question of perspective. Participant 2 is 44 years old, so an argument can be made that his memory and perspective of how his childhood was is not necessarily an accurate account of how it really was (though this argument could be made regardless of age). On the other hand, if this is the case, then it could explain why he was the only participant who deemed that sentence 41 (16) was unacceptable, whilst the others all gave high acceptability scores. The same can be said of sentence 49 (17), although in this case he was not the only participant to give this sentence a low score. Participant 5 actually rated this sentence as completely unacceptable, rating it a 1. As mentioned in section 3.2.2,
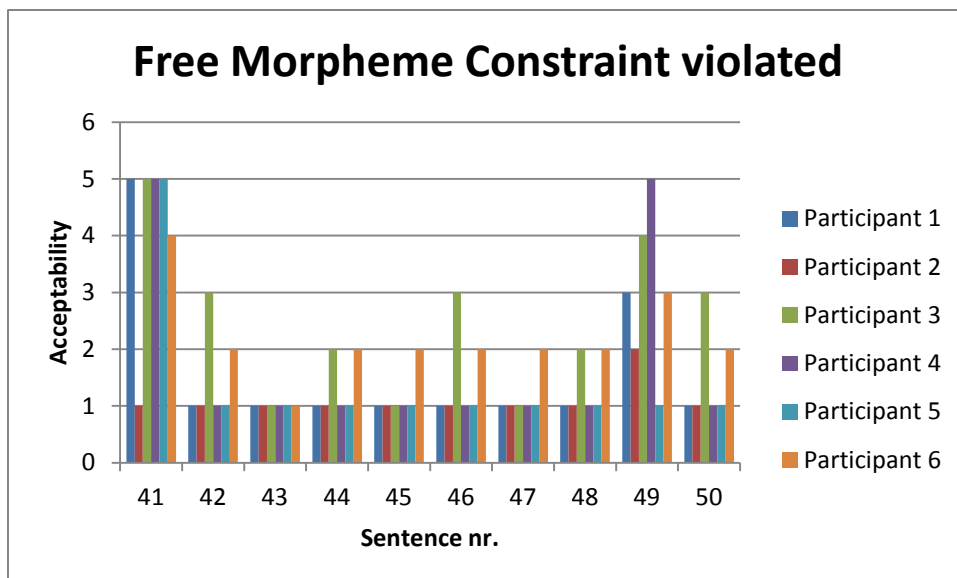
Figure 5: Participants' response to sentences violating the Free Morpheme Constraint.

Participant 5 grew up in Oslo, Norway, and views Norwegian to be his dominant language ahead of English. When growing up, although learning both languages, there was a separation of the two – English was spoken with the family at home, and Norwegian was spoken otherwise. Participant 5's answers for the rest of this section are all 1s, apart from sentence (16). The results suggest that the suffix '-ish' has been successfully integrated into the Norwegian language, when even a bilingual who claims that Norwegian is their dominant language accepts (16) as a valid sentence.

4.1.3   The closed class constraint

The third and final constraint, the Closed Class Constraint, has received the lowest acceptability scores. Of all the constraints investigated in this study, the Closed Class constraint had a scale of 1-5[13], but the median of the scale was 2 (for sentences which adhered to the constraint) in comparison to 3 for the other constraints, including the sentences which violate the Closed Class constraint. However, both the sentences which adhere to the constraint and those which violate it are given low acceptability scores. With the exception of sentence 29 (19),

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[13] Due to the fact that there were no sentences which scored a 5 on the questionnaire, figure 6 shows a scale going up to just 4.5, but the options on the actual questionnaire were the same for this section as for all the others.

(19) The treasure was buried *under* a palm tree.

The treasure was buried under a palm tree.

The sentences which violate the constraint have all received low scores on the acceptability judgments. This particular sentence is arguably a deviation from the others, because the orthography is identical and the pronunciation is similar. Certainly it can be argued that because of this similarity, with regards to orthography and phonology, when reading this sentence the participants read the preposition 'under' both as the English and the Norwegian form, and therefore came to the conclusion that it was an acceptable sentence. However, only half of the participants gave higher scores of acceptability. Participants 1, 2 and 5 gave the scores 1, 2 and 2 respectively.
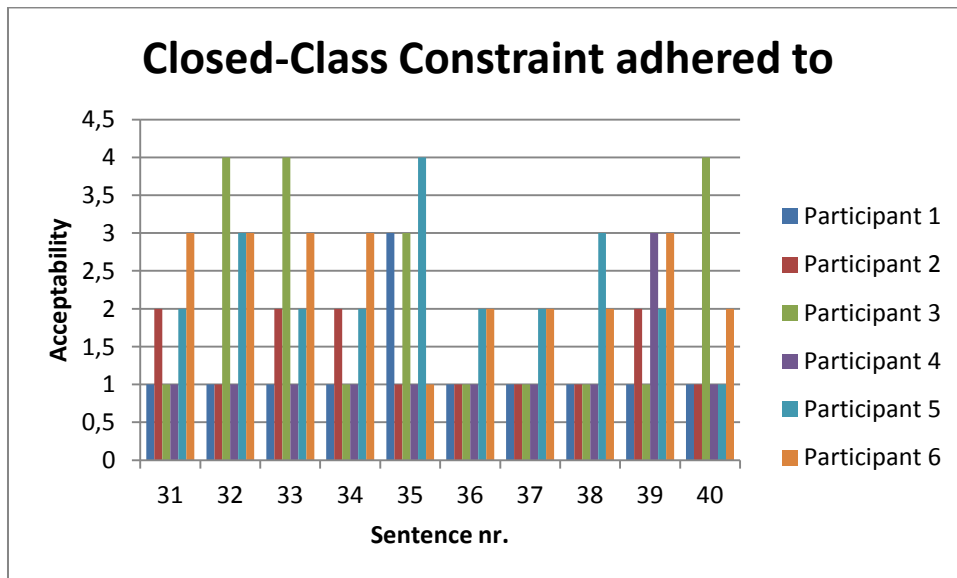
Figure 6: Participants' response to sentences adhering to the Closed-Class Constraint.

Participant 1 gave (19) a score of 1. This may be due to her initial intuition about the sentence, or it may be because she had a tendency of giving low scores throughout the questionnaire. On average, Participant 1's response was 1.43. Only 11/60 answers were above the score of 1, and of the 11 answers higher than 1, only 5 showed that a sentence was acceptable (4 or 5 on the scale). Even more consistent were Participant 2's answers. Not a single sentence was judged to be acceptable – the only scores given were 1 and 2 throughout the questionnaire. Participant 2's average response was 1.5. As mentioned previously, Participant 2 has grown up learning to keep Norwegian and English separately. Participant 1 is a 27-year-old female who grew up in Norway. Although she speaks both Norwegian and

English on a daily basis, and admits that she switches between the two, on personal reflection she stated that she usually switches between sentences, rather than switching within a sentence. As stated with Participant 2 above, such observations are not necessarily reliable.
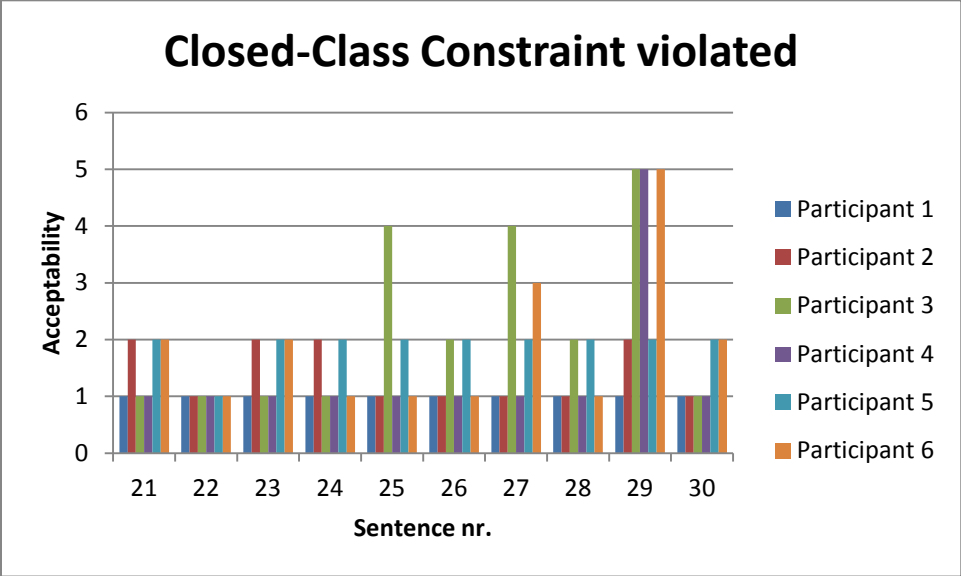
Figure 7: Participants' response to sentences violating the Closed-Class Constraint.

Participant 5 had an average of 1.98 in his judgments, and all the answers for the violations of this constraint suggest that he did not feel that the sentences were acceptable. Throughout the questionnaire, Participant 5 veered towards the lower end of the scale, even for sentences which adhere to the constraints. Having said this, Participant 5 had the second highest average with regards to his answers (See figure 8 in section 4.2.1 below). He appears to have fulfilled the expectations of this thesis, by giving higher scores to sentences which adhere to the constraints than to those which do not, yet as with many of the other participants a good deal of the 'acceptable' sentences still received low scores of acceptability.

4.2 Theory re-discussed in light of the results

This section will discuss the findings of the investigation with regards to theories from section 4, starting with motivations for CS, then moving on to the Borrowing/CS debate and then the notion of functional separation. This section will also discuss the methodology of the investigation.

4.2.1 Motivations for CS

Nicol suggests that CS occurs as a result of a conscious decision, based on the situation and context around the discourse (Nicol, 2001). Judging by the results of the questionnaire, it is possible to say that, overall, CS is generally considered unacceptable, whether it adheres to the constraints or not. The average scores of acceptability given for each participant are as follows in figure 8:

Participant	Mean Acceptability
1	1,433
2	1,5
3	1,816
4	1,73
5	1,98
6	2,73

Figure 8: Mean scores of acceptability from the questionnaire

So, on a scale of 1-5, as it is on the questionnaire, all participants answered on average that sentences were between 1 and 2 on the Likert-scale, meaning that they were judged to be unacceptable. This is not to say that CS is completely unacceptable in all situations; there were many sentences in the questionnaire that received high scores of acceptability. Also, with such a small group of participants these findings cannot be generalised to all English/Norwegian bilinguals. It is fair to say that, although the averages point towards CS's unacceptability, the results seem to back up the grammatical constraints – the sentences which adhere to the Free Morpheme Constraint received a large amount of 3s or higher in comparison to the violations of the constraint which received much lower scores such as 1s and 2s (with the exception of (16) and (17), mentioned earlier).

Judging by the information gathered from the personal particulars forms, one could argue that there are certain situations in which CS is decisively used, such as when the issue of 'lexical need' arises (Lara, 1989). Most of the participants say that they often switch between English and Norwegian, although this is not something that they have thought about in detail. This would suggest that, although when considered in a situation such as this investigation CS is deemed unacceptable, CS is in fact something the bilinguals make use of regularly; suggesting that CS is in fact acceptable in everyday situations. With regards to social

motivations, it appears that most of the participants all have certain situations where they would choose to speak one language instead of the other. For example, most participants state that they speak English with their immediate family and Norwegian with friends or at work. Participants 4 and 6 are the only participants that, in later years, have spoken mostly Norwegian even to their family. Participant 6 is slightly deviant from the rest of the participants because she is the only one who speaks a third language regularly (She speaks Swedish to her partner). This may explain why she had the highest mean acceptability judgment; using one's mind to process three languages may lead to more open 'pathways' in the brain, making CS perhaps more natural to her than to the others. On the other hand, she may simply see CS as more acceptable because of the need for it when using three languages-although speaking Swedish to her partner, she mentions that she often has to switch to Norwegian when she cannot find the vocabulary she needs in Swedish.

4.2.2 Acceptability Judgments

Due to the low scores of acceptability given on the questionnaire, and their contrast with the predictions made beforehand, it is possible to argue that the methodology of this thesis contains faults. An alternative method of data collection may have produced different results; other types of bilinguals may also have led to a different outcome. The intuitions of the participants may also be less reliable than previously thought, or less reliable than they are with other areas of language such as borrowing, or the use of definite articles.

Acceptability judgment tests remove the problem of distinguishing between speech errors, i.e. slips of the tongue or unfinished utterances, and grammatical production (Sorace and Keller, 2005: 1499). This helps the investigation by presenting the participants with ready-made sentences; all the participants have to do is follow their intuitions and make a judgment.

A disadvantage when using acceptability judgment tests is that they have been criticized for being an overly informal method of data collection when compared to the standards of experimental cognitive science. Some have suggested that the field may be on precarious empirical ground because of this (Schütze and Sprouse, 2014: 30). The informality of the acceptability judgment test can lead to errors in the data. Sorace and Keller state that linguists typically rely on a simplistic, intuitive way of collecting judgments, ignoring findings that show acceptability judgments are subject to a considerable number of biases, for

which this type of methodology fails to control (Sorace and Keller, 2005: 1499). This does not mean that the methodology is completely wrong, however, rather it suggests that an argument can be made that this method is not always the most effective, and that other methods may produce more reliable results.

4.2.3 Interviews

The success of an interview depends on how well it sheds light on the hypothesis, topic or investigation (Postholm and Jacobsen, 2011: 62)[14]. Some interviews, although seemingly helpful, may in fact be of little use to the investigation if they do not relate to the aim of the investigation. This could be said to be true of some of the participants in this investigation.

The participants were all informally interviewed after they had completed the questionnaire. These interviews were, in essence, conversations with the participants, with the main topic of conversation being the topic of the investigation – CS. There was also a discussion about the participants' own reflections on their language backgrounds. Most of the participants had nothing extra to add to the information they gave in the Background Information Form[15], they merely gave the same information verbally. A few of the participants, however, had other things to add, such as Participants 1, 2 and 5. The observations from participants 1 and 2 have already been discussed in sections 4.1.2 and 4.1.3.

4.2.4 Borrowing

The phenomenon borrowing is, as mentioned previously, closely linked to the notion of CS. Borrowing is the integration of loanwords and phrases into another language, whereas CS involves changing between two languages within a sentence. This is an important distinction to make with regards to this investigation, because it can explain why certain sentences in the questionnaire which violated the constraints were deemed acceptable by the participants. The two examples from the free morpheme constraint in particular can be explained if they are examples of borrowing rather than CS. The two suffixes '-ish' and '-est'. The former is, as mentioned in section 4.1.2, is most likely an example of a borrowed item

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[14] Original text: Om en dialog er god eller dårlig, kan kun vurderes ut ifra hvor godt den er med å belyse en problemstilling.
[15] Appendix 2: Personal Particulars

from English, because there is no suffix in Norwegian which contains the same/similar lexical meaning; so for many it may be easier to borrow '-ish' rather than re-phrase the entire sentence. The other suffix '-est', although also a Norwegian suffix (in this example the '-est' was the English suffix) may be an explained by calling it an example of borrowing. Poplack made claims, after other researchers produced examples of CS which contradicted Poplack's results, that these examples were actually examples of borrowing rather than CS (Poplack, 1988). On the other hand it may be read by the participants as a Norwegian suffix, which is why sentence 49 (17) received high scores of acceptability.

4.2.5   Functional separation

Lambert states that experience in separated language situations enhances the functional separation of the bilingual's languages, whereas experience in "fused" contexts reduces the functional separation of the two language systems (Lambert et al., 1958: 240). Most of the participants who completed the questionnaire have stated that they have grown up speaking English in some situations (i.e. with family members) and Norwegian in other situations (i.e. in the workplace). This could be an explanation for why the questionnaire received low scores of acceptability regardless of whether or not the sentences adhered to the constraints. Most of the participants were compound bilinguals. As mentioned previously, Participant 2 in particular mentioned that he rarely switched between English and Norwegian, so this would fit in with Lamberts hypothesis that the separation of languages leads to the enhancement of the functional separation of the two languages.

The notion of functional separation, and the idea that bilinguals choose a language based on external factors, can explain the differences between the participants' responses on the questionnaire. As mentioned in section 2.5.1, Fishman claims that the bilingual speaker will choose one of their languages in a given situation, depending on the topic, the situation itself and the other participants in the conversation (Fishman, 1972).

4.3   Summary of the results

The results in figures 2-7 show that the three grammatical constraints in question – the equivalence constraint, the closed-class constraint and the free morpheme constraint, all have an effect on the judgments of the participants. However, none of the constraints appear to

have a particularly strong influence on CS. The constraint with the most influence seems to be the free morpheme constraint, although even this constraint received low scores of acceptability regardless of whether or not the sentences adhered to it.

The closed-class constraint has the least amount of influence on the participants. All of the examples have been given low levels of acceptability, with a few exceptions. These exceptions have received higher scores from the participants than the adhering sentences. However, the adhering sentences on the whole do appear to have slightly higher acceptability scores in general.

The equivalence constraint also appears to hold some sway over the participants' judgments. There is a clear difference between the general scores of the examples adhering to the constraint and the examples violating it. On the other hand, the violations have more sentences with 5s (the highest level of acceptability) than the sentences which adhere to the constraint.

5   Code-switching: Conclusion

To summarise this thesis, there are three grammatical constraints which have been investigated – the equivalence constraint; the closed class constraint and the free morpheme constraint. The main subject of investigation is the extent to which these constraints control code-switching between English and Norwegian.

The thesis began with some background theories based around CS and relevant linguistic theory, before explaining the procedure of the investigation. Six participants were approached and asked if they were willing to take part in the study by completing a questionnaire and answering a simple background information form. The questionnaire consisted of 60 sentences involving examples of CS, and the participants were asked to judge the acceptability of each sentence using a Likert-scale from 1 to 5 (1 being unacceptable, and 5 being acceptable). In addition to this, an informal interview was conducted after the questionnaire was conducted. Here the participants were talked to about the topic of the study, and about their language background etc, in order to provide extra information that could be useful for the investigation.

The results of the investigation show that, regardless of the constraints, most of the examples of CS were given low acceptability scores. Although this may show that the constraints are not particularly strong with regards to CS between English and Norwegian, it could also be explained by other factors, such as the types of bilinguals who took part in the investigation. Most of the participants are either coordinate or compound bilinguals, meaning that in general they keep English and Norwegian separate; one language at a time, or one language for a certain situation and another language for different situations. Another factor which may have caused the results to show a contrast with expectations could be the fact that participants had a bad day, or that they associated 'unacceptable' and 'acceptable' with 'positive' and 'negative', and people have a tendency to veer towards one or the other (or stay 'neutral').

The methodology of the investigation has weaknesses which need addressing. The use of an acceptability test for this investigation could arguably be a less reliable method of data collection. Due to the fact that examples of CS gained low scores of acceptability throughout the questionnaire, it is possible to argue that using acceptability judgment tests is not the best or most effective way of investigating grammatical constraints of CS. The types of bilinguals used may also have had an effect on the results; most of the participants were compound

bilinguals. This would explain the low scores of acceptability throughout the questionnaire. Those who were not compound bilinguals were coordinate bilinguals – this would suggest that they are more open to CS, which would explain the way in which they answered the questionnaire. Another possibility which could explain the low levels of acceptability is that the intuitions of bilinguals may not be as reliable with regards to CS as they are with other language phenomenon.

The Free Morpheme Constraint appears to be the strongest of the three constraints under investigation in this thesis. The results for this constraint show the examples which adhered to the constraint gained the most amount of 3s or higher in the acceptability judgment test. Sentences which violated the Free Morpheme Constraint, with the exception of two examples, all received low scores.

The Equivalence Constraint also appears to be relatively strong; there is a clear difference between the scores of the examples adhering to the constraint and the examples violating it. However, there were more violating sentences with the highest score of acceptability than there were sentences adhering to the constraint.

The constraint which seems to have the least amount of influence on CS is the Closed-class Constraint – the examples all received low levels of acceptability, albeit with a few exceptions. Despite the fact that these exceptions gained higher scores than the adhering sentences, there seems to be a slight difference between the violations and the examples which adhere to the constraint. Adhering sentences on the whole do appear to have slightly higher acceptability scores in general.

The grammatical constraints arguably have a certain amount of influence and applicability regarding CS in Norwegian-English bilinguals, even though they do not have a hold on CS universally. On a final note, one can say that the hypothesis of this thesis does not hold particularly strong. Although the sentences which adhere to the three constraints have been judged more acceptable than the sentences which violate them, the examples received relatively low scores of acceptability throughout the questionnaire.

Appendices

Appendix 1: Participant consent form

Consent for Participation in Interview Research

I volunteer to participate in a research project conducted by Luke James Barber, designed to form the basis for an MA thesis in English at NTNU (Norwegian University of Science and Technology). I understand and consent to the following points:

1. My participation in this project is voluntary. I understand that I will not be paid for my participation, and that I may withdraw and discontinue participation at any time.

2. If I feel uncomfortable in any way, I have the right to decline to answer any question or to end the session.

3. Participation in the project involves providing responding to an acceptability judgement test involving bilingual data.

4. I understand that the researcher will not identify me by name in any reports using information obtained from my personal particulars form, and that my confidentiality as a participant in this study will remain secure.

5. I have read and understand the explanation provided to me. I have had all my questions answered, and I voluntarily agree to participate in this study.

6. I have been given a copy of this consent form.

_____ _____
 Signature   Date
_____ _____
 Printed Name   Signature of the Researcher

For further information, please contact:
Luke James Barber,
Email: barber@stud.ntnu.no
Tlf: 48351932
The above form has been slightly modified from the sample consent form found at the following web address:
http://www.stanford.edu/group/ncpi/unspecified/student_assess_toolkit/pdf/sampleinformedconsent.pdf

Appendix 2: Personal Particulars form

Personal Particulars Form

Age:

Gender:

Please answer these questions to the best of your ability:

Where did you grow up?

Have you ever lived abroad?

At what age did you begin speaking English and Norwegian?

Did you begin to speak one language before the other?

How often do you speak English? For example, do you speak English on a daily basis?

How often do you speak Norwegian?

Which language do you use when speaking to family members?

(If applicable) Which language do you use when speaking to your partner?

Do you speak any other languages?

Appendix 3: The Questionnaire

<u>Questionnaire</u>

What participants need to do:

Please read each sentence and consider whether or not you think they are acceptable. Please circle around the number that you feel is most suitable, on a scale of 1-5 (1 being completely unacceptable and 5 being perfectly acceptable).

E.g.   It is *på tida å vaske på kjøkkenet*.

Unacceptable   1   2   3   (4)   5   Acceptable

Please note that if your Norwegian native dialect differs from *Bokmål*, then you are free to translate the *Bokmål* into your dialect. However, the English parts of sentences must remain in English.

---

   1. I'm going to the shops, *vil du ha noe*?
Unacceptable 1   2   3   4   5   Acceptable

   2. Turn left at the *veikryss*.
Unacceptable 1   2   3   4   5   Acceptable

   3. I like sausages *fordi de smaker godt*.
Unacceptable 1   2   3   4   5   Acceptable

   4. *Vil du være med* to the cinema?
Unacceptable 1   2   3   4   5   Acceptable

   5. Thank you for *at du hentet oss*.
Unacceptable 1   2   3   4   5   Acceptable

   6. We're taking *fergen over sjøen*.
Unacceptable 1   2   3   4   5   Acceptable

7. The windows are clean *på utsida*.
Unacceptable 1   2   3   4   5   Acceptable

8. I went to the jewellers *for å køpe en klokke.*
Unacceptable 1   2   3   4   5   Acceptable

9. Hun skulle til å betale da *she realised that she had forgotten her purse.*
Unacceptable 1   2   3   4   5   Acceptable

10. When they opened the box *så de at varen var ødelagt*.
Unacceptable 1   2   3   4   5   Acceptable

11. What *spiste han til middag?*
Unacceptable 1   2   3   4   5   Acceptable

12. Han bestilte *ticket.*
Unacceptable 1   2   3   4   5   Acceptable

13. Hun kjøpte *house*.
Unacceptable 1   2   3   4   5   Acceptable

14. Hvor *ran you?*
Unacceptable 1   2   3   4   5   Acceptable

15. De deler *apartment.*
Unacceptable 1   2   3   4   5   Acceptable

16. Petter er *twin.*
Unacceptable 1   2   3   4   5   Acceptable

17. Hun ble sjekket av *doctor*.
Unacceptable 1   2   3   4   5   Acceptable

18. What *sa du?*
Unacceptable 1   2   3   4   5   Acceptable

19. How *mistet hun det?*
Unacceptable 1   2   3   4   5   Acceptable

20. Han er *teacher*.
Unacceptable 1   2   3   4   5   Acceptable

21. Put the book *på* the shelf.
Unacceptable 1   2   3   4   5   Acceptable

22. *Den* computer is not mine.
Unacceptable 1   2   3   4   5   Acceptable

23. I have *mange* pairs of shoes.
Unacceptable 1   2   3   4   5   Acceptable

24. I don't like talking *foran* large crowds.
Unacceptable 1   2   3   4   5   Acceptable

25. The church is *ved siden av* the river.
Unacceptable 1   2   3   4   5   Acceptable

26. *Han* is her friend.
Unacceptable 1   2   3   4   5   Acceptable

27. She likes going to the beach *men* she doesn't like to swim.
Unacceptable 1   2   3   4   5   Acceptable

28. There are apples *i* the fridge.
Unacceptable 1   2   3   4   5   Acceptable

29. The treasure was buried *under* a palm tree.

Unacceptable 1   2   3   4   5   Acceptable

30. The key to the front-door is *i* my pocket.
Unacceptable 1   2   3   4   5   Acceptable

31. The jewellery is in *esken*.
Unacceptable 1   2   3   4   5   Acceptable

32. The teacher went into *klasserommet*.
Unacceptable 1   2   3   4   5   Acceptable

33. Butikken ligger ved siden av *the hotel*.
Unacceptable 1   2   3   4   5   Acceptable

34. They took *heisen* up to the tenth floor.
Unacceptable 1   2   3   4   5   Acceptable

35. She bought a jacket and a *lue*.
Unacceptable 1   2   3   4   5   Acceptable

36. The students sat on *bussen*.
Unacceptable 1   2   3   4   5   Acceptable

37. Snøen falt på *the ground*.
Unacceptable 1   2   3   4   5   Acceptable

38. I dived into *svømmebassenget*.
Unacceptable 1   2   3   4   5   Acceptable

39. Hun satt sykkelen i *the garage*.
Unacceptable 1   2   3   4   5   Acceptable

40. The leaves on the trees are *grønne*.
Unacceptable 1   2   3   4   5   Acceptable

41. Han er lang-*ish*.
Unacceptable 1   2   3   4   5   Acceptable

42. Vi må springe raskt-*ly*.
Unacceptable 1   2   3   4   5   Acceptable

43. He valued her friend-*skap*
Unacceptable 1   2   3   4   5   Acceptable

44. Foxes eat rabbit-*er*.
Unacceptable 1   2   3   4   5   Acceptable

45. The teabag-*ene* are in the tea-box.
Unacceptable 1   2   3   4   5   Acceptable

46. Vi liker å spise eple-*s*.
Unacceptable 1   2   3   4   5   Acceptable

47. The book-*ene* are bound in leather.
Unacceptable 1   2   3   4   5   Acceptable

48. House-*et* is built of brick.
Unacceptable 1   2   3   4   5   Acceptable

49. Hun er den tynn-*est* jenta på laget.
Unacceptable 1   2   3   4   5   Acceptable

50. The cups are in cupboard-*et*.
Unacceptable 1   2   3   4   5   Acceptable

51. Han er *tired*.
Unacceptable 1   2   3   4   5   Acceptable

52. Her *fisk* lives in a tank.
Unacceptable 1   2   3   4   5   Acceptable

53. The captain was on board his *båt*.
Unacceptable 1   2   3   4   5   Acceptable

54. Rabbits eat *gulrøtter*.
Unacceptable 1   2   3   4   5   Acceptable

55. The snow is *hvitt*.
Unacceptable 1   2   3   4   5   Acceptable

56. Kaffen er *hot*.
Unacceptable 1   2   3   4   5   Acceptable

57. He *sprang* as fast as he could.
Unacceptable 1   2   3   4   5   Acceptable

58. Datamaskinen *is noisy and slow*.
Unacceptable 1   2   3   4   5   Acceptable

59. The cafeteria is filled with *mat*.
Unacceptable 1   2   3   4   5   Acceptable

60. My *ryggsekk* is blue.
Unacceptable 1   2   3   4   5   Acceptable

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