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THE ADJECTIVE
IN DUTCH-FRENCH CODE SWITCHING

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Emma Vanden Wyngaerd
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Abstract

This thesis investigates the word order and adjectival agreement patterns in French-Dutch code switched DPs. It examines the predictions made by two theoretical frameworks: the Minimalist Program (MP) (MacSwan 2009) and the Matrix Language Framework (MLF) (Myers-Scotton and Jake 2009) and compares these predictions to data gathered in an elicitation task and a grammaticality judgment task.

While word order in the DP (both adjective-noun order as determiner-noun order) has been examined in a number of studies (Cantone and MacSwan 2009, Herring et al. 2010, Parafita Couto et al. forthcoming, Jake et al. 2002), this is the first study investigating the adjectival agreement in code switched DPs.

Dutch-French is an interesting language pair to investigate within the context of the DP because it has several conflict sites. The first is word order: Dutch has prenominal adjectives, while French has (mostly) post-nominal adjectives. Secondly the adjectival agreement systems work differently. Dutch adjectives are sensitive to definiteness, while French adjectives aren't. These two differences are shown in (1).

(1)	a.	een wit huis	het witte huis	[Dutch]
		a white house	the white house	
	b.	une maison blache	la maison blanche	[French]
		a house white	the house white	

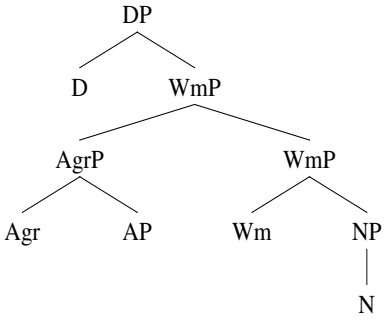
In addition, French and Dutch have different gender features: masculine and feminine for French as opposed to common and neuter in Standard Dutch and a three-way gender system (masculine, feminine, neuter) in Southern Dutch, the dialect discussed in this thesis.

This thesis incorporates elements of Cantone and MacSwan (2009) account for word order in Italian-German code switching into the analysis of Schoorlemmer (2009) of Germanic and Romance adjectival agreement. The differences between Romance and Germanic DPs based on these accounts are summarised in (2).

(2)

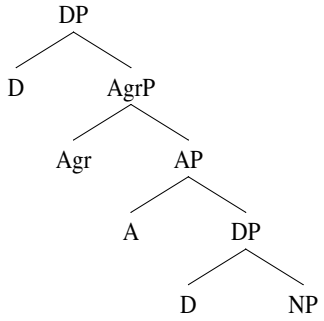
ROMANCE DP
- AgrP has a strong EPP feature
- word markers, which license low adjunction of the adjective
- no double definiteness
- only strong agreement

Structure:



GERMANIC DP
- AgrP has a weak EPP feature
- no word markers, which do not license low adjunction of the adjective
- double definiteness
- strong/weak agreement dependent on the definiteness

Structure:



The goal of the thesis is finding out which predictions are made regarding adjectival agreement and word order and test which of these predictions are borne out. MLF predicts the adjectival agreement to be from the matrix language, since 'late outsider system morphemes' always stem from the matrix language within this framework. The adjectival agreement morphemes are analysed as late outsider system morphemes, since they look outside their own maximal projection for information for their from.

In the table below the different predictions of the MLF and minimalist program with regard to adjectival agreement and word order are summarised.

		MLF	**MP**
a.	word order	matrix language	language of the adjective
b.	language of (agreement on) the adjective	matrix language	language of the adjective
c.	French noun, Dutch adjective	allowed if ML is Dutch	unproblematic
d.	Dutch neuter noun, French adjective	allowed if ML is French	derivation crash
e.	Dutch masculine or feminine noun, French adjective	allowed if ML is French	dependent on representation of gender
f.	actual agreement on the adjective	no strong prediction	corresponding to feature on the noun

To investigate this question two experiments were conducted: A grammaticality judgment task and an elicitation task. The latter was based on the toy task, devel-

oped by Gullberg et al. (2009). The grammaticality judgment task was developed in the form of an online survey. Participants of the survey were asked to rate 160 aurally presented sentences on a three-point scale.

All of the sentences were in code switch mode. Of them, 40 were fillers and 24 sentences contained DPs without adjective. These were included to control for gender assignment of code switched nouns. The remaining 96 sentences were the focus of the study, since they had DPs with an adjective. These sentences were conditioned for matrix language, word order, agreement on the adjective and gender conditions of the noun. All sentences were presented in a random order.

The survey had 47 completed responses. A background questionnaire was included to select responses of participants that learnt both languages before the age of four and spoke both languages on a daily basis. This resulted in 14 suitable responses of participants between the ages of 15 and 33. Ten of the participants took the survey in the presence of the investigator and a post interview was conducted. They also performed the elicitation task.

The elicitation task did not elicit free code switching data. This emphasises once again that code switching behaviour is influenced by a myriad of factors and extreme care should be taking with designing and conducting such experiments.

The results of this judgment task show no unambiguous confirmation of the predictions of either framework. However, statistical analysis of the mean ratings of the sentences showed that the MP is a better predictor for the grammaticality judgments, as sentences predicted to be grammatical by the MP were rated higher than sentence predicted to be ungrammatical by the same model. This difference was statistically significant to the 5% level. There was no significant difference in rating for the predictions of the MLF.

This results of the judgment task in combination with the results of previous research highlight the importance of an integration of data from both naturalistic and experimental settings. Furthermore, the lack of unambiguous results from the grammaticality judgment task argues for an integration of other experimental methodologies, such as psycho- and neurolinguistic ones.

Abbreviations and Symbols

Bolded Text	Dutch language data
Italic Text	French language data
L_1	native language
L_2	second language
-	morpheme boundary
[ ]	inherent feature
SG	singular
PL	plural
MASC	masculine
FEM	feminine
CM	common
NEUT	neuter
DET	determiner
WM	word marker
DIM	diminutive
DEF	definite
INDEF	indefinite
C	noun class

Contents

Chapter 1

Introduction

When I was little, my grand-mother taught me a nursery song she had learnt when she was little herself. The lyrics were a mix of Dutch (**bold face**) and French (*italic*). It was to the tune of "Twinkle Twinkle Little Star" and the words were like this:

Edde ni gezien, *n'avez vous pas vu*	Didn't you see, didn't you see
mijn klein hondje *est perdu*	my little doggie is lost
't is gelopen *dans la rue*	it ran down the street
me zen staartje aan zijn *cul*	with its little tail on its behind
Edde ni gezien, *n'avez vous pas vu*	Didn't you see, didn't you see
mijn klein hondje *est perdu*	my little doggie is lost

Though my grand-mother was born and raised near the Dutch border, I have since learnt that the song is a typical Brussels nursery song. The language used in this song is the result of intensive code switching between Brussels Dutch and French (Janssens 2013).

Code switching is the effortless use of multiple languages within one conversation and is common phenomenon in multilingual settings (Bullock and Toribio 2009). Early research focussed primarily on social factors determining why and when code switchers switch (Blom and Gumperz 1972). The last couple of decades research into the linguistic restrictions and factors that influence code switching has flourished (Poplack 1980).

Though early formal approaches argued switching is only allowed where the structures of both languages are equivalent (Poplack 1980), more recent approaches have taken a different route. The study of so called *conflict sites* – areas where the properties of the two participating languages differ – has become a hot topic in code switching research. Word order is a prime example of this and recently research into this area has taken off. Word order in the determiner phrase has been studied and discussed by several authors (Cantone and MacSwan 2009, Jake et al. 2002, Parafita Couto, Munarriz, Epelde, Deuchar, and Oyharçabal 2014, Parafita Couto,

Deuchar, and Fusser forthcoming). However, very little research has been done on the linguistic factors which determine adjectival agreement in code switched DPs.

Within this context, Dutch-French is an interesting language pair to investigate, since their DPs differ on several levels. The first is word order: Dutch has pre-nominal adjectives, while French has (mostly) post-nominal adjectives. Secondly, their adjectival agreement systems work differently. Dutch adjectives show different agreement wether they are in a definite or indefinite DP, while French adjectives do not. These two differences are shown in (3).

(3)	a.	een wit huis	het witte huis	[Dutch]
		a white house	the white house	
	b.	une maison blache	la maison blanche	[French]
		a house white	the house white	

In addition, French and Dutch have different gender features: masculine and feminine for French as opposed to common and neuter in Standard Dutch and a three-way gender system (masculine, feminine, neuter) in Southern Dutch, the dialect discussed in this thesis.

The goal of this thesis is to investigate Dutch-French code switched DPs. In particular, it looks at the factors which determine word order of the adjective and its agreement patterns. Two different theoretical frameworks, the Matrix Language Framework (MLF – Myers-Scotton and Jake 2009) and the Minimalist Program (MP – MacSwan 2009), are examined and the predictions these frameworks make are compared to data gathered in two experiments.

The first is an elicitation experiment, which was used to elicit naturalistic code switched speech containing code switched DPs. The second is a grammaticality judgment task, in which sentences were judged on a three point scale. The results from these tests were compared to the predictions of the MLF and the MP.

This thesis is organised in the following way: Chapter 2 contains the background information for this thesis. Chapter 3 provides a detailed literature review concerning gender (3.1), the DP in general (3.2) and previous studies on the DP in code-switching (3.4). It also contains the predictions made by the two main theoretical frameworks, the Matrix Language Framework and the Minimalist Program (3.3). The final section of this chapter (3.5) provides a short excursion into the little *v* construction in code switching. In chapter 4, the methodology of the experiments is described. Chapter 5 provides the results of the experiments and these are discussed in chapter 6. Finally, chapter 7 concludes this thesis.

Chapter 2

Background

This chapter introduces the central topics of the thesis. Section 2.1 deals with the political and linguistic situation in Belgium (2.1.1) and the linguistic situation in Brussels (2.1.2). Section 2.2 provides an introduction to code switching and the research dedicated to it. Section 2.2.2 explores the currently most influential formal approaches.

2.1 Linguistic situation in Belgium

It is well known that Belgium has a complex political situation. This complexity has developed since the 1960's in order to keep the peace between Belgium's two largest linguistic communities, the Dutch speaking community and the Francophone community. The linguistic situation in Belgium is inextricably linked to its political history. Section 2.1.1 provides a short overview of Belgium's political situation and its development. Section 2.1.2 describes the evolution of the linguistic situation in Brussels and also discusses the current state of affairs of the linguistic population.

2.1.1 Political situation and history

In this section I will provide a concise overview of the evolution of the country with regards to linguistic policy. For a complete and thorough description of Belgium's multilingual history, I refer to McRae (1986).

Belgium is a country with three official languages: Dutch, French and German. The German community is very small and is usually not involved in the linguistic tensions. The country is divided by the linguistic frontier into two regions. The northern region is called Flanders with Dutch as its official language. The southern part of the country is Wallonia in which French is the official language. In the easternmost part of Wallonia, there is a small community of German speakers.

The Brussels Capitol Region is located in Flanders and is officially Dutch-French bilingual.

Each of these regions (the Flemish, Walloon and Capital regions) has its own government responsible for matters concerning infrastructure. The federal government at the national level is responsible for national matters such as the army and pensions.[1]

Furthermore, each of the three languages have an official governmental organ called the community, corresponding to the linguistic communities (Vlaamse Gemeenschap, Communauté Française and Deutschsprachige Gemeinschaft). These communities each have their government and parliament and they oversee everything related to culture and language, which includes education. The Flemish have chosen to fuse their communal and regional governments (Blommaert 2011).[2]

This results in a total of six different governments, each with their own responsibilities in their own specific regions. One can understand why Belgium is infamous for its complex politics. The complex linguistic, political and sociological situation in Belgium did not develop overnight.

In Belgium's original constitution, a choice was made for linguistic freedom. This was in reaction to the imposition of Dutch by Willem I in between 1822 and 1829 and the constraints imposed by the French occupation between 1795 and 1814. Official matters however were conducted in French until the end of the 19th century. In 1898 a law was passed which gave Dutch formally the same legal and official status as French. In practice however, the languages were not treated equally (McRae 1986).

This resulted in the political movement called the Flemish Movement. It stood up for the rights and emancipation of the population of Flanders. The Flemish and Walloon population were divided by a host of socio-political issues. Several demonstrations and marches on Brussels were held by the Flemish Movement against the "Frenchification and territorial annexation" of the areas around the capital (Treffers-Daller 1993).

These efforts culminated in the early 1960's in the institutional reform. In 1962 the linguistic frontier was officially demarcated. This meant that Flanders and Wallonia now were monolingual regions (with the exception of the small German speaking communities in the east of the country), while Brussels – as the capital – received an official bilingual status (McRae 1986).

The demarcation of the linguistic frontier was insufficient to resolve the linguistic tension and the Belgian politics focussed on federalisation and constitutional

[1]The Flemish-Nationalist political party N-VA advocates a minimisation of the federal responsibilities. By maximising the responsibilities of the Flemish government they hope to pave the way for an independent Flanders.

[2]The enlightening short film "Belgium for Dummies" can be found at http://www.youtube.com/watch?v=QlwHotpl9DA. Though it is slightly outdated now (the special status of the "Brussel Halle Vilvoorde-region" is now abolished), it is quite clarifying.

reform. By 1970 this period was complete and the current state of affairs was more or less reached (Treffers-Daller 1993).

2.1.2 Linguistic situation in Brussels

Nowadays, the Brussels-Capitol Region is the largest urban area of Belgium. The Region consists out of 19 municipalities. Though the Region has two official languages with an equal official status, the lingua franca in Brussels is French. As in most large cities, besides the two official languages, a multitude of other European and more exotic languages are spoken by migrants. The most recent language census – conducted in 2013 (http://www.briobrussel.be/ned/webpage.asp?WebpageId=1036) – found that about 35% of the inhabitants of Brussels do not speak either French or Dutch at home .

This census showed that only 5% of the families are monolingual Dutch speaking. While an additional 15% of families has Dutch as a home language next to French, it is a marked difference with the situation up until the middle of the 18th century, At which point it is generally agreed that Brussels was entirely Dutch speaking. The rise of the Francophone population in Brussels and Flanders is called the Frenchification.

Several factors underly this process. Though the original Belgian constitution made an argument for linguistic freedom, the economic situation of the country encouraged a language shift to French. The whole of the 19th century through the 1960's, Wallonia was the economically strong part of the country. This increased the prestige of the French language and encouraged the Frenchification (Treffers-Daller 2002).

The prestige of French caused Frenchification across both Flanders and Brussels, but in Brussels this situation seems to have had an irreversible effect. Despite the constitutional linguistic freedom, the only language of education in Brussels was French from 1830 until the first World War. After this, Dutch language education was very gradually built up in Brussels. The introduction of compulsory primary education in 1914 contributed to the Frenchification of Brussels (Treffers-Daller 2002).

Nowadays education is available in the two official languages of the region: Dutch and French. The Dutch educational system has the reputation to be better, and as a result the Dutch language schools have a relatively low percentage of pupils from homogeneous Dutch speaking families. The percentages can be seen in table 1 (Treffers-Daller 2002, p.60). No similar numbers are available for French language schools.

Several varieties of Dutch are spoken in Brussels. The indigenous Dutch dialect, also called Brussels Dutch, is only spoken by the older generations of locals. Unfortunately, this dialect is disappearing, despite preservation efforts by the *Brusselse Academie* (de Vriendt 2004). The most prevalent variety of Dutch is the local

School year	Homogenous Dutch	Homogenous French	Homogenous Other	Mixed Dutch - Other
'80-'81	85.1%	2.4%	2%	10.5%
'99-'00	24.9%	27.7%	20.2%	27.2%

Table 1: Language spoken at home for pupils in Dutch language schools

regiolect, which I'll call *Brabant Dutch*, following Van Craenenbroek (2010). He defines Brabant Dutch as "a nonstandard variety of Dutch spoken in large parts of the Belgian province of Flemish Brabant" (p.14). The one spoken in Brussels, especially as spoken by the younger generation, is more influenced by French words and expressions. More recent Flemish immigrants may speak their original dialect (de Vriendt 2004).

Though Standard Dutch is another language often cited as being spoken in Brussels (Treffers-Daller 2002, de Vriendt 2004), the use of Standard Dutch may well be very limited in Brussels. A language survey performed in 2013 by the Flemish media in collaboration with the *Taalunie*, showed that use of Standard (Belgian) Dutch is losing ground everywhere in the country. This was found to be the case both at home as in the workplace, though no exact figures are available for Brussels.

The French varieties spoken in Brussels are more on a continuum. Since historically Brussels was monolingual Dutch, there is no indigenous variety of French or Walloon in Brussels. The French spoken in Brussels varies from Standard (Belgian) French to French very much influenced by Dutch. Though both Brabant and Brussels Dutch have many lexical borrowings from French, Brussels French is influenced more on the structural level by Dutch (Treffers-Daller 2002).

2.2 Code Switching

As soon as one starts to really get into a certain discipline, it always seems to be the case that no one agrees on the definition of its terminology. Code switching research is no exception. Terms used in the literature are, among others, code switching[3], code mixing, bilingual speech and borrowing. While some authors use (some of) these terms interchangeably, others draw up strict distinctions between the terms. Thus as any publication on code switching, this thesis starts with some definitions.

Since this thesis deals with bilingualism, language pairs will often occur. Some authors use the ordering of such a pair in a significant way. For example, the order can signify which language is the first or native language. A Zulu-Albanian bilingual is thus a person with Zulu as their native language who acquired Albanian at a later age. In this thesis however, no such distinction is made and the order of

[3]Alternate spellings include code-switching and codeswitching. In this thesis code switching is used throughout, except in direct quotes from articles/volumes in which a different spelling is used.

the language pair is always alphabetical: Albanian-Zulu. Where the distinction is relevant, it will be specified in the text.

The term bilingual speech is used to denote the use of linguistic elements from two or more different languages by one speaker within the same conversation. A subtype of this is the use of two languages by the same speaker. This is termed code switching, of which two types can be distinguished: intersentential and intrasentential code switching.

Intersentential code switching is the use of elements of different languages which do not co-occur within the same independent sentence. This means that code switches in coordinated sentences, as demonstrated in (4), are considered intersentential code switches. In this thesis code switched examples make a typographic distinction between the two languages. **Bolded** text is used for Dutch elements, while *italic* text is used for French elements. Neutral elements, such as proper names and non-language-specific interjections are in regular text.

(4) Nadine *est neé au mois d'avril* **en dan in de maand oktober**
Nadine is born in.the month of.April and then in the month October
heb ik een winkel opengedaan ...
have I a shop opened ...
'Nadine was born in April and then in october I opened a shop ...' (Treffers-Daller 1993, p.30)

Intrasentential code switching is used when the elements of the different languages can be found within one and the same sentence.

(5) *Je suis au balcon* **op mijn gemakske zo** *en train de regarder*
I am on.the balcony at my ease so in.the.activity of watching
les étoiles
the stars
'I am watching the stars at my ease on the balcony.' (Treffers-Daller 1993, p.29)

Since the focus of this thesis is on what happens when two agreeing elements come from different languages, most of the examples will concern intrasentential code switching. When not further specified, code switching refers to intrasentential code switching. Some authors (such as Treffers-Daller 1993) make this distinction by using the term code mixing, while others use these terms interchangeably. I have chosen not to draw a distinction between the two. To avoid confusion, I will stick to one term: code switching.

An ongoing debate in the code switching literature is the distinction between code switching and borrowing. The different views and arguments relating to this issue will be summarised in section 2.2.3.

From the earliest studies on bilingual speech and code switching the focus was

on the extralinguistic factors which governed the speech of bilinguals. For an overview of research into the sociological factors influencing code switching, I refer to Nilep (2006) and references therein. From the mid 70's onwards however, the linguistic factors that constrain code switching were starting to be investigated. The two most influential contemporary formal approaches to the linguistic structure of code switching are discussed below in section 2.2.2.

Current formal approaches often study code switches which happen at *conflict sites*. These conflict sites are places in the sentence where structures of the two languages involved in the code switch differ. An embedded sentence in Dutch-English code switching provides such a conflict site, for example. The word order of the two languages is in conflict: in the embedded clause Dutch has SOV, while English had SVO order.

This recent trend none withstanding, one of the earliest restrictions formulated in formal code switching research was the *equivalence constraint* (Poplack 1980, p.586). This constraint prevents code switches to happen in such conflict sites:

(6) THE EQUIVALENCE CONSTRAINT:
Code-switches will tend to occur at points in discourse where juxtaposition of L_1 and L_2 elements does not violate a syntactic rule of either language.

Switches at conflict sites are attested however, and the equivalence constraint is by most regarded as outdated. Conflict sites are a hot topic nowadays since it is only at conflict sites where it can be discerned which language provides the structure for that part of the sentence.

2.2.1 Attitudes towards code switching

Though regular code switching is now considered a sign of high proficiency in the languages involved (Poplack 1980), the laymen's view on code switching is often a highly negative one. Speakers who mix two languages are often accused of speaking neither language properly. The Flemish language observer Wilmars remarked the following on language use in Brussels (as quoted in Treffers-Daller 2002, p.61):

> When a common Flemish speaker begins to speak French in Brussels, he quickly discovers that he will never be able to speak like a gentleman. And as he is unwilling to 'murder' the beautiful French language, he tries to overcome his language problems by simply chattering away, mixing French and Flemish. The result is the awful language usage that is ridiculed ...

Attitudes like this one are prevailing and as a result, code switching can be a very stigmatised phenomenon. This stigmatisation is a factor to take into account when studying code switching behaviour, since it may influence the result.

Nonetheless, it has been shown that attitudes do not necessarily correlate to behaviour. Labov (1972) found that even when speakers have a negative attitude towards low prestige forms, they still used those forms. These finding has been corroborated for the code switching community by Montes-Alcalá (2000) who showed that attitudes towards code switching – be they positive or negative – did not correlate to code switching production. In some multilingual communities however, attitudes and production do prove to be related. Redinger (2010) found a statistical link between attitudes and language behaviour in the multi-lingual educational system of Luxembourg. Parafita Couto et al. (forthcoming) also found that attitudes and language behaviour were linked in their study of code switching in the English-Welsh community.

2.2.2 Theoretical approaches

Through the history of the field, code switching has been studied within many different frameworks and approached. Nowadays, two formal approaches seem to dominate the field: the generative approach and the Matrix Language Framework (henceforth, MLF). In the next two sections I will briefly discuss the two frameworks.

Matrix Language Framework

The Matrix Language Framework (MLF), developed by Carol Myers-Scotton in the early 90s, is a way to account for both processing and production of bilingual speech. The MLF focusses on *classic code switching* which is defined as "code switching in which empirical evidence shows that abstract grammatical structure within a clause comes from only one of the participating languages". Several important principles are at work in this model. The first one also applies to monolingual speech: the Uniform Structure Principle (Myers-Scotton 2006, p.243).

(7) THE UNIFORM STRUCTURE PRINCIPLE:
A given constituent type in any language has a uniform abstract structure and the requirements of well-formedness for this type must be observed whenever the constituent appears. In bilingual speech, the structures of the Matrix Language are always preferred, but some Embedded structures [...] are allowed if Matrix Language clause structure is observed.

A second important principle is the asymmetric relationship between the languages involved in code switching. Sometimes called the Matrix Language principle, or simply the asymmetry principle it demands that only one of the languages involved in the sentence provides its morphosyntactic frame. This language is referred to as the Matrix Language (ML), while the other language(s) involved is as the Embedded Language (EL). Two principles can be used to determine the Matrix Languages:

the Morpheme Order Principle (MOP) and the System Morpheme Principle (SMP) (Myers-Scotton 2006, p.44).

(8) THE MORPHEME ORDER PRINCIPLE:
In mixed constituents consisting of at least one Embedded Language word and any number of Matrix Language morphemes, surface word (and morpheme) order will be that of the Matrix Language.

(9) THE SYSTEM MORPHEME PRINCIPLE:
In [... mixed][4] constituents, all system morphemes which have grammatical relations external to their head constituents (i.e. which participate in the sentence's thematic role grid) will come from the Matrix Language.

Note that the SMP does not apply to all system morphemes, but rather to a subset. This subset includes structurally assigned morphemes, also called late system morphemes. These late system morphemes consist of two types: outsiders and bridges. Bridges are the links that connect elements making up a larger phrase. They seem to have only one form, one allomorph. Outsiders are part of a paradigm or conjugation. Bridge morphemes usually come from the ML. Though some exceptions are noted in the literature, such cases do not violate the SMP (Myers-Scotton and Jake 2009).

Outsider morphemes depend on information that is outside the word on which the morpheme attaches. This information can be retrieved from another word in the utterance or from the discourse. Verb agreement is a prime example. It is in these outsiders that the true structure and grammatical relations shine through. In (10) an example of the outliers of the ML appearing on a content morpheme of the EL in Shaba Swahili-*French* code switching (Myers-Scotton and Jake 2009, p.347)

(10) *Donc* (h)ii *richesse* y-ote (h)ii i-na-tu-*appartenir* shi
so c9.dem riches c9-all c9.dem c9-non.past-obj.1pl-belong us
ba-toto y-ake
c2-child c9-his
"So, all these riches, it belongs to us, his children."

The ML, Shaba Swahili, provides the verbal agreement in the EL verb *appartenir*.

Generative approach

Since Chomsky's *Aspects of the Theory of Syntax* (1965), generative grammar has changed a great deal. Consequently, generative approaches to code switching are

[4]Embedded Language (EL) islands (phrases from other varieties participating in the clause) are allowed if they meet EL well-formedness conditions, as well as those ML conditions applying to the clause as a whole, such as phrase placement (Myers-Scotton and Jake 2009).

very different in the most recent incarnation of the generative enterprise (the Minimalist Program, henceforth MP) than in its earlier forms.

An overview of different ways generative theory tried to account for code switching data can be found in MacSwan (2009). The biggest issue with approaches from a pre-minimalist era is that they only allow for lexical insertion after the sentence structure has already been completed. If this is the case, how can lexical items influence these structures? Is is clear from code switching data that the language contributing the lexical items does have a large influence. This issue can be resolved by adopting a lexicalist approach, which has been done in Tree Adjoining Grammar. This approach has later been adopted in the Minimalist Program.

Mahootian (1993) proposed a null theory to code switching within the Tree Adjoining Grammar. Null theory posits that code switching does not need any restrictions or conditions specific to code switching. Data from code switching can and should be accounted for by the properties of the monolingual grammars involved. If the syntactic information is in the lexicon, this can account for the fact that the language contributing the lexical item has an influence over the structure of the code switched utterance. Besides the argument of simplicity, there is another reason to assume a null theory to code switching (MacSwan 2009, p.320):

> The desire to avoid CS-specific mechanisms in accounts of CS goes beyond issues of elegance and economy. The more serious problem is that such mechanisms threaten to trivialise the enterprise. Rather than explaining descriptive restrictions observed in CS data, CS-specific mechanisms simply note these restrictions within the grammar itself so that no explanation is needed, and so one is left still wondering what general principles of grammar might be at work in posing the observed restrictions.

The Minimalist Program holds that any language consists of two components. The computational system and the lexicon. The former is universal and invariant, while the latter is language specific and contains the parameters responsible for the wide variation attested within the world's languages (Chomsky 1991). This idea allows for a different view of bilingualism, in which the (morpho-syntactic) grammars of the two languages are less compartmentalised (MacSwan 1999).

The operation *Select* chooses some items from the lexicon to go into the Numeration (or lexical array), a subset of the lexicon used to construct the derivation. The operation *Merge* takes items from this Numeration and puts them together to form new hierarchical syntactic objects. To these objects, the operation *Move* can apply to form new structures.

Movement is driven by the valuation of features. Strong features drive overt movement (visible at the phonetic form PF), while weak features drive covert movement (visible at the logical form, LF) (Chomsky 1995).[5] In code switched speech, the Numeration draws its elements from two lexicons. This is schematised in figure 1 (taken from MacSwan 1999).

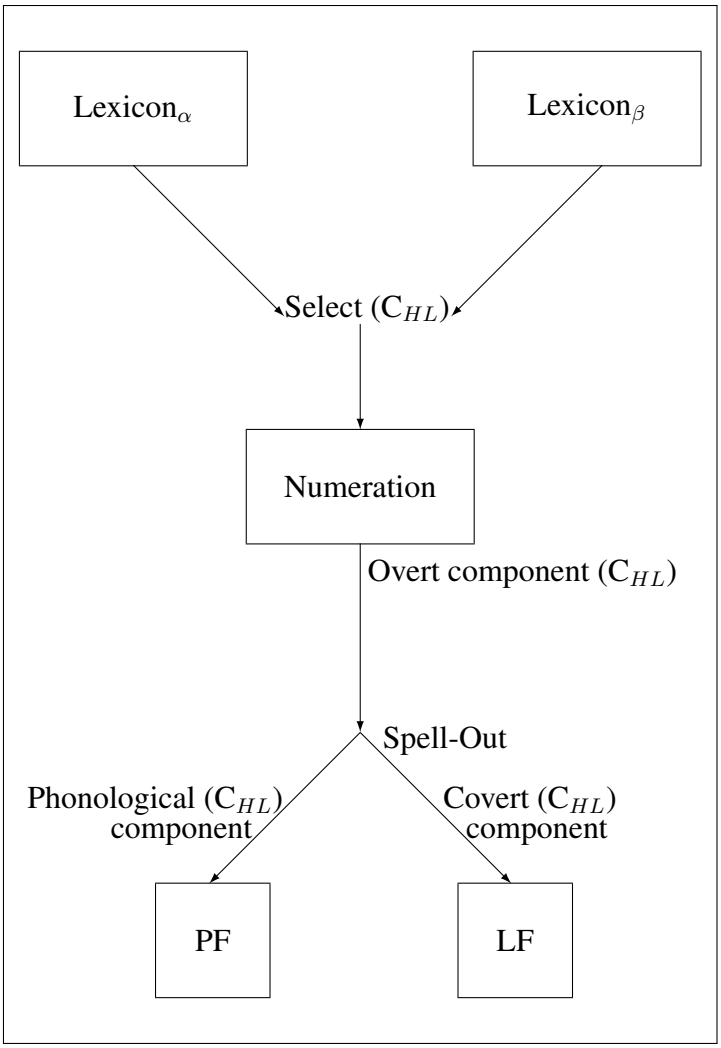


Figure 1: The Minimalist Framework. In code switched sentences, items from Lexicon α and β are taken by the operation Select to be put in Numeration. The Computational System uses the elements in the Numeration to build sentences, using the operations Move, Merge and Agree.

Another important element in this framework is the *Phonetic Interface Condition*. This condition prevents code switching from happening within one word, and

[5] Additional information on feature valuation and its relevance to agreement is discussed in section 3.2.1.

is defined in (11) (MacSwan 2009, p.331):

(11) THE PF INTERFACE CONDITION:

a. Phonological input is mapped to the output in one step with no intermediate representations.
b. Each set of internally ranked constraints is a constraint dominance hierarchy, and a language-particular phonology is a set of constraint dominance hierarchies.
c. Bilinguals have a separately encapsulated phonological system for each language in their repertoire in order to avoid ranking paradoxes, which result from the availability of distinct constraint dominance hierarchies with conflicting priorities.
d. Every syntactic head must be phonologically parsed at Spell Out. Therefore, the boundary between heads (words) represents the minimal opportunity for code-switching.

The driving force behind the Minimalist Program is the elimination of *all* mechanisms which are not strictly necessary from a conceptual point of view. For proponent of this Program, adopting Null Theory to account for code switching data an obvious step. Making predictions about code switching data can be done by looking closely to the requirements off the monolingual grammars. Studies that have taken this approach include MacSwan (1999), Toribio (2004), Liceras, Fernández Fuertes, Perales, Pérez-Tattam, and Spradlin (2008), Cantone and MacSwan (2009), González-Vilbazo and López (2011), Jansen, Müller, and Müller (2012) and Shim (2013).

Main divergences between the approaches

While both these frameworks name the clause or sentence the maximal unit of analysis, the MLF considers the sentence to be the minimal domain of analysis as well. The minimalist approach on the other hand is equipped to analyse smaller units than a full clause, and is consequently equipped to account for more data.

Research within the MLF is focussed on naturalistic data found in corpora. The minimalist approach maintains that grammaticality judgments and naturalistic data will complement each other (MacSwan 1999).

Another important divergence is the view on code switching within word boundaries. Minimalist approaches follow the initial observation by Poplack (1980) that there is a ban on word internal code switching. This is formalised in the *PF Interface Condition*. The MLF, on the other hand, does not restrict word-internal code switching. If the matrix verb of a sentence is from the embedded language, word internal code switching is even obligatory, since verbal inflection should always be from the matrix language. While the MLF is open to an incorporation of the Min-

imalist approach into their framework (the result being *modified minimalism*), the minimalist opposition remains adamant that the notion of a Matrix Language should not be used to describe code switching data. These different standpoints were debated in a series of articles: Jake, Myers-Scotton, and Gross (2002), MacSwan (2005a), Jake, Myers-Scotton, and Gross (2005) and MacSwan (2005b).

2.2.3 Borrowing vs. code-switching

How to draw a distinction between one word code switches and borrowings has occupied a large part of code switching research. This question is not only of theoretical nature, but also has some practical consequences. The language membership of lexical items determines their behaviour, so determining the linguistic identity of these words is a relevant question.

An intuitive way to define borrowings, is that they are – in contrast to code switched elements – a part of the lexicon of the language that has borrowed them. This intuitive definition is sometimes difficult to put into practice, as the reality shows more of a continuum between established borrowings and code switches (Treffers-Daller 1993).

In the discussion of borrowings versus code switches an important issue is the ban on word-internal code switches. First observed by Poplack (1980), this is a point maintained by many approaches to code switching to be important. Some argue however that code switching within the word is possible and does occur.

An ambiguous category is the category of *nonce borrowings*. These nonce borrowings are one word switches – or *lone other language items* in Poplack et al.'s terminology – which are not established as loanwords. Poplack, Sankoff, and Miller (1988) showed that these nonce borrowings behave differently from established borrowings and show many similarities to code switching, leading some people to analyse them as code switches. For a recent discussion on this category, I refer to Stammers and Deuchar (2012), Poplack (2012) and Deuchar and Stammers (2012).

Myers-Scotton (2002) argues that there is no reason to synchronically differentiate between borrowing and code switching. Both established loans and one word code switches are incorporated in the morpho-syntactic frame of the matrix languages. The only significant difference being that code switches are only tagged as being 'embedded language' while established borrowings are tagged with both embedded and matrix language, at least in the mind of the bilingual speaker.

The minimalist approach to the contrary is concerned with the borrowing-code switching distinction. González-Vilbazo and López (2011) give a formal way to distinguish between them. They define borrowing as the process in which an L_β item is copied into the L_α lexicon. Code switching is when items from the L_α and L_β lexicon are used next to one another in the *computational system*. The *PF interface condition* would prevent L_α and L_β items to co-occur in the same word, resulting in the ban on word internal code switches. Note that word internal code

switching is only prohibited when the words are formed pre-syntactically in the lexicon. Switching between a root and items added to a word post-lexically (such as some clitics) is allowed (MacSwan 2005a).

Chapter 3

Literature review

This chapter reviews the previous literature relevant to this thesis. The first section (3.1) discusses the grammatical category of gender. Section 3.1.1 briefly explains the gender systems of Dutch and French, while 3.1.2 discusses earlier research on gender assignment of loan words and gender assignment in code switching.

Section 3.2 provides a literature review of the determiner phrase. It examines the conceptions of the nominal projection in the different theoretical frameworks discussed in the previous chapter, the Minimalist Program (section 3.2.1) and the Matrix Language Framework (section 3.2.2). In section 3.3 the predictions of these two frameworks are explored with regards to word order and adjectival agreement.

In section 3.4.2 earlier studies on the DP in code switching research are discussed. Finally section 3.5 provides a short excursion into little *v*.

3.1 Gender

Some languages divide their nouns into different classes, which can be distinguished from one another by looking at the agreement patterns. These categories are usually referred to as genders. While many languages have only two or three genders, some have many more. For most Indo-European languages gender is an undisputed category, though this is not the case for some languages. In the Cushitic languages, for example, the borders between the categories of gender and number are fuzzy (van der Meer, personal communication).

Systems for gender assignment can more or less be divided into two categories: semantic and formal systems. In semantic systems, the meaning of the noun determines its gender. Animate vs non-animate is a typical type of semantic gender system. When no semantic assignment rules can be discerned, the gender system is considered to be formal (Corbett 1991).

A common type of gender system, prevalent in the Indo-European languages, is based on biological sex. Though these type of systems are semantic in the sense that

nouns denoting males go in the masculine category, while nouns denoting females go in the feminine category, for all other nouns there is no semantic reason to put them in the class they belong to. Nouns that denote neither males nor females are seemingly randomly distributed over the three genders, represented in (12) as 'residue'. This table is an illustration of the gender system of Russian (Corbett 1991, p.35).

(12)

Gender	Criterion
masculine	male + residue
feminine	female + residue
neuter	residue

While gender in Russian is not semantically predictable, it is easy to see what gender a word is by looking at it's declensional type or phonological shape (Fraser and Corbett 1994, p.128).

(13) *Morphological assignment rules for gender*:
1. Nouns of declensional class I are masculine.
2. Nouns of declensional class II and III are feminine.
3. Nouns of declensional class IV are neuter.

The gender assignment rules of Russian are morpho-phonological. Other languages with morphological gender system are the Bantu languages, where the nouns are divided into classes (genders) dependent on their prefix (Corbett 1991).

For some languages however, the gender assignment rules are completely opaque. This means that without looking at agreement with – for example – a determiner, determining gender is not possible. This is the case for German and Dutch. However, some nominalisation suffixes can determine the gender of the noun they form, as demonstrated in (14).

(14)

vrij	-heid	~	vrijheid	[Dutch]
free.ADJ	-dom[FEM]		freedom[FEM]	

This type of gender assignment system is also called derivational gender, since derivational morphemes can determine gender.

3.1.1 Gender systems of French and Dutch

This section provides a concise and descriptive overview of the gender systems of Dutch and French. As most Indo-European languages, Dutch and French have formal gender systems.

French

French, like most Romance languages, has a system of two genders: masculine and feminine. Though the gender assignment system of French has been regarded as highly opaque in the past, it has now been established that gender assignment in French is complex, but predictable. French has a myriad of phonological rules that determine the gender for 84.5% of the French nouns. In (15) a small sample of these rules (Corbett 1991, p.60).

(15) *Phonological assignment rules (sample)*:
1. nouns ending in /ɛzõ/, /sjõ/, /zjõ/, /ʒjõ/ and /tjõ/ are feminine
2. remaining nouns in /õ/ are masculine

In combination with some morphological rules, such as the one in (16), the gender predictability of French is quite high (Corbett 1991, p.58).

(16) *Morphological rule*:
Compound nouns formed from a verb plus some other element are masculine.

Gender agreement in French shows up on adjectives, articles, possessive pronouns and past participles. In (17) the agreement patterns of the articles and adjectives of French are summarised.

(17)

French	masculine	feminine	plural
indefinite article	un	une	des
definite article	le	le	les
adjectives	-ø	-e	-(e)s

Though in writing the feminine adjectival agreement marker is an -e, it never manifests as an [e]/[ɛ]/[ə]. Among other effects it can make an underlying consonant overt, or can have no overt distinction. This is shown in (18).

(18)

	‘brown’			‘annoying’			‘pretty’		
masculine:	brun	~	[brỹ]	ambentant	~	[ãbɛtã]	joli	~	[ʒɔli]
feminine:	brune	~	[brʏn]	ambetante	~	[ãbɛtãt]	jolie	~	[ʒɔli]

Dutch

Though Standard Dutch has a two way gender system, most Southern Dutch varieties – Brabant Dutch included – have retained the older three way gender system.

The three genders of Brabant Dutch are masculine, feminine and neuter (Vanden Wyngaerd 2012). The gender assignment rules of Dutch are opaque. Gender can generally only be determined by looking at agreement patterns. This with the exception of some suffixes, such as the diminutive, which can determine gender

(Cornips and Hulk 2006). This is demonstrated in (19). Other examples include the nominalisation suffix discussed in (14).

(19) a. de-n hond
the-MASC dog[MASC]
'the dog'
b. het hond-je
the[NEUT] dog-DIM
'the doggie'

Though the singular has three gender distinctions, the plural has none. The table in (20) gives an overview of the agreement of the articles of Brabant Dutch. The adjectival agreement patterns will be discussed in detail in section 3.2.1.

(20)

Brabant Dutch	masculine	feminine	neuter	plural
indefinite article	ne(n)	en	e(n)	ø
definite article	de(n)	de	het	de

The bracketed (n) is sensitive to phonological restrictions, which are not relevant here. For comparison, I give the Standard Dutch paradigm in (21).

(21)

Standard Dutch	non-neuter	neuter	plural
indefinite article	en	en	ø
definite article	de	het	de

3.1.2 Gender in code switching research

Gender assignment has received a fair bit of attention in contact linguistics. It is often claimed that loans receive an unmarked gender (Fraser and Corbett 1997, Thornton 2009). This unmarked (or default) gender is often masculine and can show up in other areas of the language as well. In Spanish, for example, when there is agreement without trigger, the agreement is the default masculine (Roca 1989). This is demonstrated in (22).

(22) est-o es estupend-o
this-MASC is great-MASC
'this is great'

Some studies have looked beyond this default gender, for other factors that can influence the gender assignment of loans. Poplack, Pousada, and Sankoff (1982), for example, investigates the factors influencing gender assignment. The examined the genders of English loans in Puerto Rican Spanish (as spoken in the US) and Montreal French, both languages with two genders: masculine and feminine. They examined the following factors (Poplack et al. 1982, p.4-5) :

- physiological sex of the referent
- phonological shape of the loanwords
- analogical gender
- association with the gender of a host language homophone
- association of a borrowed suffix with a host suffix requiring a certain gender
- default/unmarked gender

By analogical gender, they mean that the gender that the borrowed noun receives is the same of the semantic equivalent of the concept in the host language. For example, *book* is loaned as masculine in Puerto Rican Spanish, because the Spanish equivalent *libro* is masculine.

They find that the following factors are the most dominant. Physiological sex, when present, overrides all other factors. Where phonologically based gender rules can be applied, they have a strong influence over the gender assignment. Analogical gender was assigned to 60% (Montreal French) and to 85% (Puerto Rican Spanish) of the borrowed nouns.

Though loan words are often said to receive a default gender, Poplack et al. argue that other factors could be responsible for this. In Puerto Rican Spanish for example, the phonological shape is more often suited for masculine gender, than feminine, resulting in a proportionally high number of masculine loans. Though in Standard French, the overwhelming majority of loans is masculine, this is not the case for Montreal, where a significant portion of loans is feminine (Poplack et al. 1982, p.23).

A recent study by Aaron (2014) of English loans in Spanish found the importance of default gender to be linked to general patterns found in Spanish and non-referentiality. Aaron found that the conventions of the local community were the decisive factor.

It is important to keep in mind that English has no gender system. Consequently, the original gender of the English words cannot play a role in the gender assignment of loans.

Treffers-Daller (1993) (chapter 5) discusses gender assignment to French nouns in Brussels Dutch. This is a situation of interaction between two languages with gender. She finds that analogical gender is less important than the gender of the noun in the donor language. The French loans in Brussels Dutch have a tendency to keep their original gender. This in contrast to Standard Dutch where many loans tend to be assigned the neuter gender (Treffers-Daller 1993).

Treffers-Daller ascribes this congruence of the original gender and the gender ascribed to the loanword to the fact that speakers of Brussels Dutch are bilingual and are consequently able to loan the original gender with the lexical specification. Here the discussion of where to draw the line between borrowing and code switching from section 2.2.3 becomes relevant.

Treffers-Daller is not explicit about the criteria she uses to categorise the nouns as borrowed, rather than code switched. In the chapter on adjectives she is more

explicit (Treffers-Daller 1993, p.145):

> The term "borrowed adjectives" covers therefore elements that are considered as "switches" or "nonce loans" by other authors. [...] I do not refer to the distinction "established loans" versus "nonce loans any more, since it is very difficult to give objective grounds[1] for this distinction in the Brussels contact situation

Presumably the same reasoning holds for the nouns. Consequently it is not possible to say whether Treffers-Daller's results concern code switching or borrowing. Of course, intensive code switching may result into borrowing. The fact that speakers of Brussels Dutch are (and have long been) bilingual and code switch regularly may lead to the borrowing with the original gender which does not happen in Standard Dutch.

Another study that implies that gender features can be transferred across languages is Cantone and Müller (2008). This study involves the production of mixed language DPs of bilingual children. These children were German-Italian bilinguals. When they produced a mixed DP, the article tended to agree with the gender feature on the noun even if it was a different language. Crucial for this analysis is that gender is an inherent property of the noun, rather than a functional head in itself. When the noun is selected from the lexicon, its gender features become accessible and the (other language) determiner can agree with it.

Other studies have investigated gender assignment in code switched speech. Jake et al. (2002) found that in English-Spanish code switched speech, one word switches of a noun are often masculine, which they term the default.

This tendency towards a default gender was also found by Liceras et al. (2008). They investigated English-Spanish bilinguals of different types. They found that for code switched DPs with an English noun and a Spanish determiner, simultaneous bilinguals prefer the default masculine, while (late) sequential bilinguals show a preference for the analogical gender.

Parafita Couto et al. (2014) looked at gender resolution in Spanish-Basque mixed DPs. Basque nouns do not have gender, while Spanish has two genders, masculine and feminine. They found that these Basque nouns are often assigned the feminine gender in Spanish when code switching. Though this seems to contradict Jake et al.'s findings that masculine is the default gender for code switched nouns in Spanish, phonological factors are at play.

The Basque post-nominal determiner *-a* is often borrowed together with the noun. This *-a* is then interpreted as a feminine word marker, resulting in feminine

[1] I believe the difficulty is not in defining objective grounds for a distinction, but rather putting the theoretical definitions into practice. "Which lexicon provides the lexical item?" is an easy question to pose, but a very difficult one to answer in the case of Brussels Dutch. The intense language contact in the area makes it difficult to determine in whether a word is stored in both lexicons, or only in one.

gender assignment. This is illustrated in (23) (Parafita Couto et al. 2014, p.34). Even when the *-a* was not present the preference for feminine gender was observed, suggesting that the effect is extended.

(23) la illar-a lodi-a [Spanish-Basque]
the[FEM] pea-DET fat-DET
– Spanish equivalent of pea: "guisante[MASC]"
'the fat pea'

3.2 The Determiner Phrase

This section discusses the different conceptions of the Determiner Phrase in the Matrix Language Framework and the Minimalist Program. The section on the Minimalist Program elaborates on word order in the DP and on the mechanism of agreement in general and the agreement in the DP in Romance and Germanic.

3.2.1 The DP in Minimalism

This section discusses how the Minimalist Program (Chomsky 1995) accounts for characteristics of the DP such as word order and adjectival agreement. It also treats proposals that have been put forward to account for the patterns of adjectival agreement. Special attention is given to Dutch and French.

Word Order

In both Dutch and French, the article is pre-nominal.

(24) a. **een voorbeeld**
b. *un example*
'an example'

The placement of the attributive adjective is different in these two languages. In French (and other Romance languages) the unmarked position for adjectives is post-nominal, while in Dutch (and other Germanic languages) they are pre-nominal. This is illustrated in (25).

(25) a. **een ander voorbeeld**
b. *un example différent*
'a different example'

However, sometimes French adjectives may precede the noun they modify. For some adjectives, their position is invariable. Intensional, non-intersective adjec-

tives can only occur pre-nominally, while classifying adjectives must appear post-nominally (Alexiadou, Haegeman, and Stavrou 2007). This is shown in (26).

(26) a. *l'autre maison* b. **la blanche maison*
**la maison autre* *la maison blanche*
'the other house' 'the white house'

For most adjectives, the position is variable and a meaning difference exists between the two positions. Pre-nominal adjectives have narrow scope, modifying a part of the meaning component of the referent of the noun, while post-nominal adjectives have wide scope, modifying the referent of the noun (Alexiadou et al. 2007). This difference in meaning is illustrated in (27). The post-nominal adjective in a. has wide scope and modifies all aspects of the noun *femme*. The pre-nominal adjective in b. modifies only a component of the referent of *femme*.

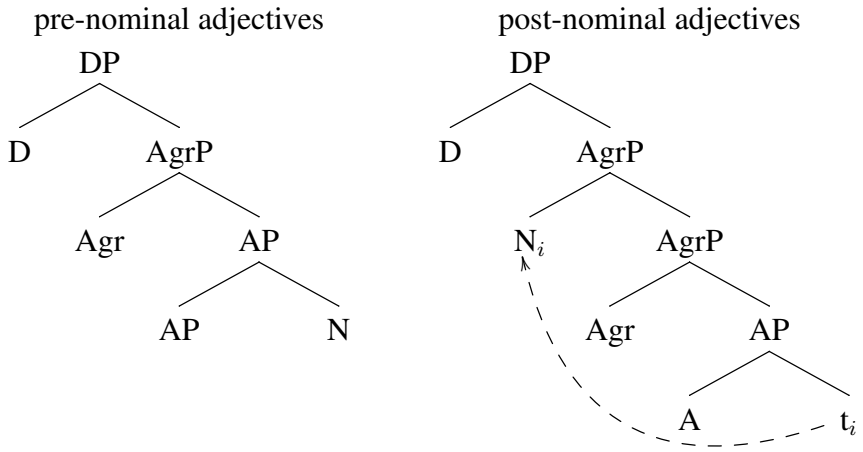
(27) a. ma femme ancienne b. mon ancienne femme
my woman old my old women
'my old wife' 'my ex-wife'

Despite the superficial differences in word order, it is a widely accepted hypothesis that in both Romance and Germanic, the adjective is generated in pre-nominal position and post-nominal word order is derived through N-movement.[2] This means that the surface order is derived when the noun moves leftwards to a higher functional projection, resulting in a noun-adjective word order (Kayne 1994, Cinque 1999, Laenzlinger 2005, Alexiadou et al. 2007).

This N-movement hypothesis is adopted in code switching research investigating noun-adjective order by Cantone and MacSwan (2009). I will follow them in naming the functional projection responsible for N-movement the Agreement Phrase. The head of this projection is equipped with a strong EPP feature which triggers the overt movement of the noun to the specifier position of the AgrP. The difference between post- and pre-nominal adjectives is illustrated in (28).

[2]There are some problems for this N-movement hypothesis. These issues are addressed in Laenzlinger (2005) and Alexiadou et al. (2007), part III, chapter 4.4.

(28)



Agreement

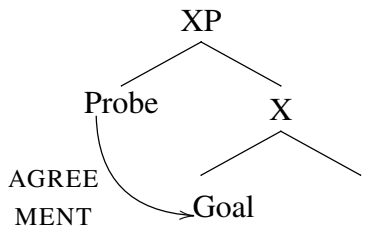
Most linguists agree that agreement is a puzzling phenomenon. In some languages it is abundant, while in others it is completely absent. Agreement is the expression of information on a part of the utterance to which the information does not belong (Corbett 2006). In (29) the morpheme expressing plurality on the verb indicates that the subject is plural, not that the amount of sleeping events is plural.

(29) de olifant-**en** slap-**en** [Dutch]
the elephant-PLUR sleep-PLUR
'the elephants sleep'

In some sense, the information is redundant. In languages designed for efficiency, such as computer languages, agreement is never used. The fact that it is so abundant in languages across the world can tell us a lot about human language. For most – if not all – modern syntactic theories, agreement forms an interesting puzzle (Corbett 2006).

Before getting into the specific mechanism of agreement, I will first discuss some terminology. The agreement process involves a probe and a goal. The probe ('sleep' in (29)) is the element looking for the feature that the goal ('elephant' in (29)) has. Structurally, these two are in an asymmetrical relationship. The probe can only search for the goal in a structure it c-commands (Chomsky 2000). This is called the search domain of the probe. The structural relation of probe and goal is illustrated in (30) (Schoorlemmer 2009).

(30)



Features play an important role in the agreement process. Features can be seen as the atoms of linguistics. The features usually involved in agreement are often referred to as the ϕ-features. The uncontroversial ϕ-features are number, person and gender. Other features that can often play a role in agreement are case and definiteness (Corbett 2006). These latter two are however not regarded as ϕ-features (MacSwan 2005b).

Features can be either plus or minus interpretable at the interpretational component of grammar Logical Form (LF). All [-interpretable] features need to be deleted by the end of the derivation. This is achieved by matching [-interpretable] features to [+interpretable] features. This match causes the deletion of the [-interpretable] features. Chomsky defines the relationship Agree as the relationship that holds between a probe α with uninterpretable features and a goal β with interpretable ones (Chomsky 2001). These uninterpretable features delete under Agree.

If uninterpretable features are not checked and deleted by the end of the derivation, the derivation crashes. This means that the derivation is an ill-formed structure. Derivations that do not crash are called convergent derivations (Chomsky 1995).

Features are distinct if they have are the same features with a different value. For example a nominative and accusative feature are distinct, since they are both case features, but have a different value. Identical features are the same feature with the same value. Features may enter into a match relationship if the features are non-distinct (Chomsky 2001), meaning that they must be of the same type, regardless of the valuation. Of course, it may be that the features are identical as well as non-distinct, since the former is a subtype of the latter. If features are distinct, they mismatch and this causes the derivation to crash. There is a non-match of features when they neither match nor mismatch. An accusative case feature can non-match with a plural number feature for example, as they are neither identical, nor distinct. (Chomsky 1995).

An alternative way to implement the Agree operation is the Feature Sharing idea developed by Frampton and Gutman (2000). In this implementation, agreement is realised by the sharing of a single feature by two (or more) syntactic terminals, rather than features getting valued on one syntactic terminal by another. Because the probe shares one and the same feature with its goal, it is possible for a probe to become a goal for a higher probe. The "Agreement is Feature Sharing" approach has gained popularity and Schoorlemmer (2009) adopts this approach, which will be discussed below.

Agreement in Romance and Germanic

Since a minimalist approach to code switching assumes that the restrictions on code switching arise from the requirements of the monolingual grammars involved, we need to take a closer look at the agreement systems of Dutch and French. The most recent and comprehensive treatment of adjectival agreement in the Germanic and Romance DP is by Schoorlemmer (2009) and it is this one that will be used in this thesis.

In most Germanic languages adjectival agreement is sensitive to definiteness. In a definite DP, the adjective does not show a full agreement paradigm, while in the indefinite DP all genders are distinguished. Schoorlemmer terms this opposition strong versus weak agreement. An example for Swedish is shown in (31) as taken from Schoorlemmer (2009, p.152).

(31)

	singular		
Swedish adjectival agreement	non-neuter	neuter	plural
weak paradigm: definite DP	-a/-e	-a/-e	-a/-e
strong paradigm: indefinite DP	ø	-t	-a/-e

Romance languages on the other hand, have adjectives that show no sensitivity to definiteness. Consequently, they have only one paradigm: the strong one.

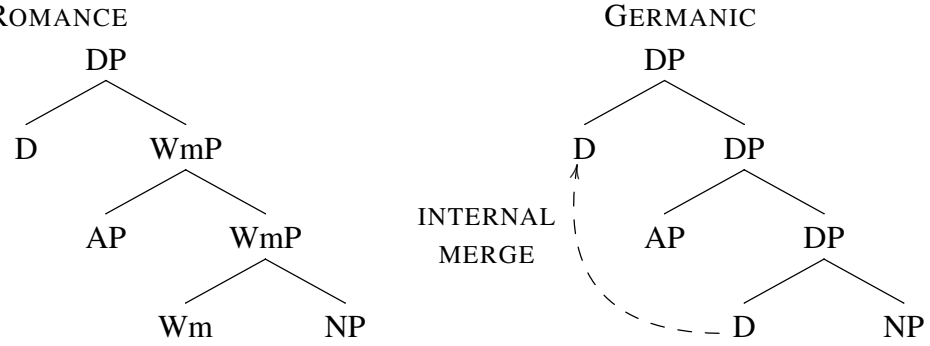
(32)

French adjectival agreement	singular		plural	
	masculine	feminine	masculine	feminine
strong agreement (in)definite DP	ø	-e	-s	-es

Schoorlemmer posits that the difference between the Romance and Germanic DPs can be found in their syntactic structure, specifically in the adjunction site of the adjective. A Romance DP has a functional projection, called the Word marker Phrase (WmP), which does not exist in Germanic DPs. He defines word markers as "nominal suffixes whose form generally correlates with the grammatical gender of the noun". This WmP licenses a low adjunction site for adjectives (Schoorlemmer 2009, p.253).

As is illustrated in (33), the Romance adjective is merged *under* the determiner, while in the Germanic DP the adjective is merged *above* the determiner, after which the determiner is merged internally above the adjective.

(33)



This double definiteness of the Germanic DP is postulated to solve the the *c-command paradox*, which is defined in (34) (Schoorlemmer 2009, p.12).

(34) C-COMMAND PARADOX:
Attributive adjectives with weak adjectival inflection must be c-commanded by a definite D for their interpretation, but they must c-command a definite D in order to license their inflection.

Since adjectives in Romance languages are not sensitive to definiteness, they do not need to c-command the determiner, and consequently Romance does not suffer from the c-command paradox. Another piece of evidence for the WmP comes from West Flemish, which has word markers, as shown in (35), but no sensitivity to definiteness, as demonstrated in the table in (36) (Schoorlemmer 2009, p.254).

(35) een katt-e
a[FEM] cat-WM[FEM]
'a cat'

(36)

West Flemish adjectival agreement	singular masculine	singular feminine	singular neuter	plural
strong agreement (in)definite DP	-e(n)	-e	-ø	-e

Note that the Germanic adjective in this analysis has two paradigms, rather than one paradigm with an extra (definiteness, besides gender and number) feature. These two paradigms are activated by different Agree operations. Strong agreement is licensed by the operation Indirect Agree.

Indirect Agree is the agreement that happens as a by-product of agreement of a higher probe with a lower element. As the adjective cannot enter into an Agree relationship with the N (no functional projection of the A dominates the N), and receives its features via Indirect Agree with a DP-external probe, in this case the case assigner of the DP (as case assigners are also probes for ϕ-features according to Chomsky (2001)). For a more detailed account of Indirect Agree, I refer to Schoorlemmer (2009), p.143-147. Note that this indirect licensing of agreement is

only possible with the view of agreement as feature sharing, developed by Frampton and Gutman and adopted by Schoorlemmer.

This Indirect Agree operation is not available in the definite DP. The internal merge of the determiner – as shown in (33) – blocks the Indirect Agree operation that would usually license the agreement on the adjective. The higher copy of the definite D is specified for all its ϕ-features and acts as a screen for the case assigner.

To account for the fact that the indefinite article does not block the Indirect Agree operation, Schoorlemmer posits that it is syntactically a numeral, rather than a determiner. This is possible as the Swedish indefinite articles are also used as numerals. The Swedish DP in (37) is ambiguous for interpretation as 'one' or 'a' Schoorlemmer 2009, p.164) .

(37) en buss
one/a.SG.CM bus
'one/a bus'

The indefinite D is present, but not morphologically realised. Consequently, the D does not block Indirect Agree. Schoorlemmer discusses Swedish, Norwegian and Standard Dutch along the same lines.

The case of German is slightly different. A crucial difference between Swedish and German is that in German, the indefinite article is not a numeral, but rather a determiner. Adjectives in the indefinite DP in German sometimes takes endings from the weak paradigm, and sometimes endings from the strong paradigm. This mixed paradigm correlates to the inflection of the indefinite determiner. When it inflects, the adjective receives weak inflection. When it doesn't inflect, the adjective receives strong inflection. The strong/weak distinction in German is tied to probehood. If the D is a probe, the adjective receives weak inflection. When it is not, it has a strong inflection.

In Brabant Dutch indefinite determiners cannot be analysed as numerals. In contrast to Swedish, the determiner is not phonologically indistinguishable from the numeral. The sentences in (38) a. and b. have distinctly different interpretations.

(38) a. **Ik heb maar nen hond**.
I have but a dog
'I have but a dog.'

b. **Ik heb maar een hond**
I have but one dog
'I have only one dog.'

However, for the Brabant Dutch case to parallel the German one there are some issues. In contrast to German, for Brabant Dutch, inflection of the indefinite determiner does not correlate to lack of inflection in the adjective, as is shown in (39). The bracketed (n) is dependent on phonological factors not relevant here.

(39)

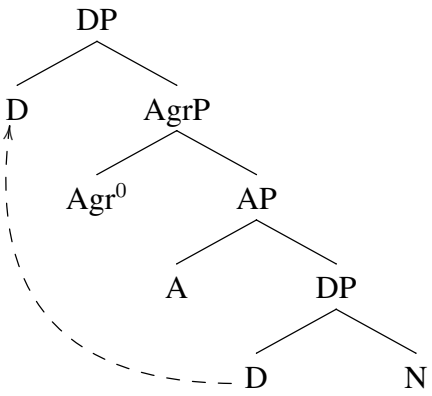
Brabant Dutch	masculine	feminine	neuter	plural
indefinite article	ne(n)	een	ee(n)	ø
indefinite adjectival inflection	-e(n)	-e	-ø	-e

Incorporating the Brabant Dutch data in Schoorlemmer's framework would lead too far afield and is an issue I leave for further research.

Schoorlemmer does not account for what licenses post nominal adjectives in the Romance languages. In a footnote he states "Most of the adjectives in Spanish occur in post nominal position [...] In order to not unnecessarily complicate the illustration of my proposal, I will abstract away from this.". He follows Haegeman (2000) in rejecting the hypothesis which is proposed in the literature that word markers are responsible for the N-movement. To build a DP that can account for both word order and agreement, I will incorporate the word order analysis of Cantone and MacSwan (2009) (as discussed in 3.2.1) and the adjectival agreement analysis of Schoorlemmer (2009).

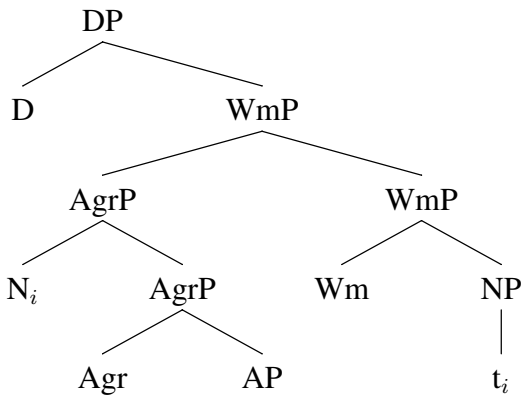
In Germanic – which has adjective-noun order – the Agreement Phrase has a weak EPP feature and the N can stay in situ and is not prompted to raise to the specifier position of the AgrP.

(40)



In Romance on the other hand, the AgrP has a strong EPP feature, which attracts the noun to its specifier position.

(41)

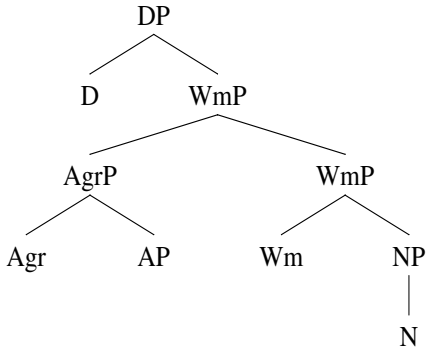


Below an overview of the differences between Romance and Germanic DPs is given.

(42)

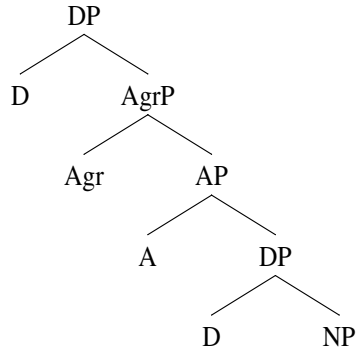
ROMANCE DP
- AgrP has a strong EPP feature
- word markers, which license low adjunction of the adjective
- no double definiteness
- only strong agreement

Structure:



GERMANIC DP
- AgrP has a weak EPP feature
- no word markers, which do not license low adjunction of the adjective
- double definiteness
- strong/weak agreement dependent on the definiteness

Structure:



3.2.2 The NP in the MLF

In this section the nominal projection is referred to as the NP, rather than as the DP, because proponents of the MLF reject the determiner as the head of the nominal projection. Myers-Scotton (2002) notes this is because naming this projection the DP "obscures the role of the noun in the underlying structure" (Myers-Scotton 2002, p.75).

As was discussed above (2.2.2), the MLF predicts the word order of a mixed NP

constituent to be determined by the Matrix Language. A monolingual Embedded Language NP (Full EL NP) would be called an EL-island and will follow the word order rules of the EL. Since they do not comply with the USP (as defined in (7), repeated here as (43)), they should be relatively rare.

(43) THE UNIFORM STRUCTURE PRINCIPLE:
A given constituent type in any language has a uniform abstract structure and the requirements of well-formedness for this type must be observed whenever the constituent appears. In bilingual speech, the structures of the Matrix Language are always preferred, but some Embedded structures [...] are allowed if Matrix Language clause structure is observed.

This follows from the *Bilingual NP Hypothesis*, which was formulated in Jake et al. (2002).

(44) THE BILINGUAL NP HYPOTHESIS:
the system morphemes in mixed NPs come from only one language, called the ML. An asymmetry between mixed NPs and full NPs from the EL obtains: full EL NPs are not preferred because their system morphemes (and their uninterpretable features) do not match other system morphemes and their uninterpretable features elsewhere in the bilingual CP.

When the features of an EL content morphemes mismatch with the features of the ML frame, the conflict is resolved in favour of the ML. This means that a mixed constituent will be chosen over an EL constituent. Jake et al. apply this to English-Spanish mixed NPs which they claim are an excellent illustration of ϕ-feature mismatch.[3]

However, it seems that the features do not mismatch, but rather non-match, as defined in section 3.2. In order for features to mismatch they must be distinct. Since English has no grammatical gender, the gender features of Spanish and English are *not* distinct, so a mismatch does not occur.

(45) THE ML FEATURE HYPOTHESIS:
in mixed NPs, the realisation of ϕ-feature settings must be drawn from the set of possible ML values.

This hypothesis requires the gender features on a determiner to be realised as in the language of the ML, but how exactly this is realised is not dependent on meeting the requirements of the formal gender feature of the ML. In other words, as long as the agreement morpheme comes from the ML, which agreement morpheme is chosen

[3]Note the use of Minimalist terminology here. Jake et al. (2002) argue that integration of the Matrix Language into Minimalism is necessary to make the Minimalist approach work, hence the integration of these terms in their argumentation.

is not dependent on the features of the EL content morpheme. No one factor determines the different choice in agreement. Translational equivalence, phonological factors and default settings may all play a role (Jake et al. 2002).

3.3 Predictions

In this section, I return to the question first posed in the introduction. What happens with the adjectival agreement in a mixed language DP? The different theoretical frameworks discussed in section 2.2.2 make different predictions. The goal of this thesis is to determine which of these are borne out.

Firstly, I will discuss the predictions by the MLF. For word order, the predictions are clear. The Morpheme Order Principle (8) predicts that in mixed DP constituents, the word order follows the word order of the matrix language. The matrix language supplies the late system morphemes. Verbal agreement is an unambiguous late system morpheme. Consequently we can identify the Matrix Language by looking at the inflection on the inflected verb.

To figure out the predictions for the agreement, we need to return to the System Morpheme Principle, which was discussed in (9) in the previous chapter. The crucial question here is: Are adjectival agreement morphemes late system morphemes? The definition of these morphemes is below (Myers-Scotton and Jake 2009, p.75):

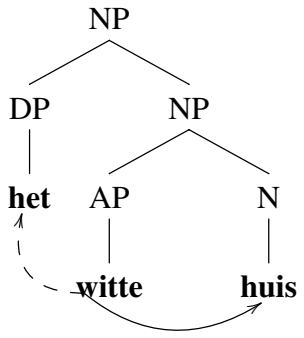
> 'outsider' late system morphemes depend for their form on information *outside* their maximal projection. That is, they are co-indexed with forms outside the head of their maximal projections.

I agree with MacSwan (2005b) that this definition is quite vague and it is difficult to determine which morphemes fit this bill. How does this work for adjectival agreement?

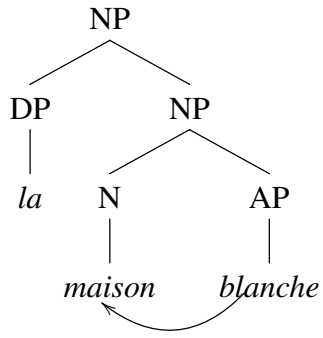
Adjectives in Dutch are indexed with both the determiner, as they are sensitive to definiteness, and the noun, as they are sensitive to gender. They look to both determiner and noun for information on their form. In French, to the contrary, the adjectives are only co-indexed with the noun, as they do not need information from the determiner to determine their form. This difference is illustrated in (46).

(46)

a.

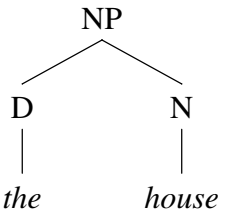


b.



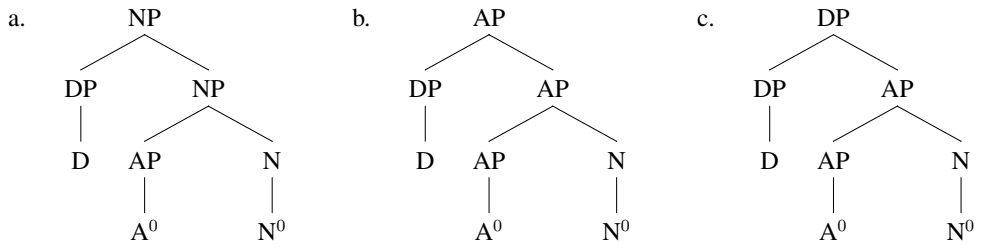
According to Myers-Scotton (2002) (p.75, footnote 2) Jake and Myers-Scotton "do not accept the Det as head of the NP analysis [... since] it obscures the role of the noun in the underlying structure".[4]

(47)



How would the structure look if you add an adjective? The possibilities are represented in (48). If a. is the correct structure, adjectival agreement morphemes would be late system morphemes in both French and Dutch. If b. is the correct structure, adjectival agreement would constitute a late system morpheme in neither French nor Dutch. Structure c. would imply that in French, adjectival agreement is not a late system morpheme in French, but is in Dutch.

(48)



Structure b. is included here for completeness, but neither theoretical framework would accept it. The generative structure is closest to option c. The MLF on the other hand would favour option a., since b. would also "obscure the role of the noun in the underlying structure". The MLF would consequently predict that any adjectival agreement should come from the Matrix Language, both when the adjective is French as when it is Dutch, consistent with the *ML feature hypothesis* (45).

Additionally, the MLF predicts no problem when the features of the noun and adjective do not match because they come from different languages. Any conflict will be resolved in favour of the matrix languages.

For the minimalist program, the predictions with regards to word order have been discussed in Cantone and MacSwan (2009). Because the AgrP determines the word order (by strong or weak EPP feature) the language of the adjective is predicted to determine the word order.

For agreement, the predictions are very much dependent on the version of agree-

[4]The D as head of the nominal projection has been mainstream in the generative literature since the mid-1980's (MacSwan 2005a).

ment one subscribes to. Using the analysis proposed by Schoorlemmer (2009) it is possible to make certain predictions.

(49) a. determiner$_{Dutch}$ noun$_{Dutch}$ adjective$_{French}$
b. **het** **huis** *vert-ø/e*
the.NEUT house[NEUT] green-MASC/FEM

In a DP such as the one in (49) we expect the following. The Dutch nouns do not have word markers, so the French adjective is merged above the DP. In the indefinite DP, strong agreements will be licensed. In the definite DP strong agreement will not be licensed and we expect weak agreement. Since French adjectives have no weak paradigm, it is difficult to predict what ending may end up on the adjective in a definite DP.

If the case is reversed and the adjective is Dutch (as in (50)) there is a different prediction. Here, the adjective is merged low, since the French noun has a WmP and thus licenses this low adjunction. Since low adjoined adjectives in Romance only show strong agreement, we may expect that Dutch low adjoined adjectives behave the same and show strong agreement endings, in both the definite and indefinite DP.

(50) a. determiner$_{French}$ adjective$_{Dutch}$ noun$_{French}$
b. *la* **groen-ø/e** *maison*
the.FEM green-CM.INDEF/NEUT.INDEF house[FEM]

In principle, the case of a French noun with a French adjective should not lead to feature mismatches. The adjective has the possibility to agree with three genders, the noun has only two genders. MacSwan (1999) argues that gender features are inherent to the noun, and are accessible as soon as the noun is selected from the lexicon. These gender features are consequently available for the determiner – or in this case adjective – to agree with.[5]

Whether or not a feature mismatch will arise when the adjective is French and the noun is Dutch, depends on the representation of the genders in Dutch. Though Brabant Dutch has three genders, not all speakers have an active command of these three genders. Speakers with Francophone parents that learnt Dutch at school (from the age of two and a half) often are not proficient in the three gender system of Brabant Dutch, but rather have the two gender system of Standard Dutch.

The question is then how the non-neuter gender is represented. Are the masculine and feminine gender features still there, but are their agreement forms syncretic. Or are there only two genders: neuter and common. If the latter is the case we may expect that Dutch nouns can never occur with French adjectives for speakers that have a neuter and common gender.

[5]This prediction was found to be borne out in Cantone and Müller's (2008) study of bilingual German-Italian children.

If the former is the case, we will expect similar results for speakers of a two-way gender system, and speakers of a three-way gender system. A neuter noun is expected to result in a feature mismatch between noun and adjective, since the adjective can only agree with feminine or masculine features. Consequently, the derivation will crash. On the other hand, a masculine or feminine noun should not present any problems and the corresponding agreement should turn up on the adjective.

The predictions discussed in this section are summarised in table 2.

	MLF	**Minimalism**
a. word order	matrix language	language of the adjective
b. adjectival agreement morphemes	matrix language	language of the adjective
c. French noun, Dutch adjective	allowed if ML is Dutch	unproblematic
d. Dutch neuter noun, French adjective	allowed if ML is French	derivation crash
e. Dutch masculine or feminine noun, French adjective	allowed if ML is French	dependent on representation of gender
f. actual agreement on the adjective	no strong prediction	corresponding to feature on the noun

Table 2: Summary of the predictions

3.4 Earlier studies on the DP in CS research

3.4.1 Word Order

Several studies in code switching have looked at word order in the DP, since they are conflict sites which can provide excellent test beds for hypothesis on the structure of code switched utterances. Both adjective-noun order and determiner-noun order has been studied.

Cantone and MacSwan (2009) looked at adjective-noun ordering in the DP in German-Italian code switching. This situation parallels the Dutch-French one, as Italian has post-nominal adjectives, while German has pre-nominal ones. They presented written DPs to ten participants between the ages of 19 and 60. All participants were bilingual and had spent time in both Germany and Italy. At the time of the survey they spoke both languages on a regular basis. They were asked to

provide grammaticality judgments of different DPs to see which element of the DP was responsible for the word order. Cantone and MacSwan found that the language of the adjective (and not the determiner) was the determining factor for word order.

Parafita Couto et al. (forthcoming) looked at adjective-noun sequences in English-Welsh code switching. Welsh has post-nominal adjectives, while English has pre-nominal ones. They found that the MLF and minimalist programme make largely congruent predictions, with only a small set of data distinguishing between them. They found that the MLF has a relative superiority where word order predictions are concerned.

Herring, Deuchar, Parafita Couto, and Quintanilla (2010) is an evaluation of different predictions made by Minimalism and the MLF for determiner-noun sequences for several language pairs (English-Spanish and English-Welsh). As these language pairs do not have conflict with regards to word ordering, they looked at which language provided the determiner. They found data compatible with both theoretical frameworks and did not find a statistically significant difference in the accuracy of the predictions. They did not look at predictions for gender.

3.4.2 Adjectival agreement

There is to the best of my knowledge no work on code switching specifically concerned with adjectival agreement. Some more general studies make mention of it.

Bentahila and Davies (1983) is a description of Arabi-French code switching. Though there isn't a section devoted to agreement, the authors note that "the agreement made is not that which would be expected" (Bentahila and Davies 1983, p. 327).

(51) Arabi-*French* code switching (Bentahila and Davies 1983, p. 327)

a. dak *le trajet* kulha
that the journey.[MASC] whole.[FEM]
'that whole journey'

b. *un français* mqawda
a French.[MASC] awful.[FEM]
'awful French'

For Minimalism, examples as these examples present an issue. There is a mismatch between the feminine gender feature of kuhla and the masculine gender feature of *trajet*, as these features are distinct. Therefore the derivation should crash. Possibly an explanation can be found in the fact that that for speakers in this community, French is an early L_2, rather than a second L_1, though the speakers seem to know the gender of the French nouns, as they use the correct French articles. It has been shown that the type of bilingualism may influence code switching behaviour (Liceras et al. 2008).

The MLF is better equipped to deal with these examples. In the sentences in (51), the translational equivalent plays a role. In (51) the Arabic equivalents of *journey* and *French* are feminine and the agreement of the Arab adjectives is feminine, despite the fact that the French nouns they modify are masculine. As Arabic is probably the ML of these DPs (based on the adjectival agreement) this resolution in favour of the Matrix Language is expected.

González-Vilbazo (2005) is an extensive description of German-Spanish code switching. Its section on agreement deals with determiner-noun sequences and the adjective is not discussed. The section about adjectives is concerned with mixed language adjectives, rather than with adjectival agreement. González-Vilbazo found that though mixed adjectives are rare in his corpus, when they do occur it is always a Spanish base with a German adjectival affix.

3.4.3 Borrowed adjectives in Brussels

In her 1993 monograph, Treffers-Daller investigated Dutch-French code switching in Brussels. She discusses the morphosyntactic integration of borrowed adjectives. Here the term "borrowed adjectives" covers a wide range of phenomena, referred to in other literature as "switches", "established loans" and "nonce loans". Treffers-Daller observes that most borrowed adjectives in her corpus are in predicative (rather than attributive) position.

The borrowing of Dutch adjectives into French was very limited (only three occurrences in her corpus of recorded conversations: an apposition, nominalisation and a predicative adjective). When a French attributive adjective was borrowed into Dutch, it was almost always accompanied by a French noun, as in (52). The noun and adjective together form an EL island and it is common for them to be borrowed together.

(52) a. **een** *grand homme*
a big man
'A big man'

b. **een** *livre jaune*
a book yellow
'A yellow book'

If the French adjective kept its French morphology, it was never borrowed into Dutch (53).

(53) a. *__een__ *grand* __man__
a big man
'A big man'

b. *__een man__ *français*
a man french
'A Frenchman'

If the French adjective received Dutch inflection, this is possible.[6] The adjective is

[6]Note that Treffers-Daller does not provide an example. I made up the example in (54) for illustrational purposes. I assume that Treffers-Daller did the same for (53) and (52), since she does not provide a source, which she always does for her corpus data.

then always in pre-nominal position.

(54) **de** *dangereuz*-**e** **man**
the dangerous-MASC.DEF man
'the dangerous man'

In addition to her corpus data, Treffers-Daller examined borrowed adjectives in two Brussels French comic books, *Bèreke* and *Bob Fish*. She found many commonalities between the data in the comics and the spontaneous speech data. It was the case that some borrowed attributive adjectives (such as **tof** 'fun') remain uninflected when borrowed. Other adjectives show Dutch inflection and are borrowed pre-nominally.

Treffers-Daller notes that it is hard to determine wether or not the nouns they modify count as Dutch or French, due to extensive borrowing from Dutch to French. In (55) for example the word for truck is the same in both languages. Though pronunciation is slightly different in the two languages (French: [kam'jõ] Dutch: [kam'jɔn]), it is not possible to discern the difference in a written text.

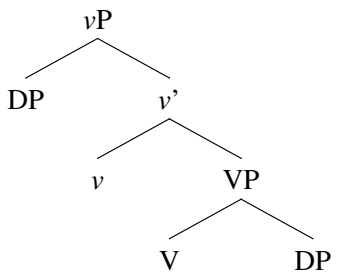
(55) ...*ce* **vlekk-e** camion (Treffers-Daller 1993, p.168)
...that tin-MASC truck[MASC]
'that tin truck'

It will be interesting to see if the results from the experiments echo the results found in Treffers-Daller (1993).

3.5 Excursion: little *v*

The little *v* hypothesis (Chomsky 1995) states that there is a functional projection above the VP. The head of this projection, little *v*, assigns the external θ-role. The structure of the *v*P is shown in (56).

(56)



Besides accounting for the syntax and semantics of causative verbs in English, this little *v* can be spelled out by a light verb. A light verb is a verb without semantic content. The do-support construction in English (57) is considered a typical light verb construction. While in English the light verb cannot be spelled out freely,

in some such as Basque or Tibetan this is less restricted (Hornstein, Nuñez, and Grohmann 2005, p.104).

(57) [$_{vP}$ I [$_{v'}$ do [$_{VP}$ like [$_{DP}$ green eggs and ham]]]]

The little *v* construction has received some attention in code switching research. In non-Minimalist approaches, these mixed language little *v* constructions are termed bilingual compound verbs (BVC) and they are attested in many code switching communities. To name just a couple, the phenomenon has been documented in the Spanish-English community of New Mexico (Wilson and Dumont 2014), the Dutch-Malay community (Muysken 2000) and the Cypriot Greek-English community (Fotiou 2010). BVC's are so prevalent that they have been put forward as a tentative universal of code switching (Edwards and Gardner-Chloros 2007).

Because the Minimalist Program allows for more precise predictions, the section here will focus on that approach. González-Vilbazo and López (2011) investigated the properties of little *v* in Spanish-German code switching. Interestingly, while neither of the languages in this pair has a little *v* construction in monolingual speech, in code switched speech these types of constructions are attested.

González-Vilbazo and López note several asymmetries in the code switched speech of the German-Spanish community. The one relevant here is that constructions where Spanish provides the light verb are attested (58a), while constructions where German provides the light verb (58b) are not (González-Vilbazo and López 2011, p.835).

(58) a. Juan hace nähen das Hemd [Spanish-German]
Jonh does.3SG sew the shirt
b. *Juan tut coser una camisa
Jonh does.3SG sew a shirt
'John sews the/a shirt'

This asymmetry is attributed to the fact that Spanish has verbal classes, while German has not. For details on why this difference lead to the asymmetry, I refer to the paper. Since the Dutch-French situation parallels this Spanish-German situation, their approach predicts that the same asymmetry would hold for Dutch-French code switching data. Since no previous research points to the presence of this type of constructions in Dutch-French code switching, the distractor sentences of the experiment described in 4.2 were chosen to carry out a preliminary investigation into the matter.

Chapter 4

Methodology

The data for these thesis were gathered in two experiments. This chapter describes the participants, procedure and stimuli of both these experiments.

4.1 Elicitation Experiment

4.1.1 Participants

The participants of the elicitation experiment were 10 Dutch-French bilinguals between the ages of 15 and 33. These participants were recruited through personal connections, social media and recruitment posters (see appendix A) posted at libraries and universities in Brussels. These participants were were chosen to comply with three main criteria:[1]

- acquisition of both languages before age 4
- continuation of use of both languages
- native proficiency in both languages
- both languages are spoken on a daily basis

The participants took a proficiency test (see appendix B) to determine in how much they had acquired the gender systems of French, Brabant Dutch and Standard Dutch. They also took a background questionnaire (see appendix C), which determined whether they fit these criteria. This questionnaire also contained questions on language use and attitudes toward code switching. All participants signed a consent form (see appendix D).

[1] It has been shown that bilinguals that fit these criteria give homogeneous grammaticality judgments where code switching data are concerned (Luiz Lopez, LACG lecture at Leiden University the 27th of March 2014).

4.1.2 Director-Matcher Task

This task is an adaptation of the Director-Matcher elicitation task developed by Gullberg, Indefrey, and Muysken (2009). This task is a *referential communication task* (Yule 1997) in which two speakers participates. The Director instructs the Matcher to do something. Gullberg et al. developed this task to elicit noun phrases consisting of determiners, colour adjectives and nouns and it was for this goal that the task was used.

Gullberg et al. (2009) used this task successfully in the Netherlands in the Dutch-Papiamento bilingual community. The task has since been used successfully in other communities, such as the English-Welsh community (Parafita Couto et al. forthcoming) and unsuccessfully in others, such as the Basque-Spanish one (Parafita Couto et al. 2014).

4.1.3 Stimuli

For this task, six nouns of concrete objects were chosen. These nouns represented the six possible categories when combining the gender conditions of French and Dutch. The words are shown in (59) with their glosses.

(59)

	Gender in Dutch		
Gender in French	masculine	feminine	neuter
masculine	**fiets** – *vélo*	**muts** – *bonnet*	**hart** – *cœur*
	‘bike’	‘hat’	‘heart’
feminine	**tand** – *dent*	**ster** – *étoile*	**huis** – *maison*
	‘tooth’	‘star’	‘house’

For each of these objects an illustration was found on Google and printed on a 5 by 5 cm card. Each card was laminated. Each object was represented twice in each finished set of cards. The same objects had contrasting colours.

(60)

Dutch	*French*	*gloss*
grijs(e)	gris(e)	grey
wit(te)	blanc(he)	white
bruin(e)	brun(e)	brown

4.1.4 Procedure

The task was preformed in pairs of two participants. Each participant received a set of cards. The participants were seated in front of each other with a cardboard plate obscuring the view of the other’s cards, as illustrated in figure 2. For one of

the participants, the cards were laid out in a 3 by 4 grid (as shown in figure 3). This participant (director) was told to direct the other (matcher) so that their cards ended up in the same order. The instructions for this task and interactions during the task were provided in code switching mode by the investigator. Once the task was completed the roles were reversed.

Figure 2: Participant set-up

The task was recorded with a Flip Video camera.

Figure 3: Toy task grid

4.2 Grammaticality Judgments

4.2.1 Participants

The participants who did the elicitation task were afterwards asked to perform the grammaticality judgment task. Additionally, the questionnaire was distributed on-

line via social media and e-mail. The survey contained a background questionnaire so that respondents could be selected with similar background to the first group. This background survey is included in the appendices (appendix C) and was split into two parts.

Question one through nine, which dealt with linguistic background were presented before the actual task. This way, respondents with the wrong linguistic background could be excluded from the grammaticality judgment task. Question ten through twenty were presented at the very end and dealt with language use and attitudes towards code switching. These questions were presented at the end to avoid influence in the task from the attitude questions.

4.2.2 Stimuli

For this task, 160 test sentences were developed. Of the 160 sentences, 120 were test sentences and 40 were distractor sentences. All sentences contained code switching. Three types of sentences were developed.

(61)

Type I	Sentences with a DP consisting out of a determiner and a noun.
	24 sentences
Type II	Sentences with a DP consisting out of a determiner, adjective and noun.
	96 sentences
Type III	Distractor sentences (little *v*).
	40 sentences

A full list of all the sentences can be found in appendix G. The sentences are all listed with their mean ratings. For the sentences of type II, it is also indicated whether or not they are predicted to be accepted by the two relevant frameworks. The results of the survey where analysed with the statistical software SPSS.

Type I

Sentences of this type had the following structure. The target DP was in a post-verbal position in a transitive sentence.

(62) Subject Verb [$_{DP}$ Object]

The target DP consisted of a determiner and a noun. The goal of sentences of this type was to look at the factors involved in gender assignment in code switches. These sentences were all one-word code switches. The same gender categories[2]

[2]For each gender category 20 nouns were selected. Ten Dutch and ten French nouns, which were each others translational equivalent. The frequencies were checked in the CELEX database (celex.mpi.nl) for Dutch nouns and the Lexique2 database (http://www.lexique.org/) for the French

established in (59) were used. Each gender category occurred twice, once with an article congruent with the translational equivalent, once with an article incompatible with the translational equivalent. This resulted in 24 different sentences. An example is given in (63)

(63) **Ik ontsteek de** *feu*.
'I lit the fire.'

To avoid other factors besides grammatical gender in either participating language the influencing the gender assignment some criteria in selecting the nouns were involved. All nouns chosen were inanimate, to prevent biological sex from influencing the gender assignment. Biological sex has been shown (Poplack et al. 1982) to override other factors. French nouns with word markers were also avoided, since the phonological shape might influence the gender assignment. For example, the overwhelming majority of nouns in French ending in *-ette* are feminine. Though the role of the phonological shape in gender assignment is an interesting issue, it was avoided here to reduce possible confounds.

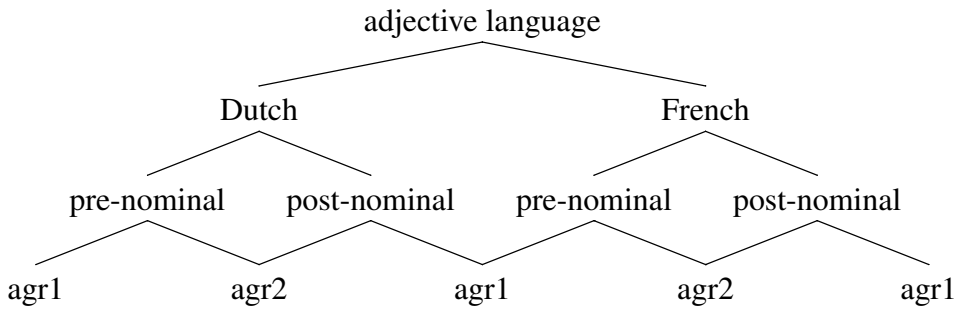
Type II

Sentences of this type had a target DP consisting out of a noun, determiner and adjective. The structure is the same as the type I sentences, as illustrated in (62). Nouns were chosen according to the same criteria for the nouns of type I sentences.

The article and noun of the target DP were in the same language with the adjective in the other. The article and noun were gender congruent, in order to isolate the effect of adjectival agreement in code switched DPs on grammaticality judgment. Because word order within the DP can also influence the judgments, as discussed in section 3.2.1, adjectives were positioned both post- and pre-nominally.

The tree in (64) shows that adjective word order, language and agreement patterns account for 8 different possible combinations.

(64)



The nouns the adjectives modify had six gender conditions, bringing the number of conditions to 48. Add the matrix and this number doubles, yielding a total of 96

nouns. The mean frequencies of the categories were not statistically different.

unique conditions. Considering the difficulty in procuring participants for master thesis experiments, it seems unlikely that a large number of responses would be collected. To improve the soundness of the statistical analysis, it was decided that each condition should be presented twice.

Because of the length of the experiment, it was deemed unwise to double the number of sentences. It is preferable to halve number of conditions and keep the amount of sentences constant. Since the gender conditions and matrix language are not predicted to interact, half of the gender conditions were presented with Dutch as the Matrix Language, while the other half was presented with Dutch as the Matrix Language.

In (65) an example sentence.

(65) *Il ferme* [$_{\text{DP}}$ **het** *ouvert* **raam**].
'He closes the open window.'

As was shown in (64), definiteness was not a condition. When the article and noun were in Dutch, the DP was definite. This was due to practical reasons, since the indefinite article posed a dilemma. In Brabant Dutch it inflects, while in Standard Dutch it does not. This would force a choice between these two variants. When the noun and article were French, the DP was indefinite. This was necessary since the Dutch adjectival agreement is only overt in an indefinite DP.

To select the adjectives, several factors were taken into consideration. As was discussed in 3.2.1, adjective positioning in French is not as rigorous as in Dutch. The adjectives that were used, had their unmarked position after the noun. Additionally, not all French adjectives have overt gender agreement and these adjectives were avoided. The adjective *joli(e)* 'pretty' for example has an orthographic gender differentiation, but no phonological one. This is illustrated in (66).

(66)

	'pretty'		
masculine:	joli	~	[ʒɔli]
feminine:	jolie	~	[ʒɔli]

Type III

The final type of sentences were the 40 distractor sentences. These also contained code switching and consisted out of a matrix clause with auxiliary and an embedded clause with a content verb. The auxiliary could either be a future tense auxiliary (**gaan**/*aller*) or a possible light verb (**doen**/*faire*). Each of the conditions shown in (67) were included five times.

(67)

a.	*S*	*faire*	**content V**	**O**
b.	*S*	*faire*	**O**	**content V**
c.	*S*	*aller*	**content V**	**O**
d.	*S*	*aller*	**O**	**content V**
e.	**S**	**doen**	*content V*	*O*
f.	**S**	**doen**	*O*	*content V*
g.	**S**	**gaan**	*content V*	*O*
h.	**S**	**gaan**	*O*	*content V*

Crucially, sentences of the type c., d., g. and h. have a monolingual equivalent, while sentences of the type a., b., e. and f. have not. Some examples are given in (68). Sentence a. is an example of condition a., while sentence b. is an example of condition h.

(68) a. *Nous faisons* **maken een tekening**.
'We are doing a drawing.'
b. **We gaan** *le Danois apprendre*.
'We're going to learn Danish'.

4.2.3 Procedure

The grammaticality judgment task consisted out of an online questionnaire developed using the free survey software Qualtrics. The questionnaire consisted out of the following parts, in the following order:

- Welcome screen
- Background questionnaire. Available in French or Dutch. See appendix C, questions one through nine.
- Instruction for the grammaticality judgment task, in code switch mode. See appendix E.
- Audio fragments of the 160 sentences, randomised.
- Proficiency test. Participants were asked to indicate the correct gender for 10 Dutch and 10 French nouns. To test their proficiency in the Brabant Dutch genders, they were asked to indicate the article which 'sounded the best' for five nouns. They could choose between the masculine indefinite article and the feminine/neuter indefinite article. See appendix B.
- Language attitude questionnaire. Available in French or Dutch. See appendix C, questions ten through twenty.

For practical reasons of loading time the sentences were presented in blocks of 10, four blocks at a time. These blocks were presented randomly and the sentence types were evenly distributed over the 16 blocks. The sentences within the blocks were also randomised. Participants were asked to rate the sentences on a three point scale,

represented by emoticons.

The sentences were presented as short sound fragments. In the code switching literature aural stimuli are generally preferred over written stimuli, since code switching is considered a predominantly oral phenomenon (González-Vilbazo et al. 2012).[3] However, the choice for audio fragments was in this case inevitable.

Orthographically the agreement morphemes of the Dutch and French adjective are the same (-e), while they are not the same phonetically ([-ə] in Dutch vs a whole range of manifestations in French, as shown in (18), repeated here as (69)). Aural stimuli consequently provided a way to distinguish these morphemes, whereas written stimuli did not.

(69)

	'brown'			'annoying'			'pretty'		
masculine:	brun	~	[brɤ̃]	ambentant	~	[ãbɛtã]	joli	~	[ʒɔli]
feminine:	brune	~	[brʏn]	ambetante	~	[ãbɛtãt]	jolie	~	[ʒɔli]

The sentences were read aloud by a regular code switcher and recorded. This person was instructed to make the sentences sound as natural as possible and to be extra vigilant to pronounce the adjectival agreement endings correctly. When a sentence did not sound or feel right, it was recorded again.

These recordings were edited into short fragments and converted to mp3 format (for compatibility with Qualtrix) using the audio editing software Audacity.

[3] In my view the important distinction is not oral vs written, but formal vs informal. As informal means of written communication are rising, I expect a growing acceptability of written code switching.

Chapter 5

Results

5.1 Elicitation task

The elicitation task confirmed that code switching behaviour is very sensitive to extra-linguistic factors. Of the ten participants tested, only two pairs code switched in moderation during the task. One pair performed the task in French when they were not code switching and the other in Dutch. The pairs that did not code switch performed the task in Dutch.

Though two pairs did code switch, there was only one code switched DP attested. Other code switches usually occurred at sentence boundaries and were consequently not relevant to the investigation. The code switched DP is provided in (70). Its context is given in (71).

(70) *le* **muts**
the.[MASC] hat.[FEM]

(71) Director: **... en dan ben je normaal gezien naast het, euhm, naast de fiets, de bruine fiets**
Matcher: mhm *le* **muts** eh
Director: *ouè, le* **muts**

The French counterpart of **muts** is masculine, suggesting analogical gender is at play here. Though the participants indicated that they spoke Dutch more than French, they had learnt Dutch at kindergarten (at the age of 2,5). Later acquisition of the Dutch gender system may go some way to account for the analogical gender here. Age of acquisition of the L_2 has been shown to influence code switching behaviour (Liceras et al. 2008).

This lack of code switching in the other participant pairs is possibly due to influence of the investigator, since eight out of ten participants said they code switched regularly. Though the experiment itself was conducted in code switching mode, the participants were aware that the investigators first and dominant language was

Dutch. Additionally, it was known to the participants that the experiment was performed by a student of a Dutch university. This Dutch setting may have influenced, or even caused, the lack of code switching. Considering the pairs that did not code switch preformed the task in Dutch – regardless of which language they spoke most often – strengthens this hypothesis.

Eliciting code switching remains a difficult task. Many factors may contribute to facilitating or inhibiting of switching behaviour. For an overview, I refer to section 2.2 in González-Vilbazo et al. (2012). The varying success of this toytask[1] affirms the difficulties in eliciting bilingual speech.

5.2 Grammaticality Judgments

The survey had a total of 47 responses. These responses were filtered with the information given in the background questionnaire. There was a total of 14 suitable responses. This high number of disregarded responses (33) is due to participants not finishing the questionnaire (11) or learning either Dutch or French after the age of 4 (22). Due to technical issues, the online survey occasionally refused to play a fragment. This means that some sentences only have 13 judgments.

Results of the proficiency tests was very high for the genders of French and Standard Dutch. Only one participant made one mistake in the Standard Dutch genders. These high scores can be attributed to the early acquisition of both languages of suitable participants. Only 7 out of the 14 participants showed to be proficient in the three way gender system of Brabant Dutch.

Attitudes towards code switching ranged from neutral to positive, with the exception of two participants who had a very negative attitude towards code switching. As was discussed in section 2.2.1, the correlation between these factors can differ for every community. A non-parametric test showed no significant correlation between either reported use and mean scores nor between attitudes towards code switching and mean scores.

Some general results and tendencies will be discussed first, before the results are broken down per sentence type. The three possible judgments were converted to a score of “0” for unacceptable, a score of “1” for neither acceptable, nor unacceptable and a score of “2” for acceptable sentences. The overall mean score was quite low at 0.73. Mean scores per participant ranged from 0.13 to 1.19. The lowest score for a sentence was 0,07 while the highest score was 1.64.

No significant difference was found in the mean rating of sentences with Dutch as the Matrix Languages compared to sentences with French as the ML. The means scores per type were as follows.

[1] It has been used both successfully (English-Welsh: Parafita Couto et al. forthcoming) and unsuccessfully (Basque-Spanish: Parafita Couto et al. 2014) in different communities.

(72)

Type I:	0.95
Type II:	0.71
Type III:	0.63

This is a significant difference between type I and II and type I and III, but no significant difference between type II and III.

5.2.1 Type I

Sentences of this type were included to control for gender assignment in code switches. The MLF makes no strong predictions concerning gender assignment, so this section will focus on the Minimalist predictions.

The proficiency test and interaction with the participants showed that only 7 of the 14 participants had active command of the three-way gender system of Brabant Dutch. The seven that did not were proficient in a two way gender system such as the one of Standard Dutch.

If the gender features of Standard Dutch are represented as common and neuter, all of the sentences of type I are expected to be judged ungrammatical by half of the participants. Since all nouns in these sentences were paired with a determiner in a different language, and consequently with different features, a feature mismatch should lead to derivation crash. However, as was shown in (72), the sentences of type I received the highest mean scores. Hence this scenario does not seem likely.

A possible account is that the "common" gender feature is comprised out of "feminine" and "masculine" features, but that these have lost all differentiation in agreement. In other words, there is no overt masculine-feminine gender distinction, but a covert one, which becomes apparent in code switched speech.

Another possibility is that the agreement process is not as strict and feature mismatching is allowed in some conditions, for example language mismatch. It is possible that there is no one-to-one correspondence to features in different languages. In this case, the feature "gender" of French and the feature "gender" of Dutch are different. Consequently – whatever their valuation – the gender features on a Dutch article and a French noun (or vice versa) will never result in a true mismatch, only a non-match. In this scenario, however, one would expect that 'anything goes' which does not seem to be the case, as not all sentences were rated grammatical.

If the gender features still play a role, the question remains whether the analogue gender feature or the gender feature of the noun is the better predictor for determiner agreement. The differences in means are shown in table 3.

Though this table shows that neither one produces a statistically significant difference in mean rating, the gender feature on the noun is closer towards statistical significance. Possibly a bigger sample size will result in a significant result for this condition.

feature on determiner	gender feature on the noun match	gender feature on the noun mismatch	analogue gender feature match	analogue gender feature mismatch
number	10	14	8	16
mean rating	1.06	0.87	1	0.92
		p = 0.16		p = 0.62

Table 3: Predictor of gender assignment in code switched nouns

5.2.2 Type II

The sentences of Type II are the focus of this study, since they also contain an adjective. For the 48 presented conditions, the MLF and MP make the same prediction in more than three quarters (34) of the cases. They make a different predictions for 14 of the conditions.

As can be seen in table 4 there was no statistically significant difference in mean rating for the predictions of the MLF. The predictions of the MP however do result in a significant difference in mean rating.

	MLF predictions grammatical	MLF predictions ungrammatical	MP predictions grammatical	MP predictions ungrammatical
number	24	72	20	76
mean rating	0.69	0.72	0.91	0.66
		p = 0.75		p = 0.02

Table 4: Mean ratings compared to MLF and MP predictions: overall

These overall results can be split up in cases where the two models make the same predictions, and cases where they make different predictions. The result is shown in table 5. As it shows, when both models make the same predictions, there is a significant difference in mean rating.

The cases where the MP and the MLF make a different prediction, the difference in mean rating is significant for both models. This is logical, since they make opposite predictions and the results are mirrored. It is the Minimalist Program is the one that makes the predictions in the correct direction.

The two previous tables indicate that the MP is the better predictor of grammaticality. The results can also be split up into their different components, agreement and word order. When this is done, the significance disappear. In table 6 it is shown that neither framework is the better predictor for word order.

Table 7 shows that the MP is no good predictor for agreement either, but the MLF is actually a reverse predictor. The sentences predicted to be rated ungram-

	MLF & MP		MLF predictions		MP predictions	
	gramm	ungramm	gramm	ungramm	gramm	ungramm
number	8	60	16	12	12	16
mean rating	0.94	0.67	0.56	0.88	0.88	0.56
		p = 0.03		p = 0.03		p = 0.03

Table 5: Mean ratings compared to MLF and MP predictions: split

	MLF predictions		MP predictions	
	grammatical	ungrammatical	grammatical	ungrammatical
number	48	48	48	48
mean rating	0.75	0.67	0.76	0.66
		p = 0.21		p = 0.19

Table 6: Comparison of mean ratings based on word order

matical by the MLF, when only considering word order are rated significantly better than sentences predicted to be grammatical.

	MLF predictions		MP predictions	
	grammatical	ungrammatical	grammatical	ungrammatical
number	48	48	40	56
mean rating	0.60	0.83	0.76	0.68
		p = 0.002		p = 0.31

Table 7: Comparison of mean ratings based on agreement

It is only when these two factors are taken together that the MP shows to have the better predictions. Since the word order and agreement factors could not (and were not) presented separately, this is perhaps not surprising.

The results of this tests were also compared to the findings of Treffers-Daller (1993). This is the only other study on adjectives in Dutch-French code switching. Her two main findings which were discussed in section 3.4.3 are summarised in (73).

(73) a. It is more common for Dutch adjectives to be embedded in a French sentence than vice versa.
b. When French adjectives are embedded in a Dutch sentence, they tend to remain uninflected.

The data of this task show support for neither of these two findings. There is no statistically significant difference in mean rating of sentences with a Dutch Matrix Language and a French adjective and French ML sentences with a Dutch adjective. Moreover, there was no significant preference for Dutch adjectives to remain uninflected when embedded in a French ML sentence.

5.2.3 Type III

Each of the conditions of this type of sentences was presented five times. The results are shown per condition in the table below.

conditions					0	1	2	mean score
1.	*S*	*faire*	**content V**	O	51	12	4	0.3
2.	*S*	*faire*	O	**content V**	53	11	6	0.33
3.	*S*	*aller*	**content V**	O	27	16	27	1.00
4.	*S*	*aller*	O	**content V**	24	23	22	0.97
5.	**S**	**doen**	*content V*	O	47	7	16	0.57
6.	**S**	**doen**	O	*content V*	55	12	2	0.23
7.	**S**	**gaan**	*content V*	O	29	16	24	0.93
8.	**S**	**gaan**	O	*content V*	35	17	18	0.76

Table 8: Scores for the conditions

It is immediately noticeable that the sentences with ‘to go’ as an auxiliary receive much better scores than sentences with ‘to do’ as an auxiliary. When the auxiliary is the Dutch verb **doen**, the mean rating (0.40) is higher then when the auxiliary is the French *faire* (mean rating = 0.31). However, this difference is not statistically significant with a p value of 0.303.

The difference in mean scores for sentences with an auxiliary of time (**gaan** and *aller*) is not statistically significant, with a p of 0.107. The different word order of the embedded clause also does not result in a significant difference of mean rating.

When the auxiliary is the possible light verb ‘to do’ the word order in the embedded clause does not cause a significant difference in result when the light verb is French (p = 0.77). When the light verb is the Dutch **doen** the word order [S little *v* V O] is rated significantly higher than the [S little *v* O V] order (p = 0.06). The preferred order is the order of French, suggesting that the content verb determines word order, rather than the light verb. This is in contradiction with the predictions of González-Vilbazo and López (2011), which claims the light verb determines the word order of the embedded sentence.

Chapter 6

Discussion and suggestion for further research

The results in table 4 seem to indicate a clear win for the Minimalist Program when it comes to predictions of the agreement and word order of the adjective. Both for the sentences where the MP and MLF have the same predictions as the sentences where the MP predicts the opposite of the MLF the sentences predicted to be grammatical by the MP had a statistically significant higher mean rating.

Additionally, the results of the type III sentences suggest that there is no little *v* construction in Dutch-French code switching. This contradicts the predictions of González-Vilbazo et al. (2012) and provides counter-evidence for BVCs as a universal of code switching as per Edwards and Gardner-Chloros (2007). Yet, these results are only the first step in the direction of investigating this issue for Dutch-French code switching and further research may consolidate or refute these findings.

Though both frameworks predict rather black and white acceptability of code switched sentences, the results are more in shades of greys. These findings tie into a wider debate on the nature of code switching data. Kootstra (forthcoming) highlights a debate between absolute and probabilistic constraints on code switching. Probabilistic constraints are graded, sensitive to context and allow for the interaction with other constraints related to language processing.

The notion of probabilistic constraints is a challenge for both the models under investigation in this thesis. Neither are equipped to deal with non-polar judgments of code switched sentences. Sanoudaki and Thierry (2014) showed that Welsh-English bilinguals had their Welsh syntax activated, even when they processed monolingual English sentences in an all English context. This result may be an indication that bilinguals can have a more flexible attitude towards grammaticality of conflict sites. Evidence of this type invites these two models to rethink their stark predictions and develop a model which can account for this variance.

The non-polar grammaticality judgment-data found in this study also reflect the findings researchers have found in other bilingual communities. Parafita Couto

et al. (forthcoming) investigated word order in English-Welsh adjective-noun sequences and for example found similar low grammaticality judgments. Interestingly, their data point towards relative superiority Matrix Language Framework, while this study implicates the Minimalist Program to be a better predictor.

Though there was no statistical correlation found between language attitudes and the grammaticality judgments, the mean scores were very low. This suggests that even individuals with positive attitudes towards code switching may have a bias towards rejecting code switched speech. If such a bias indeed exists in this community, it may be the case that the grammaticality judgment task in this form – at least for this community – is not the ideal way to investigate code switch speech.

However, this also implies that different communities may have different ideal methodologies and grammaticality judgments may prove useful in others. This is indeed what has been argued in the literature. González-Vilbazo and López (2011), for example, advocate that grammaticality judgments are useful tools to investigate code switching in the German-Spanish community they studied.

If the participants were interested, I would talk to them about what they thought of the judgment task, whether they found it difficult, etc. These conversations brought up some interesting factors to take into consideration. For some sentences, they attributed the rejection to the semantic content, though efforts were made to have the sentence be a natural as possible.

Furthermore, some participants attributed their low acceptance rate to the intonation or pronunciation of some sentences. It is recognised that prosody can influence code switching (González-Vilbazo et al. 2012, MacSwan 1999, González-Vilbazo 2005). These participant remarks provide additional evidence for the influence of prosody and advocate for a strict monitoring of prosodic cues when designing aural stimuli.

To sum up, these post-interviews suggest participants may have rated a sentence ungrammatical for other reasons than the ones under investigation in this thesis. This could be countered by asking participants to choose between two alternatives, as shown in (74). If participants are forced to judge only one dimension, it will be clear *why* the participants chose one alternative over the other. This may result in clearer data.

(74) a. **Ik koop** *la maison* **witte**
I buy the house white
b. **Ik koop** *la* **witte** *maison*
I buy the white house

More traditional fieldwork methods could also provide useful. One on one interviews with a couple of invested informants have proven a valuable resource for the compilation of syntactic/morphological/phonological atlases. If informants can be found with suitable attitudes, this type of research may also provide more nuanced

results than a study of the type conducted for this thesis. Especially the possibility for a dialogue about the issues under investigation, will give a more representative image of the factors influencing the acceptability of code switched sentences.

Another alternative approach would be to eschew grammaticality judgment tasks altogether. Sometimes participants have difficulty providing judgments to sentences that are prescriptively bad. This issue can be circumvented by taking a more subconscious route. Psycho- and neurolinguistic approaches have gained popularity in code switching and bilingualism research. These type of studies unearth subconscious reactions to stimuli and provide a different point of view to the issue.

This line of inquiry has indeed been followed up. After Parafita Couto et al. (forthcoming) found the data of their English-Welsh study based on corpus data, elicitation data and grammaticality judgments to be unsatisfactory, they followed up with a neurolinguistic ERP study (Parafita Couto, Boutonnet, Hoshino, Davies, Deuchar, and Thierry under review). This follow-up study confirms their tentative results towards superiority of the MLF, implying that at first sight unconvincing results may prove robust when combining different methodologies.

Chapter 7

Conclusion

This thesis explored the behaviour of adjectives in code switched speech with regards to word order and agreement. It investigated the predictions of two theoretical frameworks – the Minimalist Program and the Matrix Language Framework – and compared these to data gathered in an elicitation task and a grammaticality judgment task. The findings of this thesis argue for an integration of different methodologies.

The results from the grammaticality judgment task indicated that the Minimalist Program is a better predictor for word order and agreement of the adjective in Dutch-French code switching. Mean ratings of the grammaticality judgments were quite low, and not uniform. Especially this non-uniformity may imply that an absolute approach to the grammaticality of conflict sites is not on the right track. Both the MP and MLF predict black and white results, a prediction which is not borne out. Dealing with variability remains a challenge for current syntactic theory.

The data from the grammaticality judgment task were also compared with the findings related to adjectives of Treffers-Daller (1993), who compiled a Dutch-French code switching corpus. The gaps in Treffers-Daller's corpus did not correspond to lower grammaticality judgments. This highlights the importance of an integration of data from both naturalistic and experimental settings.

An additional issue neither model can account for is that for English-Welsh bilingual participants, results of similar tasks and further neurolinguistic experiments were in favour of the MLF (Parafita Couto et al. under review). The observation that the MP and MLF seem to preform differently according to the community is not expected. What may play a role in these different findings is that the English-Welsh study did not look at adjectival agreement. A study which separates the influence of word order and agreement on grammaticality judgments Dutch-French community may clarify how the predictions of the different frameworks relate to these components.

The elicitation task has shown once again that code switching behaviour is influenced by a myriad of factors. The elicitation experiment did not find that partici-

pants code switched freely. This is possibly due to the presence of the investigator, who was not a code switcher and it was clear that her native language was Dutch. Additionally all the paperwork – including the recruitment poster – bore the logo of a Dutch university. It is advisable that researches wishing to conduct this experiment in the future carefully consider how participants are approached and what context is given for the experiment. Furthermore, it is recommended that a code switcher with excellent competence in both languages conduct the elicitation experiment.

Because this is the first study looking at adjective-noun word order in Dutch-French code switching, and the first to look at adjectival agreement in code switching in general, these results in favour of the Minimalist Program can only be seen as tentative. It has been argued that only an integration of corpus and naturalistic data, grammaticality judgments and neurolinguistic evidence can give a complete picture of code switching data (Gullberg et al. 2009, Parafita Couto et al. under review). Since the evidence in this study has been limited to grammaticality judgments, these results will only gain a definitive nature when they are replicated using other methodologies.

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Appendix A

Participant recruitment poster

Gezocht: Personnes bilingues

Universiteit Leiden

Spreek jij wel eens un mélange de deux langues? Alors je suis à ta recherche!

Voor een onderzoek ben ik op zoek naar **tweetaligen (Frans-Nederlands)** die regelmatig wisselen tussen deze twee talen.

Ben jij opgevoed in twee talen et as-tu envie de participer à une éxperience chouette?

Contacte moi!

emmavandenwyngaerd@gmail.com

Mercikes

Appendix B

Proficiency tests

Standard Dutch and French Gender

Welk lidwoord is juist?

	de	het
ring		
zetel		
schoen		
plaat		
auto		
fles		
rivier		
glas		
zwembad		
werk		

Quel article est correct?

	le	la
parapluie		
silence		
jeu		
tissu		
odeur		
horloge		
place		
tête		
lampe		
tartine		

Brabant Dutch Gender

1. Wat klinkt het best?
   a. ne schuif
   b. een schuif

2. Wat klinkt het best?
   a. ne vogel
   b. een vogel

3. Wat klinkt het best?
   a. nen doos
   b. een doos

4. Wat klinkt het best?
   a. nen dag
   b. een ding

5. Wat klinkt het best?
   a. nen doos
   b. een doos

Appendix C

Background questionnaires

Questionnaire

Participant n° .....

Nous serions reconnaissent si vous pourrait nous fournir avec le fond suivant pour nous aider avec notre recherche.

1. Vous êtes: Homme ☐ Femme ☐ ? **2.** Age:……..

3. Qu'est ce que c'est votre occupation (où si vous êtes retraité/au chômage, qu'est ce qu'était votre dernière occupation)?

.....

4. Indiquez où vous avez habité pendant un période substantif et quand vous avez habité là:

ex.: Place: *Jette, Bruxelles* Dates: *1975-93*
Place: *Wavre, Brabant walon* Dates: *1993-99*
Place: *Melbourne, Australie* Dates: *1999-2002*
Place: *Etterbeek, Bruxelles* Dates: *2002-05*

Place: …… Dates: ……

Place: …… Dates: ……

Place: …… Dates: ……

Place: …… Dates: ……

Place: …… Dates: ……

Place:…… Dates: ……

5. Qu'est que c'est le niveau d'éducation le plus haut que vous avez complété?
☐ L'enseignement secondaire inférieur
☐ L'enseignement secondaire supérieur
☐ Diplôme de Bachelor: professionnelle où académique; Diplôme d'haute école
☐ Diplôme de Master, doctorat
☐ Aucune de ces réponses

6. Depuis quand parlez vous Français?
☐ Depuis j'avais 2 ans où plus jeune
☐ Depuis j'avais 4 ans où plus jeune
☐ Depuis l'école primaire
☐ Depuis l'école secondaire
☐ J'appris le Français comme adulte

7. Depuis quand parlez vous Néerlandais?
☐ Depuis j'avais 2 ans où plus jeune
☐ Depuis j'avais 4 ans où plus jeune
☐ Depuis l'école primaire
☐ Depuis l'école secondaire
☐ J'appris le Néerlandais comme adulte

8. Sur une échelle de 1 à 4, vous parlez le Français comment?
☐ **1** Je connais que quelques mots et expressions
☐ **2** Je suis confiant dans des conversations de niveau de base
☐ **3** Je suis plus où moins confiant dans de conversations de niveau haut
☐ **4** Je suis confiant dans de conversations de niveau haut

9. Sur une échelle de 1 à 4, vous parlez le Néerlandais comment?
☐ **1** Je connais que quelques mots et expressions
☐ **2** Je suis confiant dans des conversations de niveau de base
☐ **3** Je suis plus où moins confiant dans de conversations de niveau haut
☐ **4** Je suis confiant dans de conversations de niveau haut

10. Quelle langue vous parliez avec vôtre mère (si applicable)?
☐ Français
☐ Néerlandais
☐ Français & Néerlandais
☐ Autre (Spécifier s.v.p.).……
☐ Pas applicable

11. Quelle langue vous parliez avec vôtre père (si applicable)?
☐ Français
☐ Néerlandais
☐ Français & Néerlandais
☐ Autre (Spécifier s.v.p.).……
☐ Pas applicable

12. Quelle langue vous parliez avec un autre gardien où soignant (si applicable)?
☐ Français
☐ Néerlandais
☐ Français & Néerlandais
☐ Autre (Spécifier s.v.p.).……
☐ Pas applicable

13. Dans quelle langue vous étiez instruit principalement à l'école primaire?

☐ Français
☐ Néerlandais
☐ Français & Néerlandais
☐ Autre (Spécifier s.v.p.).……

14. Dans quelle langue vous étiez instruit principalement à l'école secondaire?

☐ Français
☐ Néerlandais
☐ Français & Néerlandais
☐ Autre (Spécifier s.v.p.).……

15. Dans la tabelle au-dessous, faites une liste des cinq personnes que vous en parlez le plus. Ça peut être en personne où par téléphone. Notez quelle langue vous parlez principalement avec cette personne.

Noms de la personne où de la relation	Lanue parlez principalement avec la personne: (Placez un crochet dans une cellule par règle)			
	Français	Néerlandais	Français & Néerlandais également	Une autre langue
1. *Sophie*	✓			
2. *Mère*		✓		
3. *Chef*			✓	
4. *Jan*				✓
5. *Sœur*		✓		

Remplissez la tabelle au-dessous

Noms de la personne où de la relation (utilisez des noms fictives si vous le préféré)	**Lanue parlez principalement avec la personne: (Placez un crochet dans une cellule par règle)**			
	Français	**Néerlandais**	**Français & Néerlandais également**	**Une autre langue**
1.				
2.				
3.				
4.				
5.				

16. Comment jugiez vous le Français sur un échelle de 1 à 5 sur les caractéristiques suivantes? Cerclez un nombre par règle.

démodé	1	2	3	4	5	moderne
pas amicale	1	2	3	4	5	amicale
pas influent	1	2	3	4	5	influent
pas inspirant	1	2	3	4	5	inspirant
inutile	1	2	3	4	5	utile
laid	1	2	3	4	5	joli

17. Comment jugiez vous le Néerlandais sur un échelle de 1 à 5 sur les caractéristiques suivantes? Cerclez un nombre par règle.

démodé	1	2	3	4	5	moderne
pas amicale	1	2	3	4	5	amicale
pas influent	1	2	3	4	5	influent
pas inspirant	1	2	3	4	5	inspirant
inutile	1	2	3	4	5	utile
laid	1	2	3	4	5	joli

18. Vous voyez vous même principalement comme **……?**

☐ Wallon(ne)
☐ Flamand(e)
☐ Bruxellois(e)
☐ Néerlandophone
☐ Francophone
☐ Bilingue
☐ Belge
☐ Autre (Spécifier s.v.p.):……

19. Dans quelle mesure vous êtes d'accord avec la déclaration suivante:
"Dans la vie quotidienne je sépare le Français et le Néerlandais aussi bien que possible."

☐ **1** Complètement pas d'accord
☐ **2** Pas d'accord
☐ **3** Ni d'accord, ni pas d'accord
☐ **4** D'accord
☐ **5** Complètement d'accord

20. Dans quelle mesure vous êtes d'accord avec la déclaration suivante:
"On doit éviter de mélanger le Français et le Néerlandais dans la même conversation."

☐ **1** Complètement pas d'accord
☐ **2** Pas d'accord
☐ **3** Ni d'accord, ni pas d'accord
☐ **4** D'accord
☐ **5** Complètement d'accord

Merci beaucoup pour votre temps et coopération.

Vragenlijst

Deelnemer n° .....

We zouden dankbaar zijn als u ons de volgende achtergrondinformatie kon geven om ons te helpen bij ons onderzoek.

1. Bent u een: Man ☐ Vrouw ☐ ? **2.** Leeftijd:……..

3. Wat is uw huidige beroep (of als u op pensioen bent/werkloos bent, wat was uw laatste beroep voordat u op pensioen ging/werkloos werd)?

.....

4. Geef alstublieft aan waar u langdurig gewoond heeft tijdens u leven en wanneer u hier woonde:

vb.: Plaats: *Jette, Brussel* Datums: *1975-93*
Plaats: *Dilbeek, Vlaams Brabant* Datums: *1993-99*
Plaats: *Melbourne, Australië* Datums: *1999-2002*
Plaats: *Etterbeek, Brussel* Datums: *2002-05*

Plaats: …… Datums: ……

Plaats: …… Datums: ……

Plaats: …… Datums: ……

Plaats: …… Datums: ……

Plaats: …… Datums: ……

Plaats:…… Datums: ……

5. What is het hoogste niveau van onderwijs dat u afgewerkt heeft?
☐ Lager middelbaar onderwijs
☐ Hoger middelbaar onderwijs
☐ Bachelordipoma: professioneel of academisch, hogeschool diploma
☐ Masterdiploma, doctoraat
☐ Geen van bovenstaande

6. Sinds wanneer bent u in staat Nederlands te spreken?
☐ Sinds ik 2 jaar was of jonger
☐ Sinds ik 4 jaar was of jonger
☐ Sinds de lagere school
☐ Sinds de middelbare school
☐ Ik leerde Nederlands als volwassene

7. Sinds wanneer bent u in staat Frans te spreken?
☐ Sinds ik 2 jaar was of jonger
☐ Sinds ik 4 jaar was of jonger
☐ Sinds de lagere school
☐ Sinds de middelbare school
☐ Ik leerde Frans als volwassene

8. Hoe goed spreekt u Nederlands, op een schaal van 1 tot 4?
☐ **1** Ik ken slechts enkele woorden en uitdrukkingen
☐ **2** Zelfzeker in een conversatie op basisniveau
☐ **3** Vrij zelfzeker in uitgebreide conversaties
☐ **4** Zelfzeker in uitgebreide conversaties

9. Hoe goed spreekt u Frans, op een schaal van 1 tot 4?
☐ **1** Ik ken slechts enkele woorden en uitdrukkingen
☐ **2** Zelfzeker in een conversatie op basisniveau
☐ **3** Vrij zelfzeker in uitgebreide conversaties
☐ **4** Zelfzeker in uitgebreide conversaties

10. Welke taal sprak u met uw moeder toen u opgroeide (als van toepassing)?
☐ Nederlands
☐ Frans
☐ Nederlands & Frans
☐ Andere (Specifiëer a.u.b.)……
☐ Niet van toepassing

11. Welke taal sprak u met uw vader toen u opgroeide (als van toepassing)?
☐ Nederlands
☐ Frans
☐ Nederlands & Frans
☐ Andere (Specifiëer a.u.b.)……
☐ Niet van toepassing

12. Welke taal sprak u met een andere voogd of zorgverlener toen u opgroeide (als van toepassing)?

☐ Nederlands
☐ Frans
☐ Nederlands & Frans
☐ Andere (Specifiëer a.u.b.)……
☐ Niet van toepassing

13. In welke taal kreeg u hoofdzakelijk les in de lagere school?

☐ Nederlands
☐ Frans
☐ Nederlands & Frans
☐ Andere (Specifiëer a.u.b.)……

14. In welke taal kreeg u hoofdzakelijk les in de middelbare school?

☐ Nederlands
☐ Frans
☐ Nederlands & Frans
☐ Andere (Specifiëer a.u.b.)……

15. Maak in de tabel hieronder een lijst van de vijf mensen waarmee u het meest spreekt in uw dagelijks leven. Dit kan zowel in het echt zijn als via de telefoon. Noteer dan welke taal u vooral spreekt met deze personen, als aangegeven staat in de voorbeeldtabel.

Namen van de personen of relatie	Taal vooral gesproken met deze persoon: (Plaats een vinkje in één cel per regel)			
	Nederlands	Frans	Nederlands & Frans in gelijke mate	Een andere taal
1. *Sofie*	✓			
2. *Moeder*		✓		
3. *Baas*			✓	
4. *Jacques*				✓
5. *Zus*		✓		

Vul de tabel hieronder in

Namen van de persoon of de relatie (gebruik fictitieve namen als u dat verkiest)	Taal vooral gesproken met deze persoon: (Plaats een vinkje in één cel per regel)			
	Nederlands	Frans	Nederlands & Frans in gelijke mate	Een andere taal
1.				
2.				
3.				
4.				
5.				

16. Hoe zou u het Nederlands beoordelen op een schaal van 1 tot 5 met betrekking tot de volgende eigenschappen? Omcirkel op iedere regel één getal.

ouderwets	1	2	3	4	5	modern
onvriendelijk	1	2	3	4	5	vriendelijk
niet invloedrijk	1	2	3	4	5	invloedrijk
niet inspirerend	1	2	3	4	5	inspirerend
nutteloos	1	2	3	4	5	nuttig
lelijk	1	2	3	4	5	mooi

17. Hoe zou u het Frans beoordelen op een schaal van 1 tot 5 met betrekking tot de volgende eigenschappen? Omcirkel op iedere regel één getal.

ouderwets	1	2	3	4	5	modern
onvriendelijk	1	2	3	4	5	vriendelijk
niet invloedrijk	1	2	3	4	5	invloedrijk
niet inspirerend	1	2	3	4	5	inspirerend
nutteloos	1	2	3	4	5	nuttig
lelijk	1	2	3	4	5	mooi

18. U ziet zichzelf voornamelijk als **……?**

☐ Vlaams
☐ Waals
☐ Brussels
☐ Franstalig
☐ Nederlandstalig
☐ Tweetalig
☐ Belg
☐ Andere (Specifiëer a.u.b.):……

19. In hoeverre bent u het eens met de volgende bewering:
"In het dagelijks leven houd ik het Nederlands en het Frans zo vaak mogelijk apart."

☐ **1** Volledig oneens
☐ **2** Oneens
☐ **3** Noch eens, noch oneens
☐ **4** Eens
☐ **5** Volledig eens

20. In hoeverre bent u het eens met de volgende bewering:
"Men moet vermijden Nederlands en Frans te mengen in dezelfde conversatie."

☐ **1** Volledig oneens
☐ **2** Oneens
☐ **3** Noch eens, noch oneens
☐ **4** Eens
☐ **5** Volledig eens

Heel erg bedankt voor uw tijd en medewerking!

Appendix D

Participant consent forms

Deelenemer n^0 ...

Universiteit Leiden

Faculteit Geesteswetenschappen

Toestemmingsformulier

Naam onderzoeker: Emma Vanden Wyngaerd

De onderzoeker hierboven genoemd heeft mij voldoende ingelicht over het onderzoek waaraan ik vrijwillig meedoe. Ik begrijp dat ik op ieder moment het recht heb het experiment stop te zetten. Ik begrijp eveneens dat mijn recht op anonimiteit en vertrouwelijkheid zullen worden gerespecteerd.

- Ik stem in met de opname van deze conversatie en begrijp dat ik op ieder moment het opnametoestel mag stop zetten. Ik geef hierbij ook mijn toestemming voor het verspreiden van de opnames (zowel het geluid als de afschriften) op voorwaarde dat de namen van de sprekers en andere namen genoemd in de conversatie zullen vervangen worden door fictieve namen in het afschrift.

- Ik geef hierbij eveneens toestemming voor het gebruiken van alle informatie die ik verstrek aan de onderzoeker via vragenlijsten voor onderzoeks- of educatieve doeleinden onder strikte voorwaarde van het bewaren van mijn anonimiteit.

- Ik verstrek hierbij ook volledige toegang tot deze gegevens aan aan de ondezoekers op voorwaarde dat zij zich aan de relevande morele code houden. Ik begrijp ook dat ik, door het tekenen van dit toelatingsformulier, de bovengenoemde onderzoeker toestemming geef deze gegevens te presenteren als gedeelte van hun werk in schriftelijke of mondelinge vorm, zonder mijn bijkomende toestemming. Bij deze draag ik het auteursrecht van mijn bij-drage over aan de begeleider van de onderzoeker, Dr M. Carmen Parafita Couto.

- Ik sta toe / sta niet toe (schrappen wat niet pas) dat foto's en korte video-opnames zullen genomen worden van mij terwijl ik het experiment uitvoer.

- Ik sta toe / sta niet toe (schrappen wat niet past) dat ik in de toekomst gecontacteerd wordt voor andere onderzoeksprojecten.

Handtekening:

Datum: .. / .. /2014

Naam:
Adres:

Dit formulier wordt in duplicaat opgemaakt. Eén exemplaar wordt bijgehouden door de onderzoeker en één door de deelnemer.

Participant n^0 ...

Universiteit Leiden

Faculteit Geesteswetenschappen

Formulaire de consentement éclairé

Nom de l'enquêteur: Emma Vanden Wyngaerd

L'enquêteur m'a informé de manière satisfaisante à propos de l'expérience à laquelle je participe volontairement. Je comprends que je peux l'arrêter à tout moment et que mon droit à l'anonymat et à la confidentialité sera scrupuleusement respecté.

- Je suis d'accord avec l'enregistrement des conversations et je comprends que je peux arrêter l'appareil d'enregistrement à tout moment. Par la présente, j'autorise la distribution des enregistrements (aussi bien les informations sonores que les transcriptions), à condition que les noms des participants soient remplacés par des noms fictifs dans les transcriptions.

- Par la présente j'autorise l'enquêteur à utiliser toutes les informations que j'ai fournies dans les questionnaires pour des objectifs de recherche où d'enseignement (y compris des publications de recherche et/où des rapports) à condition que mon anonymat soit scrupuleusement respecté.

- J'autorise également l'enquêteur à exercer un droit d'accès complet à toutes ces données à condition qu'elle suive le code d'éthique approprié. Je comprends aussi qu'en signant ce document, j'autorise le chercheur à utiliser ces données comme une partie de son travail écrit ou oral sans me demander une autorisation supplémentaire.

- Je transmets le droit d'auteur au superviseur de cette recherche: Dr M. Carmen Parafita Couto.

- J'autorise/ je n'autorise pas (biffer la mention inutile) l'enquêteur à me filmer et me photographier pendant ma participation à l'expérience.

- J'autorise/ je n'autorise pas (biffer la mention inutile) l'enquêteur à me contacter pour d'autres recherches dans l'avenir.

Signature:

Date: .. / .. /2014

Nom:
Adresse:

Ce formulaire sera fait en deux exemplaires. Un exemplaire sera remis au participant et l'autre sera gardé par l'enquêteur.

Appendix E

Instruction Block

Hallo! Nog eens bedankt dat je deel wilt nemen aan dit onderzoek. *Dans la partie suivante du questionnaire* **krijg je 160 korte geluidsfragmenten te horen.** *Pour chaque fragment t'as l'option d'indiquer comment tu trouves la phrase. C'est important* **om eraan te denken dat het gaat om hoe er in je omgeving gesproken wordt,** *et pas comment "il faut faire".*

Is de zin acceptabel? Duid dan de ":)" aan. *La phrase est mauvaise? Indique le ":(". Si la phrase est ni bonne, ni mauvaise,* **duid dan ":|" aan.**

Donc:

- :) – **goeie zin**
- :| – ni **goed**, ni **slecht**
- :(– **slechte zin**

(**Het kan effe duren voor de fragmenten laden.** *Merci pour ta patience.*)

Appendix F

Noun Overview

	Gender in Dutch								
Gender in French	masculine			feminine			neuter		
masculine	**fiets**	*vélo*	'bike'	**muts**	*bonnet*	'hat'	**bed**	*lit*	'bed'
	neus	*nez*	'nose'	**knie**	*genou*	'knee'	**hart**	*coeur*	'hart'
	buik	*ventre*	'tummy'	**zon**	*soleil*	'sun'	**dak**	*toit*	'roof'
	rug	*dos*	'back'	**broek**	*pantalon*	'pants'	**brood**	*pain*	'bread'
	voet	*pied*	'foot'	**liefde**	*amour*	'love'	**land**	*pays*	'country'
	hoek	*coin*	'corner'	**huur**	*loyer*	'rent'	**vuur**	*feu*	'fire'
	boom	*arbre*	'tree'	**oefening**	*exercice*	'exercise	**woord**	*mot*	'word'
	vinger	*doigt*	'finger'	**spier**	*muscle*	'muscle'	**oog**	*œil*	'eye'
	arm	*bras*	'arm'	**schuif**	*tiroir*	'drawer'	**einde**	*fin*	'end'
	dag	*jour*	'day'	**haven**	*port*	'harbour'	**gat**	*trou*	'hole'
feminine	**appel**	*pomme*	'apple'	**straat**	*rue*	'street'	**huis**	*maison*	'house'
	stoel	*chaise*	'chair'	**tafel**	*table*	'table'	**raam**	*fenêtre*	'window'
	mond	*bouche*	'mouth'	**hand**	*main*	'hand'	**oor**	*oreille*	'ear'
	tand	*dent*	'tooth'	**maan**	*lune*	'moon'	**vel**	*peau*	'skin'
	baard	*barbe*	'beard'	**ster**	*étoile*	'star'	**been**	*jambe*	'leg'
	steen	*pierre*	'stone'	**keuken**	*cuisine*	'kitchen'	**feest**	*fête*	'party'
	nacht	*nuit*	'night'	**bloem**	*fleur*	'flower'	**wiel**	*roue*	'weel'
	sleutel	*clé*	'key'	**deur**	*porte*	'door'	**bos**	*forêt*	'woods'
	rok	*jupe*	'skirt'	**doos**	*boîte*	'box'	**uur**	*heure*	'hour'
	sjaal	*écharpe*	'scarf'	**jurk**	*robe*	'dress'	**graf**	*tombe*	'grave'

Appendix G

List of the sentences

Type I

n^0	sentence	mean rating
1	**Ik ontsteek de** *feu*.	1.357
	'I light the fire.'	
2	**Wij verlaten het** *pays*.	.429
	'We're leaving the country.'	
3	**Hij repareerde de** *roue*.	1.357
	'He fixed the wheel.'	
4	**Hebt gij het** *heure*?	1.071
	'Do you have the time?'	
5	**Jantje aaide de** *ventre*.	1.143
	'John pet the belly.'	
6	**Ik kuste het** *doigt*.	.143
	'I kissed the finger'.	
7	**Vampieren verkiezen de** *nuit*.	1.071
	'Vampires prefer the night.'	
8	**De tandarts trok het** *dent*.	.643
	'The dentist pulled the tooth.'	
9	**Ik stootte de** *genou*.	1.357
	'I bumped my knee.'	
10	Van Gogh **schilderde het** *port*.	.714
	'Van Gogh painted the harbour.'	
11	**Wij zien de** *lune*.	1.143
	We see the moon.'	
12	**De loodgieter installeerde het** *cuisine*.	.643
	'The plumber installed the kitchen.'	
13	*La voiture manque un* **wiel**.	1.071
	'The car is missing a wheel.'	
14	*Ça prendra une* **uur**.	.929
	'That will take one hour.'	
15	*Tu vois un* **vuur**?	.857

n^0	sentence	mean rating
	'Do you see the fire?'	
16	Colombus *découvrait une* **land**.	.500
	'Columbus discovered a country.'	
17	*Il a perdu un* **tand**.	.643
	'He lost a tooth.'	
18	*J'ai réservé une* **nacht**.	1.143
	'I booked one night.'	
19	*Le docteur examinait un* **buik**.	1.143
	'The doctor examined a belly.'	
20	*J'ai dessiné une* **vinger**.	1.071
	'I drew a finger.'	
21	*La maison a un* **keuken**.	1.357
	'The house has a kitchen.'	
22	*La terre a une* **maan**.	.857
	'The earth has a moon.'	
23	*Anvers et Rotterdam ont un* **haven**.	1.571
	'Antwerp and Rotterdam possess a harbour.'	
24	*Il a cassé une* **knie**.	.571
	'He broke a knee.'	

Type II

n^0	sentence	MLF	MP	mean rating
25	**Hij kreeg de fiets** *lent*.	X	✓	.571
	'He received a slow bike.'			
26	Jef **breekt de** *gros* **neus**.	X	X	.857
	'Jef breaks the big nose.'			
27	Anna **brak de voet** *droite*.	X	X	.714
	'Anna broke het right foot.'			
28	**Dàt is de** *dangereuse* **hoek**.	X	X	1.571
	'That's the dangerous corner.'			
29	**Toen viel de boom** *ancien*.	X	✓	.571
	'Then the old tree fell.'			
30	**Ze bezeerde de** *droit* **arm**.	X	X	.143
	'She hurt her right arm.'			
31	**We overleefden de dag** *longue*.	X	X	.643
	'We survived the long day.'			
32	**De kinesist masseert de** *droite* **rug**.	X	X	.714
	'The physiotherapist massaged the straight back.'			
33	**Jullie kopen de appel** *vert*.	X	✓	.500
	'You are buying the green appel.'			
34	**Sam ontworp de** *fameux* **stoel**.	X	X	.929
	Sam designed the famous chair.'			
35	**Max kuste de mond** *douce*.	X	X	.643
	'Max kissed the mouth softly.'			

n^0	sentence	MLF	MP	mean rating
36	**Antoine scheert de** *brune* **baard**.	X	X	.714
	'Antoine shaves the brown beard.'			
37	**Ik versierde de steen** *gris*.	X	✓	.571
	'I decorated the grey stone.'			
38	**Die vakman maakte de** *élégant* **sleutel**.	X	X	.786
	'That craftsmen made the elegant key.'			
39	**Linnea wil de rok** *courte*.	X	X	.786
	'Linnea wants the short skirt.'			
40	**Ik heb de** *chaude* **sjaal**.	X	X	.429
	'I have the warm scarf.'			
41	**Sharapova scheurde de spier** *fort*.	X	X	.714
	'Sharapova ripped the strong muscle.'			
42	**Ik wil de** *mignon* **muts**.	X	X	1.000
	'I want the cute hat.'			
43	**Ze voorspelden de zon** *brillante*.	X	✓	1.643
	'They predicted the burning sun.'			
44	**Het geld ligt in de** *secrète* **schuif**.	X	X	1.000
	'The money is in the secret drawer.'			
45	**Ik kreeg de broek** *blanc*.	X	X	.929
	'I received the white pants.'			
46	**Annemie is de** *nouveau* **liefde**.	X	X	.429
	'Annemie is the new love.'			
47	**Ik betaal de huur** *dernière*.	X	✓	.214
	'I pay the last rent.'			
48	**We doen de** *lourde* **oefening**.	X	X	1.071
	'We do the difficult exercise.'			
49	*Nous prendrons* **de straat** *étroit*.	✓	X	.500
	'We take the narrow street.'			
50	*Jean a cassé de boiteux* **tafel**.	X	X	.429
	'Jean broke the wobbly table.'			
51	*Adam serre* **de hand** *douce*.	✓	✓	.357
	'Adam shakes the soft hand.'			
52	*Nous rencontrons* **de** *Américaine* **ster**.	X	X	.643
	'We will meet the American star.'			
53	*Amélie reçoit* **de bloem** *odorant*.	✓	X	.571
	'Amélie receives a fregrant flower'			
54	*Il ferme* **de** *ouvert* **deur**.	X	X	.214
	'He closes the open door.'			
55	*J'ouvre* **de doos** *verte*.	✓	✓	.786
	'I open the green box.'			
56	*Elle créait de laide* **jurk**.	X	X	.143
	'She created the ugly dress.'			
57	*François fait* **het bed** *douillet*.	✓	X	.214
	'François makes the bed cosy.'			
58	*Les pilules aideront* **het** *fort* **hart**.	X	X	.000

n^0	**sentence**	**MLF**	**MP**	**mean rating**
	'The pills will help the strong hart.'			
59	*L'architecte dessianait* **het dak** *particulière*.	✓	X	.500
	'The architect draws the peculiar roof.'			
60	*J'achète* **het** *fraiche* **brood**.	X	X	.500
	'I buy the fresh loaf of bread.'			
61	*Tu voyais* **het oog** *brun*.	✓	X	.429
	'You saw the eye.'			
62	*Je connais* **het** *long* **woord**.	X	X	.571
	'I know the long word.'			
63	*Je trouvais* **het einde** *conne*.	✓	X	.571
	'I found the stupid ending.'			
64	*Elles creusaient* **het** *profonde* **gat**.	X	X	1.143
	'They dug the deep hole.'			
65	*Nous achetaient* **het huis** *blanc*.	✓	X	.357
	'We bought the white house.'			
66	*Il ferme* **het** *ouvert* **raam**.	X	X	.214
	'They close the open window.'			
67	*Le docteur guérrit* **het oor** *sourde*.	✓	X	.643
	'The doctor cures the deaf ear.'			
68	*Je coupe* **het** *fine* **vel**.	X	X	.714
	'I cut the fine skin.'			
69	*Marie organisait* **het feest** *fou*.	✓	X	.357
	'Marie organises the crazy party.'			
70	*Vouz avez trouvez* **het** *particulier* **bos**.	X	X	.500
	'You have found the peculiar forrest.'			
71	Vic *a nettoyé* **het graf** *ancienne*.	✓	X	.571
	'Vic cleaned the old grave.'			
72	Bruno *étendait* **het** *courte* **been**.	X	X	.786
	'Bruno straightened the short leg.'			
73	**Hij wil** *un vélo* snelle.	X	X	.357
	'He wants a fast bike.'			
74	Ben **heeft** *un* **dikke** *nez*.	✓	✓	1.214
	'Ben has a large nose.'			
75	**Gij hebt** *un dos* **recht**.	X	X	.643
	'You have a straight back.'			
76	**Emma heeft** *un* **vies** *pied*.	✓	X	.643
	'Emma has a dirty foot.'			
77	**Dat is** *un coin* **gevaarlijke**.	X	X	.214
	'That's a dangerous corner.'			
78	**In de tuin staat** *un* **oude** *arbre*.	✓	✓	.929
	'In the garden there is an old tree.'			
79	**Ze heeft** *un bras* **slank**.	X	X	.929
	'She has a slim arm.'			
80	**Vandaag wordt** *un* **lang** *jour*.	✓	X	.429
	'Today will be a long day.'			

n^0	sentence	MLF	MP	mean rating
81	**Oma haakte** *un bonnet* **schattige**.	X	X	.500
	'Grandma crocheted a cute hat.'			
82	**Ze voorspellen** *un* **felle** *soleil*.	✓	✓	1.071
	'They predict a bright sun.'			
83	**Ik zoek** *un pantalon* **wit**.	X	X	.857
	'I am looking for white pants.'			
84	Odette **vond** *un* **nieuw** *amour*.	✓	X	1.071
	'Odette found a new love.'			
85	**Dat appartement heeft** *un loyer* **hoge**.	X	X	.429
	'The rent for that appartment is expensive.'			
86	**De leerlingen doen** *un* **zware** *exercice*	✓	✓	1.500
	'The pupils do a difficult excercice.'			
87	**Het hart is** *un muscle* **sterk**.	X	X	.357
	'The heart is a strong muscle.'			
88	**Dat bureau heeft** *un* **geheim** *tiroir*.	✓	X	1.429
	'That desk has a secret drawer.'			
89	**Ik wil** *un lit* **zachte**.	X	X	.643
	'I want a soft bed.'			
90	**Opa heeft** *un* **sterke** *cœur*.	✓	✓	1.000
	'Grandpa has a strong heart.'			
91	**Het huis heeft** *un toit* **steil**.	X	X	.429
	'The house has a steep roof.'			
92	**Ik bak** *un* **vers** *pain*.	✓	X	.357
	'I'm baking a fresh loaf of bread.'			
93	**Ik teken** *un œuil* **bruine**.	X	X	.571
	'I'm drawing a brown eye.'			
94	**Ik schrijf** *un* **lange** *mot*.	✓	✓	.857
	'I'm writing a long word.'			
95	**Da verhaal heeft** *un fin* **stom**.	X	X	.429
	'That story has a stupid ending'.			
96	**Ze groeven** *un* **diep** *trou*.	✓	X	.286
	'They dug a deep hole.'			
97	*L'enfant mange une pomme* **groene**.	X	X	.500
	'The child eats a green apple.'			
98	*Nous trouvions une* **bekende** *chaise*.	X	✓	.643
	'We found a famous chair.'			
99	*Blanche-neige avait une bouche* **zacht**.	X	X	1.214
	'Snow-White had a soft mouth.'			
100	*Grand-papa a une* **bruin** *barbe*.	X	X	.643
	'Grandpa has a brown beard.'			
101	Simon *trouvait une pierre* **grijze**.	X	X	.571
	'Simon found a grey stone.'			
102	Emma *utilise une* **elegante** *clé*.	X	✓	.786
	'Emma uses an elegant key.'			
103	*Elle porte une jupe kort*.	X	X	1.000

n^0	**sentence**	**MLF**	**MP**	**mean rating**
	'She's wearing a short skirt.'			
104	*Maman tricote une* **warm** *écharpe*.	X	X	1.071
	'Mother knits a warm scarf.'			
105	*Ils voient une rue* **smalle**.	X	X	.714
	'They saw a narrow street.'			
106	*Je vais reparer une* **wankele** *table*.	X	✓	1.143
	'I will fix the wobbly table.'			
107	*Tu as une main* **zacht**.	X	X	.929
	'You have a soft hand.'			
108	*On a vue une* **Amerikaans** *étoile*.	X	X	.286
	'We saw an American star.'			
109	George *achète une fleur* **geurige**.	X	X	.143
	'George bought a fragrant flower.'			
110	*Cette chambre a une* **grote** *porte*.	X	✓	1.214
	'This room has a large door.'			
111	*Je préfère une boîte* **groen**.	X	X	1.143
	'I prefer a green box.'			
112	*Ma sœur achète une* **lelijk** *robe*.	X	X	.929
	'My sister buys an ugly dress.'			
113	*Il voyait une maison* **witte**.	X	X	1.357
	'He saw a white house.'			
114	*La chambre a une* **grote** *fenêtre*.	X	✓	1.357
	'The room has a big window.'			
115	*Il a une oreille* **doof**.	X	X	1.286
	'He has a deaf ear.'			
116	*Le pudding a une* **dun** *peau*.	X	X	.929
	'The pudding has a thin skin.'			
117	*Le pirate a une jambe* **manke**.	X	X	.500
	'The pirate has a limping leg.'			
118	*J'organise une* **zotte** *fête*.	X	✓	1.286
	'I'm organizing a crazy party.'			
119	*Je cherche une forêt* **donker**.	X	X	.786
	'I search a dark forest.'			
120	*L'archeologue decouvrait une* **oude** *tombe*.	X	X	1.071
	'The archeologist discovered an old grave.'			

Type III

n^0	**sentence**	**mean rating**
121	*Jean fait* **naaien het hemd**.	.429
	'Jean sews the shirt.'	
122	*Alex fait* **schrijven een brief**.	.357
	'Alex writes a letter.'	
123	*Michael fait* **drinken een pintje**.	.071
	'Michael drinks a beer.'	

n^0	**sentence**	**mean rating**
124	*Nous faisons* **maken een tekening**.	.357
	'We are making a drawing.'	
125	*Tu fais* **eten de soep**.	.214
	'You are eating the soup.'	
126	*Il va* **lezen zijn boek**.	1.429
	'He is going to read his book.'	
127	*Je vais* **dragen de boeken**.	1.214
	'I will carry the books.'	
128	*Nous allons* **kuisen de vloer**.	1.286
	'We are going to clean the floor.'	
129	*Tu vas* **knippen zijn haar**.	.286
	'You will cut his hair.'	
130	*Vous allez* **vinden een hond**.	.786
	'You will find a dog.'	
131	*Marie fait* **haar moeder zoeken**.	.714
	'Marie is looking for her mother.'	
132	*Tu fais* **de krant kopen**.	.214
	'You are buying the newspaper.'	
133	*Je fais* **geld afhalen**.	.214
	'I am withdrawing cash.'	
134	*Nous faisons* **de dieren eten geven**.	.214
	'We are feeding the animals.'	
135	*Elle fait* **een feest organiseren**.	.286
	'She is organizing a party.'	
136	*Elle va* **ne koffie drinken**.	.929
	'She is going to drink a coffee.'	
137	*Nous allons* **de bloemen gieten**.	1.071
	'We will water the flowers.'	
138	*Les hommes vont* **voetbal kijken**.	1.429
	'The men will watch football.'	
139	*Il va* **de kamer stofzuigen**.	.429
	'He will vacuum the room.'	
140	*Ils vont* **mijn moeder ontmoeten**.	.929
	'They are going to meet my mother.'	
141	**Jan doet** *ranger les jouets*.	.500
	'Jan is arranging the toys.'	
142	**Ik doe** *écrire un livre*.	.357
	'I am writing a book.'	
143	**Ze doet** *achter un gsm*.	.071
	'She is buying a cell phone.'	
144	**Wij doen** *laver les vêtements*.	.500
	'We are washing the clothing.'	
145	**Ze doen** *inviter leurs amis*.	1.357
	'They are inviting their friends.'	
146	**Hij gaat** *cuire un gâteau*.	.857

n^0	**sentence**	**mean rating**
	'He will bake a cake.'	
147	**Ik ga** *couper le papier*.	1.143
	'I'm going to cut the paper.'	
148	**Julie gaat** *visiter le museum*.	.714
	'Julie is going to visit the museum.'	
149	**Wij gaan** *éduquer les enfants*.	1.000
	'We are going to raise the children.'	
150	**Jij gaat** *brosser les dents*.	.857
	'You'll brush your teeth.'	
151	**We doen** *le dessert manger*.	.071
	'We are eating the dessert.'	
152	**Ik doe** *conduire un bus*.	.071
	'I drive the bus.'	
153	**Jij doet** *masser mon dos*.	.143
	'You are rubbing my back.'	
154	**Hij doet** *allumer les bougies*.	.429
	'He lights the candles.'	
155	**Zij doen** *casser la vase*.	.429
	'They break the vase.'	
156	**Ze gaan** *grand-mère visiter*.	.786
	'They will visit grandma.'	
157	**Ik ga** *mon copain soigner*.	1.000
	'I will take care of my friend.'	
158	**We gaan** *le Danois apprendre*.	.714
	'We're going to learn Danish.'	
159	Suzanne **gaat** *le secret raconte*r.	.643
	'Suzanne will tell the secret.'	
160	**Den hond gaat** *mes devoirs manger*.	.643
	'The dog will eat my homework.'	