Code-Switching in the Nominal Structure:

Polish English and Dutch-English Code-Switching

Master Thesis

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Abstract

This thesis analyses code-switching in the nominal structure. In particular, it focuses on code-switching between Polish-English and Dutch-English. In scientific research, code-switching are explained in the light of two theories: the Minimalist approach (MacSwan 1999 and the Matrix Language Frame model (2002). The purpose of this thesis is to gain more insight into the D°-N° switch between languages with gender and case marking. Moreover, it aims to test the predictability of both frameworks.

To achieve these goals, an online survey was distributed to universities in the Netherlands and Poland. It was filled in by both Polish-English and Dutch-English bilinguals with an academic background. Thirteen Polish-English— and eighty three Dutch-English subjects participated in the study. The survey included sentences with the Matrix Language and Embedded from all three languages. Moreover, the determiner gender was taken into consideration in Dutch-English code-switching, while case and gender marking of nouns in Polish-English code-switching.

The results revealed that the Minimalist Program has a higher predictive value, although it could not account for all the results. The framework does not make a distinction between different kinds of gender or case. Moreover, some of the results might indicate that participants were actually borrowing instead of code-switching, which in return suggests that the participants were not advanced code-switchers or that they were exposed to one language in a greater measure than to the other. Therefore, to make any conclusive remarks, further research should be done on languages displaying gender and case marking and that a framework should be developed which can account for the effects gender and case have on code-switching.
1. Introduction

1.1. Research area and the scope of the paper

Most of the world’s population speaks more than one language (Schwieter and Tokowicz 2015: 4). There are more bilingual than monolingual speakers in the world (Hamers and Blanc 2000: 1). There is no country, no society, nor age group where only one language is spoken (Grosjean 1982: 1). It is no surprise then that people who master more than one language, sometimes use two languages within one or more sentences, whether consciously or not. This phenomenon of mixing two languages in a single discourse is called code-switching.

The following is just an example of the phenomenon:

(1) Le consulta era eight dollars

The visit cost eight dollars (in Grosjean 1982: 151)

Grosjean notices that bilinguals code-switch unconsciously as they assume that the interlocutor will understand both languages they use in a discourse (Grosjean 1982: 148). Just like bilingualism is a norm in today’s society, so is code-switching as it “affects practically everyone who is in contact with more than one language or dialect, to a greater or lesser extent” (Gardner-Chloros 2009: 4). Much already has been written on this subject, from sociolinguistic aspects of code-switching (Gardner-Chloros 2009), psycholinguistics (Longxing Wei 2002) to the formal models of code-switching, two of which this paper will analyse. The Minimalist framework is MacSwan’s approach grounded in the Minimalist Program and the Matrix Language Frame model is Myer-Scotton and Jake’s universal model of code-switching.

Both models deal with the code-switch in the nominal structure, between determiner and noun which makes them the most relevant in the light of this thesis. However, and as will become clear later on, even these theories are unable to account for every phenomena
associated with code-switching. This is a gap which needs to be filled, namely the effect of grammatical gender and case on code-switching in the nominal structure should be analysed in more detail. This is what this thesis will do by testing two theories on code-switching between Determiner and Noun. Throughout this study, those two theories will be introduced and evaluated based on the empirical research. Objectively operationalized surveys have been designed, taking a qualitative angle. This research will contribute to the discussion of code-switching within the nominal structure.

1.2. Overview of the paper

The following chapter, containing an exposition of the background of the literature on code-switching, will discuss the two theories on code-switching within the nominal structure, that inform the analysis of the Polish-English and Dutch-English code-switching in question. Code-switching will be read in light of both the Minimalist and the Matrix Language Frame approaches and their predictions. The analysis of Polish-English code-switching will focus specifically on the influence of case marking on the N⁰ and the notion of the DP structure or its lack in the Polish language. Moreover, the analysis of Dutch-English code-switching will concentrate on the gender marking of the Dutch determiner and its influence of code-switching. The discussion will end with the overview of the main findings and limitations for the scope of this research as well as recommendations for further research.
2. Background

The following chapter, containing an exposition of the literature overview which informs the analysis of the Polish-English and Dutch-English code-switching in question. Firstly, this chapter will discuss the definition of bilingualism and code-switching as a linguistic phenomenon. Secondly, code-switching and borrowing will be compared as this will be relevant in the Discussion chapter. Moreover, this chapter will focus on two theories, the Minimalist Approach and Matrix Language Frame approach, as they will be the most relevant to the analysis of the test cases. The nominal structure of Polish and Dutch will be presented in section 2.5. The section 2.6 will also present previous research on code-switching in the noun phrase. The last part of this section will be devoted to the research questions.

2.1 Bilingualism

As mentioned in the Introduction, bilingualism is a phenomenon occurring all over the world in great measures. However, its definition is not straightforward. Traditionally, a bilingual speaker is defined as a speaker who has “native-like control of two (or more) languages” (Bullock and Toribio 2009: 7). Some scholars define bilinguals as speakers who do not display any accent changes or have vocabulary on every and any subject, but that is not even the case with monolinguals (Bullock and Toribio 2009: 7). There are also those who reach another extreme saying that a bilingual person “possesses a minimal competence in only one of the four language skills, listening comprehension, speaking, reading and writing, in a language other than his mother tongue” (Hamers and Blanc 2000: 6).

According to Bullock and Toribio there are four different criteria that distinguish one bilingual person from the other (2009:7) that, for the purpose of this thesis, will be adhered to in this research. First of all, the age of a bilingual acquiring the second language makes distinction between “simultaneous/early bilinguals” vs “second language acquires/late
bilinguals” (Bullock and Toribio 2009: 7). Bullock and Toribio claim that the early bilinguals achieve status of true bilinguals if they do not cease to speak the languages they have acquired in their childhood. Because they continue using the languages from their childhood throughout their lives, they have “advanced linguistic and communicative abilities in both languages, and are able to deploy each as required” (Bullock and Toribio 2009: 7). Two more criteria are: “the language most used”, and “the status of the language in the community” (Bullock and Toribio 2009: 7). The effect of those two criteria are seen, for example in the heritage bilinguals who are simultaneous bilinguals raised in immigrant and guest-worker communities. Those heritage bilinguals tend to use the majority language more than their parent’s language which may result in restriction of their “home” language (Bullock and Toribio 2009: 8). Moreover, when it comes to the late bilinguals, there is a distinction between “naturalistic” bilinguals and “elite” bilinguals as they differ in the ways their acquire the linguistic information of a language. The former mostly acquire the second language without any formal instruction, while the latter in class-room environment (Bullock and Toribio 2009: 9).

2.2 Definition of Code-Switching

In order to find out exactly how Polish-English and Dutch-English code-switching can be accounted for, it is necessary to discuss code-switching and its definition. Code-switching occurs among bilinguals as “many bilinguals will exploit this ability and alternate between languages in an unchanged setting, often within the same utterance” (Bullock and Toribio 2009: 2). Similarly to bilingualism, the definition of code-switching is difficult to establish and characterise (Bullock and Toribio 2009: 2). Code-switching can occur within a sentence as an alternation between words or even as “the alternation of languages for larger segments of discourse” (Bullock and Toribio 2009: 2). Moreover, the language proficiency
aforementioned plays an important role as it causes “CS patterns” to lack uniformity across linguistic environments (Bullock and Toribio 2009: 2). The purpose of code-switching varies. It can be “filling linguistic gaps, expressing ethnic identity, and achieving particular discursive aims” (Bullock and Toribio 2009: 2).

Code switching is a phenomenon, occurs ‘in the moment,’ without awareness or consciousness of the interlocutors (Myers-Scotton and Jake 2015 416, 417). Moreover, code-switching differs from other seemingly similar contact forms, such as loan translations or diglossia. Loan translations receive the morphological form of the native language, but retain the foreign meaning or pattern of the loan translation (in Bullock and Roribio 2009: 5 ex. 7b):

(2) US French
   étudiant gradué
   “graduate student”
   literally “student graduated”

The loan translation would therefore be gradué, as in the term in French would normally be étudiant de troisième cycle.

Diglossia at first glance resembles code-switching as it involves two languages without morphological integration. However, there are rules as to how languages must be switched as “each language form is associated with a particular social function” (Bullock and Toribio 2009: 5, 6). For example one language is spoken in official situation and one in informal settings. However, code-switching is not about changing social environment in order to switch languages, but rather person’s free choice “when, why, and how to alternate between languages” (Bullock and Toribio 2009: 5, 6).

Furthermore, some scholars argue that both borrowing and code-switching reflect the bilingual speaker’s lack of proficiency in either of the languages (Anderson and Toribio 2007: 235). However, MacSwan argues that code-switching is not seen as a lack of linguistic
skills, but rather as “a prestigious display of linguistic talent” (MacSwan 2005: 62). Indeed, interlocutors who speak two or more languages fluently use code-switching in their communication (MacSwan 2014:1). Belazi et al notice, that code switching can be either inter- or intrasentential. Intersentential codeswitching is limited by “social and discourse constraints”, while intrasentential codeswitching is restricted “by properly syntactic principles” (1994: 221). Therefore, speakers who code-switch intersententially do not need to be proficient in the code-switched languages, while intrasentential code-switchers must have a thorough command of the grammar of the languages involved (Belazi et al 1994: 222). The examples of intrasentential code-switching in (3) and intersentential in (4) (in Cantone 2007: 58 ex. 13, 14):

(3) A: Do you know Pavarotti’s newest song?
B: Yes, I know it. È una bellissima cazione

It is a beautiful song
A: Anche a me piace
Also to me like (I) it

(4) I love that Kleid
I love that dress

In this paper, only one type of code-switching will be taken into consideration when it comes to the code-switching in the nominal structure: the intrasentential code-switching, “that is, language mixing below sentential boundaries” (MacSwan 2014: 1). The reason for choosing intrasentential code-switching is that the code-switching analysed in this paper takes place between the determiner and the noun, and the grammatical competence involved in those switches is relevant as well. Moreover, to test if the intersentential code-switching has any influence on the judgement of the test cases, in all cases this type of code-switching was also used in the experiment (as will be explained in more detail in the Methodology chapter).
Lastly, since this thesis argues in favour of code-switching between the determiner and noun, it is important to look more in depth at how code-switching can be distinguished from borrowing and what are the early constrains on code-switching that rejected switches between the noun and determiner. This will be discussed in the following two sections.

2.3 Code-switching as opposed to borrowing

The distinction between code-switching and borrowing is not very straightforward among scholars. There are different opinions as to how to distinguish those two phenomena. On one hand, as Grosjean (1982:129) notices, if an element from one of the languages is integrated morphologically and phonologically, then borrowing takes place. For example, if an English word type becomes typiar in Spanish, it becomes a borrowed material (MacSwan 2014:1). It is integrated morphologically by the addition of Spanish nominal-verbal –ar inflection, and it must be integrated phonologically into Spanish pronunciation system. Lastly, Poplack introduces four types of switches, where either borrowing or code-switching takes place. First of all, borrowing occurs if all levels are integrated (i.e. morphological, phonological and syntactic), as in the following example (Poplack 1980: 584):

(5) Es posible que te MÓGUEEN.

_They might mug you._

If there is only either phonological or the syntactic integration of one word to the base language, code-switching takes place as it is illustrated in the following examples (6) and (7), syntactic and phonological integration respectively (Poplack 1980: 584):

(6) Las palabras HEAVY-DUTY, bien grandes, se me han olvidado.

_I've forgotten the real big, heavy-duty words._

(7) That's what he said, [da 'wari se]
If none of the linguistic features are integrated, then there is clearly a case of code-switching (Poplack 1980: 584):

(8) No creo que son FIFTY- DOLLAR SUEDE ONES.

I don't think they're fifty- dollar suede ones.

2.4 Code-switching and early constraints

Code-switching moreover is “constrained”, which implies that “CS behaviour is itself rule governed” (MacSwan 2014: 2). Indeed, many scholars in the eighties and nighties introduced constrains on code-switching (MacSwan 2014: 3). One of those constraints is Joshi’s (1982) Constraint on Closed-Class Items. He claims that in code-switching, items belonging to the closed-class (as determiners) cannot undergo a bilingual switch (MacSwan 2014: 3). According to Joshi, in code-switching, there is a matrix language where the mix language “is coming from,” while the other language in the discourse is the embedded language (Joshi 1982: 145, 146). Therefore, a determiner will always belong to the matrix language (as it belongs to the closed-class items), while noun (being lexical) can be switched. This is illustrated in the following example of Marathi-English Determiner-Noun switch (Joshi 1982: 148):

(9) kahi khurcya
(10) some chairs
(11) kahi chairs
(12) *some khurcya

If kahi khurcya comes from the matrix language and some chairs is an embedded language then the determiner can only be kahi i.e. coming from the matrix language but never from the embedded language.
Moreover, Belazi et al. follow the account of Abney (1987) on feature-selection (f-selection) (1998: 228). Abney notices that there is a special connection between the functional head and its complement based on the f-selection. Indeed, Belazi et al (1994) propose the Functional Head Constraint, arguing that the language feature on the complement of a functional head must match the language feature of the functional head (Belazi et al 1998: 228). In code switching therefore, the functional head and the noun cannot undergo any switches as the language feature on either the head or the complement would not match and the f-selection would make the switch fail (Belazi et al 1998: 228, 229). Not only code-switching between D and NP is disallowed, but also other functional heads and their complements, i.e. C and IP (Belazi 1994: 221). The following examples illustrate Belazi’s claim (1994: 230 ex. 22):

(13) *Los policias han seen a thief.

the police officers have seen a thief

'The police officers have seen a thief.'

Here, the modal auxiliary have and VP seen cannot be switched. Only a switch between a lexical head and its complement is allowed as (14) illustrates, where preposition and its complement undergo switch:

(14) SaVae:t ni-tkalmu Lal l'anemie.

Sometimes we-speak about the anemia

'Sometimes we speak about anemia.' (Belazi et al 1994: 227 ex.15)

In conclusion, both Joshi’s Constraint on Closed-Class Items and and Belazi et al.’s Functional Head Constraint predict that the mixing of determiner and noun in Polish-English and Dutch-English code-switching is ill-formed. However, the following section will
introduce the argumentation of both the Minimalist and the Matrix approach. Those two approaches differ in the way they explain the occurrence and well-formedness of the noun-determiner switch.

2.5 The two recent approaches

As aforementioned, there are two recent approaches to code-switching in the nominal structure: the Matrix Language Frame model and the Minimalist model. It is important to mention that both theories assume that the sentence is “the maximal unit of analysis” and focus on the intrasentential codeswitching (Herring et al. 2010: 557). This section will show that according to the Minimalist approach and the Matrix Language Frame model, the switch between a functional head and its complement is indeed possible. Even though the Minimalist approach and Matrix Language Frame model contradict the early constraints presented in the previous section, only one of the recent approaches is rule-based, namely the Matrix Language Frame. This will be discussed in the following section. The Minimalist approach is constraint-free (MacSwan 2014: 18) and will be discussed in section 2.5.2.

2.5.1 The Matrix Approach

The Matrix Language Frame approach (Myers-Scotton, 1993, 2002) divides languages involved in code-switching into matrix and embedded language, just like Joshi did (see section 2.3) through his Constraint on Closed-Class Items. The Matrix Language Frame approach does not specify what the matrix language is exactly (MacSwan 2014: 15), just like Joshi did not either. They claim in their original definition that the matrix language is the language “contributing the majority of morphemes” (MacSwan 2014: 15). However, unlike Joshi, the later work of Jake, Myers-Scotton, and Gross (2002) define the matrix language more accurately through the application of two principles. Firstly, the Morpheme Order
Principle states that the morphemes in a discourse follow the order of the matrix language. Secondly, Matrix Language Frame model predicts that “in every codeswitched clause, either, but only one, of the languages may provide the morphosyntactic frame for that clause,” and that the language which provides that frame is the matrix language, and “the determiner should come from the matrix language” (Herring 2010: 554). This follows from the System Morpheme Principle:

(15) The System Morpheme Principle:

In ML [matrix language] +EL [embedded language] constituents, all system morphemes which have grammatical relations external to their head constituent (i.e., which participate in the sentence’s thematic role grid) will come from the ML (Myers - Scotton, 1997a, p. 83).

According to the MLF approach, the system morphemes fulfil different functions than the content morphemes. Namely, the system morphemes are functional morphemes while content morphemes stand for lexical elements (Fuller and Lehnert 2000: 403). The distinction has its reasoning in the fact that the content morphemes are elements which are either receivers or assigners of thematic roles. Therefore, nouns are content morphemes as receivers of thematic roles, while system morphemes are neither receivers nor assigners (Fuller and Lehnert 2000: 403). The system morphemes are rather defined as [+qualification]. Because system morphemes will come from the ML according to the System Morpheme Principle, the content morphemes will come from the Embedded Language (Chan 2015: 22). Moreover, the system morphemes mark case, gender and definiteness and number (Fuller and Lehnert 2000: 403). Thus, those “determiners [...] — which mark definiteness, case, and gender — are clearly system morphemes” (Fuller and Lehnert 2000: 403).

Therefore, only the following examples of English and Spanish are allowed (with the noun from the embedded language in bold):
‘The spring break already began’ (Sastre1, 610; appendix example 347 in Herring et al 2010: 560).

[Spanish ML and Spanish determiner]

(17) because your mom’s a vieja

old_lady

[English ML, English determiner]

(in Herring et al 2010: 560)

Example (16) illustrates the predictions of the MLF model. First of all, the Morpheme Order Principle is satisfied as Spanish must be the Matrix Language as in this example the word order is different (OVS) than the English word order (SOV (subject-object-verb)). When it comes to the System Morpheme Principle, functional head el come from Spanish, while the lexical morphemes (spring break) are from English.

2.5.1.1 The Matrix Approach: borrowing or code-switching?

As mentioned in section 2.2 there have been different opinions as to what should be seen as borrowing and what as code-switching. The Matrix Language Frame states that there is not a clear-cut distinction between borrowing and code-switching and that “a continuum of relationships exists between borrowing and all forms of CS material so that code-switching and borrowing are not distinct phenomena” (Myers-Scotton 1992: 21). However, what is different are the constraints on the borrowed and code-switched elements (Wright 2011: 259). Indeed, the MLF approach sees the distinction between borrowing and code-switching based on Matrix Language and Embedded Language distinction (Myers-Scotton 2002: 153).
The borrowings are a part of the Matrix Language lexicon, while the codeswitched elements are in the Embedded Language lexicon (Clyne 2003: 71, 72). Nevertheless, although borrowings are normally integrated in the Matrix Language, “singly occurring codeswitching forms largely are integrated in the morphosyntactic frame of […] the Matrix Language (Myers-Scotton 2002: 153).

2.5.2 The Minimalist Approach

The Minimalist Approach, just like the Matrix Approach, does not reject the switch between the determiner and noun. However, the Minimalist Approach unlike the Matrix Language Frame approach is constraint-free (MacSwan 2014: 18). The approach is based on the basic assumptions of the Minimalist Program. The program is based on the assumption that there is a so-called Universal Grammar. There are also innate linguistic universal parameters by which a language can be acquired (Bošković 2013: 95). The Minimalist framework, as its name suggests, is all about minimal, simple, economic explanations of processes occurring in languages (Bošković: 2013: 121). What is crucial to the explanation of those processes are the features, which are selected independently by languages, as the languages “differ in terms of what features they select from the universal inventory and use in the assembly of functional categories” (Guijarro-Fuentes et al 2011: 39). By the checking of features and operations Select and Merge, phrase structure trees are formed (MacSwan 2014: 19). The feature checking notion allows the Minimalist Approach to account for the code-switching (MacSwan, 1999). Indeed, MacSwan applies the Minimalist Program feature checking “to bilingualism in that the entries in the lexicon come from different languages and will be differentiated by the features associated with them” (Herring et al. 2010: 556).

As aforementioned, the aspect of feature checking is the most crucial aspect in the Minimalist Approach to code-switching. First, MacSwan argues that according to the
Minimalist Program, bilinguals have different lexicons for each language they speak, from which an operation Select “picks” an element and “introduces them into the numeration, an assembled subset of the lexicon used to construct a derivation” (MacSwan 2000, 43 in Herring 2010: 556, 557). After this, Merge picks the elements that have undergone the numeration and merges together the syntactic objects in an organized way (MacSwan 2000, 43 in Herring 2010: 556, 557). Lastly, the syntactic objects formed by the operation Merge are moved by another operation, namely Move, to once again form new syntactic structures (MacSwan 2000, 43 in Herring 2010: 556, 557). According to Herring et al, because features have to match between the items throughout the processes of Select, Merge and Move, feature checking process have to occur (Herring 2010: 557). Ndayiragije notes, that the formal features of functional elements must be checked (1999: 399). Moreover, if the features on the items do not match in mixed elements during code-switching, switches are blocked (Herring et al 2010: 556, 557). Indeed, as MacSwan notices, only the uninterpretable features of the determiner and not noun have to be deleted by another operation, namely Agree, from the narrow syntax. It is because the uninterpretable features on the determiner do not have any specific values and that is why Agree has to value and delete them all at the same time (MacSwan 2012: 21). This means that also in code-switching, the noun following the determiner values and deletes the features of the determiner. If there are some features missing in the determiner as compared to the noun, the operation fails and therefore certain code-switching between determiner and noun fails as a result. The following examples illustrate this constraint:

(18) Va a aumentar los **plates**.

‘he is going to increase the plates’ (MacSwan 2014: 219, ex. 20)

(19) *I see the **casa**.

‘I see the house.’ (MacSwan 2014: 220, ex. 24)
On one hand, in (18) the code-switching is well-formed as the number feature matches with the number feature of the Spanish determiner (which also has a gender feature). Therefore, the noun is able to value the uninterpretable features of the determiner and delete them. In (19), on the other hand, the code-switching is ill-formed as in the Spanish noun the features of gender and number have to match the features of the English determiner. However, the English determiner lacks the gender feature and therefore the noun is unable to value and delete the features of D. (MacSwan 2014: 223). The English determiner has only the person and number features, lacking the gender feature (Herring et al 2010: 570). Therefore, according to MacSwan, the English determiner lacks enough features, which leads to its inability to check the features of Spanish noun (MacSwan 2014: 223), being person, number and gender features (Herring et al. 2010: 559). Hence, the code-switching between Determiner and Noun can only occur when there are the same phi-features available on the determiner as in the noun or if there are more features on the determiner, but never on the noun (MacSwan 2014: 223).

2.5.2.1 The Minimalist Approach: borrowing & code-switching

In the Minimalist Approach, code-switching and borrowing are significantly different. If the morphology of the Matrix Language is reflected in the inflection of the Embedded language, the element in the Embedded Language must be borrowing. Indeed, according to MacSwan, borrowing means that a foreign word has been adopted to the lexicon of another language (MacSwan 2014: 180). Therefore if the following sentence (20) is ill-formed, it means that the word kalp cannot be borrowed, but rather a result of code-switching:

(20) * my sister kalp-ed the curry
The addition of the English past form inflection –ed it disallowed here, which suggests that it is not borrowed (MacSwan 2014: 180). However, when a word is both morphologically and phonologically integrated, there is no ill-formedness:

(21) Juan está parqueando su coche

Juan be/3Ss park-DUR his car

‘Juan is parking his car’ (MacSwan 2014: 202)

Moreover, if the features which are normally on the embedded element in a monolingual context are lacking in the code-switched context, then the element in the Embedded Language must be borrowed. For example, if Spanish and English were the code-switched languages, then an English noun would be a borrowing as it lacks the gender feature of a Spanish noun (Myers-Scotton 2002: 159).

Code-switching, on the other hand, is not based on “linguistic […] integrat[ion]”, be it phonological (although not always) or inflectional i.e. case or gender markers (Fuller and Lehnert 2000: 422). Rather, “CS involves the mixing of phonologically distinctive elements into a single utterance” (MacSwam 2014: 1). That means that when it comes to code-switching, the distinctive grammatical features of both languages involved will be incorporated in the switch, but not integrated one into another.

2.6 The different syntactic structure of Polish, Dutch and English

The following section discusses Polish and Dutch syntax, analysing case for Polish, gender for Dutch, as those features will be crucial for further analysis.

2.6.1 Polish Syntax and Case marking

Polish is a Slavic language, which is similar to English when it comes to the word
order, but not when the DP structure or the inflectional system is concerned. Polish does indeed have the word order SVO (subject-verb-object), which is a word order of English as well (Kasztalska 18). However, Polish unlike English has an abundant inflectional system, which especially comes to the fore with case or gender marking. When it comes to the assignment of case, Polish nouns receive seven grammatical cases: nominative, genitive, dative, accusative, instrumental, locative, and vocative (Kasztalska 18). When it comes to gender, Polish nouns have three available grammatical genders: masculine, feminine, or neuter” (Kasztalska 18). Lastly, what is very relevant to this thesis is that Polish is argued not to have the DP structure, which is available in English (Kasztalska 18). However, there are scholars who claim that Polish does have the DP structure (Rutkowski 2002). This thesis will take both views into consideration.

Moreover, if there is a DP structure in Polish, this thesis will follow the view that Polish zero D is the counterpart of the English definite article, as argued by Papaja et al (2016: 355).

The following is an example of English-Polish code switching (Ewing, 1984: 57):

(22) You are a **krowa grub-a**

You are a cow.NOM.SG fat-FEM.SG

*You are a cow fat*

The example shows that the determiner comes from the Matrix Language, while the code-switched items come from the Embedded Language. The word order SVO is similar in English and Polish. Therefore, because there is Subject-Verb agreement on *are*, English must be the Matrix Language (based on Herring et al 2010: 560). Moreover, although the element in the Embedded Language is integrated morphologically in the Matrix Language (lacking the
usual instrumental case), the MLF does not argue for a borrowing for a single codeswitching form like this. However, the example contradicts the Minimalist approach, since the determiner does not have the gender feature present in the N, and the noun cannot value and delete the features in the determiner. In this case code-switching would be ill-formed as the English D would only have person and number features and the Polish noun would have: gender, person, number and case.

Moreover, in a sentence context like in the example (23), Polish would normally have the instrumental case marking. Indeed, Fauconnier (1996) notices that predicates in Polish have instrumental case marking:

(23) Wałęsa jest prezydentem.
    Walesa (NOM) be (present 3.sg) president (INSTR)
    ‘Walesa is (the) president.’

In example (21) the nominative form of the Polish word prezydent receives the instrumental case inflection –em. When it comes to example (22), however, it is clear that the usual Polish instrumental case marking of “cow fat” -ą, does not occur in this example of English-Polish code-switching. It retains in the nominative case marking. That would mean that in the view of the Minimalist approach, this case is actually an example of borrowing rather than a code-switching.

2.6.2 Dutch Syntax and Gender marking

The Dutch language is a Germanic language, which has an underlying SOV word-order (Booij 2005: 186) that distinguishes it from English. Moreover, the Dutch nouns take either common or neuter determiner (the indefinite determiner will not be discussed as it is beyond the scope of this paper). The singular and plural definite determiner in Dutch is de, and singular definite determiner het. The plural definite determiner does is not assign any
gender, and is always *de* (Cornips and Hulk 2008: 269).

Example of Dutch-English code switching (Clyne 2003: 77, ex. 13):

(24) speciaal toen we in de hill-s kwamen
    especially when we in the hill-PL came
    ‘especially when we came in the hills’

Homeland Dutch: *vooral toen we naar de heuvelen kwamen*

In this example the determiner comes from the Matrix language and the noun from the Embedded Language, which follows the Matrix Language Frame model. The word order is that of Dutch, which confirms that Dutch must be the Matrix language. In the Minimalist approach to code-switching, both the determiner and the noun have person and number features, which agrees with that theory as well. This example seems to be a perfect example of code-switching which can be accounted for in both the Minimalist and MLF frameworks.

2.6.3 English syntax and phi-features

As aforementioned, English is a Germanic language with SVO word order. As already indicated, English nouns have phi-features, too, but they are not realized on determiners (Myers-Scotton and Jake in Schwieter in Schwieter 2015: 438). Moreover, unlike Dutch, English does not have gender features either on the determiner or the noun. Myers-Scotton and Jake argue that although English does not have overt phi-features on the determiner, the features become visible at the level of Mental Lexicon. More specifically, at the formulator, where “structurally assigned agreement (AGR) needs to be specified as in the *woman play-s tennis well.*” Here, according to Myer-Scotton and Jake, the phi features of number and person become visible at the level of the formulator (Myers-Scotton and Jake in Schwieter 2015: 438). That is also why in the study of Herring et al. (2010) discussed in the
following section, both the English determiner and noun have person and number features on the determiner as the following presents:

(25)  English D, \( \phi \{\text{person}, \text{number}\} \)

English N, \( \phi \{\text{person}, \text{number}\} \) (in Herring et al. 2010: 570 ex. 28)

However, this paper assumes that the English determiner only has the number feature on the determiner as the English noun only has the number feature (see MacSwan 2010: 223 and Pires and Rothman 2009: 181), which is not present morphologically.

2.7 Previous research

Previous research on codeswitching has shown that code-switching between determiner and noun is well-formed. For example, Poplack (1980) is one of the researchers who noted that, the switch is indeed possible and driven by the equivalence constraint: ‘Code-switches will tend to occur at points in the discourse where the juxtaposition of L1 and L2 elements does not violate a syntactic rule of either language i.e. at points around which the surface structures of the two languages map onto each other’ (Poplack 1980, 586). Moreover, Jake, Myers-Scotton, and Gross (2002) argued for the Bilingual NP Hypothesis. In their analysis, one of the biggest claims and the most relevant one for this paper is that: “determiners in mixed nominal constructions should come from the matrix language of the clause […] (e.g. English Det English N with Spanish matrix language) are permitted but dispreferred” (in Herring et al. 2010: 555).

Moreover, there are also researchers who have studied the Det-N code-switching in the light of either only the Matrix Language Frame or both the MLF and the Minimalist Approach. Indeed, both Herring et al (2010) and Fuller (2000) analysed code-switching
within the noun phrase. Herring et al. discussed Spanish-English and Welsh-English code-switching in the MLF and Minimalist Approach, while Fuller only in the MLF framework.

On one hand, Herring et al. discovered that the Minimalist approach proved to be correct for almost all their data. The main proof was that in her experiment, the determiner indeed came from the language with grammatical gender. That furthermore has to do with the fact that the gender on the Spanish determiner can be valued and deleted by the English noun (Herring et al 2010: 571). Moreover, Herring et al noticed that the Minimalist approach only has to take the D features into consideration while MLF has to analyse the whole sentence or clause (Herring et al 2010: 565). On the other hand, Fuller and Lehnert noted that code-switching in German-English involving gender and articles “is not stable but variable and dynamic.” They found out that the Matrix Language assigns grammatical gender. Therefore, the reason why the English language cannot be the Matrix language is that it does not have the gender feature (Fuller 417, 418).

2.8 Research questions

Previous research has shown that the code-switching between determiner and the noun is acceptable, contrary to the early approaches to code-switching between the functional head and the lexical complement. Indeed, the Welsh-English and Spanish English study (Herring et al. 2010 see section 2.7) have shown that the predictions of the Minimalist approach are correct. The Minimalist approach predicts that there is a significant correlation between the phi-features on both determiner and noun and code-switching in the structure of nominal. Determiner has to have at least all features of the noun, and it can have more as well, but never less. The German-English study was based on the Matrix Language Frame and revealed
that the features available in a language are crucial in code-switching. The Matrix language makes predictions based on the Matrix Language vs. Embedded Language, where the code-switched nominal element will always come from the Embedded Language and the determiner from the Matrix Language.

Based on the aforementioned predictions of both the Minimalist approach and the Matrix Language Frame as well as the recent research on code-switching between D° and N°, the following research questions will be addressed:

**RESEARCH QUESTION 1:**

Which framework (the Matrix Language Frame or the Minimalist approach) has better coverage/predictive if the languages involved in code switching differ in the presence of gender features on D°/N°?

**RESEARCH QUESTION 2:**

Which framework (the Matrix Language Frame or the Minimalist approach) has better coverage/predictive if the languages involved in code switching differ in the presence of case features on D°/N°?

The hypothesis of this paper is that it is the Minimalist Framework rather than the Matrix Framework that can account for the determiner-noun switch in both languages. The previous research on Welsh-English and Spanish-English (Herring et al. 2010) determiner-noun code-switching has proven that as well. However, in the data analysed in these works, neither of the languages participating in code-switching has case marking nor is there a distinction of different kinds of gender on either determiner or noun.
The research question will be operationalized through researching Polish-English and Dutch-English code-switching as these differ in the presence of gender/case. The research will be conducted through an online survey, as will be presented in the following Methodology chapter.
3. Data and Methodology

3.1 Overview

In this study, the influence of gender/case in the nominal domain on the availability of code-switching between Dutch and English and Polish and English has been studied. This chapter outlines the research design and describes how the research was conducted.

This research was carried out by the means of an online survey. It is common for sentence level code-switching experiments to use “grammaticality and acceptability judgement tasks” to test participants’ judgment on whether or not a particular switch is grammatical, “or indicate its degree of acceptability” (Gullberg 2009: 31).

The survey was sent to the English department of universities in the Netherlands (Leiden University and University of Groningen) as well as in Poland (Uniwersytet Wroclawski). The participants were asked to decide whether or not the selected sentences consisting of code-switching were correct or incorrect.

3.2 Ethics

In the introduction to the survey, the participants received information as to what kind of questionnaire was ahead of them, that their participation was voluntary and that they could withdraw at any point during the study, for any reason and without prejudice. They were also assured that the responses would be kept fully confidential.

3.3 Sample

The participants for this research were assumed to be exclusively advanced (either early or late bilingual) speakers of either Dutch or English as well as either Polish or English on an academic level and in an academic environment, i.e. elite bilinguals. To make sure that
their level of English was that of an advanced speaker, the survey was sent only to the Universities in the Netherlands and in Poland which offered either a BA or MA English Language or Linguistic track, namely the … This paper does not exclude the possibility that some of them could be early bilinguals, i.e. native speakers of Dutch and English or Polish and English. Eighty three participants took part in the Dutch-English survey while thirteen in the Polish-English questionnaire. Their gender or age was not taken into consideration.

3.4 Results: extra questions on proficiency and frequency of code-switching

The only extra background questions asked in the survey were: 1. How often they spoke Polish)/English and Dutch/English; and 2. How often they mixed those two languages: every day, every week or every month, and never was given as an option in question on how often they codeswitched.

The result show that for Polish-English code-switching, 83% of the participants spoke Polish on a daily basis, while 17% once a week. None of them spoke Polish once a month or less frequently (see graph 1).The results in Dutch-English code-switching show an even bigger tendency of the participants to using the Dutch language, as 97.5% claimed to use Dutch on a daily basis, while 2.5% once a week (see graph 2).

Graph 1 Frequency in the use of Polish
When it comes to the use of English, 91.7% of the participants in the Polish-English survey claimed to use English every day, while 8.3% once a week (see graph 3). For the participants of the Dutch-English survey, 90.2% claimed to use English every day, 8.5% once a week and only 1.2% once a month (see graph 4).
Lastly, when it comes to code-switching between the languages, the Polish-English code-switchers, 25% claimed to mix the languages every day, 16.7% once a week, and 50% once a month, while 8% never (see graph 5). Dutch-English code-switchers seem to be mixing languages more frequently, as 67% claimed to code-switch every day, 23% once a week, 2% once a month and 7% never (see graph 6).

Graph 4 Frequency in the use of English (NL-EN)

Graph 5 Frequency of code-switching (PL-EN)
The participants are assumed to be the late bilinguals, as presented in the Introduction chapter, and more specifically the elite bilinguals as their background is academic and their frequency of use of English on daily basis is for both Polish-English and Dutch-English participants reaches 90% and more.

3.5 Instructions

The participants were given instructions before filling in the survey. They were presented with an introductory slide stating that the experiment they were about to take part in, were made of mixed either Polish-English or Dutch-English sentences in a form of a dialogue. There was a question and an answer. The answer contained three sentences. The code-switching occurred in the underlined sentence. The participants were asked to decide if the sentence was an example of a very bad, bad, in-between, almost perfect or perfect code-switching. After the introductory first slide of the survey, the second slide presented the participants with an example of a very bad and perfect code-switching either of Dutch and
English or Polish in English in a domain outside the DP structure (code-switching between two sentences as an example of a perfect code-switching and lexeme-internal code-switching as an extremely bad example).

The survey took approximately ten to fifteen minutes to complete and was to be filled in by the participants online. Therefore, the participants did not have to come to the Leiden University and it was possible for them to either use their mobile phones or computers.

3.6 Material and stimuli

The material used for the survey were constructed sentences based on previous research (see Herring et al. 2010 & MacSwan 2005). Only definite (and zero articles for the Polish-English code-switching) English and Dutch articles were used for this study. For Polish, all three genders of nouns were taken into consideration, as well as case marked nouns and those without case marking. For Dutch both neuter and non-neuter (common) nouns were used in the experiment. Each dialogue was constructed in such a way that the answer started in English/Dutch or English/Polish and was followed by an English/Dutch or English/Polish determiner respectively. There was always a switch between the determiner and the noun so that the determiner and noun would never come from the same language. After the sentence containing code-switching, another sentence would follow in English/Dutch or English/Polish (see the appendix).

In Dutch-English pairs, twelve of the sentences consisted of the determiner and noun switches being the core of this study; eighteen were fillers with the code switch between a determiner and the compound or even within the compound; there were also eight fillers with a switch between a complementizer and embedded clause. In Polish-English pairs thirty of the sentences were the crucial determiner-noun switches; fifteen determiner-compound (and within the compound) switches and six switches between the complementizer and embedded
clause. Moreover, in Dutch the neuter and non-neuter gender was taken into consideration while in Polish both the inflection on the noun as well as masculine, feminine and neuter gender of the noun.

The Tables 3.1 and 3.2 show the predictions made based either on the Matrix approach or MacSwan’s Minimalist approach. Matrix approach predicts that only the code-switching where the determiner comes from the Matrix Languages and the noun from the Embedded Language will hold. The Minimalist approach predicts that the features on the determiner must match the features on the noun (be it more features but never less). It is illustrated with help of Table 3.1 and 3.2 below.

<table>
<thead>
<tr>
<th>Combinations</th>
<th>Predictions Minimalist</th>
<th>Predictions Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>DET&lt;sub&gt;EN&lt;/sub&gt; overt, NUM + N&lt;sub&gt;PL&lt;/sub&gt; NUM, MASC/FEM/NEUT; GEN/NOM</td>
<td>*</td>
<td>If the matrix language is English √ If the matrix language is Polish *</td>
</tr>
<tr>
<td>Ex. I had to go to the sklepu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DET&lt;sub&gt;EN&lt;/sub&gt; covert, NUM + N&lt;sub&gt;PL&lt;/sub&gt; NUM, MASC/FEM/NEUT; GEN/NOM</td>
<td>*</td>
<td>If the matrix language is English √ If the matrix language is Polish *</td>
</tr>
<tr>
<td>Ex. I had to go to Ø sklepu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DET&lt;sub&gt;PL&lt;/sub&gt; covert, NUM + N&lt;sub&gt;EN&lt;/sub&gt; NUM</td>
<td>√</td>
<td>If the matrix language is Polish √ If the matrix language is English *</td>
</tr>
<tr>
<td>Ex. Musialem iść do Ø shop</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EN= English
PL= Polish
Num= Number
Table 3.2 Combinations and Predictions of Dutch-English code-switching

<table>
<thead>
<tr>
<th>Combination</th>
<th>Predictions Minimalist</th>
<th>Predictions MLF</th>
</tr>
</thead>
<tbody>
<tr>
<td>DET&lt;sub&gt;EN&lt;/sub&gt;, overt, NUM + N&lt;sub&gt;NL&lt;/sub&gt;, NEUT/COM, NUM</td>
<td>*</td>
<td>If the Matrix Language is English √</td>
</tr>
<tr>
<td>Ex. *I had to go to the <em>lokaal</em></td>
<td></td>
<td>If the Matrix Language is Dutch *</td>
</tr>
<tr>
<td>DET&lt;sub&gt;NL&lt;/sub&gt;, overt, NEUT/COM, NUM + N&lt;sub&gt;EN&lt;/sub&gt;, NUM</td>
<td>√</td>
<td>If the Matrix Language is Dutch √</td>
</tr>
<tr>
<td>Ex. <em>Ik moest naar de square</em></td>
<td></td>
<td>If the Matrix Language is English *</td>
</tr>
</tbody>
</table>

NEUT= Neuter
COM= Common

3.7 Extra filler questions on code-switching: compounds and C-IP

This section presents the concise results of the extra filler questions. The fillers were used to make sure that the participants would not lose their focus during the experiment. However, although normally the fillers are not related to the actual experimental purpose (Arunachalam 2013: 224), the fillers used in this paper were in the line of code-switching and indeed code-switching between the functional head and its lexical complement. One of the fillers included switch between the determiner and compound and even with a switch within the compound structure. Moreover, code-switching between C and IP were introduced as well. The Polish noun used for the Polish-English fillers was masculine exclusively. For the
Dutch fillers only neuter gender of the determiner was used.

The results for both Dutch-English and Polish-English fillers have revealed that all sentences with code-switching between the complementizer, be it Dutch, English or Polish and the IP in either of the three languages, the switches are judged as unacceptable (see appendix C). The following examples show the ill-formedness in Polish-English (26 and 27) and Dutch-English (28 and 29) code-switching:

(26) *I had to see if on przyjdzie. We could see him only today.
(27) *I had to see czy he comes. We could see him only today.
(28) *Ik moest zien if hij komt. We could see him only today.
(29) *Ik moest zien of he comes. We could see him only today.

When it comes to the code-switched NN compounds (where either of the N is in Polish, English or Dutch), most of the cases are dispreferred (see actual data and results in the appendix C).
4. Results

This chapter will present the results of the surveys. The predictions made by the Minimalist approach as well as MLF approach tested during the survey will be evaluated through the findings. Moreover, only the answers ‘very bad’, ‘bad’, ‘almost perfect’ ‘perfect’ were counted, leaving out the ‘in-between’ answers. Since these in-between answers neither refute nor confirm the predictions made by both Minimalist framework and Matrix Frame Language model, they were not taken into consideration while analysing the results. Further, the responses were clustered. The sum total of ‘very bad’ and ‘bad’ answers as well as the sum total of ‘almost perfect’ and ‘perfect’ were calculated. Furthermore, the sum of “very bad” and “bad” was labelled “unacceptable” and the sum of “almost perfect” and “perfect” was labelled “acceptable.” Lastly, if the number of acceptable answers was higher than unacceptable, the entire row was marked green and labelled “acceptable”, while if there were more unacceptable answers than acceptable, the row was marked yellow and labelled “unacceptable”. Lastly, if it occurred that the number of acceptable and unacceptable answers was similar, the entire row was marked as a grey area and labelled “in-between.”

4.1 Results Polish-English survey

In this section the results of Polish-English survey will be presented. There are six tables. Table 4.1 and 4.2 show the results of the questions where English is the Matrix Language, determiner is English (overt), the noun is Polish and the following sentence is in Polish (Table 4.1) or English (Table 4.2). Tables 4.3 presents the results of the sentences with English as the Matrix Language if the covert determiner is treated as the English determiner (if Polish does not have the DP structure). However, if the determiner is treated as the Polish covert determiner (assuming that Polish does have DP structure), there will be no code-switching as the following noun is Polish as well. Moreover, in Table 4.3 all sentences are
followed by either a Polish or an English clause. Tables 4.4 contains sentences with Polish as the Matrix Language of one assumes that the covert determiner is a Polish determiner (DP hypothesis). Again, if ones assumes that Polish does not have DP structure, there will be no switch as the covert determiner will be the English covert determiner followed by an English noun. Moreover, the sentences containing code-switching are followed by either Polish or English clauses.

Lastly, both gender and case are marked next to the noun and determiner in the first column in all Tables. For tables 4.3 and 4.4, extra notations A and B are introduced to give predictions when the zero determiner is treated as a Polish determiner or a lack of determiner (A and B respectively).

Table 4.1 Results: English ML, DEN-NPL, Gen vs Nom Case + (Polish)

<table>
<thead>
<tr>
<th>The different conditions as test cases</th>
<th>Predictions Minimalist Approach</th>
<th>Predictions MLF Approach</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) DET&lt;sub&gt;EN&lt;/sub&gt;, overt, NUM + N&lt;sub&gt;P&lt;/sub&gt;, NUM, MASC/FEM/NEUT, GEN + (Polish)</td>
<td>*</td>
<td>√</td>
<td>unacceptable</td>
</tr>
<tr>
<td>ex. Q3 I had to go to the sklepu. Mama poprosiła, żebym kupiła mleko.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) DET&lt;sub&gt;EN&lt;/sub&gt;, overt, NUM + N&lt;sub&gt;P&lt;/sub&gt;, NUM, MASC/FEM/NEUT, NOM + (Polish)</td>
<td>*</td>
<td>√</td>
<td>in-between</td>
</tr>
<tr>
<td>ex. Q6 I had to go to the sklep. Mama poprosiła, żebym</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.2 Results: English ML, **DET**-**NPL**, Gen vs Nom Case + (English)

<table>
<thead>
<tr>
<th>The different conditions as test cases</th>
<th>Predictions</th>
<th>Predictions</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minimalist Approach</strong></td>
<td><strong>MLF</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) <strong>DET</strong> EN, overt, NUM + <strong>NPL</strong></td>
<td>*</td>
<td>√</td>
<td><strong>unacceptable</strong></td>
</tr>
<tr>
<td>(English)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ex. Q9 <em>I had to go to the <em>sklepu</em> My mum had asked me to buy milk.</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) <strong>DET</strong> EN, overt, NUM + <strong>NPL</strong></td>
<td>*</td>
<td>√</td>
<td><strong>acceptable</strong></td>
</tr>
<tr>
<td>(English)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ex. Q12 <em>I had to go to the <em>sklep</em> My mum had asked me to buy milk.</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) <strong>DET</strong> EN, overt, NUM + <strong>NPL</strong></td>
<td>*</td>
<td>√</td>
<td><strong>in-between</strong></td>
</tr>
<tr>
<td>(English)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ex. Q13 <em>I had to go to the <em>brama</em> My mum had asked me to open it.</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Tables 4.1 and 4.2 two things become visible. First of all, when English is the Matrix Language and the Polish noun in the code-switched sentence has genitive case, the sentence is judged as unacceptable (see examples (1) from both 4.1 and 4.2). The gender marking or the language of the clause following does not influence the judgement.
Moreover, when the Polish noun is in the nominative case and the clause following the sentence containing the code-switching, the sentence is seen as an example of neither bad nor perfect example of code-switching. However, when the clause preceded by the code-switched sentence is in English, the sentence with a Polish noun in the feminine case as the example (30) is seen as acceptable, i.e. the only perfect example of code-switching:

(30) I had to go to the sklep. My mum had asked me to buy milk.

When it comes to the two approaches, it is the Minimalist approach which predicts correctly that most of the examples is ill-formed as the determiner is English and has only one feature, number, while the Polish noun has features of gender, case and number. The derivation should crash as the English D lacks enough features. The framework cannot account for the fact that both type of gender and the following clause might play a role in the judgement of code-switching well-formedness. The MLF model sees all the sentences as correct examples of code-switching, while the results show that not all of them are. The only prediction that the framework makes is that the code-switching must be well-formed since the determiner comes from the Matrix Language.

Table 4.3 Results: English ML, Do-Npl., Gen vs Nom Case, + (English/Polish)

<table>
<thead>
<tr>
<th>The different conditions as test cases</th>
<th>Predictions Minimalist Approach</th>
<th>Predictions MLF Approach</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) DET, covert, NUM + Npl, NUM, MASC/FEM/NEUT, GEN+ (English/Polish)</td>
<td>A: no switch</td>
<td>A: no switch</td>
<td>unacceptable</td>
</tr>
<tr>
<td>ex. Q15 I had to go to Øsklepu. Mama poprosila, żebym kupila mleko.</td>
<td>B: *</td>
<td>B: ✓</td>
<td></td>
</tr>
</tbody>
</table>
The Table 4.3 differs from 4.1 and 4.2 because of the fact that the determiner is not overt but covert. The Table shows that unlike in Table 4.2, there is no acceptable code-switching found. Moreover, the in-between choices marked grey indicate that the nominative case has preference over the genitive case marking and again the feminine gender is marked (compare examples (2) and (3) in Table 4.2). However, the masculine and neuter form are seen as neither bad nor perfect, contrary to the example (2) in Table 4.2.

Lastly, as aforementioned in the introduction to this chapter, the A and B options reveal that if the determiner is seen as a Polish zero determiner, then there is obviously no switch as the noun is Polish as well. However, if it was an English determiner, it would be ungrammatical in this position. Nevertheless, if one puts aside the ungrammaticality of the zero determiner in this context, then the predictions of both approaches can be reviewed. The Minimalist Approach correctly predicts the ill-formedness of the sentences, as the determiner...
is an English determiner with only one number feature, while the Polish noun has gender, case and number. The MLF wrongly predicts the well-formedness of all the sentences in question as the only criterion this framework takes into consideration is that the determiner would come from the Matrix Language.

Table 4.4 Results: Polish ML, Do-NEn + (English/Polish)

<table>
<thead>
<tr>
<th>The different conditions as test cases</th>
<th>Predictions</th>
<th>Predictions</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimalist Approach</td>
<td>MLF Approach</td>
<td></td>
</tr>
<tr>
<td>(1) DET covert, NUM+ NEn, NUM, MASC/FEM¹</td>
<td>A: ✓</td>
<td>A: ✓</td>
<td>unacceptable/in-between</td>
</tr>
<tr>
<td>+ (English/Polish)</td>
<td>B: no switch</td>
<td>B: no switch</td>
<td></td>
</tr>
<tr>
<td>ex. Q27 Musialem iść do Ø shop. My mum asked me to buy milk.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) DET covert, NUM + NEn, NUM, NEUT¹+ (English/Polish)</td>
<td>A: ✓</td>
<td>A: ✓</td>
<td>7</td>
</tr>
<tr>
<td>ex. Q29 Musialem iść do Ø cinema. I had to see that great movie.</td>
<td>B: no switch</td>
<td>B: no switch</td>
<td></td>
</tr>
</tbody>
</table>

In Tables 4.4, not English (as in 4.1, 4.2 and 4.3) but Polish is the Matrix Language. First of all, the results unveil that the language of the sentence following the code-switched sentence does not make any difference. Moreover Table 4.4 demonstrates that, as opposed to the sentences in Table 4.2, only neuter and not masculine gender is unmarked (analysing the English nouns as having the gender features of their Polish equivalent):

(31) Musialem iść do Ø cinema. I had to see that great movie.

¹ Polish equivalent, not English gender, as English does not have gender features on the noun
Moreover, if the covert determiner is seen as an English determiner, no switch takes place as the following noun is English as well. However, if the covert determiner is seen as the Polish equivalent of the English covert determiner, both frameworks predict well-formedness of all cases. According to the Minimalist Approach, the derivation does not fail as the Polish determiner has at least the same number of features as the English noun. MLF frameworks predict that all sentences would be well-formed as the Polish determiner would come from the Polish Matrix Language. However, both frameworks are only partially right as case (1) is ill-formed contra their predictions and (2) is well-formed, which has to do with the neuter gender of the English equivalent of Polish noun.

4.2 Results Dutch-English survey

In this section the results of Dutch-English survey will be presented. There are two tables. Table 4.5 shows the results of the cases where English is the Matrix Language, the noun is Dutch and the following sentence is in either in Dutch or English. Table 4.6 shows the results of the questions where Dutch is the Matrix Language, the noun is English and the following sentence is in either English or Dutch. Moreover, the gender of the determiner is marked in the columns.

Table 4.5 Results: English ML, DEN-NL + (English/Dutch)

<table>
<thead>
<tr>
<th>The different conditions as test cases</th>
<th>Prediction Minimalist Approach</th>
<th>Prediction MLF Approach</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) DET&lt;sub&gt;EN&lt;/sub&gt;, DEF, NUM + N&lt;sub&gt;NL&lt;/sub&gt;, NUM, NEUT/COM + (English/Dutch)</td>
<td>*</td>
<td>✓</td>
<td>unacceptable</td>
</tr>
<tr>
<td>ex. Q3 I had to go to the lokaal. I had to give tuitions.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.5 reveals that there is no difference in the participants’ judgement whether English or Dutch follows the sentence with the D-N switch. Moreover, the Minimalist Approach predicts rightly that the cases will be wrong, as the determiner is the English D with not enough features to be checked by the Dutch noun. Therefore, the derivation is bound to fail. The Matrix Language Frame predicts this case to be correct as the determiner comes from the Matrix Language, but the predictions prove to be wrong.

Table 4.6 Results: Dutch ML, DNL-NEN + (English/Dutch)

<table>
<thead>
<tr>
<th>The different conditions as test cases</th>
<th>Prediction</th>
<th>Prediction</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimalist Approach</td>
<td>MLF Approach</td>
<td></td>
</tr>
<tr>
<td>(1) DET&lt;sub&gt;NL&lt;/sub&gt;, NUM COM + N&lt;sub&gt;NL&lt;/sub&gt;, NUM, NEUT/COM&lt;sup&gt;2&lt;/sup&gt; + (English/Dutch)</td>
<td>✓</td>
<td>✓</td>
<td>acceptable</td>
</tr>
<tr>
<td>ex. Q8 Ik moest naar de square. We had an appointment there.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) DET&lt;sub&gt;NL&lt;/sub&gt;, NUM, NEUT + N&lt;sub&gt;EN&lt;/sub&gt;, NUM, NEUT/COM&lt;sup&gt;2&lt;/sup&gt; + (English/Dutch)</td>
<td>✓</td>
<td>✓</td>
<td>unacceptable</td>
</tr>
<tr>
<td>ex. Q9 Ik moest naar het square. We had an appointment there.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>2</sup> The gender on English nouns refers to the Dutch equivalents, as English nouns do not display gender features.
Table 4.6 unveils that again, the language of the sentence following the one with D-N switch is not relevant. What seems to be relevant is the Matrix Language and the languages of the determiner and the noun. Here, as opposed to Table 4.5, the Dutch language is the Matrix Language. Moreover, the fact that there is gender feature on the determiner appears to be crucial. While the neuter determiner is a part of the unacceptable switch, the common determiner makes a perfect switch with the English noun:

(32) Ik moest naar de square. We had an appointment there.

Moreover, although both frameworks predict all the contingencies to be perfect examples of code-switching, the participants judged the sentences with Dutch non-neuter (common) determiner as good examples of code-switching. The Minimalist predicts all to be acceptable because of the Dutch determiner with the gender feature, while the Matrix Language Frame because of the fact that the determiner comes from Dutch, i.e. the Matrix Language of the sentence.

Lastly, it does not make any difference if the English noun is neuter or non-neuter when corresponding to Dutch nouns (as English nouns does not have gender marking).

Overall, the results of Dutch-English code-switching show that the participants evidently prefer cases where the Matrix language is Dutch.
5. Discussion and Summary

5.1. Introduction

This chapter will be dedicated to the discussion of the results obtained through the online survey as was presented in the previous chapter. The results of the Polish-English survey as well as Dutch-English survey will be discussed in the light of Minimalist and Matrix Language Frame approaches. The following section 5.2 will present the main findings. Section 5.2.1 and 5.2.2 will provide the answers to the research questions. Furthermore, the findings of this paper will be compared to the previous research done on the issue of code-switching in the nominal phrase grounded in Minimalist and MLF approaches (section 5.3). Lastly, the limitations to the research will be indicated as well as the application of the findings of this paper (section 5.4).

5.2 Main findings

The results have demonstrated that both the early approaches to code-switching and the recent frameworks are partially accurate. First of all, the results of the fillers have shown that there is indeed a constraint on code-switching between functional head C and its complement IP, as well as inside a compound. However, as predicted by the Minimalist approach and the MLF framework, there is well-formedness of code-switching between the determiner and the noun in both English-Dutch and Polish-English data, contrary to early approaches. This shows that the early constraints on code-switching in all the functional domains are wrong.

The results find more support for the Minimalist Approach than for the MLF approach, although the Minimalist framework does not account for all the data. However, the framework does explain the well- and ill-formedness of most of the Polish-English and
Dutch-English code-switching. Indeed, the framework does predict correctly that in most cases where either Polish or Dutch are the Matrix Language, the code-switching is good, as example (33) and (34) show respectively:

(33) Musialem iść do Ø cinema. I had to see that great movie.

(34) Ik moest naar de square. We had an appointment there.

However, when it comes to distinct gender and case types, the Minimalist framework, although in other aspects better than the MLF framework, fails to predict the right outcome. Indeed, the sentences where Dutch is the Matrix Language (34), on one hand, the framework does not predict the very specific outcome involving either neuter or non-neuter gender of the determiner. On the other hand, in Polish-English code-switching (33) the framework fails to predicts gender distinction as well as case marking of the noun. What is crucial to mention here, is that in a case of example (33) only the English noun corresponding to Polish noun with the neuter gender is allowed, while in (34) only the common gender is allowed.

When English is the Matrix Language, the Minimalist predictions of ill-formedness match the results, except for the one case where English is ML and the determiner is English as well while the noun is Polish, nominative and masculine, followed by an English clause:

(35) I had to go to the sklep. My mum had asked me to buy milk.

Furthermore, the Matrix Language Frame approach predicts almost all cases to be correct, which is disconfirmed by the findings. Therefore, although both approaches lack predictions for detailed linguistics factors present in languages like Dutch or Polish, the Minimalist approach is more accurate. The following section will look specifically at the two languages and main finding of code-switching involving them by answering the research question stated in chapter.
The following sections will answer the research questions stated in the Background chapter:

**RESEARCH QUESTION 1:**

Which framework (the Matrix Language Frame or the Minimalist approach) has better coverage/predictive if the languages involved in code switching differ in the presence of gender features on D°/N°?

**RESEARCH QUESTION 2:**

Which framework (the Matrix Language Frame or the Minimalist approach) has better coverage/predictive if the languages involved in code switching differ in the presence of case features on D°/N°?

### 5.2.1 Research question 1

In Polish-English code-switching, the Polish noun has gender marking, while in Dutch-English code-switching it is the Dutch determiner that has gender features. This leads to differences in code-switching and the way in which one can account for those switches.

Indeed, the Dutch D° has two genders: neuter and non-neuter (common). As the results have shown, although both frameworks predict all Dutch-English code-switching with Dutch as the Matrix Language to be correct, only the ones with the non-neuter determiner is considered to be appropriate. That only suggests that even though the Minimalist approach correctly predicts that the determiner will come from the Dutch language (as English only has number and person features), it fails to predict different outcome for different kinds of genders. In Dutch it is unclear why the participants choose only the non-neuter gender of the
determiner (see Table 4.6). The only acceptable code-switching is illustrated in the example (2) repeated here again:

(36) Ik moest naar de square. We had an appointment there.

The reason for the lack of clarity is that, as Booij states that the assignment of gender is based on the similar Dutch words, but the word in the experiment has both neuter and non-neuter equivalents in Dutch (2002: 38):

(37) Ik moest naar de square. Mijn moeder wilde mij daar ontmoeten.

‘I had to go to the square. My mum wanted me to meet me there’

(38) Ik moest naar de chemist. Mijn moeder wilde dat ik iets zou ophalen voor haar.

‘I had to go to the chemist. My mum wanted that I would pick up something for her’

In (37) the Dutch equivalent of square would be plein, which has the neuter gender het assigned, while in (38) the Dutch equivalent of chemist is apothek, which goes together with the determiner with common gender de. It is therefore unclear why the noun square is seen as unacceptable when combined with the Dutch neuter determiner.

The presence of gender features on D° in Dutch has already been mentioned. However, in Polish-English code-switching gender marking does not apply to the determiner but on nouns: feminine, neuter and masculine. It can be concluded from the results that only neuter (40) and masculine (39) are unmarked, while feminine (41) is marked when the noun is in Polish (see Table 4.2):

(39) I had to go to the sklep. My mum had asked me to buy milk.

(40) I had to go to the kino. I had to see that great movie!

(41) * I had to go to the brama. My mum had asked me to open it.
When the noun is in English and it refers to a Polish noun, then only the neuter gender is correct (see Table 4.4):

(42) Musialem iść do Ø cinema. I had to see that great movie.

This gender preference is unpredicted in both frameworks, even not by the Minimalist approach.

5.2.2 Research question 2

Polish is the only language from the three languages tested in this paper, which has inflectional case marking on the noun. The results revealed that the lack of case marking on the inflection, i.e. the nominative case (43) instead of genitive (44) is preferred:

(43) I had to go to the sklep. My mum had asked me to buy milk.

(44) *I had to go to the sklepu. Mama poprosiła, żebym kupiła mleko.

None of the frameworks predict such results. However, although the Minimalist approach fails to account for it under the notion of code-switching, it does predict it as a result of borrowing. As the framework predict, the Polish noun loses its morphological case inflection as a result of incorporation into the Matrix Language of English. Since English does not have case inflection of its nouns, the fact that only the Polish nouns without inflection are seen as good example of code-switching suggests that the morphology of the Matrix Language (English) is reflected in the morphology of the Embedded Language (Polish) and that points to borrowing as MacSwan notices (see chapter 2). Indeed, in Table 4.2, only if English is the languages of the clause following the code-switching are judged to be the good examples of code switching, where the Matrix Language is English, the noun is Polish without the Polish genitive case marking. Therefore, both inter- and intrasentencial code-switching suggests that the case illustrated in example (43) is an example of borrowing and not code-switching. Furthermore, examples (45) and (46) suggests that here not borrowing but
code-switching must be taking place, as the morphology of the English noun is not incorporated into the morphology of the Polish system and it is not relevant whether Polish or English is the language of the following clause.

(45) Musialem iść do Ø cinema. I had to see that great movie.


Moreover, the results of Table 4.3 indicate that the case marking in English and Polish is too different. The cases in Table 4.3 are cases with English as the Matrix Language, with either English or Polish zero determiner. Here, none of the cases is seen as acceptable contra Table 4.4. The reason of this ill-formedness can be a lack of agreement between the English preposition \( to \) and Polish noun. English preposition requires dative case of the noun, while in Polish such case does not exist (it is a genitive case in Polish in such context) see Table 5.1 (based on Bielec 2012, Zorach 2009: 37, Fromkin and Hyams 2013: 344)

Table 5.1 The difference between English and Polish case system

<table>
<thead>
<tr>
<th>English</th>
<th>Polish</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>nominative</strong></td>
<td><strong>nominative</strong></td>
</tr>
<tr>
<td><em>ex. The wolf runs.</em></td>
<td><em>ex. Dobry ojciec kocha dzieci</em></td>
</tr>
<tr>
<td></td>
<td>‘A good father loves his children’</td>
</tr>
<tr>
<td><strong>instrumental</strong></td>
<td><strong>genitive starting with do ‘to’ or z ‘from’</strong></td>
</tr>
<tr>
<td><em>ex. Marcin jest dobrym ojcem</em></td>
<td><em>ex. do Anglii</em></td>
</tr>
<tr>
<td></td>
<td>‘Marcin is a good father’</td>
</tr>
<tr>
<td></td>
<td>‘to England’</td>
</tr>
<tr>
<td><strong>dative/oblique</strong></td>
<td><strong>dative indirect object (to someone/something)</strong></td>
</tr>
</tbody>
</table>
Therefore, the examples are seen as incorrect. This is only predicted by the Minimalist framework, as the features of the English preposition and Polish noun do not agree and therefore the derivation fails.

### 5.3 Comparison to previous research

The previous research by Herring et al (2010) has shown that the Minimalist approach was more accurate predicting that if a language has grammatical gender feature, the determiner will come from that language. All the Welsh English data and most of the Spanish English data was accounted by this prediction (Herring et al 571). They also noticed that the results in favour of the Minimalist approach followed from the fact that the Matrix Language was always in the language with the gender feature (Herring et al 2010: 571). The results on the present paper support the previous research as the Minimalist approach accounts for most of the data, just like in the study of Herring et al. However, in the present research the

<table>
<thead>
<tr>
<th>English</th>
<th>Polish</th>
</tr>
</thead>
<tbody>
<tr>
<td>ex. <em>Give food to the wolf.</em></td>
<td>ex. <em>Dalam moja ksiæzke mojej mamie.</em></td>
</tr>
<tr>
<td>accusative V+NP (no preposition)</td>
<td>accusative direct object</td>
</tr>
<tr>
<td>ex. <em>I love the wolf</em></td>
<td>ex. <em>Mam ladny dom</em></td>
</tr>
<tr>
<td>‘I gave my book to my mum’</td>
<td>‘I have a nice house’</td>
</tr>
<tr>
<td>locative starting with w ‘in’</td>
<td></td>
</tr>
<tr>
<td>ex. <em>w Anglii</em></td>
<td></td>
</tr>
<tr>
<td>‘in England’</td>
<td></td>
</tr>
<tr>
<td>vocative if addressing someone/something</td>
<td></td>
</tr>
<tr>
<td>ex. <em>Kochasz ja, Jurku?</em></td>
<td></td>
</tr>
<tr>
<td>‘Do you love her, Jurku?’</td>
<td></td>
</tr>
</tbody>
</table>
Minimalist framework prediction that the determiner will only come from the language with grammatical gender does not hold for all cases. Only Dutch-English code-switching cases confirm this predictions (see Table 4.6), while in Polish-English code-switching both cases where the determiner is English (Table 4.2, (2)) and Polish (Table 4.4 (2) are judged as acceptable.

Moreover, neither the Minimalist/MLF frameworks nor the previous research can account for the influence of different gender types or noun case marking on code-switching between the determiner and noun.

5.4 Limitations and further research

The present research has shown that there is a clear connection between the gender and case marking on N° and D° and code-switching. However, the results obtained during the research have shown that further research on this matter is required because the connection and lack of predictions of both the Minimalist approach and the MLF approach.

Moreover, the present study included a small number of Polish-English participants (13), which does allow for establishing clear paradigms, but it could be seen as too small to be representative in order to make definitive conclusions. Therefore, additional research is required with a wider numbe of the participants. Even more so, taking into consideration that only 25% of the participants of Polish-English survey claim to code-switch on a daily basis. That could suggest that the participants were only beginners in the use of code-switching.

When it comes to the participants of the Dutch-English survey, the results also show that only the sentences with Dutch as the Matrix Language are seen as correct examples of code-switching. This may imply that the participants were speakers exposed to Dutch in a greater measure than to English.
Furthermore, the results have shown that in some cases the phenomenon in question is borrowing and not code-switching. Therefore, further research should include different case marking for Polish nouns. Moreover, more case tests on Dutch determiners and their gender distinction should be done as to why the non-neuter gender is preferred over the neuter gender in code-switched clauses.

Lastly, languages like Polish should be included in the research on code-switching. Polish is a language with a greatly developed gender distinction and case marking. The more languages with similar gender and case marking are analysed in relation to code-switching, the more insight will be gained on the relationship between those features and code-switching universally.
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Appendices

Appendix A Polish-English survey

Code-switching Polish-English

Q1 Welcome to the Master research study!

I am interested in understanding code-switching (mixing of two languages) within nominals.

The participant will be presented with an experiment made of mixed Polish-English sentences in a form of a dialogue. There is a question and an answer. The answer contains three sentences. The mixing of two languages occurs in the underlined one. The participants have to decide if the underlined sentence is an example of an extremely bad, bad, in-between, almost perfect or perfect mix of the two languages. The goal of the experiment is not to examine the proficiency in any of the languages but rather how code-switching works.

The study should take you around twenty minutes to complete. Your participation in this research is voluntary. You have the right to withdraw at any point during the study, for any reason, and without any prejudice.

Please be assured that your responses will be kept completely confidential.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

Thank you in advance for your participation!
Q0 Extremely bad code-switching:

I saw her in that buildom.

Perfect code-switching:

I have to go shopping. Potrzebna mi nowa torebka.

Q2 A: Have you done your homework yet?

B: No, I haven’t. I had to go to the sklepu. Mama poprosiła, żebym kupiła mleko.

- Extremely bad (no one would say that)
- Bad (strange, but can be understood)
- In-between (I would not say that, but others may)
- Almost perfect (most of the people say that)
- Perfect (everybody says that)

Q3 A: Have you done your homework yet?

B: No, I haven’t. I had to go to the bramy. Mama poprosiła, żebym otworzył.

Q4 A: Have you done your homework yet?

B: No, I haven’t. I had to go to the kina. Musiałem zobaczyć ten super film.

Q5 A: Have you done your homework yet?

B: No, I haven’t. I had to go to the sklep. Mama poprosiła, żebym kupiła mleko.

Q6 A: Have you done your homework yet?

B: No, I haven’t. I had to go to the brama. Mama poprosiła, żebym otworzył.

Q7 A: Have you done your homework yet?

B: No, I haven’t. I had to go to the kino. Musiałem zobaczyć ten super film.

Q8 A: Have you done your homework yet?

B: No, I haven’t. I had to go to the sklepu. My mum had asked me to buy milk.

Q9 A: Have you done your homework yet?

B: No, I haven’t. I had to go to the bramy. My mum had asked me to open it.
Q10  A: Have you done your homework yet?
      B: No, I haven’t. I had to go to the kina. I had to see that great movie!

Q11  A: Have you done your homework yet?
      B: No, I haven’t. I had to go to the sklep. My mum had asked me to buy milk.

Q12  A: Have you done your homework yet?
      B: No, I haven’t. I had to go to the brama. My mum had asked me to open it.

Q13  A: Have you done your homework yet?
      B: No, I haven’t. I had to go to the kino. I had to see that great movie!

Q14  A: Have you done your homework yet?
      B: No, I haven’t. I had to go to sklepu. Mama poprosiła, żebym kupiła mleko.

Q15  A: Have you done your homework yet?
      B: No, I haven’t. I had to go to bramy. Mama poprosiła, żebym otworzył.

Q16  A: Have you done your homework yet?
      B: No, I haven’t. I had to go to kina. Musiałem zobaczyć ten super film.

Q17  A: Have you done your homework yet?
      B: No, I haven’t. I had to go to sklep. Mama poprosiła, żebym kupiła mleko.

Q18  A: Have you done your homework yet?
      B: No, I haven’t. I had to go to brama. Mama poprosiła, żebym otworzył.

Q19  A: Have you done your homework yet?
      B: No, I haven’t. I had to go to kino. Musiałem zobaczyć ten super film.

Q20  A: Have you done your homework yet?
      B: No, I haven’t. I had to go to sklepu. My mum asked me to buy milk.

Q21  A: Have you done your homework yet?
      B: No, I haven’t. I had to go to bramy. My mum asked me to open it.

Q22  A: Have you done your homework yet?
B: No, I haven’t. I had to go to kina. I had to see that great movie.

Q23 A: Have you done your homework yet?
B: No, I haven’t. I had to go to sklep. My mum asked me to buy milk.

Q24 A: Have you done your homework yet?
B: No, I haven’t. I had to go to brama. My mum asked me to open it.

Q25 A: Have you done your homework yet?
B: No, I haven’t. I had to go to kino. I had to see that great movie.

Q26 A: Have you done your homework yet?
B: Nie, nie zrobiłem. Musiałem iść do shop. My mum asked me to buy milk.

Q27 A: Have you done your homework yet?
B: Nie, nie zrobiłem. Musiałem iść do gate. My mum asked me to open it.

Q28 A: Have you done your homework yet?
B: Nie, nie zrobiłem. Musiałem iść do cinema. I had to see that great movie.

Q29 A: Have you done your homework yet?
B: Nie, nie zrobiłem. Musiałem iść do shop. Mama poprosiła, żebym kupiła mleko.

Q30 A: Have you done your homework yet?
B: Nie, nie zrobiłem. Musiałem iść do gate. Mama poprosiła, żebym otworzył.

Q31 A: Have you done your homework yet?

Q32 A: Have you done your homework yet?
B: No, I haven’t. I had to see the wodospad. Tylko dziś mogliśmy go zobaczyć.

Q33 A: Have you done your homework yet?
B: No, I haven’t. I had to see the wodofall. Tylko dziś mogliśmy go zobaczyć.

Q34 A: Have you done your homework yet?
B: No, I haven’t. I had to see the waterspad. Tylko dziś mogliśmy go zobaczyć.
Q35 A: Have you done your homework yet?
B: No, I haven’t. I had to see the wodospad. We could see it only today.

Q36 A: Have you done your homework yet?
B: No, I haven’t. I had to see the wodofall. We could see it only today.

Q37 A: Have you done your homework yet?
B: No, I haven’t. I had to see the waterspad. We could see it only today.

Q38 A: Have you done your homework yet?
B: No, I haven’t. I had to see wodospad. Tylko dziś mogliśmy go zobaczyć.

Q39 A: Have you done your homework yet?
B: No, I haven’t. I had to see wodofall. Tylko dziś mogliśmy go zobaczyć.

Q40 A: Have you done your homework yet?
B: No, I haven’t. I had to see waterspad. We could see it only today.

Q41 A: Have you done your homework yet?
B: No, I haven’t. I had to see wodospad. We could see it only today.

Q42 A: Have you done your homework yet?
B: No, I haven’t. I had to see waterpad. We could see it only today.

Q43 A: Have you done your homework yet?
B: No, I haven’t. I had to see wodofall. We could see it only today.

Q44 A: Have you done your homework yet?
B: Nie, nie zrobiłem. Musiałem zobaczyć waterfall. We could see it only today.

Q45 A: Have you done your homework yet?
B: Nie, nie zrobiłem. Musiałem zobaczyć waterspad. We could see it only today.

Q46 A: Have you done your homework yet?
B: Nie, nie zrobiłem. Musiałem zobaczyć wodofall. We could see it only today.

Q47 A: Have you done your homework yet?
B: No, I haven’t. I had to see if on przyjdzie. Tylko dziś mogliśmy go zobaczyć.

Q48 A: Have you done your homework yet?
B: No, I haven’t. I had to see if on przyjdzie. We could see him only today.

Q49 A: Have you done your homework yet?
B: Nie, nie zrobilam. Musieliśmy zobaczyć czy he comes. We could see him only today.

Q50 A: Have you done your homework yet?
B: Nie, nie zrobilam. Musieliśmy zobaczyć czy he comes. We could see him only today.

Q51 A: Have you done your homework yet?
B: No, I haven’t. I had to see czy he comes. We could see him only today.

Q52 A: Have you done your homework yet?
B: No, I haven’t. I had to see czy he comes. Tylko dziś mogliśmy go zobaczyć.

Q53 How often do you use Polish?
☐ every day (1)
☐ once a week (2)
☐ once a month (3)

Q54 How often do you use English?
☐ every day (1)
☐ once a week (2)
☐ once a month (3)

Q55 How often do you mix English and Polish?
☐ every day (1)
☐ once a week (2)
☐ once a month (3)
☐ never (4)
Appendix B Dutch-English survey

Code-switching Dutch-English

Q1 Welcome to the Master research study!

I am interested in understanding code-switching (mixing of two languages) within nominals. The participant will be presented with an experiment made of mixed Dutch-English sentences in a form of a dialogue. There is a question and an answer. The answer contains three sentences. The mixing of the two languages occurs in the underlined one. The participants have to decide if the underlined sentence is an example of an extremely bad, bad, in-between, almost perfect or perfect mixing of the two languages. The goal of the experiment is not to examine the proficiency in any of the languages but rather how code-switching works.

The study should take you around twenty minutes to complete. Your participation in this research is voluntary. You have the right to withdraw at any point during the study, for any reason, and without any prejudice.

Please be assured that your responses will be kept completely confidential.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

Thank you in advance for your participation!
Q0 Extremely bad code-switching:

I have done the dishafwas.

Perfect code-switching:

I don't know her. Heb je haar ooit gezien?

Q2 A: Have you done your homework yet?

B: No, I haven’t. I had to go to the winkel. My mum asked me to buy milk.

   o Extremely bad (no one would say that)
   o Bad (strange, but can be understood)
   o In-between (I would not say that, but others may)
   o Almost perfect (most of the people say that)
   o Perfect (everybody says that)

Q3 A: Have you done your homework yet?

B: No, I haven’t. I had to go to the lokaal. I had to give tuitions.

Q4 A: Have you done your homework yet?

B: No, I haven’t. I had to go to the winkel. Mijn vader had mijn al gevraagd om melk te kopen.

Q5 A: Have you done your homework yet?

B: No, I haven’t. I had to go to the lokaal. Ik moest bijlessen geven.

Q6 A: Have you done your homework yet?

B: Nee, ik heb het niet gedaan. Ik moest naar de chemist. My mum wanted me to buy something.

Q7 A: Have you done your homework yet?

B: Nee, ik heb het niet gedaan. Ik moest naar het chemist. My mum wanted me to buy something.

Q8 A: Have you done your homework yet?
B: Nee, ik heb het niet gedaan. Ik moest naar de square. We had an appointment there.

Q9  A: Have you done your homework yet?
    B: Nee, ik heb het niet gedaan. Ik moest naar het square. We had an appointment there.

Q10 A: Have you done your homework yet?
    B: Nee, ik heb het niet gedaan. Ik moest naar de chemist. Mijn moeder wilde dat ik iets zou ophalen voor haar.

Q11 A: Have you done your homework yet?
    B: Nee, ik heb het niet gedaan. Ik moest naar het chemist. Mijn moeder wilde dat ik iets zou ophalen voor haar.

Q12 A: Have you done your homework yet?
    B: Nee, ik heb het niet gedaan. Ik moest naar de square. Mijn moeder wilde mij daar ontmoeten.

Q13 A: Have you done your homework yet?
    B: Nee, ik heb het niet gedaan. Ik moest naar het square. Mijn moeder wilde mij daar ontmoeten.

Q14 A: Have you done your homework yet?
    B: No, I haven’t. I had to wash the tafelkleed. It got really dirty.

Q15 A: Have you done your homework yet?
    B: No, I haven’t. I had to wash the tafelcloth. It got really dirty.

Q16 A: Have you done your homework yet?
    B: No, I haven’t. I had to wash the tablekleed. It got really dirty.

Q17 A: Have you done your homework yet?
    B: No, I haven’t. I had to wash the tafelkleed. Het werd echt vies.

Q18 A: Have you done your homework yet?
Q19 A: Have you done your homework yet?
B: No, I haven’t. I had to wash the tablecloth. Het werd echt vies.

Q20 A: Have you done your homework yet?
B: No, I haven’t. I had to wash the tablekleed. Het werd echt vies.

Q21 A: Have you done your homework yet?
B: Nee, ik heb het niet gedaan. Ik moest de tablecloth wassen. It got really dirty.

Q22 A: Have you done your homework yet?
B: Nee, ik heb het niet gedaan. Ik moest de tablekleed wassen. It got really dirty.

Q23 A: Have you done your homework yet?
B: Nee, ik heb het niet gedaan. Ik moest het tablecloth wassen. It got really dirty.

Q24 A: Have you done your homework yet?
B: Nee, ik heb het niet gedaan. Ik moest de tablecloth wassen. It got really dirty.

Q25 A: Have you done your homework yet?
B: Nee, ik heb het niet gedaan. Ik moest het tablecloth wassen. It got really dirty.

Q26 A: Have you done your homework yet?
B: Nee, ik heb het niet gedaan. Ik moest de tablecloth wassen. Het werd echt vies.

Q27 A: Have you done your homework yet?
B: Nee, ik heb het niet gedaan. Ik moest het tablecloth wassen. Het werd echt vies.

Q28 A: Have you done your homework yet?
B: Nee, ik heb het niet gedaan. Ik moest de tablekleed wassen. Het werd echt vies.

Q29 A: Have you done your homework yet?
B: Nee, ik heb het niet gedaan. Ik moest het tablekleed wassen. Het werd echt vies.

Q30 A: Have you done your homework yet?
B: Nee, ik heb het niet gedaan. Ik moest de tafelcloth wassen. Het werd echt vies.

Q31 A: Have you done your homework yet?

B: Nee, ik heb het niet gedaan. Ik moest het tafelcloth wassen. Het werd echt vies.

Q32 A: Have you done your homework yet?

B: No, I haven’t. I had to see if hij komt. Alleen vandaag konden wij hem zien.

Q33 A: Have you done your homework yet?

B: No, I haven’t. I had to see if hij komt. We could see him only today.

Q34 A: Have you done your homework yet?

B: No, I haven’t. I had to see if he comes. We could see him only today.

Q35 A: Have you done your homework yet?

B: Nee, ik heb het niet gedaan. Ik moest zien if hij komt. We could see him only today.

Q36 A: Have you done your homework yet?

B: Nee, ik heb het niet gedaan. Ik moest zien if he comes. We could see him only today.

Q37 A: Have you done your homework yet?

B: Nee, ik heb het niet gedaan. Ik moest zien if he comes. Alleen vandaag konden wij hem zien.

Q38 A: Have you done your homework yet?

B: No, I haven't. I had to see if he comes. Alleen vandaag konden wij hem zien.

Q39 A: Have you done your homework yet?

B: Nee, ik heb het niet gedaan. Ik moest zien if hij komt. Alleen vandaag konden wij hem zien.

Q41 How often do you speak English?

☑ every day (1)

☑ once a week (2)
Q42 How often do you speak Dutch?
- every day (1)
- once a week (2)
- once a month (3)

Q43 How often do you mix Dutch and English?
- never (1)
- every day (2)
- once a week (3)
- once a month (4)
Appendix C Fillers: data and results

Polish-English

The following examples in Table C.1 show the results of the Polish-English fillers of code-switched NN. The English overt the and covert Ø determiners are taken into consideration in (1)-(3). For Polish, the covert Ø determiner is marked as well in (4) and (5).

The extra clause that follows the sentence containing code-switching is put between the brackets. The features available on both determiner and noun are indicated. DET stands for determiner, while NN for compound.

A and B options show either that A: the D is Polish or B: that the D must be English if one argues for no DP structure in Polish and therefore D must be the English covert determiner.

Table C.1 Fillers: Polish-English and code-switched NN

<table>
<thead>
<tr>
<th>The different conditions as test cases</th>
<th>Predictions Minimalist Approach</th>
<th>Predictions MLF Approach</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) DET&lt;sub&gt;EN&lt;/sub&gt; covert/overt NUM + NN&lt;sub&gt;PL&lt;/sub&gt; NUM, MASC, NOM + (Polish/English)</td>
<td>A: no switch</td>
<td>✓</td>
<td>in-between</td>
</tr>
<tr>
<td>Ex. Q33 I had to see the wodospad. (Tylko dziś mogliśmy go zobaczyć)</td>
<td>B: *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) DET&lt;sub&gt;EN&lt;/sub&gt; covert, NUM + N&lt;sub&gt;PL&lt;/sub&gt;N&lt;sub&gt;EN&lt;/sub&gt; + (Polish)</td>
<td>*</td>
<td>?</td>
<td>in-between</td>
</tr>
<tr>
<td>Ex. Q40: I had to see o wodofall. (Tylko dziś mogliśmy go zobaczyć)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) DET&lt;sub&gt;EN&lt;/sub&gt; overt, NUM + N&lt;sub&gt;PL&lt;/sub&gt;N&lt;sub&gt;EN&lt;/sub&gt;/N&lt;sub&gt;EN&lt;/sub&gt;N&lt;sub&gt;PL&lt;/sub&gt; + (Polish/English)</td>
<td>*</td>
<td>?</td>
<td>unacceptable</td>
</tr>
</tbody>
</table>
The results show that only one example is judged as acceptable, namely (4). In this sentence, Polish is the Matrix Language and the determiner comes from Polish, while the compound does not undergo the switch, being an English NN compound. The grey area seems to be reserved for cases where: 1. The Matrix Language is English, the determiner in English and the compound is a Polish NN compound; 2. When English is the matrix language, there is a zero determiner and the compound is either a Polish NN compound or mixed Polish-English NN compound. The unacceptable examples are the ones with English Matrix Language with mixed compound or Polish Matrix Language with mixed compound. The Minimalist Framework rightly predicts all the examples, (1)-(3) and (5) to be wrong and (4) to be correct as it predicts ban on code-switching within compounds (MacSwan 1999: 203) and that there should be at least the same features on both the determiner and noun, and never less on the D. That is why example (1) cannot be correct. The Matrix Language Frame wrongly predicts the example (1) to be well-formed, and for examples (2)-(3) and (5) there is no specification as to

<table>
<thead>
<tr>
<th>Ex. Q35: <em>I had to see the waterspad. (Tylko dziś mogliśmy go zobaczyć)</em></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(4) DETPL covert, NUM + NNEN+ (English)</td>
<td>A: √</td>
<td>A: √</td>
</tr>
<tr>
<td>Ex. Q45: <em>Musialem zobaczyć wodospad. (We could see it only today)</em></td>
<td>B: no switch</td>
<td>B: no switch</td>
</tr>
<tr>
<td>(5) DETPL covert, NUM + NENVENNPL + (English)</td>
<td>*</td>
<td>?</td>
</tr>
<tr>
<td>Ex. Q46: <em>Musialem zobaczyć wodospad. (We could see it only today)</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
what should be the ML and what EL, that is why there are question marks in the table when it comes to the predictions of MLF. The MLF also predicts (4) to be correct.

Moreover, if the A and B options are taken into consideration in the light of the Minimalist approach, example (1) has either no switch or even if there is a switch (excluding the discussion of ungrammaticality of zero D in such context in English) it cannot be correct as the English D would not have enough features to be checked by the Polish noun. The MLF approach has wrong predictions as it treats the assumed switch in option B in example (1) as a good example of code-switching since the D comes from the Matrix Language. The rest of the examples is difficult to access because of lack of prediction of the MLF when it comes to compounds.

Table C.2 Fillers: Polish-English C+IP code-switching

<table>
<thead>
<tr>
<th>The different conditions as test cases</th>
<th>Predictions Minimalist Approach</th>
<th>Predictions MLF Approach</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (English) CEN + IPPL + (Polish/English)</td>
<td>√</td>
<td>√</td>
<td>unacceptable</td>
</tr>
<tr>
<td>Ex. Q49: <em>I had to see if on przyjdzie. We could see him only today.</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. (Polish) CEN + IPPL + (English)</td>
<td>√</td>
<td>*</td>
<td>unacceptable</td>
</tr>
<tr>
<td>Ex. Q50 Musialam zobaczyc if on przyjdzie. We could see him only today.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. (Polish) + CPL + IPEN + (English)</td>
<td>√</td>
<td>√</td>
<td>unacceptable</td>
</tr>
</tbody>
</table>
In examples (1)-(4) of Table C.2 both the Minimalist approach and MLF predict that all the sentences will be good examples of code-switching, except for (2) and (4) for MLF. Although the functional head C carries only the wh-feature and therefore neither in Polish nor in English the deletion of those features can take place, MacSwan’s research does not provide restrictions to the C-IP switches (MacSwan 2014: 291). For the MLF framework only predicts examples (1) and (3) to be correct as the C is in the ML, which the results reveal to be wrong.

Dutch-English

The following examples in Table C.3 show the results of the Dutch-English fillers of code-switched NN. The English overt *the* is taken into consideration in (1)-(2). For Dutch, the neuter and common determiners are marked as well in (3)-(5).

The extra clause that follows the sentence containing code-switching is put between the brackets. The features available on both determiner and noun are indicated. DET stands for determiner, while NN for compound.
Table C.3 Fillers: Dutch-English and code-switched NN

<table>
<thead>
<tr>
<th>The different conditions as test cases</th>
<th>Prediction Minimalist Approach</th>
<th>Prediction MLF Approach</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DET\textsubscript{EN} overt, NUM+ NNN\textsubscript{NL} GEN, NUM+ (English/Dutch)</td>
<td>*</td>
<td>√</td>
<td>in-between</td>
</tr>
<tr>
<td>Ex. Q14 I had to wash the tafelkleed. It got really dirty.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. DET\textsubscript{EN} overt, NUM \textsubscript{NL} NEN/ NENNN\textsubscript{NL} + (English/Dutch)</td>
<td>*</td>
<td>?</td>
<td>unacceptable</td>
</tr>
<tr>
<td>Ex. Q16 I had to wash the tablekleed. It got really dirty.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. DET\textsubscript{NL} com, NUM + NEN\textsubscript{EN} NUM+ (English/Dutch)</td>
<td>√</td>
<td>√</td>
<td>in-between</td>
</tr>
<tr>
<td>Ex. Q26 Ik moest de tablecloth wassen. Het werd echt vies.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. DET\textsubscript{NL} neut, NUM + NEN\textsubscript{EN} NUM+ (English/Dutch)</td>
<td>√</td>
<td>√</td>
<td>unacceptable</td>
</tr>
<tr>
<td>Ex. Q27 Ik moest het tablecloth wassen. Het werd echt vies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. DET\textsubscript{NL} com/neut, NUM + NENNN\textsubscript{NL}/ NNN\textsubscript{NL} + (English/Dutch)</td>
<td>*</td>
<td>?</td>
<td>unacceptable</td>
</tr>
</tbody>
</table>
The results as shown in Table C.3 imply that none of the examples is judged to be acceptable. Both frameworks make wrong predictions. The Minimalist predicts sentences (3) and (4) to be correct while MLF framework predicts wrongly examples (1), (3) and (4) to be correct, while (2) and (5) are beyond the scope of the MLF framework.

Table C.4 Fillers: Dutch-English and C+ IP code-switching

<table>
<thead>
<tr>
<th>The different conditions as test cases</th>
<th>Predictions Minimalist Approach</th>
<th>Predictions MLF Approach</th>
<th>results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (English/Dutch) + CEN + IPNL + (English/Dutch)</td>
<td>✓</td>
<td>English as ML ✓/Dutch as ML *</td>
<td>unacceptable</td>
</tr>
<tr>
<td>Ex. Q35 <em>Ik moest zien if hij komt</em>. We could see him only today.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. (English/Dutch) + CNL + IPEN + (English/Dutch)</td>
<td>✓</td>
<td>Dutch as ML ✓/English as ML *</td>
<td>unacceptable</td>
</tr>
<tr>
<td>Ex. Q38 I had to see of he comes. Alleen vandaag konden wij hem zien.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Lastly, the C-IP fillers are judged as bad examples of code switching regardless of the fact what language is the matrix language, what language the determiner comes from or what is the language of the sentence following the code-switched C and IP. While the Minimalist approach does not put any ban on those kind of switches, the MLF predicts that the sentences
with C of the Matrix Language will be correct, which proves to be wrong. The language of the following sentence does not seem to be of any significant influence.