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A case study of language transfer in bilingual first language acquisition

by

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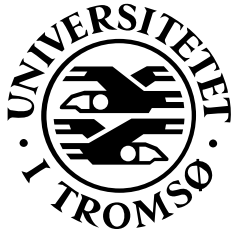

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1. INTRODUCTION

1.1 Bilingual first language acquisition

Anyone who has attempted to acquire a second language as an adult knows that achieving a native-like competence is very hard, if not even impossible. Knowing this, one has to be impressed by the way children seem to acquire their first language so effortlessly. From they utter their first word around their first birthday it only takes them a couple of years to become truly native speakers of the language. And obviously they are not aided by instruction and exercises, such as e.g. grammar drills. In fact, it has been attested time and again that trying to correct young children's imperfect grammar has hardly any impact on their acquisition process.

If child language acquisition in monolingual children is impressive, it is even more fascinating to study the language development in bilingual children. The addition of an extra language to the acquisition process does, in general, not seem to cause any problems for bilingual children.

Recently, the study of bilingual first language acquisition has received increased attention. Many studies have discussed whether acquiring two (or more) languages simultaneously has any effect on the acquisition process or not. Paradis and Genesee (1996) claim that their three English/French bilingual subjects developed their two languages autonomously, with no interference attested between the two. However, other studies (e.g. Volterra and Taeschner 1978, Lanza 1992, Müller 1998) have provided evidence that autonomy is not always a striking characteristic of bilingual first language acquisition. Several factors have been claimed to be involved when bilingual children mix their two languages. Volterra and Taeschner (1978) argue that young bilinguals who produce mixed utterances have not yet realised that their languages are two separate systems. Lanza (1992) claims that the notion of language dominance is an important aspect concerning the direction of bilingual children's language transfer. It has also been suggested that bilinguals use language mixing as a

strategy to cope with difficulties in one of their languages (cf. Müller 1998). I will discuss this in more detail in chapter 2.

1.2 The project

1.2.1 Aims

The starting point for this case study is the claim of Paradis and Genesee (1996) suggesting that the two languages of a bilingual child develop autonomously, without any interference attested between the two. This project attempts to explore the general validity in such a statement. Hence, I have collected data from a bilingual English/Norwegian girl. I specifically want to focus on her development of syntax in the two languages, and I predict language transfer to potentially occur in those areas of the syntax where these two languages differ.

For a child acquiring English and Norwegian simultaneously, two syntactic phenomena immediately stand out as potential sources of confusion. First, the placement of the finite main verb differs in the two languages. In Norwegian, which is a verb second language (V2), all finite verbs move to C in main clauses, regardless of whether they are main verbs or auxiliaries. In English, on the other hand, only finite auxiliaries move out of the VP. Main verbs always remain in V. The difference is illustrated in (1) and (2):

(1) a. Yesterday John [$_{VP}$ **kissed** Mary]
b. John did not [$_{VP}$ **kiss** Mary]
c. Did John [$_{VP}$ **kiss** Mary]?

(2) a. I går **kysset**$_i$ Jon [$_{VP}$ t_i Marie]
b. Jon **kysset**$_i$ ikke [$_{VP}$ t_i Marie]
c. **Kysset**$_i$ Jon [$_{VP}$ t_i Marie]?

Another syntactic aspect which is different in English and Norwegian is the marking of definiteness on nouns. In Norwegian definiteness is expressed by attaching a definiteness suffix at the end of the noun, whereas in English, a prenominal article has the function of marking definiteness. This is shown in (3) and (4):

(3) a. **the** horse
b. **the** big horse
c. **that** horse

(4) a. hest**en**
b. den store hest**en**
c. den hest**en**

The aim of this thesis is thus to see whether the bilingual subject in this case study shows any signs of cross-linguistic influence between her two languages in these two areas of the syntax. If language mixing is attested in the data, I will attempt to account for exactly *what* is transferred and *why* this is transferred.

1.2.2 Predictions

As mentioned in the previous subsection, I predict language transfer to occur in English/Norwegian bilingual children's acquisition of verb placement and of definite noun phrases. Concerning the direction of transfer I will assume that the direction is not *governed* by the notion of dominant language. Rather, I will explore how the relative frequency and strength of cues for acquisition of certain constructions may be affected by the bilingual nature of the input. I will also investigate whether the syntactic markedness of the relevant target structures is of importance for the direction of transfer. These hypotheses are captured in the following three predictions:

Prediction 1

If a certain construction is different in language A and language B, and the one in A is less marked (i.e. less costly) than the one in B, this may lead bilingual children to transfer the less marked structure of A into language B.

Prediction 2

If the cue structures for a certain feature in language A do not occur frequently enough in the input, or the input provides inconsistent cues concerning this feature, bilingual children may transfer specifications for this feature from language B.

Prediction 3

If the structures containing the cues for a certain feature in language A are complex, their function as cues may be weakened. For bilingual children this may result in transfer of this feature from language B into language A.

In addition I include a sub-hypothesis predicting that when the adult-like structure in the complicated language is acquired, the transfer will cease, or at least decrease.

As we will see, these three hypotheses make contradictory predictions concerning the acquisition of verb placement and definite noun phrases. When analysing the data from my subject, I will discuss whether or not these predictions are supported in the data.

1.2.3 Methodology

1.2.3.1 The subject

The subject for this study is an English/Norwegian bilingual girl, Emma. She lives in Norway with her American mother and Norwegian father. Their home language is English. Both her parents claim that they always address her and each other in this language, and that they never code-switch between Norwegian and English when interacting with Emma[1]. This claim is confirmed by my data. On those few occasions when they have attempted to speak Norwegian with her, she has responded with surprise and unwillingness to use this language with them. Both her parents speak Norwegian with friends and other family, so Emma is aware that they know both English and Norwegian. Still, she never attempts to address them

[1]Except for using the Norwegian word *sånn* for which there is no English equivalent. It generally means something like *there you go* or *alright*. The family also consistently uses some Norwegian words for Norwegian concepts, like *barnehage (day-care centre), matpakke (packed lunch)*, etc.

in Norwegian. Emma has lived Norway all her life and has been in a day-care centre (where Norwegian is the only language) on a daily basis since she was about one year old.

1.2.3.2 The data collection

The data from Emma were collected weekly over a period of three months, from she was 2;7.10 to 2;10.9. All the data are based on spontaneous speech, and only Emma's utterances were transcribed. Every second week her parents tape-recorded her for one hour in daily family situations (during meals, playing, etc.). Every other week I visited the family and played with her for an hour. Our language together was Norwegian. In fact, during the first six recordings Emma was under the assumption that I did not know English.[2] Hence, she always addressed me in Norwegian (also after the seventh recording).

Grosjean (1998a, b) points out the importance of controlling for the bilingual subject's language mode when studying language mixing. A bilingual may in a given situation be at any point on the monolingual-bilingual mode continuum. Grosjean claims that this can be "controlled by such variables as who the bilingual is speaking or listening to, the situation, the topic, the purpose of the interaction, and so on" (1998a:136). When at the monolingual end of the continuum, only one of the bilingual's languages is fully activated. This situation may be created by e.g. interaction with a monolingual person. When the bilingual is communicating with other bilinguals using both languages, on the other hand, the subject is in a totally bilingual mode, with both languages being activated. In my study, Emma's language mode is controlled for in order to eliminate her being in a bilingual mode as a cause for language mixing. I claim that although she is aware of her parents' bilingualism, she is in the monolingual area of the continuum when interacting with them, as English always is their language of communication together. When interacting with me, she is also in a monolingual mode, although of course with Norwegian as the activated language. I am aware that as all the

[2]At 2;8.20 (the seventh recording) she heard me speaking English to her American grandparents and with surprise commented to her mother: "They're speaking English!"

recordings were done in Emma's home, this might be argued to be an "English arena" for her. However, Emma's parents were only present during the first and last few minutes of each Norwegian recording, so persons or situations creating a potentially bilingual mode for her were generally avoided.

1.2.3.3 Additional data from a monolingual Norwegian child

In addition to the bilingual data from Emma, I have also collected some data from a monolingual Norwegian boy, Henning. I felt that this was necessary because of the scarcity of data from monolingual Norwegian children. This data collection consists of four hours of sporadic tape recordings from the age of 2;4.4 to 3;0, in addition to sporadic diary notes from 1;11 to 3;0. These data are also based on spontaneous speech, and only Henning's utterances were transcribed. As this collection is relatively sparse, I realise that the data from Henning may not be representative for all his monolingual Norwegian peers, just as Emma's production patterns do not necessarily correspond to all English/Norwegian bilinguals. I obviously do not attempt to make generalisations concerning *all* monolingual Norwegian children nor *all* English/Norwegian bilingual children. Rather, I want to explore Emma's development in her two languages to see whether this deviates from what is reported in monolingual children. If deviations are found as expected, I will analyse my findings, and make conclusions based mainly on Emma's speech production. However, my conclusions hopefully may have some relevance for bilingual children in general as well.

1.3 Organisation of the thesis

In chapter 2 I will discuss some important issues involved in bilingual first language acquisition. I will focus specifically on the phenomenon of language mixing and language transfer. Chapter 3 provides a syntactic analysis of the two areas in English and Norwegian syntax to be dealt with in the discussion of my data, viz. placement of the finite main verb and definite noun phrases. A section on the challenge for bilingual children when acquiring these constructions is included towards the end of chapter 3. In chapter 4 I first present the results

of the data collection in general. Next, I focus especially on Emma's development of verb placement and of definite noun phrases, and I attempt to account for any transfer attested in the acquisition of these two areas of syntax. Chapter 5 sums up and concludes the thesis.

2. BILINGUAL FIRST LANGUAGE ACQUISITION

In this chapter I will to take a closer look at bilingual first language acquisition (BFLA henceforth). I will focus on the development of grammar in the two languages being acquired and specifically look at how grammatical structures may be transferred from one language into the other. In section 2.1 I will first give a brief historical introduction to some studies done on BFLA. Then I will discuss some general aspects of BFLA. Section 2.2 deals specifically with the phenomenon of language mixing. I will discuss to what extent children acquiring two languages simultaneously mix the two, i.e. *what* they mix and *why*.

2.1 A general overview

Ronjat's (1913) study of his bilingual French/German son Louis is one of the earliest detailed studies on BFLA reported in the literature. Ronjat and his wife consistently used the one person, one language approach (*une personne, une langue*), and he attributed the considerable success of his son's language development to this. Louis showed no signs of confusion between the two languages, i.e. both his French and his German resembled that of monolingual children. He also clearly associated each language with specific persons, and would always use the "correct" language with the "correct" person.

Another important study in the BFLA research is the work by Leopold (1939, 1947, 1949a, 1949b). His four volumes consist of detailed analyses of his daughter Hildegard's language development of German and English from birth to the age of 12. Leopold and his wife also employed the one person, one language approach; Leopold always addressed his daughter in German, his wife always in English. Looking at Hildegard's development of both vocabulary, sound system, syntax, morphology, and semantics in German and English, he did not find any conclusive evidence for interference between the two languages in the first two years. However, Hildegard did not appear to be as balanced a bilingual as Ronjat's son Louis. In fact, after her second birthday English became more dominant (as her father's influence

decreased), and her use of German became more and more passive. In addition, the mixing of English words and syntactic elements into German became more frequent.

In the last couple of decades, the study of bilingual first language acquisition has received increased attention. The DUFDE[3] Project (1980s - 90s), supervised by Jürgen Meisel, for example, is a systematic longitudinal study of the language development in several bilingual children. This project focuses on German/French bilingual children growing up in Hamburg with French-speaking mothers and German-speaking fathers using the one person, one language approach (cf. the contributions in Meisel 1990, 1994). Several case studies of bilingual children have also been done in recent years, such as Vihman's (1985) study of Raivo's first language acquisition of Estonian and English, and De Houwer's (1990) case study of Kate's simultaneous acquisition of Dutch and English.

When doing research on the language development of bilingual children it is necessary to clarify some important terms. First we need to define whether we are looking at cases of simultaneous or successive acquisition of two languages. Whether a child is acquiring her two languages simultaneously or has already acquired (parts of) one language when the other one is introduced may be crucial to the development of her two languages. The latter scenario might be argued to be an instance of second language acquisition rather than first language acquisition of two languages. McLaughlin (1984), among others, has discussed when the cut-off point for simultaneous acquisition is to be set and successive acquisition takes over. He argues that a child can be considered to acquire two languages simultaneously if the second language is introduced before the age of 3. According to McLaughlin "(...) by the age of 3, it would seem that the child has had a considerable head start in one language; it is no longer a question of acquiring the two simultaneously" (1984:73). Hence, if a second language is

[3]Deutsch und Französisch - Doppelter Erstspracherwerb/German and French - Simultaneous First Language Acquisition.

introduced to a child who is older than 3 years, McLaughlin would consider this *successive* acquisition of two languages.

De Houwer (1990), on the other hand, assumes that the cut-off point is much earlier than this. According to her, it is realistic that a child who is introduced to e.g. French after a year of exposure to only Russian might exhibit quite a different development in French (because of the prior knowledge of Russian) when compared to a child who has been exposed to both French and Russian from birth. De Houwer also points out the relevance of this when comparing language development in bilingual and monolingual children. It would arguably not be right to compare the acquisition of Cantonese in a monolingual child exposed to this language from birth, to a bilingual child exposed to Cantonese only from six months onwards. On the basis of this, De Houwer (1990) suggests, along with Padilla and Lindholm (1984), that only children exposed to two languages from birth can be considered cases of simultaneous acquisition of two languages. However, as the term *simultaneous acquisition* has been subject to different definitions, she prefers Meisel's (1989) term *Bilingual First Language Acquisition*, and proposes the following definition (De Houwer 1990:3):

> BFLA refers to those situations in which
> (a) a child is first exposed to language B no later than a week after he or she was first exposed to language A, and
> (b) a child's first exposure to languages A and B is fairly regular, i.e. the child is addressed in both languages almost every day.

In my thesis I use this term as well, although my subject does not quite meet De Houwer's rather strict definition. In her first year, Emma probably was not addressed in Norwegian by anyone in her closest surroundings on a daily basis. Both her parents spoke English to her and each other, and she did not attend a day-care centre yet. However, living in a predominantly Norwegian-speaking community, I presume that she would be exposed to Norwegian fairly often, both in the nearby community and by e.g. children's programmes on TV. Hence, I choose to term Emma's language development of English and Norwegian as bilingual first language acquisition.

In research on BFLA three major questions seem to be especially intriguing, viz. the difference between monolingual and bilingual children, the role of the input, and the debate on whether young bilingual children have two separate language systems or not. The first question deals with comparing the language development of bilingual children to that of monolingual children. This has turned out to be complicated for various reasons. First of all it is necessary to have comparable data from monolingual children acquiring the language(s) concerned. Unfortunately, for a number of languages there are no collections of data from monolingual child language development as of yet, which obviously makes a comparison with bilingual children impossible. If there indeed are data from monolingual children in the language(s) concerned, one needs to make sure that these data are actually comparable. More specifically one needs to make sure that the bilingual children have been exposed to this language from the same age as the monolinguals (i.e. usually from birth). Also, the children must be at the same overall developmental stage if we want to look for delays in specific areas (whether we use age, MLU[4] or other means of defining developmental stages). And finally there is the issue of individual differences, which is quite relevant when dealing with small corpora.

However, it has been claimed by several researches (Taeschner 1983, Garcìa 1983, Meisel 1986, 1989, De Houwer 1990, Paradis and Genesee 1996, and others) that the language development in bilingual children is very similar to that of monolingual children. Rather than giving an overview of all these studies, I will just briefly present some of the evidence given in Paradis and Genesee (1996) and De Houwer (1990).

Studying the acquisition of finiteness, negation, and pronominal subjects in bilingual French/English children, Paradis and Genesee (1996) found that both the acquisition pattern and the acquisition rate are similar to what is found in monolingual French and English children. For example, monolingual French children initially form negatives with the negator

[4]Mean Length of Utterance.

pas in either preverbal or postverbal position (1a - b). Monolingual English children, on the other hand, always place the negator in a preverbal position in the early stages of language development, sentence initially at first (1c), then sentence medially (1d) (examples from Déprez and Pierce 1993, 1994, and Pierce 1992 cited by Paradis and Genesee 1996:6):

(1) a. Pas chercher les voitures — Philippe 2;1
no look for the cars

b. Ça tourne pas — Philippe 2;1
that isn't turning

c. No Leila have a turn — Nina 2;1

d. Me no go home — Peter 2;1

The three bilingual subjects in Paradis and Genesee's study showed both the same pattern and rate of the acquisition of negatives as their monolingual peers. In their French these bilingual children produced both preverbal and postverbal negation, whereas in their English, they used preverbal negation only. In the early stages, 60% of their English negations were sentence-initial, whereas in the later stages, sentence-medial negations occurred more frequently (74%).

De Houwer (1990) similarly came to the conclusion that bilingual children develop their languages in a way very similar to their monolingual peers. She found that her English/Dutch bilingual subject Kate resembled monolingual English and Dutch children in the development of both noun phrases and verb phrases in both languages. De Houwer points out that the data is somewhat scarce, especially from monolingual Dutch children. Still, her overall impression is that "whenever comparisons have been attempted between monolingual children and children growing up bilingually from birth, researchers have found similarities rather than differences" (De Houwer, 1995:243-244).

Another major issue when discussing BFLA concerns the input the child is exposed to in the two languages. It is necessary to specify both the amount of input the child receives in both languages, as well as the nature of this input, e.g. whether it contains language mixing or not.

In this connection it is useful to look at Romaine's (1995) types of bilingual acquisition in childhood. She distinguishes between six different types based on the native language(s) of the child's parents, the language(s) of the community and the parents' strategy in addressing the child. I will not go into details about the different types here. Let me just point out that my case study is an example of Romaine's second type of bilingual language acquisition, "One Language - One Environment". This means that the parents have different native languages and that the language of one of them is dominant in the community. Both parents speak the non-dominant language to the child, who is fully exposed to the dominant language outside the home.

The third and perhaps the most controversial issue in BFLA is the debate on whether children acquiring two languages simultaneously start out with one or two language systems. Volterra and Taeschner (1978) are probably the most influential proponents of the *one-system hypothesis*. They suggest that children acquiring two languages simultaneously go through three stages. In the first stage, children have only one language system including both lexicon and syntax from both languages. In the second stage they begin to acquire equivalent words in the two languages and thus develop two separate lexical systems, while still using only one syntactic system. In the third stage, the children gradually separate the syntax of the two languages. For at least one of Volterra and Taeschner's two subjects, Lisa, the second stage begins at approximately 2;5, whereas they claim that she at 2;9 is beginning to differentiate between two separate syntactic systems. Vihman (1985) also argues that bilingual children initially only have a single lexicon consisting of words from both languages being acquired. However, she did not find evidence for Volterra and Taeschner's stage two in her data. Her subject Raivo seemed to differentiate both between two lexical and two syntactic systems already around age 2;0. Thus it is questionable whether Vihman's findings actually provide evidence in favour of the one-system hypothesis.

The one-system hypothesis has not gone by undebated. Meisel (1989) argues that bilingual children are able to differentiate their two languages from a very early age. He claims that his subjects apply the language-specific inflectional markings for finite verbs as soon as they start marking such inflections (subject C at 1;10 - 1;11, and subject P at 2;9). The separate system hypothesis is also supported by Genesee, Nicoladis and Paradis (1995). They recorded French/English bilingual children from the age of 1;10 - 2;2 and found that these children more often than not used the appropriate language with the appropriate person in a "one person - one language" environment. This, they claim, is an indication of language separation. This debate is still going on, and I will not attempt any conclusions here. Besides, this debate is not that relevant for the discussion of my findings. The data collection started when my subject was 2;7, and by that age most people would agree that children separate their two languages, both in terms of lexicon and syntax.

However, in the next section we will see that even if we assume that bilingual children indeed do have two separate language systems from a very early age on, we still need to explain another phenomenon, viz. language mixing.

2.2 Language mixing and transfer

The phenomenon of language mixing and transfer is also an area where a clarification of definitions is necessary. One of the crucial distinctions is that between *language mixing* and *code switching*. In the following, language mixing will refer to situations where the child mixes, or *transfers*, lexical or grammatical elements from one language into the other. I assume this to be a subconscious process, where the child is not aware of the fact that the elements belong to different language systems. Code switching, on the other hand, is a more or less conscious process[5], where the child (or adult) deliberately switches languages for

[5]Code switching may also be a subconscious process in some situations. The crucial difference from language mixing is that a speaker using code switching is aware that the elements in the utterance belong to two different language systems.

some communicative function. These definitions are along the lines of Meisel (1989:36). He defines language mixing as "(...) the fusion of two grammatical systems, i.e. a possible characteristic of a bilingual's *grammatical competence"*. Code switching, on the other hand, he defines as "(...) a specific skill in the bilingual's *pragmatic competence*". In the following, language mixing will be my main concern.

Assuming that children indeed do have two language systems to begin with, we cannot overlook the fact that bilingual children still exhibit language mixing. So what exactly do they mix and why? In the following I will focus on mixing of grammatical rather than lexical morphemes. Although I am aware of the importance of the sociolinguistic aspects involved in bilingual language acquisition, I will discuss language mixing within a generative framework.

Gawlitzek-Maiwald and Tracy (1996) discuss two kinds of mixed structures in their subjects (German/English bilingual children): *"lexically mixed structures"*, such as (2a) below, and *"potentially literal translations of utterances with signs of word order interference"*, as in (2b) (the examples are taken from Gawlitzek-Maiwald & Tracy 1996:911):

(2) a. kiwi ... du hast gebuyed them? (2,3.29)
"kiwi you have ge-bought them"
b. ich habe gegeben meine löffel zu dir (2;7)
"I have given my spoon(s) to you"
(Adult German: Ich habe dir meinen Löffel gegeben.)[6]

First, I will focus on the lexically mixed structures. Petersen (1988) argues that the direction of code switching[7] is not random, but rather that it is connected to the notion of language dominance. Her subject, Thea, grew up in the US with Danish-speaking parents. She was exposed to very little code switching in her environment. Basically, her parents spoke to her

[6]The adult German translation is mine.

[7]Although Petersen talks about *code switching* (rather than *language mixing*), I believe this is relevant to the discussion of language transfer.

in Danish (with just a few exceptions), and she was exposed to English in day care. Yet, Petersen found that Thea at 3;2 exhibited some switching on the morpheme level. English grammatical morphemes occurred with both English and Danish lexical morphemes, as in (3) and (4), respectively. However, Danish grammatical morphemes only occurred with Danish lexical morphemes (5). Hence, she never used English lexical morphemes with Danish grammatical morphemes (6) (from Petersen, 1988:482):[8]

(3) HER DOLLY
(4) HER dukke
(5) hendes dukke
(6) *hendes DOLLY

This mixing pattern was found for several categories, such as verbs, auxiliaries, pronouns, etc. According to Petersen, this can be explained by the notion of language dominance. The dominant-language hypothesis (Petersen, 1988:486) states that in "(...) word-internal code switching, grammatical morphemes of the DOMINANT language may cooccur with lexical morphemes of either the dominant or the nondominant language". On the other hand, "(…) grammatical morphemes of the NONDOMINANT language may cooccur only with lexical morphemes of the nondominant language". Thea is said to be English-dominant at this point. This could therefore explain why she never produces utterances such as (6), which would yield a lexical morpheme from the dominant language (English) combined with a grammatical morpheme from the nondominant language (Danish).

Lanza (1992) found a similar switching pattern in her subject Siri, who was acquiring Norwegian and English simultaneously. Lanza claims that Norwegian is Siri's dominant language at the stage of the data collection, i.e. from 2;0 - 2;7. Accordingly, she used Norwegian grammatical morphemes with both Norwegian and English lexical morphemes (7a - b), but English grammatical morphemes only with English lexical morphemes (7c).

[8] All examples mean *her dolly*.

Lanza found no instances of English grammatical morphemes with Norwegian lexical morphemes (7d). Her data thus supports the claim that grammatical morphemes can only be transferred from the dominant to the nondominant language, not vice versa.

(7) a. husk**er**
"swing(s)"
b. look**er**
"look(s)"
c. look**s**
d. *husk**s**
"swing(s)"

However, Köppe (1996), among others, has argued against this statement. She studied three children from approximately 1;6 - 3;0, who were acquiring German and French simultaneously. Only one of the children showed the same unidirectional mixing pattern as the one found in Petersen (1988) and Lanza (1992). This child was dominant in German and her data showed that she mixed significantly more function words from German into French than the other way around. For the other two children, Köppe found that mixing of function words went in both directions.

Obviously, more data is needed to make any conclusion on this issue. However, as we will see in the following, my data support the view that the type (and direction) of language mixing is not necessarily related to the notion of language dominance.

Next I will look at the mixing of structure. Gawlitzek-Maiwald and Tracy (1996) studied the language mixing of a German/English bilingual girl, Hannah. They found that from the age of 2;4 to 2;8 she frequently produced utterances like (8) and (9), but never utterances such as (10) (Gawlitzek-Maiwald and Tracy 1996:913 - 915):[9]

(8) Jetzt kannst du hause gehen.
"Now you can go home."

[9]My translations.

(9) Ich hab gemade you much better.
"I have made you much better."

(10) *The man can weggehen.
"The man can go away."

Sentence (8) is an all German clause, and as German is a V2 language, this clause is a CP. Sentence (9), on the other hand, contains elements from both English and German. Crucially, the English elements only constitute a VP projection, according to Gawlitzek-Maiwald and Tracy. Hence, they take these examples to indicate that the child at this stage has developed both a VP and an IP/CP in German, but only a VP in English. They point out that Hannah uses German modals and auxiliaries, which are both assumed to be generated in IP. In English, however, she shows no signs of neither morphological nor lexical realisations of IP, i.e. she does not produce third person singular agreement on finite verbs (*-s*), nor does she use any kinds of auxiliaries.[10] In examples such as (9), Gawlitzek-Maiwald and Tracy therefore suggest that she projects a German IP on top of an otherwise English VP. This is what they call *bilingual bootstrapping*. They claim that bilingual children may use language transfer as a relief strategy to bridge both lexical and structural gaps. At 2;9 Hannah starts producing English modals and auxiliaries, as well as third person agreement. During the same period, transfer of German IP structure into English decreases. According to Gawlitzek-Maiwald and Tracy she has now acquired the English IP and thus she no longer needs to bootstrap.

Müller (1998) also analyses language transfer in bilingual children as a relief strategy. She studied data from bilingual children acquiring German and either English, French or Italian simultaneously. Looking at German clause structure, Müller claims that adult German is ambiguous from the child's perspective. In German main clauses the finite verb is in the

[10]Gawlitzek-Maiwald and Tracy themselves note that the lack of both agreement and auxiliaries may be caused by the fact that these elements are not perceptually very salient in English. Auxiliaries are often subject to contraction, and agreement only occurs in third person singular.

second position (V2). Subordinate clauses, on the other hand, are somewhat less regular. Generally, they are verb-final. However, some conjunctions such as *sondern*, only allow the non-verb-final pattern. Others, like *weil* allow both verb-final and non-verb-final orders. Thus, this is an area of potential confusion for children. The following examples are from Müller (1998:151):

(11) a. Ich mag Nebensätze, weil sie so kompliziert sind.
I like subordinate clauses because they so complicated are
"I like subordinate clauses because they are so complicated."
b. Ich mag Nebensätze, weil sie sind so kompliziert.

The data from a French/German bilingual child, Ivar, indicate that, in contrast to monolingual German children, he has considerable problems acquiring the word order in German subordinate clauses. Until 4;4 only 4% of his German subordinate clauses are target-like. In his target-deviant subordinate clauses, the finite verb is frequently placed in the third position, as in French. Müller suggests that, due to the ambiguous input in adult German, Ivar transfers features from French subordinate clauses into German as a relief strategy. She claims that whereas these errors are found in monolingual German children as well, they tend to occur more frequently in bilinguals. Bilingual children also seem to take much more time to "correct the error".

To sum up, I am assuming that the debate between the one-system hypothesis and the separate system hypothesis will not be relevant for the discussion of my data, as Emma was already 2;7 when the recordings started. However, even at this stage, when children presumably do have two syntactic systems, we need to account for the fact that they still to some extent mix their two languages. It has been argued that language mixing is connected to the notion of language dominance, but in the discussion of my data, I will argue against this view. As we just saw, language mixing has also been analysed as a relief strategy on the part of the bilingual children. I will explore this approach further when looking at my data.

3. SOME NOTES ON ENGLISH AND NORWEGIAN SYNTAX

In the introduction I predicted language transfer in bilingual children to occur in those areas of syntax where the two languages being acquired differ. For English/Norwegian bilinguals I pointed out two such areas, viz. placement of the finite main verb, and definite noun phrases. The differences between English and Norwegian in these areas are repeated in (1) and (2):

(1) a. Yesterday John [$_{VP}$ **kissed** Mary]

b. I går **kysset**$_i$ Jon [$_{VP}$ t$_i$ Marie]

(2) a. **the** horse

b. hest**en**

In (1a) we see that the finite main verb stays inside the VP in English, whereas in Norwegian it moves (1b). The phrases in (2) show the differences in definiteness marking in English and Norwegian. In English the prenominal article *the* expresses definiteness. Norwegian, on the other hand, employs a suffix attached to the noun to mark definiteness.

In order to discuss Emma's acquisition of these language specific features it is necessary to have a clear idea about the syntactic analysis of these constructions in the adult language. In section 3.1 I will therefore give a brief outline of the minimalist approach to syntax. Sections 3.2 and 3.3 provide an analysis of definite noun phrases and of verb placement in adult English and Norwegian. In section 3.4, I will make predictions concerning the acquisition of these language specific features in bilingual children.

3.1 Introduction: The Minimalist Program

The Minimalist Program (MP) was first introduced by Chomsky (1993).[11] The following outline is based on Chomsky (1993, 1995a, b), Marantz (1995), Radford (1997), and Ouhalla (1999). Within a minimalist approach to syntax, the construction of phrases and sentences is

[11]This paper was first published in 1992 under the same title in *MIT Occasional Papers in Linguistics*.

seen as a computational process. Items are selected from the lexicon and entered into a computational component. Here the derivation goes through operations such as e.g. *Move* to reach the representation most compatible with the grammatical rules of the language. At a certain stage in the derivation one may decide to pronounce the utterance. This stage is called *Spell-Out*. After Spell-Out the derivation goes on to the two interface levels, phonological form (PF) and logical form (LF), where it must satisfy the *Principle of Full Interpretation* (FI) in order to converge. According to FI "a representation for a given expression must contain all and only those elements which contribute directly to its interpretation at the relevant level" (Radford, 1997:171). This means that all elements in the derivation must be phonetically interpretable at PF and semantically interpretable at LF. Otherwise, the derivation crashes. Besides FI, the movement operations in the computational component are guided by economy principles such as *Procrastinate*, *Shortest move*, and *Greed*. Procrastinate states that movement should be delayed for as long as possible, preferably until LF. Shortest move requires that a constituent moves as short as possible in the derivation. Greed demands that a constituent only moves in order to satisfy its own needs.

In the Minimalist Program, all lexical categories are assumed to be fully inflected already in the lexicon. Thus, movement is no longer motivated by the need to get inflection attached to the lexical element. Rather, it is triggered by the need to check the morphological features on the lexical elements against agreement features in the functional nodes. These features may be strong or weak. Strong features need to be checked off before Spell-Out, as they are uninterpretable at LF if they are still unchecked by the time the derivation reaches this interface level. Checking them off in the overt syntax is possible as strong features are interpretable at PF. Weak features, on the other hand, are invisible and thus interpretable at LF, and can therefore be checked off at this level. Hence, if the features to be checked are strong, movement must be instantiated before Spell-Out, because strong unchecked features are visible, and therefore uninterpretable at LF. If the features are weak, they can be checked off at LF, and movement is not required prior to Spell-Out. In fact, according to Procrastinate, since movement is not *required* before LF, it is not possible either.

The distinction between strong and weak features is subject to parametric variation, and this is what causes cross-linguistic differences concerning word order. In child language acquisition, the child needs to acquire the lexical and functional elements of the relevant language and the features incorporated in these words to find out whether to move them overtly, i.e. prior to Spell-Out, or covertly, at LF. This means that children have to decide whether certain features in the language are strong or weak. An interesting question in this connection is whether children in the initial stages of syntactic development assume all features to be weak (Platzack 1996, Roberts 1999) or whether they have already set all the language-specific parameters before they enter the two-word stage. However, I will not go into this debate here, as it does not bear any significance for the discussion of my data.

3.2 The structure of the noun phrase

In this section I will apply the minimalist framework outlined in 3.1 to the analysis of English and Norwegian noun phrases. As I assume Abney's (1987) DP hypothesis for noun phrases, I will provide an overview of this analysis in subsection 3.2.1, before looking at English and Norwegian definite noun phrases specifically in 3.2.2 and 3.2.3.

3.2.1 NPs reanalysed as DPs

Chomsky (1970) attempts to explain the parallels between the sentence in (3a) and the noun phrase in (3b) below, by arguing that the structure of the verb phrase in (3a) is similar to the structure of the noun phrase in (3b):

(3) a. John [$_{VP}$ proved the theorem]

b. [$_{NP}$ several of John's proofs of the theorem]

He suggests that the following phrase structure rules (or schemas, as he calls them) apply to both NPs and VPs, "(...) where [Spec, N'] will be analysed as the determiner, [and] [Spec, V'] as the auxiliary (...)" (Chomsky, 1970:210):

(4) i. X' -> X ...

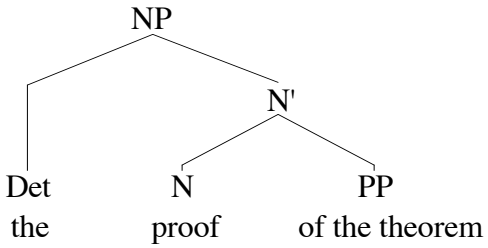
ii. X" -> [Spec, X'] X'

In fact, Chomsky (1986) claims that the phrase structure is similar across all lexical categories (p. 160):

(5) Each lexical category X (X = N, V, A, P) heads a category X' (X-bar) consisting of X and its complements. Call X' a *projection* of X. We assume a further projection X" consisting of X' and a *specifier* of X', where the specifier of N' is the determiner (DET: articles, quantifiers, possessive NP).

Chomsky (1970, 1986) places determiners in the specifier position of the NP. Jackendoff (1977) also analyses determiners in this way (although he assumes a three-bar-level system). Hence, the structure of the noun phrase *the proof of the theorem* is as shown in (6) below:

(6)



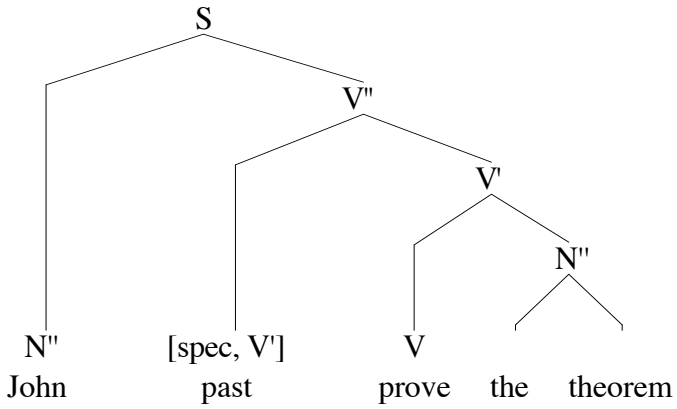
Based on the fact that determiners and possessors are in complementary distribution in English, Jackendoff also locates possessors in the specifier position. Whereas *John's proof of the theorem* and *the proof of the theorem* both are acceptable, **John's the proof of the theorem* is ruled out, as both the possessor *John* and the determiner *the* would occupy SpecNP.

Clauses are assumed to be headed by S, which is not a maximal projection of any head. Chomsky (1970) postulates the schema in (7) for sentences (p. 210):

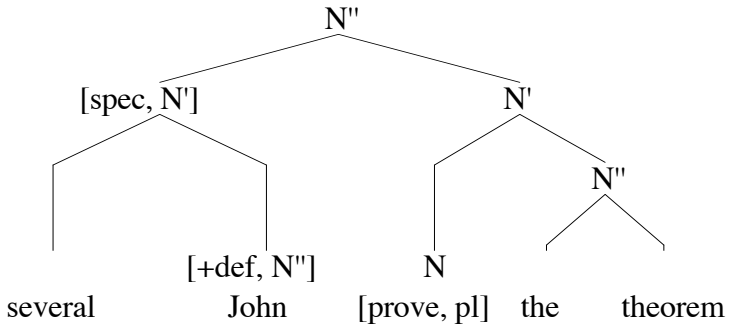
(7) S -> N" V"

Phrase structure rules for phrases thus differ from the ones for clauses. This yields the following structures for (3a - b) (Chomsky, 1970:211):[12]

(8) a.



b.



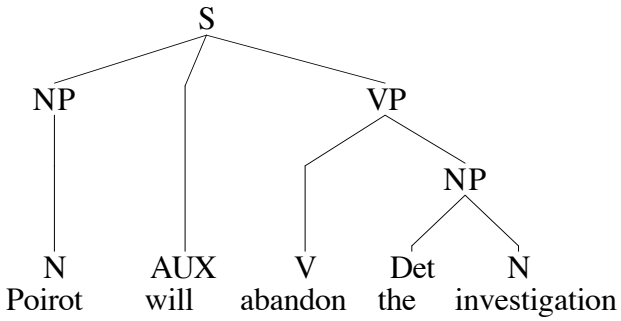
As we see here, the structure of V" in (8a) and of N" in (8b) is basically the same, where V" is the maximal projection of the head V and N" is the maximal projection of the head N. However, the structure of the whole clause in (8a) is different, as S is not a maximal projection of any of the lexical categories in the clause.

[12]For the internal structure of the [spec, N'], Chomsky (1970:200) suggests the rules in (1), below. According to this, *several* is a prearticle and *John's* is the Poss-element of the [spec, N']:

(1) a. Det -> (Prearticle of) Article (Postarticle)
b. Article -> { ±def }
Poss

Chomsky (1986) extends the X-bar schema of the lexical categories to the sentential functional elements as well. In sentences such as (9) below (from Haegeman, 1994:83), the auxiliary seems to be the only potential head of S, as it is the only terminal node.

(9)



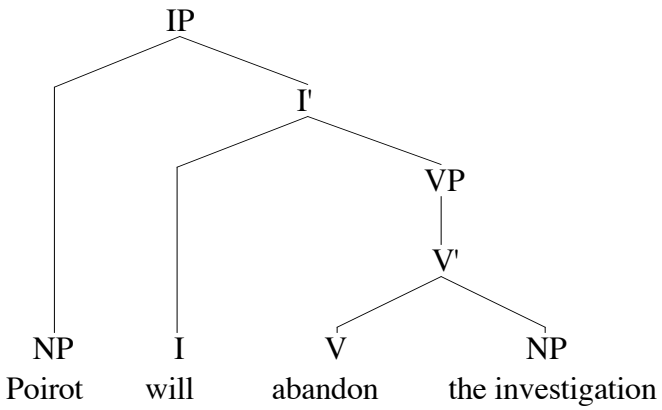
In sentences without an overt auxiliary, such as (10), Chomsky argues that there is a separate node for tense marking. Comparing (10) and (11) we see that the past tense element is independent of the VP (my italics):

(10) Poirot [$_{IP}$ abandon*ed* the investigation]

(11) Abandon the investigation, Poirot [$_{IP}$ *did* indeed]

This tense marking node Chomsky calls INFL (inflection), and it is analysed as the head of the clause. Like other heads (N, V, A, etc.) it first projects into a bar-level, I', taking a complement (the VP), and then further projects into a phrasal level, IP. The specifier of the IP is the subject of the clause:

(12)



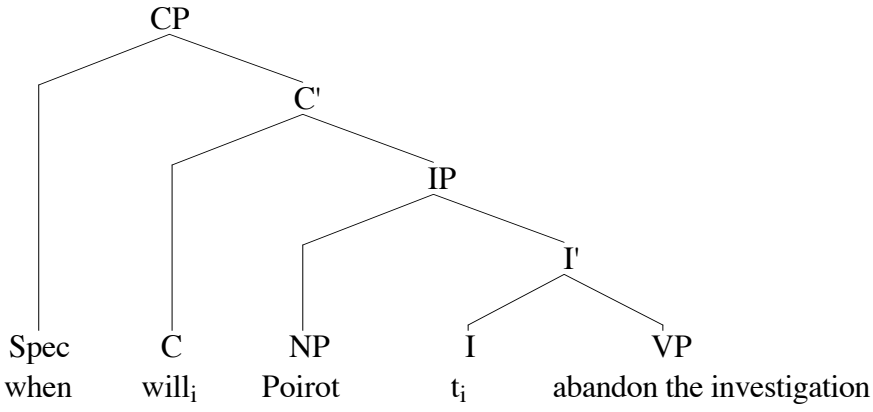
Sentences introduced by a complementizer used to be analysed as S', which again is not the maximal projection of any head. However, in (13) the complementizer may be treated as the head of the phrase. Complementizers introduce a sentence, and thus select an IP complement:

(13) $[_{C}$ if $[_{IP}$ Poirot $[_{I}$ will abandon the investigation]]]

Conforming to the other heads, this head C also projects into a C' and a CP. As mentioned, C selects an IP complement. The specifier position of CP is available for elements such as *wh*-words to move into:

(14) a. $[_{CP}$ when$_j$ $[_{C}$ will$_i$ $[_{IP}$ Poirot t_i abandon the investigation t_j]]]

(14) b.



As we see in (14), the element in I, i.e. the modal auxiliary, moves to C. Moving the auxiliary to C prevents inverted auxiliaries and complementizers from co-occurring. Thus, the unacceptable sentence in (15) (from Haegeman, 1994:121) is ruled out, as both the auxiliary and the complementizer would occupy the same head, C:

(15) *I wonder whether will Poirot abandon the investigation

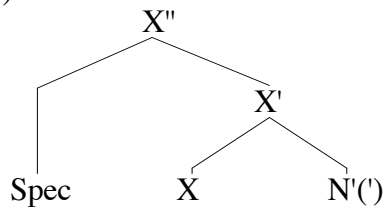
As we have seen, Chomsky (1986) uses the structure of lexical phrases (VPs, NPs, APs, PPs) to explain clause structure. Whereas clauses are headed by a functional element (I or C), lexical phrases are headed by a non-functional element (V, N, A or P). Abney (1987) attempts

to assign a more *clause-like* structure to the *noun phrase*. He claims that in both Hungarian and Turkish noun phrases, the noun agrees with its possessor in person and number:

(16) a. az en kalap-om (Hungarian)
the I:NOM hat-1sg
"my hat"
b. a te kalap-od
the you:NOM hat-2sg
"your hat"
c. sen-in el-in (Turkish)
you:GEN hand-2sg
"your hand"
d. on-un el-i
he:GEN hand-3sg
"his hand"

Abney argues that there is an agreement marker (AGR) in the noun phrase just as there is one in the clause (AGR in the INFL node). He also points out that the possessor in Hungarian bears the nominative case, just as the subject does in sentences. The nominative case in sentences is assigned under government by AGR, and Abney assumes that this is true for noun phrases too. Hence, he suggests that the noun phrase is headed by a functional category rather than the noun itself. Accordingly, the phrase structure of the noun phrase is analysed along the lines of (17) below:

(17)



Concerning the identity of X, Abney (1987:24) says:

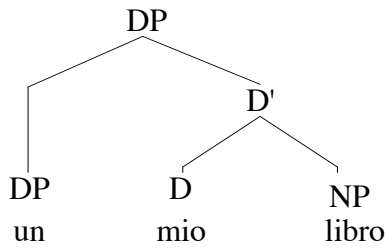
(18) The lexical class of category Infl is the class of modals. The question is then, What is the noun-phrase equivalent of the modal? And the only real candidate, as far as I can see, is the determiner.

This functional head (henceforth D) projects into a DP and may select a maximal projection of N as its complement. In this analysis, possessors are placed in the spec-position of the DP. As mentioned, Jackendoff (1977) assumed that possessors and determiners do not co-occur. Although this is true for English, the examples in (16a - b) show that in Hungarian this is not the case. Consider also the following phrase in Italian (19) (from Radford, 1988:171):

(19) un mio libro
a my book
"a book of mine"

In the traditional NP analysis this construction is a potential problem, as both the indefinite article and the possessive pronoun would have to be placed in the specifier position of NP. In the DP analysis, however, as the indefinite article *un* is positioned in SpecDP and the possessive pronoun *mio* is positioned in the head D. Analysing the X in (17) as D yields the following structure for the Italian phrase in (19):

(20)



Throughout the rest of my thesis I will assume that all noun phrases are DPs. In the next two subsections I will account for English and Norwegian DPs within the minimalist approach to syntax outlined in 3.1. I will focus on demonstrative noun phrases and definite noun phrases with and without modifying elements such as adjectives. Note that I will refer to these DPs as *noun phrases*, and bare noun phrases headed by an N head will be referred to as NPs.

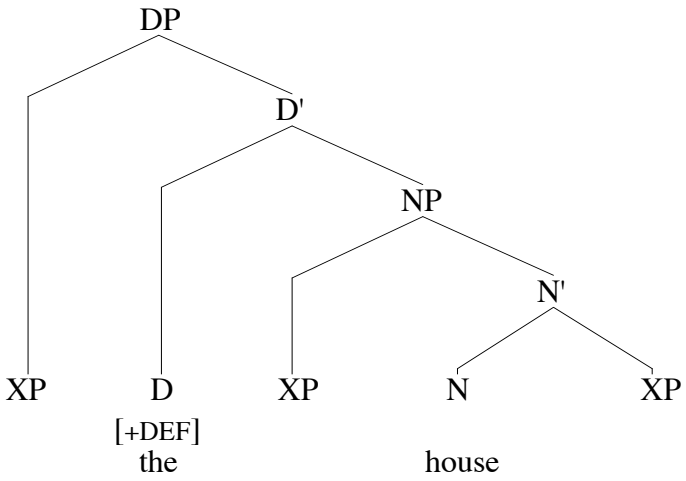
3.2.2 The structure of adult English DPs

In English, definiteness is expressed by the prenominal definite article *the*. This definite article also precedes modifying elements such as adjectives. Examples are given in (21):

(21) a. **the** house
b. **the** big house

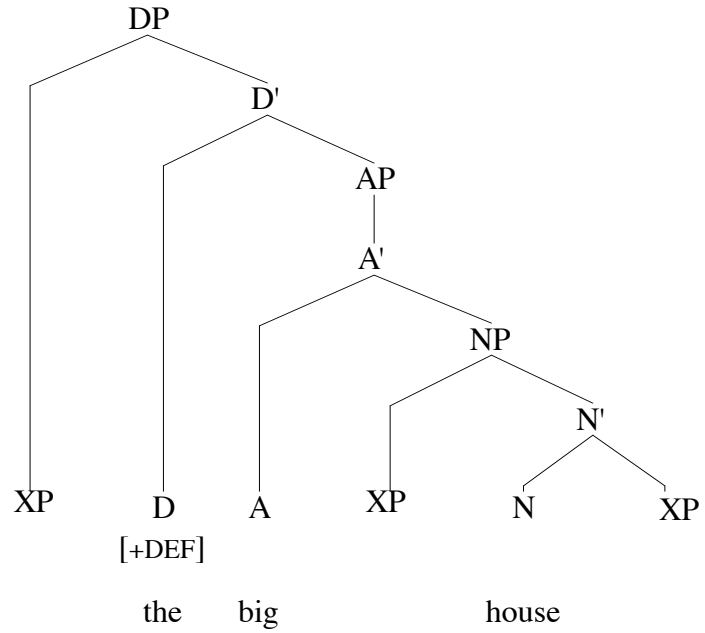
Recall from the previous section that determiners are assumed to be positioned in D. Thus, definiteness in a noun phrase such as (21a) is realised in this node, as illustrated in (22):

(22)



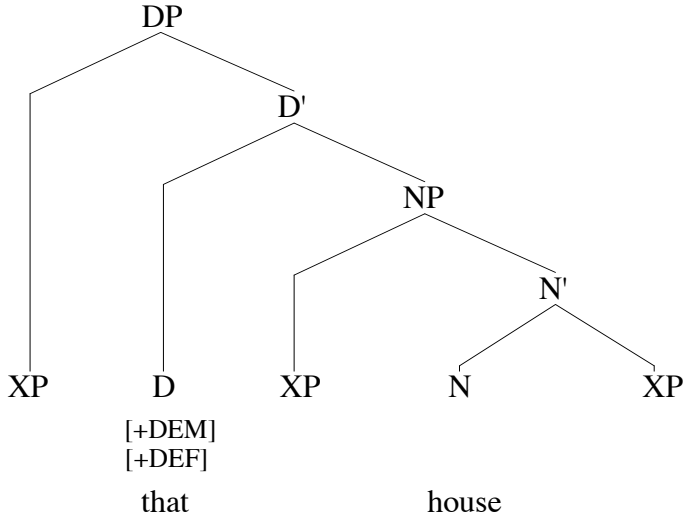
Hence, we see that definiteness is generated in D in English. For noun phrases modified by an adjective, I will follow Abney's (1987) suggestion that adjectives are heads selected by D, which again take an NP as its complement. This assumption yields the following structure for noun phrases such as (21b):

(23)



Further, I assume that all demonstrative noun phrases have a demonstrative feature [DEM] in D, distinguishing them from ordinary definite noun phrases. In English, this [DEM] feature in D is checked off by the demonstrative article *that*. This article also checks off the definiteness features in D in such phrases:

(24)



These three constructions show that in English DPs, the D holds both strong [DEF] and strong [DEM] features. As we will see next, the distribution of features is slightly different in Norwegian.

3.2.3 The structure of adult Norwegian DPs

In Norwegian, the definiteness of noun phrases is marked with a definite suffix attached at the end of the noun. Norwegian also has a gender system; nouns are either masculine, feminine or neuter, and the suffix agrees accordingly (*-en*, *-a*, *-et*, respectively):

(25) a. bil**en**
car-DEF:MASC
"the car"
b. bok**a**
book-DEF:FEM
"the book"
c. hus**et**
house-DEF:NEU
"the house"

In indefinite noun phrases the adjective agrees according to gender (26a), whereas in definite phrases the adjective receives the suffix *-e* in all genders (26b). However, Norwegian definite noun phrases with a modifying adjective also show what is traditionally called *double definiteness*, i.e. there is an independent prenominal article *den/det*[13] in front of the adjective *in addition* to the definiteness suffix on the noun:

(26) a. **et** stor**t** hus
a:NEU big:NEU house
"a big house"
b. **det** stor**e** hus**et**
ART:NEU big house-DEF:NEU
"the big house"

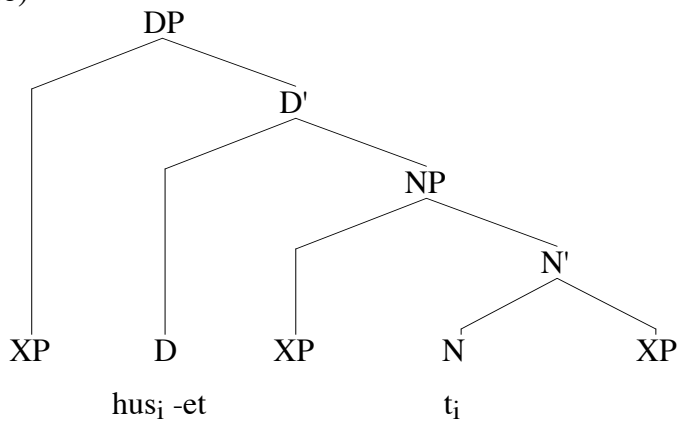
This so-called double definiteness is also found in demonstrative noun phrases, where the demonstrative article *den/det* co-occurs with the suffixed article:

[13] *den* in masculine and feminine, *det* in neuter.

(27) **det** hus**et**
that:NEU house-DEF:NEU
"that house"

The DP analysis outlined in 3.2.1 has been applied to the Scandinavian languages by, among others, Delsing (1993). He initially proposes that the suffixed definite article is generated in D, and the head noun moves from N to D to attach to the suffix. Unmodified noun phrases, such as the ones in (25) would thus have the structure in (28), where the noun *hus* has moved from N to D and picked up the definiteness inflection there:

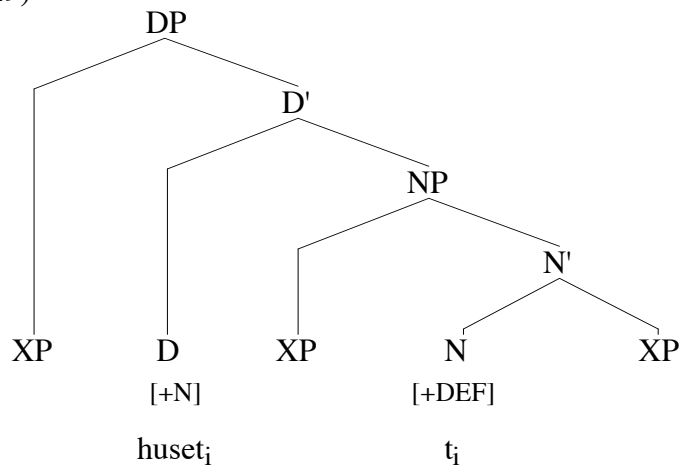
(28)



In (26b) the modifying adjective blocks N-to-D movement. The head noun therefore remains in N and does not get the inflectional suffix. However, the D position must be licensed and the prenominal definite article *det* is inserted here. This would yield phrases like *det store hus* "the big house", which is in fact grammatical in Danish. But as we just saw, Norwegian includes the definiteness suffix in these cases. Thus, this is not a very attractive analysis. Delsing himself is aware of this, and he proposes a different approach. Following Svenonius (1992, 1993), he adopts an analysis in which the suffixed article is assumed to be base generated on the head noun in N. Svenonius (1993) claims that the distribution of definiteness is decided through selection. The head D may select an NP with the feature specification [±DEF]. Definite and demonstrative DPs in Norwegian hence select an NP that is [+DEF], whereas indefinite noun phrases select an NP specified for [-DEF].

This hypothesis is also compatible within a minimalist framework. Along with Svenonius (1992, 1993) and Delsing (1993) I assume that the definiteness features are located in N in Swedish and Norwegian. (Recall from the previous section that I assumed D to bear the definiteness features in English DPs.) Thus, definite nouns are entered into the derivation with the definiteness suffix already attached to them. In addition, I assume that Norwegian D has strong N-features. Hence, these features must always be checked off in the overt syntax. In bare unmodified noun phrases, the definite noun moves from N to D, and thereby checks off the strong N-features in D before Spell-Out:

(29)



According to Delsing (1993), the prenominal article and the suffix in phrases like (25b) have different functions. He suggests that the suffix bears the definiteness, whereas the prenominal article behaves more like an expletive element. This is exemplified by existential constructions such as those given in (30). In such clauses the noun phrase is semantically indefinite. These constructions allow the prenominal article, but not the suffix (Delsing, 1993:128-129):

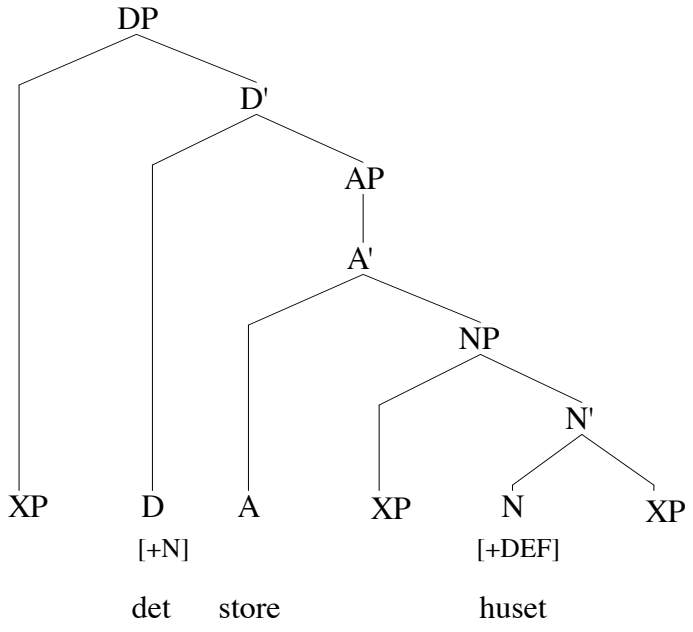
(30) a. det finns inte den minsta anledning att betvivla detta (Swedish)
there is not the least reason to doubt this
b. *det finns inte den minsta anledningen att betvivla detta
there is not the least reason-the to doubt this

It seems that "the definiteness restriction in Swedish is not dependent on the prenominal article, only on the suffixed one" (Delsing, 1993:129). The function of the prenominal article

is to check off the strong N-features in D. This is also true for Norwegian. Hence, in phrases like (26b) and (27), the suffix rather than the prenominal article is the "true" marker of definiteness in the phrase.

In noun phrases containing a modifying adjective, Shortest move blocks N-to-D movement and the noun remains in N, where the definiteness features are expressed. However, as D has strong N-features in Norwegian, this position needs to be lexicalised in the overt syntax. In such phrases we get what Santelmann (1993) terms *den*-support. In Norwegian noun phrases such as (26b), the adjective head blocks the noun from moving to D in the overt syntax, leaving the N-features in D unchecked. Thus, *den*/*det* is needed in the derivation to save it from crashing. This prenominal article checks off the strong N-features in D before Spell-Out and the derivation converges:

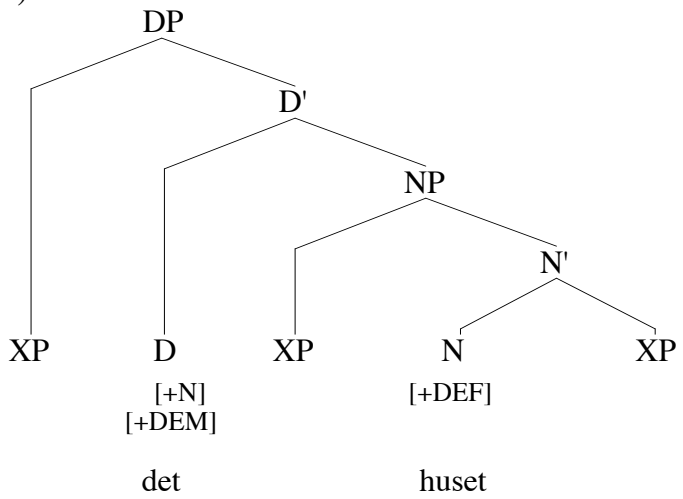
(31)



I assumed in section 3.2.2 that all demonstrative noun phrases have a [DEM] feature in D. In Norwegian, as in English, this feature is strong, and thus needs to be checked off in the overt syntax. However, as the noun itself is not specified for [DEM], it cannot check off this feature. The demonstrative article *den*/*det* is included in D in the derivation, and this item checks off

the [DEM] features as well as the N-features in D. The structure of phrases such as (27) is illustrated below:

(32)



As we have seen in these last two subsections, the main difference between English and Norwegian noun phrases is that in English, definiteness is expressed in D by an independent definite article, whereas in Norwegian, a suffix attached on the noun is the marker of definiteness.

3.3 Verb placement

In this section, I will focus on the placement of the finite main verb, as Norwegian and English show some fundamental differences with respect to this, illustrated in (1) above. As mentioned in the introduction, in English topicalised declarative clauses, the finite main verb follows the subject, whereas in Norwegian this verb precedes the subject. The differences observed between English and Norwegian are due to the fact that Norwegian is a verb second (V2) language and English an SVO language. Main verbs are base-generated in V inside the VP in all languages. In V2 languages, such as Norwegian, all finite verbs move out of VP in main clauses before Spell-Out. In English, on the other hand, main verbs do not move until after Spell-Out, at LF. In the following two subsections I will take a closer look at verb placement in three different syntactic constructions: topicalised clauses, negatives, and *yes-no*

questions. These are the constructions that will be relevant for the discussion of verb placement in the data from Emma.

3.3.1 Verb placement in adult English

Based on work by Emonds (1978) and Pollock (1989), Chomsky (1993, 1995a) discusses the differences in English and French verb placement, illustrated in (33) and (34):

(33) John **often kisses** Mary
(34) Jean **embrasse souvent** Marie

In English, the main verb follows the VP-adjoined adverb *often*, whereas in French the verb has moved in front of the adverb *souvent*. The reason for this, Chomsky claims, is that the IP[14] in French is "stronger" than the IP in English. Recall from section 3.1 that strong features need to be checked off before Spell-Out. Thus, in French, the verb moves from V to I in the overt syntax:

(35) Jean $[_{I'}[_{I}$ embrasse$_i]$ $[_{VP}$ souvent $[_{VP}$ $[_{V}$ $t_i]$ Marie]]]

In English, on the other hand, the V-features in the IP are assumed to be weak. As weak features are checked off at LF, the main verb does not have to check its finite features against the agreement features in IP prior to Spell-Out. Accordingly, the English main verbs remain inside the VP in both topicalised clauses such as (1a) and main declarative clauses such as (33), illustrated in (36a - b), respectively:

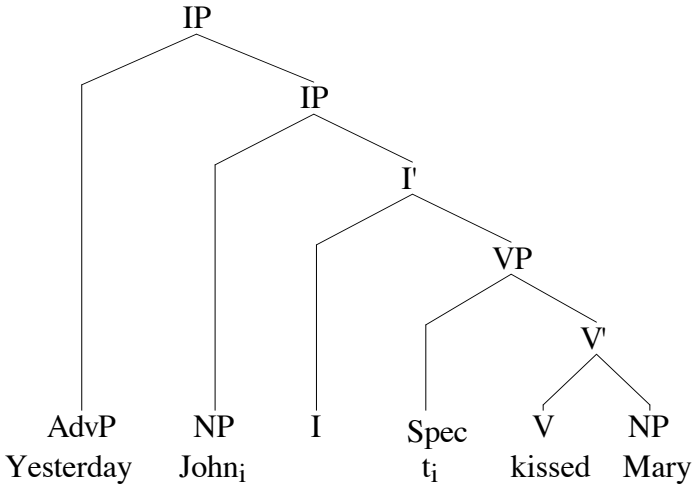
(36) a. Yesterday John $[_{VP}$ $[_{V}$ kissed] Mary]]
b. John often $[_{VP}$ $[_{V}$ kisses] Mary]]

Following the economy principle Procrastinate, if the main verb does not have to move in the overt syntax, movement is prohibited. After Spell-Out, English main verbs move from V to I

[14] I will refer to IP as including the TP and AgrP projections, as my analysis does not require to split up this projection.

to check off the weak V-features in this node. Example (37) shows the tree structure for (36a):

(37)

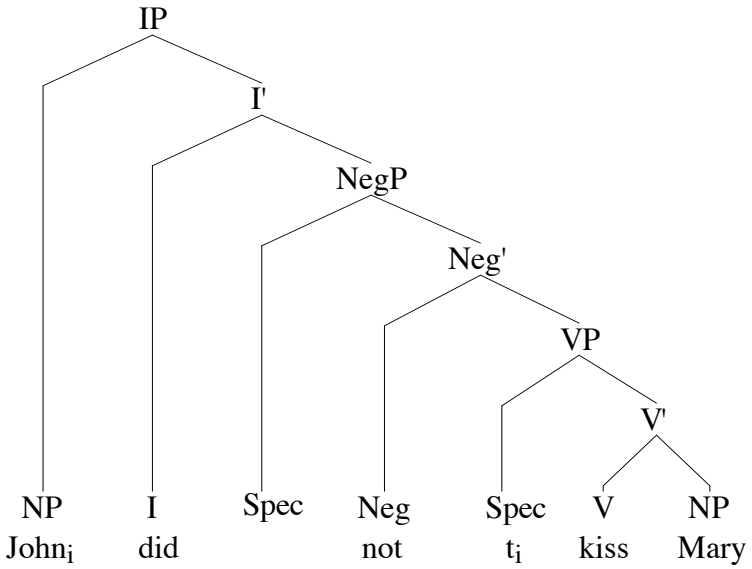


However, this attractive analysis of declarative clauses does not provide a straightforward account for English negations and *yes-no* questions. In these constructions, English requires *do*-support:

(38) John **did** not kiss Mary
(39) **Did** John kiss Mary?

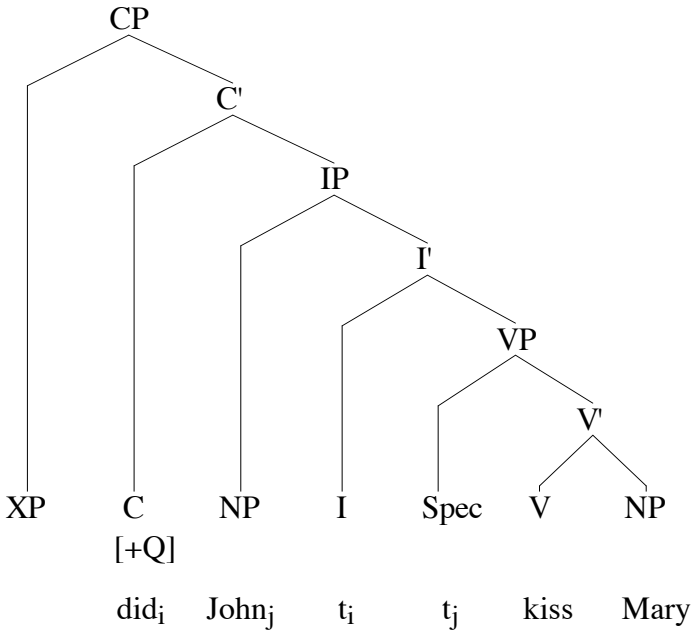
Let us first take a look at negations. I said in the previous paragraph that the English main verb moves to I at LF to check off the weak V-features in IP. However, in negated utterances this movement is apparently barred. It is generally assumed (cf. Radford 1997) that the English negative element *not* is a head above the VP with its own maximal projection, NegP, rather than being adjoined to the VP such as adverbs like *never*. Shortest move thus prohibits the verb from moving from V to I at LF, as this movement would involve passing the Neg head. Therefore, dummy *do* is needed in the derivation, to check off the agreement features in IP. The tree structure for (38) is given in (40) below:

(40)



Next, let us look at *yes-no* questions. Chomsky (1995) suggests that all interrogative constructions have a Q-feature in C, distinguishing these constructions from the corresponding declarative clauses. Like all other features, this Q-feature may be either strong or weak. Along with Radford (1997), I will assume that this feature is strong in English. Hence, following checking theory it must be checked off prior to Spell-Out. However, the English main verb cannot move to I in the overt syntax in English. According to Shortest move it thus cannot move to C either, as that would involve movement across the head position in IP. As it seems, the Q-features in C remain unchecked after Spell-Out. Therefore, as a Last Resort operation, *do*-support in I is needed to prevent the derivation from crashing. This dummy element moves from I to C, and checks off the strong Q-features there:

(41)



Before we turn to look at verb placement in Norwegian, let me mention that auxiliary *have* and copula *be* move to I in English in both affirmative and negative clauses (42a - d). These elements also move up to C to check off the Q-features there in *yes-no* questions (43a - b). Modal auxiliaries are base-generated in I, and these elements also move to C in *yes-no* questions (44):

(42) a. [$_{IP}$ John [$_I$ has$_i$] [$_{VP}$ t$_i$ [$_{VP}$ kissed Mary]]]
b. [$_{IP}$ John [$_I$ has$_i$] [$_{NegP}$ not [$_{VP}$ t$_i$ [$_{VP}$ kissed Mary]]]]
c. [$_{IP}$ John [$_I$ is$_i$] [$_{VP}$ t$_i$ a teacher]]
d. [$_{IP}$ John [$_I$ is$_i$] [$_{NegP}$ not [$_{VP}$ t$_i$ a teacher]]]

(43) a. [$_{CP}$ [$_C$ Has$_i$] [$_{IP}$ John [$_I$ t$_i$] [$_{VP}$ t$_i$ [$_{VP}$ kissed Mary]]]]
b. [$_{CP}$ [$_C$ Is$_i$] [$_{IP}$ John [$_I$ t$_i$] [$_{VP}$ t$_i$ a teacher]]]

(44) [$_{CP}$ [$_C$ Will$_i$] [$_{IP}$ John [$_I$ t$_i$] [$_{VP}$ kiss Mary]]]

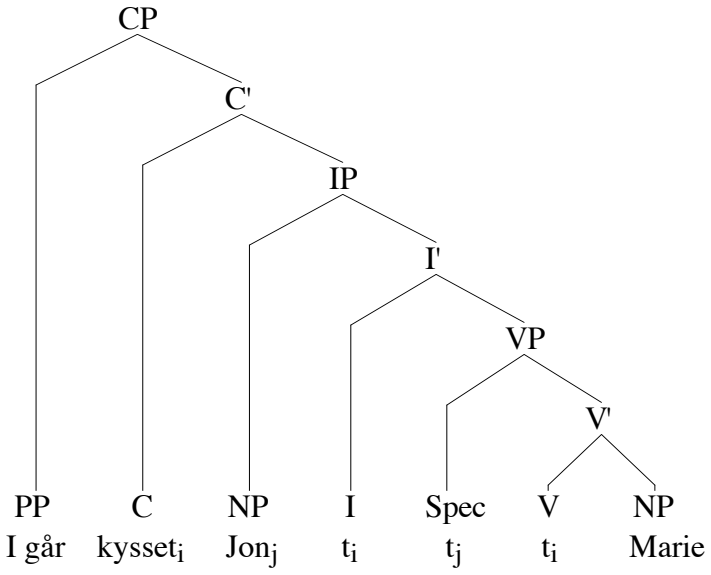
Chomsky (1993) explains this by suggesting that these verbs are semantically vacuous. Therefore, they are invisible to LF rules, and cannot move at this interface level. To prevent the derivation from crashing, auxiliaries must thus move in the overt syntax.

3.3.2 Verb placement in adult Norwegian

Like most other Germanic languages (except English), Norwegian is a verb second language. As we just saw, in English only auxiliaries move out of the VP. The finite *main* verb remains in V, and only moves to I at LF to check off weak agreement features there. In Norwegian and the other V2 languages, on the other hand, the finite verb always moves to C in main clauses, regardless of whether it is a main verb or an auxiliary. This movement is motivated by strong features in C. In all V2 languages, C needs to get its features checked off before Spell-Out. In sentences containing only a finite main verb, this verb always moves V-I-C, and thus checks its (agreement) features against the strong features in C:

(45) a. Jon kysset aldri Marie
John kissed never Mary
b. I går kysset Jon Marie
yesterday kissed John Mary

(46)



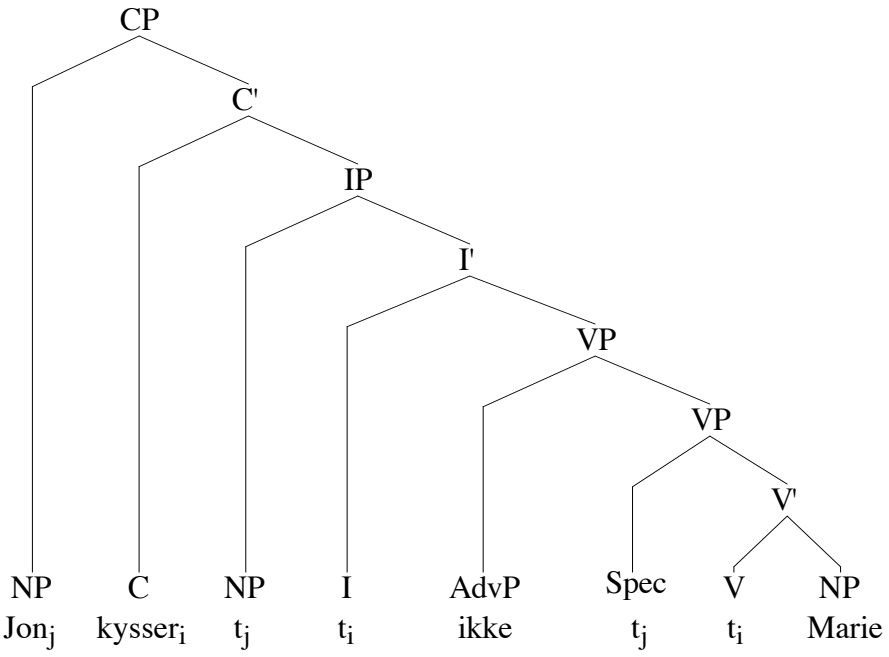
In clauses with an auxiliary in addition to the main verb, the auxiliary moves V-I-C, and the main verb stays in V:

(47) a. [$_{CP}$ Jon$_j$ [$_C$ har$_i$] [$_{IP}$ t$_j$[$_I$ t$_i$] [$_{VP}$ aldri [$_{VP}$ [$_V$ t$_i$] [$_{VP}$ [$_V$ kysset] Marie]]]]]
"John has never kissed Mary"
b. [$_{CP}$ I dag [$_C$ har$_i$] [$_{IP}$ Jon [$_I$ t$_i$] [$_{VP}$ [$_V$ t$_i$] [$_{VP}$ [$_V$ kysset] Marie]]]]
"Today John has kissed Mary"

In English the negative element *not* is assumed to head its own projection NegP. However, in Norwegian, the equivalent *ikke* is generally analysed as adjoined to VP, like adverbials, as shown in (47a). Since it is not a head projection, *ikke* does not block the verb from moving from V to I. From there the main verb can move on to C, resulting in negated utterances also being V2 in Norwegian:

(48) Jon kysser ikke Marie
John kisses not Mary

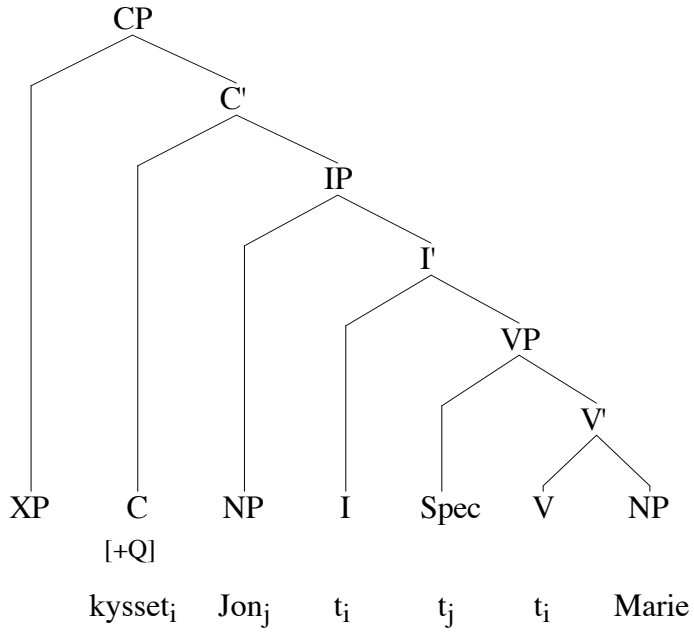
(49)



Finally, we find evidence of main verbs moving out of the VP in Norwegian *yes-no* questions. In these constructions the finite verb has moved to a position in front of the subject, viz. C. It thus checks off both the strong features as well as the Q-features in C:

(50) Kysset Jon Marie?
kissed John Mary

(51)



As we have seen, strong features in C require the finite verb to always move to C in Norwegian in both declarative clauses, topicalisations, negations, and *yes-no* question, regardless of whether it is a main verb or an auxiliary.

3.4 The challenge for bilingual children

After this overview of the placement of finite main verbs and definite noun phrases in both adult English and Norwegian, let us turn to look at how children acquire these specific constructions. I mentioned towards the end of 3.1 that language acquisition within the Minimalist Program basically involves lexical learning and deciding whether certain V- and N-features in the given language are strong or weak. I will here first discuss three different approaches to how children acquire the correct parameter settings. Then I will go on to look at the cues for acquiring verb placement and definite noun phrases in English and Norwegian. Finally, I will close this chapter by making some predictions concerning a bilingual child's acquisition of these constructions.

3.4.1 Cues and complexity in language acquisition

According to Platzack (1996), the economy considerations of the Minimalist Program imply that children should initially opt for the least marked possible grammar. On the definition of markedness, he claims that overt syntactic operations are more costly than covert ones, and he further states that "the mechanisms forcing overt operations in a language will be the marked ones" (p. 369). If children prefer the least marked grammar, they will initially assume all features to be weak and thereby avoid movement. Platzack captures this idea in what he calls the Initial Hypothesis of Syntax (Platzack 1996:376):

(52) Initial Hypothesis of Syntax (IHS)
All instances of feature checking take place after spell-out

Within this approach, language acquisition is seen as a gradual adjustment of the IHS to the target language, based on positive evidence in the input. Roberts (1999) also claims that the notion of markedness plays a crucial role in language acquisition. Along the lines of Platzack, he argues that "a structure involving movement is more complex for the learner than a structure not involving movement" (p. 292). Roberts suggests that markedness can explain the root infinitives attested in early child language (examples from Swedish in Plunkett and Strömqvist 1990:48):

(53) a. Älg säger inte mu
elk say-PRES NEG moo
b. Inte ha den
NEG have-INF that one

In (53a) the verb *säger* occurs to the left of the negation *inte*, and it shows the finite inflection. This indicates that the verb has moved out of the VP. In (53b), on the other hand, the verb is non-finite, and occurs in a position to the right of the negative element. Thus, it has not moved out of the VP. According to Roberts, the occurrence of examples such as (53b) reflects children's tendency to initially adopt the unmarked setting of the V-movement

parameter, i.e. no movement. Only when they learn verbal inflection do they start moving the verbs out of the VP.

Lightfoot (1999a, b) assumes quite a different approach to language acquisition. Based on work by Dresher and Kaye (1990) and Dresher (1998), he suggests that language acquisition is not a process of trying to match the input. Rather, he claims that the child uses structures in the input as a *source of cues* for parameter setting. The resulting grammar may not necessarily be identical to the input. According to Lightfoot (1999a:149) "the output of the grammar is entirely a by-product of the cues that the child finds". Whether or not a child sets a given parameter to the same setting as the one found in the adult language depends on how robustly the cues for this specific setting are expressed in the input. Lightfoot claims that a cue-based approach to language acquisition can account for the loss of V-movement in English. In short, what he suggests is that at a certain stage in the Middle English period, the structures providing cues for verb movement[15] were not frequent enough in the input for children to acquire this feature. Hence, these Middle English-speaking children ended up with a grammar lacking movement of the main verb.[16]

Henry and Tangney (1999) adopt an analysis which takes both structural complexity and cues into consideration. According to them, "language acquisition involves tension between the drive to create a maximally simple grammar in Universal Grammar (UG) terms and the need to adopt a grammar that covers the input data" (p. 139). They interpret the minimalist account of parametric variation slightly differently from Platzack (1996) and Roberts (1999). Rather than assuming that weak features always represent the least complex setting, they claim that a consistent grammar is simpler than a grammar which contains inconsistent feature specifications for its functional heads. As a concrete example they suggest that a

[15] I will return to which structures function as cues for verb movement shortly.

[16] For a more detailed discussion of this, see Lightfoot (1999a:151 - 167).

grammar in which all or no verbs raise to Agr_S is less complex than a grammar where some verbs raise to Agr_S and some verbs do not.

As we will see in chapter 4, I will adopt an approach similar to the one advocated by Henry and Tangney (1999) when analysing my data. Before making predictions about the acquisition of verb placement and definite noun phrases in English/Norwegian bilingual children, let us take a look at the cues for acquiring these constructions in English and Norwegian.

3.4.1.1 Word order

Lightfoot (1999a, b) claims that the main cue in V2 languages for moving the main verb V-to-C is clauses with an initial non-subject. SpecIP is associated with subjecthood, thus an initial non-subject must be located in an position above IP, viz. SpecCP. As the initial element (be it a subject or not) is always followed by the finite verb in main clauses in a V2 language, structures with an initial non-subject are clear indications of the finite verb having moved to C. An example of such a structure in Norwegian is given in (54), where the initial element is a time adverbial:

(54) $[_{CP}$ I går $[_{C}$ gikk$_i]$ $[_{IP}$ hun $[_{I}$ $t_i]$ $[_{VP}$ $[_{V}$ $t_i]$ på kino]]]
yesterday went she on cinema
"Yesterday she went to the cinema"

In addition, *yes-no* questions provide cues for moving the finite verb to C. In these constructions not only auxiliaries, but also main verbs undergo inversion. The position of the main verb preceding the subject *hun* indicates that it has to be moved to a position above IP, as in (55):

(55) $[_{CP}$ Kjente$_i$ $[_{IP}$ hun $[_{I}$ $t_i]$ $[_{VP}$ $[_{V}$ $t_i]$ mannen]]]
knew she man-DEF
"Did she know the man?"

Thirdly, verb placement in negations also constitutes a cue for moving the main verb out of the VP. In (56) we see that the finite main verb precedes the negative element *ikke*:

(56) [$_{CP}$ Hun$_j$ [$_C$ kjenner$_i$] [$_{IP}$ t_j [$_I$ t_i] [$_{VP}$ ikke [$_{VP}$ [$_V$ t_i] mannen]]]]
she knows not man-DEF
"She does not know the man"

Recall from the previous section that a structure needs to occur frequently enough in the input to function as a cue for the language learner. According to Lightfoot (1999a), the main cue structure for V2, viz. topicalised clauses, constitutes about 30% of the main clauses in V2 languages such as Norwegian, Swedish, German and Dutch. As the other two structures (*yes-no* questions and negations) also occur quite frequently in Norwegian, I suggest that the cues for verb movement V-to-C in Norwegian are quite strong. Platzack (1996), among others, reports that monolingual children acquiring Swedish (a V2 language very similar to Norwegian) produce clear cases of V2 constructions quite early (around the age of 2;0).

The English equivalent structures to (54) - (56), on the other hand, indicate that main verbs do not move out of VP. First, whereas topicalised constructions provide the main cues for verb movement in Norwegian, in English they function as cues for *not* moving the main verb to C. In these constructions the main verb follows the subject in English and is hence the third constituent in the clause. Thus, the main verb cannot have moved to C here:

(57) [$_{IP}$ Yesterday [$_{IP}$ he saw you]]

Secondly, cues for leaving the main verb in the VP are also found in *yes-no* questions. If there is an auxiliary in the question, we get subject-auxiliary inversion in adult English, resulting in (58a). If, on the other hand, there is only a main verb in the question, *do*-insertion is required, as in (58b). In both constructions, the main verb remains inside the VP. *Do*-insertion is also required in negated utterances. Here, the negative element *not* blocks the verb from moving covertly to check off the weak features in I at LF, and *do* is needed to check

these features overtly before Spell-Out, as illustrated in (59). The negative element preceding the main verb indicates that this verb is still in V:

(58) a. [$_{CP}$ Have$_i$ [$_{IP}$ you [$_I$ t$_i$] [$_{VP}$ t$_i$ [$_{VP}$ read his new book]]]]
b. [$_{CP}$ Did$_i$ [$_{IP}$ you [$_I$ t$_i$] [$_{VP}$ see the new film]]]

(59) [$_{IP}$ He [$_I$ does] [$_{NegP}$ not [$_{VP}$ see you]]]

For monolingual English children these cues seem to be sufficient to prevent movement of main verbs from V to C. English-speaking children correctly leave the main verb in V from the very early stages of language development. Inversion of non-auxiliary verbs are hardly ever found in English child language. Similarly, all negative elements precede the main verb in early child language.

3.4.1.2 DPs

Recall from 3.2.2 and 3.2.3 that I claimed an important difference between English and Norwegian DPs to be that the definiteness features are located in D in English, and in N in Norwegian. Children acquiring English need to identify these strong [DEF] features in D, and accordingly always realise this head in the overt syntax in definite DPs, through including a determiner in this position. Structures providing cues for this feature specification of English DPs are given in (60):

(60) a. [$_{DP}$ [$_D$ **the**] [$_{NP}$ boy]]
b. [$_{DP}$ [$_D$ **the**] [$_{AP}$ nice [$_{NP}$ boy]]]

In both these constructions we see that definiteness (in bold) is expressed in D. Similarly, structures like (61) provide cues that demonstrative features are also expressed in D in English:

(61) [$_{DP}$ [$_D$ **that**] [$_{NP}$ boy]]

We saw in 3.2.3 that things are quite different in Norwegian DPs. I suggest that bare definite noun phrases such as (62) indicate that the definiteness features are specified in N rather than in D:

(62) $[_{DP}\ [_{D}\ \text{gutt}\mathbf{en}_i]\ [_{NP}\ t_i]]$

The definite suffix *-en* is attached to the noun already in the lexicon, and this noun + suffix complex is inserted in N. Because D has strong N-features, N moves to D to check off these features in the overt syntax. Structures such as (63) and (64) below provide additional cues that [+DEF] is realised in N rather than in D, as the suffix is included in these noun phrases even when D is filled by a prenominal article. In 3.2.3 I claimed that the suffix is the "true" marker of definiteness in Norwegian. Thus, the prenominal article *den* only serves the function of checking off strong N-features in D. These strong N-features can probably not be detected from phrases like (62) alone. Rather, structures such as (63) function as cues for assigning D strong N-features in Norwegian. Finally, demonstrative noun phrases such as (64), provide cues that the demonstrative features are positioned in D in Norwegian, as they are in English:

(63) $[_{DP}\ [_{D}\ \mathbf{den}]\ [_{AP}\ \text{snille}\ [_{NP}\ \text{gutten}]]]$
(64) $[_{DP}\ [_{D}\ \mathbf{den}]\ [_{NP}\ \text{gutten}]]$

3.4.2 Predictions for English/Norwegian bilingual children

In section 3.3 we saw that placement of the finite main verb involves movement in the overt syntax in Norwegian, but not in English. Hence, Norwegian apparently presents the more marked option of the two. However, English verb placement also includes the Last Resort operation of *do*-insertion in certain constructions. I will therefore argue that it might be questionable whether the English or the Norwegian verbal system present the more complex system concerning placement of finite verbs.

Based on the discussion of DPs in 3.2, I suggest that Norwegian noun phrases have a somewhat more marked structure than their English equivalents. The derivation of Norwegian DPs involves movement in addition to an operation similar to English *do*-support, viz. *den*-support. This implies that the derivation of Norwegian DPs is more costly than that of English DPs.

Döpke (1997, 1998) discusses how different structures in a bilingual child's two languages may present contradicting cues for parameter settings, thus creating a *cue conflict* for the child. Let us look at the potential conflicts simultaneous input from English and Norwegian may create for the acquisition of verb placement and definite noun phrases. Concerning verb placement, an obvious cue conflict emerges; the V2 parameter is set differently in the two languages. The conflict for English/Norwegian bilingual children when setting this parameter is captured in (65):

(65) **Cue conflict for the acquisition of verb placement**
Are the features in C strong or weak?

In the acquisition of noun phrases, bilingual English/Norwegian children are faced with contradicting cues concerning the location of the definiteness features. This conflict is expressed in (66):

(66) **Cue conflict for the acquisition of DPs**
Are definiteness features generated in D or in N?

Henry and Tangney (1999) suggest that children will adopt the more complex (i.e. the more marked) setting of a parameter only if there are strong enough cues for this setting in the input. If the cues for the marked setting are not strong enough, children may resort to the unmarked setting.

When analysing my data, I will explore the possibility that cues interact with structural complexity (i.e. markedness) in the process of parameter setting. This idea of an interaction

between cues and complexity makes some interesting predictions for bilingual first language acquisition. Whereas monolingual children (usually) only have to consider cues from one language when setting their parameters, bilingual children receive cues from two different language systems with potentially different parameter values. They are thus presented with more options than their monolingual peers. Children acquiring two languages with different settings for certain parameters therefore provide very good test cases for studying how structural markedness competes with the robustness of cues in language acquisition.

Based on the three different approaches to language acquisition discussed in 3.4.1 I will make three predictions concerning transfer in bilingual A/B children (where A and B represent language variables):

Prediction 1

If a certain construction is different in language A and language B, and the one in A is less marked (i.e. less costly) than the one in B, this may lead bilingual children to transfer the less marked structure of A into language B.

Prediction 2

If the cue structures for a certain feature in language A do not occur frequently enough in the input, or the input provides inconsistent cues concerning this feature, bilingual children may transfer specifications for this feature from language B.

Prediction 3

If the structures containing the cues for a certain feature in language A are complex, their function as cues may be weakened. For bilingual children this may result in transfer of this feature from language B into language A.

The first prediction suggests that when faced with two different structures, the bilingual child will (at least initially) opt for the structurally simplest (i.e. the unmarked) construction. An English/Norwegian bilingual child would thus initially assume the English setting of the V2 parameter, as that is the unmarked alternative. Turning to the acquisition of definite DPs, we saw in 3.2 that English also provides the less marked system of definiteness marking. Hence,

according to prediction 1, a child acquiring English and Norwegian simultaneously would be likely to transfer the features of English DPs into Norwegian.

In the second prediction I hypothesise that the frequency and consistency of the cues in the input will be crucial for acquisition. For an English/Norwegian bilingual this implies that if the structures providing cues for e.g. leaving the English main verb inside VP are either infrequent in the input or inconsistent, these cues may not be robust enough to trigger acquisition of this feature in English. In such a situation, the bilingual child is liable to transfer the V2 parameter from Norwegian into English as the cues for this feature are strong in Norwegian. Similarly, if the cues for analysing N as [+DEF] in Norwegian are either infrequent or inconsistent, the child may transfer the analysis of [+DEF] from English.

My third prediction is a modification of prediction 2. Although prediction 3 also assumes cues to be important in language acquisition, it claims that the availability of these cues is not only dependent on their frequency in the input, but also on the relative complexity of the structures providing these cues. Accordingly, if the cue structures for leaving the main verb inside VP in English are complex, the V2 phenomenon might be transferred from Norwegian into English. Similarly, complex cue structures concerning the position of [+DEF] in e.g. Norwegian may lead to transfer of the specifications for this feature from English.

Hypotheses 1 and 3 make contradictory predictions concerning transfer in the acquisition of verb placement. When analysing the data from Emma we will see that the complexity of cue structures seems to be more influential on the acquisition process than the notion of structural markedness.

4. RESULTS AND DISCUSSION

In this chapter I will present and discuss the data from Emma. Section 4.1 gives a general overview of her development in English and Norwegian. Note that I will not include the parts of Emma's language development which do not differ significantly from the development found in monolingual children. Rather, I will focus on those features which I consider to be relevant to the fact that she is acquiring two languages simultaneously. In sections 4.2 and 4.3, I will take a closer look at two specific areas of Emma's language development of English and Norwegian, viz. the acquisition of verb placement, and of definite noun phrases. I will argue that the instances of language mixing found in Emma's acquisition of these constructions are indications of language transfer.

4.1 Emma's language development in general

4.1.1 Language separation

In chapter 2, I discussed the debate between the one-system hypothesis and the separate development hypothesis. When looking at the data from Emma, we find clear indications that she separates her two languages both pragmatically and grammatically already in the first recording. First, my data provide evidence that Emma separates her two languages pragmatically. As mentioned in section 1.2, she clearly associates a specific language with a specific person. This is evident in situations where she interacts with both her parents and the investigator. In the first recording, at age 2;7.10, Emma and the investigator are playing together with a ball, speaking Norwegian. Emma's mother enters the room, and Emma immediately addresses her in English. When her mother leaves, Emma turns back to the investigator and continues the conversation in Norwegian.[17] This incident shows that she easily code-switches between Norwegian and English according to whom she is addressing.

Similar findings of two-year-olds code-switching have been reported by, among others, Lanza (1992). She claims that her subject Siri, mixes her two languages in contextually sensitive

[17]Details of this interaction are included in the Appendix 1.

ways. Siri's Norwegian-speaking father is reported to allow for a more bilingual context, by e.g. employing code-switching himself, or by using a move-on strategy when Siri produces mixed utterances. The latter means that he basically ignores the fact that Siri mixes the languages, and continues the conversation. Her English-speaking mother, on the other hand, generally asks for clarification on Siri's mixed utterances, and she avoids using code-switching herself. Accordingly, Siri mixes her two languages more when interacting with her father than with her mother.

Secondly, several examples show that Emma distinguishes between two different grammatical systems. She productively uses the regular past tense endings in both English and Norwegian, (1) and (2) respectively:

(1) I tipp**ed** it over 2;10.8
(2) Grisen hopp**a** over mæ 2;10.9
"The pig jumped over me"

Although she does overgeneralise the regular endings within both languages (and much more so in English than in Norwegian), she rarely mixes endings *between* the two languages. In fact, I only found one instance of a potential mixing of the past tense inflectional morpheme:

(3) Now tip**a** you my tower over 2;10.8

This could be an example of transfer of the Norwegian past tense morpheme *-a* into English. However, this may just as well be transfer of a whole lexical word with its inflections, as the English verb *to tip* has the Norwegian equivalent *å tippe*, with the past tense form *tippa*.

Another indication of two grammatical systems is Emma's use of possession in the two languages. In Norwegian the possessive determiner can either precede or follow the noun. The latter possibility is the most frequent in the Norwegian dialect Emma is exposed to. In English, this determiner always precedes the noun in these constructions. Emma uses both patterns in Norwegian as seen in (4a - b), and in accordance with her dialect, the majority of

her possessive determiners follow the noun. In her English, the possessive determiner always correctly precedes the noun as in (5a). Structures such as (5b) are not found in my data of Emma's English:

(4) a. Her er **din** tog 2;7.21
"Here is your train"
b. Æ ordne krona **mi** 2;7.21
I fix crown-the my
"I'm fixing my crown"

(5) a. I have **your** dolls and a big doll 2;8.5
b. *I have doll your

4.1.2 Sporadic language mixing

Paradis and Genesee (1996) make a useful distinction between episodic code-mixing and systemic transfer. They claim that episodic code-mixing "indicates an 'on-line' interaction between the two languages in performance and does not necessarily indicate systemic interaction at the level of competence" (Paradis and Genesee, 1996:3). Systemic transfer, on the other hand, is seen as an indication of interdependency between the development of the two languages. I will adopt this distinction in the analysis of my data. Hence, sporadic language mixing will not be analysed as language transfer. Systemic mixing between two languages, on the other hand, will be taken as evidence for transfer. In this subsection I will give a brief overview of Emma's sporadic mixings. The systemic mixings will be dealt with in subsections 4.2.1 and 4.2.2.

Sporadic language mixings are attested at the lexical level in both Emma's English and Norwegian. It is important to note here that the family as a whole consistently uses some Norwegian words (for Norwegian concepts, etc.). These words include, among others, *barnehage* (for *day-care centre*), *barne-TV* (for children's programs on TV), and *matpakke* (for *packed lunch*). Another Norwegian word which the parents use frequently in their English, is *sånn*. This word has no direct equivalent in English. In Norwegian *sånn* can be

used in (at least) two different ways. First, it can be used as a filler, as shown in (6), meaning something like *there you are* or *alright*:

(6) **Sånn**, nå er vi klare
"**Alright**, now we are ready"

Secondly, *sånn* may have the form and function of a noun. The head noun in a noun phrase can be substituted by *sånn*, provided that the meaning of *sånn* is given by the context:

(7) Jeg vil ha en **sånn**
"I want **one of those**"

In my data Emma's parents only use *sånn* in the first sense in their English. Interestingly, it seems that Emma overextends the meaning of *sånn* in her English to include also the second sense. This is exemplified by utterances such as (8), where Emma attaches the English plural suffix *-s* to *sånn* as if it were an English noun:

(8) two **sånns** here 2;8.5
"two of these"

Except for the example in (8), Emma's use of these "family words" mirrors that of her parents. Accordingly, they are not counted as lexical mixings in Emma's speech, but rather as "family borrowings".

However, in addition to these borrowings, occasional lexical mixings are attested in both languages. In (9a), a Norwegian lexical word is used in an otherwise English utterance. Sentence (9b) shows mixing of an English lexical word into Norwegian:

(9) a. And a **vegg** here 2;8.5
"And a wall here"
b. Den andre ballong **popped** 2;8.17
"The other balloon popped"

I found substantially more lexical mixings (almost twice as many) from Norwegian into English, as in (9a), than the other way round (see Table 1 and 2 below). I assume these mixings occur when she either does not know the word in the appropriate language, or when she simply has forgotten it. Examples such as (10a - b) indicate that she at least sometimes knows the equivalent word in the other language. In (10a) I suggest that the word from the correct language for some reason is not retrieved fast enough from the lexicon, resulting in language mixing.

(10) a. Åh, **look** der! 2;7.21
"Oh, look over there!"
b. Åh, **se** her! 2;7.21
"Oh, look over here!"

More interestingly for the scope of this thesis is the fact that Emma also to some extent mixes structures and certain expressions or language-specific ways of saying things:

(11) a. I gonna take **those here pizzas** on **those here plates** 2;9.2
"Jeg skal ta **de her pizzaene** på **de her fatene**"[18]
(Eng. "I'm gonna take/put **these pizzas** on **these plates**")
b. I can **take** this matpakke **with to barnehage** 2;9.23
"Jeg kan **ta** denne matpakken **med i barnehagen**"
(Eng. "I can take this packed lunch/sandwich with me to the day-care centre")
c. **Have du thinking** to eat some of that? 2;9.23
"**Har du tenkt** å spise noe av det?"
(Eng. "Are you going to eat some of that?")
d. Det **ser som** et egg 2;10.9
"It **looks like** an egg"
(Norw. "Det ser **ut** som et egg")

Again, I found twice as many instances of mixing from Norwegian into English than the other way round throughout the recording period (22 versus 9). See Table 1 and 2.

[18]These kinds of noun phrases are at least frequent in the North Norwegian dialect Emma is exposed to. The standard Norwegian equivalent would be "Jeg skal ta *disse pizzaene* på *disse fatene*".

Table 1: Sporadic mixing from Norwegian into English:

Rec. no.	Rec. 2	Rec. 4	Rec. 6	Rec. 8	Rec. 10	Rec. 12	Total
Age	2;7.14	2;8.5	2;8.17	2;9.2	2;9.23	2;10.8	
lexical mixing	**7**	**6**	**6**	**5**	**8**	**3**	**35**
structure mixing	**1**	**3**	**5**	**7**	**5**	**1**	**22**
Total	**8**	**9**	**11**	**12**	**13**	**4**	**57**

Table 2: Sporadic mixing from English into Norwegian:

Rec. no.	Rec. 1	Rec. 3	Rec. 5	Rec. 7	Rec. 9	Rec. 11	Rec. 13	Total
Age	2;7.10	2;7.21	2;8.7	2;8.20	2;9.11	2;9.25	2;10.9	
lexical mixing	**3**	**1**	**4**	**5**	**1**	**0**	**5**	**19**
structure mixing	**2**	**0**	**2**	**1**	**0**	**0**	**4**	**9**
Total	**5**	**1**	**6**	**6**	**1**	**0**	**9**	**28**

As these tables show, the frequency of both lexical and structural mixings is random throughout the recording period in both languages. I found no notable increase in mixing into Norwegian after the point when Emma realised that the investigator knew English (at 2;8.20, the seventh recording). Similarly, no notable drop in mixing of Norwegian elements into English is detected when Emma interacts with monolingual English-speaking people.[19]

4.1.3 Language dominance

MLU (mean length of utterance) was counted in number of words rather than morphemes, and it turned out to be more or less the same for both languages throughout the recording period (see Appendix 2 for details).

I briefly touched upon the issue of language dominance in chapter 2. There I indicated that the type and direction of language mixing would not necessarily be governed by the notion of language dominance. Rather, I suggest here that the *frequency* of mixing may be an indication of one language being stronger than the other. Hence, although Emma seems to be a fairly balanced bilingual, I will analyse the relatively higher frequency of both lexical and structural

[19]The sixth recording contains conversations between Emma and her monolingual English-speaking grandparents.

mixing into English than into Norwegian as an indication of Norwegian as Emma's stronger language. Note, however, that I do not believe that language dominance *governs* the kinds of possible mixings nor the direction of mixing.

Another aspect in Emma's language production which indicates that Norwegian is her stronger language, is found in phonology. Several adult English and Norwegian words which mean the same are also pronounced in similar ways. English *here/there* and the Norwegian equivalents *her/der* are examples of this. Some pronouns are also very close in pronunciation, such as English *you/mine* and Norwegian *du/min*.[20] In Emma's English, these words are frequently given with the Norwegian pronunciation.

Recall that along with Paradis and Genesee (1996), I do not consider sporadic language mixing to be evidence of language transfer. As I do not assume language dominance to be a determining factor involved in language transfer either, the findings reported in the previous subsections will not be discussed any further.

4.2 Systemic mixing - transfer

In the following sections I will discuss the more systemic mixings found in the data from Emma. To adopt the definition in Paradis and Genesee (1996), systemic mixing here refers to "the influence at the level of representation or competence, sustained over a period of time" (p. 3). This kind of mixing provides evidence for *transfer* from one language into another. Recall from the introduction that I predicted transfer to occur in areas where the two languages being acquired differ. As hypothesised, I found transfer involved in Emma's acquisition of verb placement and of definite noun phrases. Subsections 4.2.1 and 4.2.2 present the data found concerning these two constructions, respectively. Each subsection is

[20]Emma most of the time uses *mine* in English in positions where *my* is the appropriate pronoun. I assume this to be caused by both influence from Norwegian *min*, and the fact that *mine* is used in some constructions in English.

followed by a discussion of the findings. In subsection 4.2.3 I will summarise the discussions and make some concluding remarks.

4.2.1 Emma's development of word order

The word order in declarative main clauses is superficially the same in English and Norwegian, viz. subject - verb - object (SVO). These kinds of constructions are not reported to be an area of problems in neither monolingual English nor monolingual Norwegian children. Main clauses may also be topicalised, e.g. either by an adverbial or by the direct object. The underlying differences between English and Norwegian main clause word order become apparent in exactly these topicalised structures. Norwegian, being a V2 language, requires the finite verb to be in the second position (12), whereas in English the main verb remains inside the VP (13):

(12) I går **gikk jeg** på kino
yesterday **went I** to the cinema
(13) Yesterday **I went** to the cinema

4.2.1.1 English

Three different structures in Emma's English seem to indicate that she to some extent overgeneralises the V2 phenomenon from Norwegian into English. These constructions are topicalised main clauses, negatives, and *yes-no* questions. Consider first the topicalised main clauses. In general, the main verb figures correctly in the position following the subject in Emma's English topicalisations, as in (14) - (15). However, structures like (16) are also found:

(14)	That **we need** to take away maybe	2;8.5
(15)	Now **that gonna** have some sleep here	2;8.5
(16)	Now **throw I** it	2;8.5

In fact, in 26,3% of her topicalised main clauses in English, the finite main verb is placed in the second position, as in (16). See Table 3 below:

Table 3: Word order in Emma's topicalised English main clauses:

Rec. no.	Rec. 2	Rec. 4	Rec. 6	Rec. 8	Rec. 10	Rec. 12	Total
Age	2;7.14	2;8.5	2;8.17	2;9.2	2;9.23	2;10.8	
XP-S-V	**6** (75%)	**19** (65,5%)	**15** (75%)	**9** (81,8%)	**6** (100%)	**1** (50%)	**56** (73,7%)
*XP-V-S	**2** (25%)	**10** (34,5%)	**5** (25%)	**2** (18,2%)	**0** (0%)	**1** (50%)	**20** (26,3%)
Total	**8**	**29**	**20**	**11**	**6**	**2**	**76**

According to Döpke (1997), these kinds of constructions are not found in monolingual English children. When they start producing topicalised utterances, the word order is always XP-S-V, with the main verb remaining inside the VP.

Similar tendencies are found in Emma's use of negation. She correctly places both auxiliaries, modals, and copula *be* in front of the negated element *not*, as illustrated in (17):

(17) a. **Is** it **not** called xx[21] a rooster? 2;8.17
b. I **could not** do it 2;7.14
c. Cause he **will not** have a diaper 2;8.5
d. And this doll **is not** tired 2;9.2

However, when looking at Emma's negative utterances with a main verb only, my findings indicate that she is not sure about the placement of this verb. Emma produced 32 such utterances throughout the recording period. Out of these, the majority (68,8%) showed preverbal negation, exemplified in (18):

(18) a. Mommy **not know** that 2;8.17
b. She **not heard** me 2;10.8

Only three of the 32 negative utterances exhibited *do*-insertion:

(19) a. Now I **don't** have xx that train 2;7.14
b. **Didn't** <du> take that? 2;7.14
c. I **don't** want +...[22] 2;7.14

[21] xx in the transcription refers to an unintelligible word in the recording.

[22] +... in the transcription indicates that the sentence was not completed.

In the remaining seven utterances, the finite main verb has moved out of the VP, and precedes the negative element. See Table 4 below for details.

(20) a. I **hurt not** this knee now 2;8.5
b. He **like** it **not** 2;8.17
c. She **have not** dress 2;9.2

Table 4: Emma's English negations with a main verb only (negations with auxiliaries and copulas are excluded):

Rec. no.	Rec. 2	Rec. 4	Rec. 6	Rec. 8	Rec. 10	Rec. 12	Total
Age	2;7.14	2;8.5	2;8.17	2;9.2	2;9.23	2;10.8	
Neg-V	**2**	**7**	**9**	**0**	**2**	**2**	**22** (68,8%)
do-Neg-V	**3**	**0**	**0**	**0**	**0**	**0**	**3** (9,4%)
V-Neg	**0**	**3**	**1**	**2**	**1**	**0**	**7** (21,8%)
Total	**5**	**10**	**10**	**2**	**3**	**2**	**32**

Hence, when looking at Emma's production of negated utterances with a main verb only (leaving out both negative constructions with modals and auxiliaries, and with the copula *be*), I found that the main verb precedes the negative element 21,8% of the time, indicating that she is employing verb movement.

In addition to this, Emma also frequently raises the verb *gonna* in negations. In fact, in 15 out of the 16 instances of negations with *gonna* found in the data, this verb is raised to a position preceding the negative element, as illustrated in (21a - b). The only instance of *gonna* following the negation is given in (21c):

(21) a. The teletubby **gonna not** sleep in there more 2;8.5
b. I **gonna not** tip it over 2;10.8
c. <Du> **not gonna** knock the tower 2;10.8

The third type of construction indicating that Emma is moving the finite main verb out of the VP is *yes-no* questions. She productively applies both subject-auxiliary inversion (22a - b) and subject-copula inversion (22c - d):

(22) a. Can you find that in the bedroom? 2;7.14
b. Have <du> braided this? 2;8.5
c. Is it summer now? 2;8.17
d. Was I in Tenerife? 2;9.2

In addition to this, however, she frequently inverts main verbs as well in *yes-no* questions. During the recording period, Emma produces 12 *yes-no* questions requiring *do*-insertion in adult American English. Out of these 12, she only inserts *do* in two of them, and only one of these two is correct (23a). The other one shows double tensing (23b). In the remaining ten, the main verb and the subject are inverted (23c - e) (mostly with the main verb *have*; six of the ten):

(23) a. Didn't <du> take that? 2;7.14
b. Does your chicken can come out of your egg? 2;8.17
c. Drive daddy me to barnehage? 2;7.14
d. Have I a skirt?[23] 2;9.2
e. Need <du> any matpakke? 2;9.23

In Emma's *yes-no* questions I also found the verb *gonna* in an inverted position (there was only one instance of *gonna* in *yes-no* questions attested in the data):

(24) Gonna <du> build a fine tower that do you like? 2;10.8

According to Pinker (1984) and Aldridge (1989), among others, inversion of non-auxiliary verbs is virtually never attested in monolingual English-speaking children. Kuczaj and Maratsos (1983) also report that when children start producing subject-auxiliary inversion, only the verbs that can be inverted in the adult language are inverted in the children's speech. O'Grady (1997) claims that examples such as (25) (taken from Erreich, Valian, and Winzemer, 1980:163) are extremely rare:

[23]As Emma's parents speak American English, they do not use questions with a raised verb *have* as in (1):
(1) Have you got any money?
Hence, I doubt that Emma's questions such as (23d) are instances of questions lacking *got*:
(2) Have I *got* a skirt?

(25) Goes paci(fier) in mouth?

O'Grady also states that utterances such as (21a - b) and (24) are not found in monolingual English children. He claims that "[e]ven verbs such as *gotta* and *hafta*, which are semantically similar to the auxiliaries *must* and *should*, are not used by language learners in inversion patterns (...)" (p. 159).

We should note here that both *yes-no* questions and negations require *do*-insertion in adult English if the corresponding declarative clause only contains a main verb. Looking at the data from Emma, it seems that she has not yet fully acquired the operation of *do*-support. We see this in the low frequency of *do*-insertion in both constructions. Out of the twelve *yes-no* questions with a main verb she produced during the recording period, only two showed any attempt of *do*-insertion (and only one succeeded). In Emma's negations, only three out of 25 utterances[24] exhibit *do*-insertion. Clearly, Emma has not yet acquired the intricate system of *do*-support in English.[25]

4.2.1.2 Norwegian

Recall from chapter 3 that in English, topicalisations, negations and *yes-no* questions all indicate that the finite main verb remains inside the VP. In Norwegian, on the other hand, these constructions exhibit verb movement from V to C (the V2 phenomenon). In the data from Emma it seems that V2 is fairly well established in her Norwegian already at the starting point of the recordings. She consistently places the finite main verb in the second position in both unmarked main clauses, (26a) - (27a), as well as in main clauses topicalised by either an adverbial (26b), or an object (27b):

[24]I have left out the 7 instances of negations with a raised main verb here, as *do*-support is not needed if the main verb is raised. The remaining 22 utterances show preverbal negation, i.e. the negative element *not* precedes the verbal element.

[25]Compared to three of the monolingual English children in a study by Andersen (1996), Emma seems to be slightly delayed in the acquisition of *do*-support in negations. Andersen's three subjects productively use *do*-insertion in negative clauses at the ages of 2;5.25, 2;6.23, and 2;9.3, respectively.

(26) a. Vi **kommer** 2;9.25
"We are coming"
b. Snart **kommer** vi 2;9.25
"Soon we are coming"

(27) a. Vi **glemte** hesten 2;9.25
"We forgot the horse"
b. Hesten **glemte** vi 2;9.25
"The horse we forgot"

Only 7 (3,4%) of her topicalised main clauses occur with the finite main verb in the third position, as in (28), (all of these utterances are topicalised by an adverbial). See Table 5 below.

(28) No æ **ordna** det 2;7.10
"Now I fixed it"

Table 5: Word order in Emma's Norwegian topicalised main clauses:

Rec. no.	Rec. 1	Rec. 3	Rec. 5	Rec. 7	Rec. 9	Rec. 11	Rec. 13	Total
Age	2;7.10	2;7.21	2;8.7	2;8.20	2;9.11	2;9.25	2;10.9	
XP-V-S	**14** (93,3%)	**7** (87,5%)	**9** (90%)	**7** (87,5%)	**48** (100%)	**49** (96,1%)	**67** (98,5%)	**201** (96,6%)
*XP-S-V	**1** (6,7%)	**1** (12,5%)	**1** (10%)	**1** (12,5%)	**0** (0%)	**2** (3,9%)	**1** (1,5%)	**7** (3,4%)
Total	**15**	**8**	**10**	**8**	**48**	**51**	**68**	**208**

Unfortunately, data from monolingual Norwegian children are scarce. However, Schlyter and Håkansson (1994) report on the acquisition of V2 in five monolingual Swedish children (aged 1;11 - 3;1). As Swedish is also a V2 language and in addition quite similar to Norwegian in many respects, it is fair to assume that the development of V2 would be basically the same in the two languages. Schlyter and Håkansson claim that Swedish children acquire the V2 parameter without any problems, and sentences with the verb in the third position are extremely rare in their data. Utterances such as (29) only constitute (2%) of the sentences with a subject and a verb (from Schlyter and Håkansson 1994:52):

(29) Nu han är borta Niklas (2;10)
now he is away

Platzack (1996) found instances of V2 already at 1;11 in one of his subjects (from Platzack 1996:376):

(30) Nu får pappa denna — Sara (1;11)
now get:PRES daddy this

However, he claims that these kinds of constructions are not consistently used until about a year later. By this I assume Platzack suggests that the V2 parameter is not yet fully acquired until the end of the third year. For another subject, Embla, he also found that the finite verb is almost always in the second position in utterances with a sentence-initial non-subject (i.e. what I have termed *topicalised sentences*). In fact, out of the 24 topicalised utterances Embla produced from 1;9 - 2;1 only one (4%) displayed the finite verb in the position following the subject (from Platzack 1996:400):

(31) Julklapp Embla har — Embla (2;1)
christmas present Embla has

Comparing this to the Norwegian data from Emma, we find that the developmental patterns are more or less the same. She productively applies V2 already at the beginning of the recordings, but V2 is still not used obligatorily at the end of the third year.

Müller (1996) reports similar findings in monolingual German children. She concludes that "nearly all researchers agree that V2 patterns (where the subject appears in the position immediately following the finite verb) emerge early and that V2 is not obligatory in child grammar" (p.1000).

Emma's use of negations in Norwegian also indicates that she has acquired the V2 effects. During the recording period, she always places the finite verb in front of the negative element *ikke*, regardless of whether the verb is a modal auxiliary, copula *be*, or a main verb. (I found no instances of negated utterances with an auxiliary *have* and a main verb in the data). This is illustrated in (32):

(32) a. Æ **vil ikke** ha den 2;7.21
I will not have it
"I don't want it"
b. Den **er ikke** farlig 2;7.10
it is not dangerous
"It is not dangerous"
c. Æ **miste ikke** hatten min 2;8.7
I lose not hat-DEF my
"I don't lose my hat"

Finally, *yes-no* questions do not constitute an area of problems in Norwegian for Emma. Both auxiliaries and main verbs are correctly inverted in all of her *yes-no* questions, as is illustrated by (33a - c):

(33) a. **Kan du** ta den ned? 2;7.10
"Can you take that down?"
b. **Er det der** en frosk? 2;9.25
is that there a frog
"Is that a frog?"
c. **Har dokker** en fat? 2;9.25
have you a plate
"Do you have a plate?"

Tables 3 and 5 show that Emma uses significantly more topicalised utterances in Norwegian than in English (a total of 208 in Norwegian versus 76 in English). This asymmetry crucially mirrors the distributional patterns found in the respective adult languages. As Hasselgård et al. (1998:309) point out, "[i]n main clauses of declarative sentences, fronting is an infrequent option in English compared with Norwegian".

Table 6 below indicates that in the vast majority (93,5%) of Emma's topicalised English utterances, an adverbial rather than the object is fronted. The same pattern is found in adult English. Although adverbials are topicalised more frequently than objects in Norwegian too, fronting of objects constitutes 21,2% of Emma's Norwegian topicalised structures (see Table

7). Again, this corresponds to what we find in the adult language as well. According to Hasselgård et al. (1998:309) "[f]ronting of non-subject noun phrases is far less common in English than in Norwegian".

Table 6: Types of topicalisation in Emma's English:

Rec. no.	Rec. 2	Rec. 4	Rec. 6	Rec. 8	Rec. 10	Rec. 12	Total
Age	2;7.14	2;8.5	2;8.17	2;9.2	2;9.23	2;10.8	
w/adv.	**8**	**27**	**19**	**10**	**6**	**2**	**72** (93,5%)
w/obj.	**0**	**3**	**1**	**1**	**0**	**0**	**5** (6,5%)
Total	**8**	**30**	**20**	**11**	**6**	**2**	**77**

Table 7: Types of topicalisation in Emma's Norwegian:

Rec. no.	Rec. 1	Rec. 3	Rec. 5	Rec. 7	Rec. 9	Rec. 11	Rec. 13	Total
Age	2;7.10	2;7.21	2;8.7	2;8.20	2;9.11	2;9.25	2;10.9	
w/adv.	**14**	**4**	**6**	**4**	**47**	**39**	**50**	**164** (78,8%)
w/obj.	**1**	**4**	**4**	**4**	**1**	**12**	**18**	**44** (21,2%)
Total	**15**	**8**	**10**	**8**	**48**	**51**	**68**	**208**

4.2.1.3 Discussion

In section 3.4.2 I claimed that the potential conflict involved in the acquisition of verb placement for English/Norwegian bilinguals was whether to move the finite main verb out of the VP, or to leave it in situ. Based on work by, among others, Schlyter and Håkansson (1994), Schlyter (1998) suggests that the (X)SV(Y) structure seems to be more dominant than (X)VS(Y) for bilinguals. Schlyter and Håkansson (1994) studied three Swedish/French bilingual children for whom Swedish was the dominant language. In the data from these children, they did not find any instances of transfer of the V2 parameter from Swedish into French. Schlyter and Håkansson suggest that this is related to the notion of markedness "in the sense that an unmarked word order (i.e. SVX) can be transferred, but not a marked one (XVS)" (p. 58). However, as we saw in section 4.2.1.1, evidence from three different structures seems to indicate that Emma to a certain extent overgeneralises the V2 rule from Norwegian into English. In 26,3% of her topicalised English utterances, the finite main verb is placed in the second position, resulting in utterances such as (34a). She also shows a tendency to raise main verbs in negative constructions. When looking at Emma's negated

utterances with a main verb only (leaving out both negative constructions with modals and auxiliaries, and with the copula *be*), I found that in 21,8% of her negations, the main verb precedes the negative element, as in (34b). The third type of structure indicating an overgeneralisation of the V2 rule into English is *yes-no* questions. In 10 out of Emma's 12 *yes-no* questions requiring *do*-insertion in adult English, the main verb is raised (rather than just auxiliary *have*, copula *be*, and modal auxiliaries). An example of this is given in (34c):

(34) a. Now **have I** ringed Angus 2;8.17
b. I **hurt not** this knee now 2;8.5
c. **Have I** two combs? 2;8.5

I suggest that the evidence from these three constructions indicates that Emma has not yet fully acquired the rules for verb placement in English. As these kinds of errors are usually not found in monolingual English children, it is fair to assume that they are caused by the fact that Emma is acquiring two languages simultaneously.

A first point to note is that the word order in English and Norwegian main declarative clauses is superficially the same, viz. subject - verb - object, as illustrated in (35):

(35) a. John kissed Mary
b. Jon kysset Marie
S V O

From these constructions alone it is not possible to decide whether the finite main verb is in V or has moved to C. I will suggest here that Emma at the stage of the recordings (age 2;7 - 2;10) is considering the possibility that the main verb moves to C in main clauses in English as well as in Norwegian. Along with Schlyter and Håkansson (1994), Schlyter (1998) claims that theories of markedness need to be taken into account when discussing the phenomenon of language transfer, and she indicates that the direction of transfer is linked to the notion of markedness. Assuming a marked structure to be a structure involving costly operations such

as movement, Schlyter's suggestion corresponds to my prediction 1 (here repeated from chapter 3):

Prediction 1

If a certain construction is different in language A and language B, and the one in A is less marked (i.e. less costly) than the one in B, this may lead bilingual children to transfer the less marked structure of A into language B.

It is generally assumed that V2 is more costly than an SVO construction as the former involves verb movement (cf. Chomsky 1995). As Emma still seems to transfer the V2 phenomenon into English, I argue that Schlyter's indications of a preference for (X)SV(Y) over (X)VS(Y) does not hold in this case. Accordingly, my prediction 1 is not met when looking at Emma's acquisition of verb placement in English and Norwegian.

De Houwer (1997) presents evidence that children do not necessarily always opt for the least costly alternative in language acquisition. She studied the use of past verb forms in a bilingual Dutch/English girl, Kate (aged 2;7 - 3;4). In Dutch, present perfect is the most common way of expressing past tense, whereas in English, the simple past is used most frequently. Note that both constructions are used in both languages. De Houwer claims that the Dutch present perfect construction is considerably more complex than the English simple past. Still, her subject Kate follows the patterns found in the input, thus choosing the more complex structure in Dutch, although the simple past alternative is available. Hence, it seems that when children determine which is the more "economic" alternative, they do not necessarily base this decision solely on the structural markedness of a construction. I will come back to this alternative approach to economy shortly.

As the notion of markedness cannot account for the transfer involved in Emma's placement of the finite main verb, let us turn to the cue-based approach to language acquisition. It seems that the cues for not moving the main verb in English are confusing or not strong enough to prevent Emma from trying out this option. Let us take a closer look at the cues again. The

main cue structure for leaving the main verb in V is topicalised clauses. In such clauses it would be less costly to leave the verb in V until after Spell-Out, and then move it covertly at LF, than to move the verb in the overt syntax. However, I suggest that Emma does not pick up enough cues to be sure that the main verb stays in situ in these constructions. We saw in 4.2.1.2 that topicalised utterances are much more frequent in Norwegian than they are in English. Hence, the cues for V2 in Norwegian are arguably stronger than the cues for "main verbs stay in V" provided by English in the bilingual input. Unmarked declarative clauses with an SVO order, such as (35) above, leave open the possibility of being analysed as V2 constructions. I therefore suggest that having analysed Norwegian main clauses as V2 tempts Emma to occasionally resort to this analysis for English main clauses as well. Hence, my prediction 2 (repeated here from chapter 3) is supported in the data.

Prediction 2

If the cue structures for a certain feature in language A do not occur frequently enough in the input, or the input provides inconsistent cues concerning this feature, bilingual children may transfer specifications for this feature from language B.

Döpke (1997, 1998) presents similar findings in three German/English bilingual children. She found these children to have problems with placement of the non-finite verbs in German.[26] Whereas monolingual German children early differentiate between non-finite verbs in sentence-final position and finite verbs in the second position, Döpke's three bilingual subjects took longer to acquire this distinction. In what she refers to as phase III[27], Döpke claims that these children move German verbs to a mid-sentence position regardless of whether it is finite or not. As unmarked main clauses in German and English are superficially similar (subject - verb - object), Döpke (1998:561) claims that "(...) the partially overlapping surface structures in German and English make it temporarily difficult for the

[26]German is a V2 language. Thus, finite verbs are always in the second position in main declarative clauses. Non-finite verbs do not move out of the VP and are therefore located in sentence-final position, as German VPs are head final.

[27]Phase III corresponds to different ages for the three children, 2;7 - 2;11, 2;5 - 3;0, and 2;3 - 2;7 in their development of German.

bilingual child to differentiate between the two languages on the level of syntax, and that the superficial similarities are instrumental in delaying the correct placement of the nonfinite verb within the verb phrase". Hence, she suggests that the input from English enhances the "verb-before-object" cue for German, and creates a cue conflict for the bilingual children concerning where to place non-finite verbs.

The two additional structures providing cues for leaving the English main verb in V, *yes-no* questions and negations, require *do*-insertion if the corresponding declarative clause contains a main verb only. As we saw in section 4.2.1.1, Emma has probably not fully acquired this operation yet. I therefore suggest that the complexity of these structures make them less available as cues for the [-V2] setting of the V2 parameter. Assuming this, we see that my prediction 3 is also met in the case of Emma's acquisition of verb placement.

Prediction 3

If the structures containing the cues for a certain feature in language A are complex, their function as cues may be weakened. For bilingual children this may result in transfer of this feature from language B into language A.

Viewed in isolation, English affirmative main clauses are probably more economical than the Norwegian equivalents because the former only exhibits movement at LF. However, when *do*-support is required in the visible syntax to check the weak features in I, this kind of operation is arguably more costly than overt verb movement to C to check the strong features there found in Norwegian. Recall from chapter 3 that *do*-insertion is analysed as a Last Resort operation. As Emma has not yet fully acquired this operation (and this is an operation that is generally acquired later than V2 effects in children acquiring a V2 language), it is perhaps not so surprising that Emma tries out the hypothesis that C is strong in English to avoid the complexities of *do*-support.

Adding to the potential confusion regarding verb placement is the fact that auxiliary *have* and copula *be* in English behave like both main verbs and auxiliaries in Norwegian, and thus may raise out of the VP in both *yes-no* questions and negations, as in (36a - b):

(36) a. Is$_i$ she [$_{VP}$ t$_i$ a doctor]?
b. She is$_i$ not [$_{VP}$ ti a doctor]

Henry and Tangney (1999:239) claim that "a language where all verbs raise to Agr$_S$, is simpler (...) than one where some verbs raise to Agr$_S$ and some do not". In that sense, the Norwegian system of verb placement is arguably *more* economical than the English one, as *all* finite verbs move out of VP in the overt syntax in Norwegian, whereas only auxiliaries and copulas move overtly in English. It is thus likely that from Emma's point of view the cues for leaving the main verb in V are not overwhelmingly strong in English.

Summing up, I suggest that the above mentioned facts concerning English verb placement, supported by the strong cues for V-to-C movement in Norwegian, cause Emma to occasionally transfer the V2 rule from Norwegian into English. My prediction 1 was rejected by the data, as Emma transfers the more marked parameter setting (V2) into the language with the unmarked setting (SVO). On the other hand, I found support for my predictions 2 and 3 as both the low frequency and the relative complexity of the cue structures affect their function as cues for acquisition. Hence, we see that the nature of the cues is more influential in the acquisition of verb placement than structural markedness. The cues Emma picks up from the bilingual input prevent her from consistently assigning the correct (unmarked) parameter setting to English main verbs, viz. remain in V. She therefore optionally transfers the strong features in C (i.e. the marked alternative) from Norwegian into English because of the unclear nature of the English input when combined with input from Norwegian.

4.2.2 Emma's development of noun phrases

In chapter 3 I claimed that one of the main differences between English and Norwegian DPs is the location of the definiteness features. In English, [+DEF] is expressed in D, whereas in

Norwegian, this feature sits in N. We see the difference in phrases such as (37) - (38) below. While an independent prenominal definite article *the* marks definiteness in English, in Norwegian, this function is filled by a definiteness suffix attached to the noun:

(37) $[_{DP}\ [_{D}$ the$]\ [_{NP}\ [_{N}$ house$]]]$
(38) $[_{DP}\ [_{D}$ huset$_i]\ [_{NP}\ [_{N}\ t_i]]]$

4.2.2.1 Norwegian

Based on the data from a monolingual Swedish boy Tor, Svartholm (1978) suggests that the singular definiteness suffix is the first inflectional morpheme acquired by monolingual Swedish children. Nelfelt (1990) also studied the language development in a Swedish boy, Markus, from age 1;9.3 to 1;11.12. Her findings similarly indicate that the singular definiteness suffix is among the earliest morphemes to be acquired. In fact, Markus uses this suffix productively by the age of 1;11.12. At this stage, the singular indefinite article also begins to emerge. As Norwegian is closely related to Swedish in many respects, it is fair to assume that we would find basically the same developmental pattern in monolingual Norwegian children.

When looking at the data from Emma, I found that she produces a wide variety of Norwegian noun phrases by the time of the first recording. She frequently uses indefinite noun phrases, both with and without a modifying adjective, as in (39a - c):

(39)	a. Det er **en stjerne**	2;7.10
	"That is a star"	
	b. Det var **en hull** her[28]	2;8.20
	"There was a hole here"	
	c. Æ vil ha **en stor ku** der oppi	2;8.7
	"I want a big cow in there"	

[28]I will not discuss Emma's gender mistakes here. Let me just point out that she more or less only uses the masculine gender.

As mentioned in 4.1.1, Emma also uses both the two variants of genitive constructions found in adult North Norwegian.[29] Examples (4a - b), here repeated as (40a - b), show this:

(40) a. Her er **din tog** 2;7.21
"Here is your train"
b. Æ ordne **krona mi** 2;7.21
I fix crown-the my
"I'm fixing my crown"

I should mention here that she makes a few mistakes when producing these constructions. In (41), she incorrectly attaches the definiteness suffix to a noun preceded by the possessive determiner, whereas in (42), the definiteness suffix is incorrectly absent on a noun followed by a possessive determiner:

(41) Æ vil ha **min kua** der oppi 2;8.7
I want have my cow-the there up-in
"I want to have my cow in there"
(42) Og han tok ikke med **kylling min** 2;8.20
and he took not with chicken my
"And he didn't bring my chicken"

My data from a monolingual Norwegian child show that these errors occur in monolingual Norwegian children too:

(43) mamma min Henning 2;3.24
mother my
"my mother"

Note that Emma does not use adjectives in these genitive constructions yet, i.e. she never produces phrases like those in (44):

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[29]In standard Norwegian, the genitive *-s* is also used, but this variant is very infrequent in North Norwegian. I found only one instance of a genitive *-s* in Emma's speech:

(1) Det er Ask**-s** nisse 2;7.21
"That is Ask's Santa"

(44) a. min fine bil[30]
b. den fine bilen min
the nice car-the my
"my nice car"

More interesting, however, is Emma's development of definite noun phrases. As mentioned above, according to Svartholm (1978) the singular definiteness suffix seems to be the first inflectional morpheme to be acquired by Swedish children. My data from the monolingual Norwegian child show that this suffix appears early in Norwegian children too (45a). It seems to be used productively from the beginning of the child's third year (45b - c):

(45) a. Æ fikk brødskiv**a** Henning 1;11.13
"I got the sandwich"
b. Kor er skjei**a**? Henning 2;1.16
"Where is the spoon?"
c. Æ bare hoppe seng**a** Henning 2;3.24
"I'm just jumping in the bed"

Looking at the data from Emma, I find that she correctly uses the suffixed definite article in bare definite noun phrases from the first recording:

(46) Den går opp i luft**a** 2;7:10
it goes up in air-the
"It goes up in the air."

However, as we saw in chapter 3, Norwegian noun phrases are somewhat special in the sense that they require both a definite suffix and a prenominal article in certain constructions. My data indicate that when monolingual Norwegian children start using demonstrative noun phrases and definite noun phrases with modifying adjectives, they either correctly include

[30]In my data from a monolingual Norwegian child I did not find any instances of genitive constructions modified by an adjective either. Because of the size of this corpus, I do not want to make any generalisations concerning monolingual Norwegian children here. However, it is interesting to note that the construction which is most frequently used in North Norwegian, (44b), is rather complex, so a delay in the acquisition of such a construction would not be unexpected in neither monolingual nor bilingual children.

both the suffix as well as the prenominal article in these constructions (47a - b) or they leave out the prenominal article, rather than the definiteness suffix (47c):

(47) a. Æ hiv oppå **den** fat**et** Henning 2;4.4
I throw on that plate-the
"I'm throwing (something) on that plate."
b. **den** røde traktor**en** Henning 2;6.22
the red tractor-the
"the red tractor"
c. Ikke store kniv**en** Henning 2;4.4
not big knife-the
"Not the big knife"

The data from Emma, on the other hand, show a different pattern of development of these noun phrases. Considering demonstrative noun phrases first, I found that during the first four Norwegian recordings, Emma frequently used phrases such as (48):

(48) **Den** tog har æ fått mi mamma 2;7.10
that train have I got my mum
"My mum has given me that train."

For the majority of such phrases the target seems to be a demonstrative noun phrase rather than just a bare definite noun phrase. However, some of these phrases might be interpreted as bare definite noun phrases. The important point here is that this kind of construction is not commonly found in monolingual Norwegian children.[31]

Noun phrases including both the prenominal article *and* the suffix, on the other hand, were more or less absent in Emma's speech at this stage (see Table 8). During the first three recordings she only produced one instance of such a phrase:

[31]This statement is again based on my rather limited set of data from one child in addition to my own observations. However, I believe most Norwegian parents would agree with me!

(49) Se **den** sang**en**! 2;7.21
see that song-the
"Look at that song!"

However, as is shown in Table 8, the frequency of these phrases increased throughout the recordings. At the same time, the frequency of phrases such as (48), with *only* the prenominal article, *decreased* significantly.

Table 8: Emma's production of Norwegian definite singular noun phrases:

Rec. no	Rec. 1	Rec. 3	Rec. 5	Rec. 7	Rec. 9	Rec. 11	Rec. 13
Age	2;7.10	2;7.21	2;8.7	2;8.20	2;9.11	2;9.25	2;10.9
N + Def	10	12	5	13	**25**	**34**	**34**
Art + N	**12**	**25**	**14**	**27**	1	10	1
Art + N + Def		1		1[32]		12[33]	8

Turning to the definite noun phrases modified by an adjective, it is interesting that Emma only uses three such phrases throughout the whole recording period (in recording 1, 11 and 13).[34] It is worth noting, however, that these three phrases follow the same pattern of definiteness marking as her demonstrative noun phrases, i.e. the phrase in the first recording only includes the prenominal article (50), whereas the one in the last recording shows both the article and the definiteness suffix (51):

(50) **Den** stor ball var fort 2;7.10
"The big ball was fast"

(51) Og **den** store gris**en** må sove 2;10.9
and the big pig-the must sleep
"And the big pig must sleep"

[32]There were three possible occurrences of Art + N + Def in addition to this one. (It was difficult to hear because of the quality of the recording.)

[33]Here too there were three possible Art + N + Def constructions in addition to the twelve clear ones.

[34]These three utterances are included in Table 8.

The collection of data from Emma was ended after the thirteenth recording (age 2;10.9). However, I expect that the development of Emma's Norwegian definite noun phrases will continue in the same direction as indicated in Table 8.

4.2.2.2 English

Compared to what I found in Emma's Norwegian, English noun phrases seem to be a more or less error-free area. As we remember from chapter 3, I consider the structure of English noun phrases to be relatively less complex than that of the Norwegian equivalents. As in Norwegian, Emma productively uses English indefinite noun phrases both with and without a modifying adjective:

(52)	a. I like to have **a candle**	2;7.14
	b. And I have **a big truck**	2;8.5

She also uses possessive noun phrases, both with genitive *-s* and with a possessive determiner, as shown in (53a - b):

(53)	a. Here is **daddy's cup**	2;8.5
	b. Maybe that is **mine skirt**?	2;9.2

Contrary to what I found in the Norwegian data, she also uses possessive noun phrases with adjectives:

(54)	I got **mine big truck** here first	2;8.5

She actually produces 15 such constructions in English throughout the recording period.

Looking at Emma's definite noun phrases in English, we find that these are not as problematic as the Norwegian equivalents. Emma uses both the definite article *the*, and the demonstrative article *that/this* as in (55a - b):

(55) a. Can you find that in **the bedroom**? 2;7.14
b. You need to wait with **that piece** 2;7.14

I also found 11 instances of these kinds of phrases occurring with a modifying adjective (in the Norwegian data there were only three such instances):

(56) a. That is **the wrong way** 2;8.5
b. I gonna step on **that scary woman** 2;8.17

4.2.2.3 Discussion

Recall from 3.4.2 that I predicted the position of [+DEF] to constitute a potential conflict between English and Norwegian for bilingual children acquiring these two languages. In English this feature is located in D, whereas in Norwegian, I claimed [+DEF] to be located in N. Examples such as (46) above show that Emma does use the definiteness suffix productively in Norwegian bare definite noun phrases. However, she consistently leaves out this suffix in phrases containing a prenominal article in the early stages, resulting in phrases such as (48). Examples (46) and (48) are repeated in (57a - b) below:

(57) a. Den går opp i luft**a** 2;7:10
it goes up in air-the
"It goes up in the air"
b. **Den** tog har æ fått mi mamma 2;7.10
that train have I got my mum
"My mum has given me that train"

I suggest here that Emma at the stage of the recordings assumes [+DEF] to be in D in Norwegian just as it is in English. Under such an analysis, bare definite noun phrases exhibit movement of the noun and the suffix from N to D, where the suffix checks off the definiteness features. In demonstrative noun phrases and definite noun phrases modified by an adjective, the prenominal article *den* can check off the [+DEF] features in D, and thus the definiteness suffix is not necessary. (This is probably how Danish works.) However, as we saw in chapter 3, the suffix is the true marker of definiteness in Norwegian, and the

prenominal article is not able to licence the [+DEF] features, as these are located in N. In demonstrative noun phrases the prenominal article checks off the [DEM] features in D, but in noun phrases modified by an adjective, this article only functions as a dummy-element to check off strong N-features in D when the noun is somehow prevented from moving to this position.

I argued in chapter 3 that the structure of Norwegian definite noun phrases is more marked than that of the English equivalents. Noun phrases like the one in (57a) involve movement of the noun from N to D to check the strong N-features there. I assumed that phrases like (57b) involve the operation of *den*-support (Santelmann 1993). Similar to English *do*-support, *den*-support is considered to be a Last Resort operation. The English equivalents to the DPs in (57a - b) do not involve movement or any processes similar to *den*-support. Thus, at first sight it seems that my prediction 1 is met in Emma's acquisition of definite noun phrases. As English definite DPs are less marked than the Norwegian ones, Emma seems to transfer the less marked analysis from English into Norwegian. Analysing [+DEF] in D rather than in N yields a less costly derivation of demonstrative noun phrases and definite noun phrases modified by an adjective. However, bare definite noun phrases still involve movement from N to D to check off [+DEF], so this construction is not less marked under this analysis. I will thus suggest that the notion of markedness is not the main motivation behind the transfer attested in Emma's Norwegian noun phrases. In fact, if Emma was consistently resorting to the unmarked option presented by the English input, her Norwegian bare definite noun phrases should not involve movement either. Rather, they should include only the prenominal article to check off the [+DEF] in D, and leave out the suffix all together, as in (58) (where *den* is not a demonstrative, but a definite article):

(58) **den** hest
"the horse"

As Emma does not do this, I assume that structural markedness is not the main reason for the transfer attested in her Norwegian noun phrases.

Monolingual Norwegian children do not produce deviant structures such as the one exemplified in (57b). Obviously, the transfer is caused by the fact that Emma receives input from English in addition to Norwegian. It is therefore relevant to consider the cues provided by both English and Norwegian concerning the location of [+DEF]. I assume that the three types of definite noun phrase structures discussed in the previous subsections are used as frequently in English as they are in Norwegian. Still, frequency of cues might be an issue here. In English, all the three structures indicate that [+DEF] is located in D. As they all have a prenominal article realised in D, these constructions provide cues for [+DEF] being in this position. I claimed in 3.4.2 that bare definite noun phrases are cues for definiteness being expressed in N in Norwegian, as these phrases only contain a definiteness suffix in addition to the noun. However, I suggest that, combined with the English input, the other two noun phrase constructions in Norwegian provide inconsistent cues concerning the position of [+DEF]. Phrases with both a prenominal article and a suffix open the possibility for more than one analysis, viz. either the article or the suffix may be the marker of definiteness. As Emma obviously has analysed D as the location of English [+DEF], she apparently tries out the possibility that this is true in Norwegian as well. Based on this, I claim that my second prediction is also met in Emma's acquisition of definite DPs. As the Norwegian input, when combined with English, seems to provide inconsistent cues concerning the position of [+DEF], Emma transfers the specifications for this feature from English into Norwegian. Müller (1998:151) claims that "the bilingual child may, as a relief strategy, use parts of the analysis of one language in order to cope with ambiguous properties of the other". Studying German/English bilingual children, she also found bilinguals to resort to language transfer when faced with data that could be analysed in more than one way. This is exactly what Emma does. She combines the analyses of English and Norwegian and ends up with something that looks like Danish!

My third prediction, concerning the complexity of the cue structures, is also supported by Emma's acquisition of definite noun phrases. The main cue structure for analysing [+DEF] in N is bare definite DPs. However, this structure involves movement to D to check off the

strong N-features there. This movement is presumably a source for confusion as to where the [+DEF] features are actually checked off. As movement to D is required (to check off the strong N-features) this may lead to the assumption that the [+DEF] features are checked off here as well. The additional structures providing cues that [+DEF] is in N, viz. demonstrative noun phrases and definite noun phrases modified by an adjective, are even more complex as they involve the operation of *den*-support. I therefore claim that as the cue structures for analysing [+DEF] in N in Norwegian are quite complicated, their function as cues is weakened. This, combined with the strong cues for analysing [+DEF] in D provided by English, leads Emma to transferring the specifications for [+DEF] from English into Norwegian.

In summary, data from Emma's definite DPs give support to my predictions 2 and 3. I claim that the notion of markedness is not the main motivation for Emma's transfer of definiteness features from English into Norwegian. Rather I suggest that the inconsistency and complexity of the Norwegian cues for analysing [+DEF] in N combined with the strong English cues for analysing [+DEF] in D cause the transfer attested in Emma's acquisition of Norwegian definite noun phrases.

4.2.3 Concluding remarks

As the errors found in Emma's acquisition of both placement of the finite main verb and of definite DPs are generally not found in monolingual Norwegian and English children, they are most likely caused by the fact that Emma is acquiring two languages simultaneously. Hulk and van der Linden (1998) point out that bilingual children receive input that allows more syntactic possibilities than their monolingual peers do. They suggest that bilingual children actually have *too many* cues in the input, and thus conflicts arise. In sections 4.2.1.3 and 4.2.2.3 I have attempted to show that Emma employs bilingual bootstrapping when she is confronted with difficulties in either of her two languages. As Müller (1998:164) puts it, "in case of doubt, the bilingual child, as a relief strategy, tries to solve the ambiguity by using transfer".

In both the discussions of Emma's acquisition of verb placement and of definite noun phrases I argued that the notion of markedness was not the main force behind the language transfer attested. Thus, I claim that my prediction 1 has to be rejected. Rather, the nature of cues seemed to be important in the acquisition process. Concerning the acquisition of both verb placement and definite noun phrases I suggested that infrequency/inconsistency and complexity of the cue structures played a significant part. In Norwegian, the demonstrative noun phrases and the definite noun phrases modified by an adjective provide inconsistent cues as to where [+DEF] is checked off. In addition, all the three noun phrase constructions discussed in the previous sections are quite complicated in Norwegian, and their function as cues are thus weakened. For monolingual Norwegian children these two factors do not seem to constitute any significant problems. However, when combined with simultaneous input from English, the inconsistency and complexity of Norwegian definite DPs invite Emma to transfer feature specifications for [+DEF] from English into Norwegian.

Similarly, in 4.2.1.3 I claimed that the main cue structure for acquiring verb placement in English (i.e. topicalisations) did not occur frequently enough in the data for Emma to acquire this. I also argued that the English input provided inconsistent cues, as copula *be* and auxiliaries can move out of the VP. Further, the availability of the additional cue structures for leaving the main verb in V (i.e. negations and *yes-no* questions) was assumed to be reduced because of the complexity of these structures. Again, this does not seem to cause problems for monolingual children acquiring English, but for Emma, receiving simultaneous input from Norwegian leads to occasional transfer of the V2 phenomenon from Norwegian into English. Thus, I found support for predictions 2 and 3 both in Emma's acquisition of placement of the finite main verb in English as well as in her acquisition of Norwegian definite noun phrases.

Recall from section 2.2 that the German/English subject Hannah, in Gawlitzek-Maiwald and Tracy's (1996) study ceased to employ bilingual bootstrapping from German into English when she acquired the appropriate structures in English. Similarly, in Emma's acquisition of definite DPs I found clear indications that language transfer is a strategy that she makes use

of temporarily to "bridge the gap" in Norwegian. At around the age of 2;9 she starts producing correct Norwegian demonstrative noun phrases, including both the prenominal article and the suffix. At this stage she is presumably realising that the suffix, rather than the prenominal article, expresses definiteness in Norwegian, and hence that [+DEF] is in N rather than in D. The number of phrases with only the prenominal article decreases radically as she starts producing phrases with the correct definiteness marking (see Table 8). She obviously no longer needs to bootstrap from the English structure. Hence, I claim that my sub-hypothesis is supported by the data as well. When the adult-like structure in the complicated language is acquired, the transfer decreases (and presumably, it will eventually more or less cease). Similarly, I suggest that Emma's overgeneralisation of V2 also is a strategy to "bridge the gap" in English. Accordingly, I predict that when she acquires the operation of *do*-support in English, her transfer of the V2 phenomenon will decrease, if not entirely cease.

Within the minimalist approach to syntax, economy is generally defined in terms of derivational cost, i.e. markedness. A costly derivation is one that involves operations such as movement. It has been suggested that language learners initially will favour the least costly, i.e. the unmarked derivations when acquiring a language (Clark and Roberts 1993, Platzack 1996, Roberts 1999). Following this idea we would assume that bilingual children faced with two alternative analyses would be more liable to transfer the less costly construction into the language with the more costly alternative than vice versa. However, as we have seen, especially in Emma's acquisition of verb placement, structural markedness is not the major motivation behind language transfer. My prediction 3 indicate that both frequency of cues and structural complexity influence the process of language acquisition. In the case of Emma, I have suggested that the *interaction* of cues and structural complexity is the source of the transfer involved in her language development. Based on Henry and Tangney (1999) I will therefore propose an alternative account of the notion of economy in language acquisition. They claim that "the child selects from the options made available by UG the least marked grammar *that*

is consistent with much of the input"[35] (p. 251). I suggest here that from a child's point of view, the cost of a derivation is not only based on its structural complexity, but also on how compatible this derivation is with the cues in the input. I further suggest that children will prefer consistency over low cost derivations if cues in the input leave open both possibilities. This is particularly interesting in the case of bilingual children, as they receive a much wider range of input than monolingual children do. Although I doubt that bilingual children in general are trying to fuse the two grammars in the input into one, there seems to be a tendency to seek some kind of consistency (cf. Döpke 1997, 1998, Müller 1998).

To conclude this chapter, I have argued that Emma resorts to language transfer when she is confronted with problematic areas in either one of her languages. This analysis is supported by the works done by among others Gawlitzek-Maiwald and Tracy (1996), Döpke (1997, 1998), and Müller (1998). In some studies done on transfer in bilingual children, it has been suggested that language dominance determines the direction of the transfer (cf. Petersen 1988, Lanza 1992). However, my data clearly indicate that for Emma, this is not the case. She is a fairly balanced bilingual, with a slight dominance in Norwegian. Still, we see that the language transfer goes in both directions, from Norwegian into English, and vice versa. This strongly suggests that the notion of language dominance is not the main force behind Emma's systemic language transfer. Further, the data indicate that Emma resorts to transfer when the cues for a certain structure are not robust enough. The robustness of cues may be reduced when the cue structures are either infrequent or inconsistent, or when complexity makes the cue structures unavailable to the child. We have also seen that when the strength of cues competes with derivational markedness, Emma prefers a construction that is consistent with the cues over an unmarked structure. This is especially clear in Emma's acquisition of verb placement in English. Data from Emma's acquisition of Norwegian definite noun phrases show that the transfer from English decreases significantly when she begins to

[35] My emphasis.

master this area of Norwegian syntax. This indicates that language transfer in bilingual children is a temporary strategy to cope with difficult input.

5. SUMMARY AND CONCLUSION

Paradis and Genesee (1996) claim that the bilingual French/English children in their study acquired their two languages autonomously, with no signs of grammatical interference between the language being acquired. In this case study I have attempted to show that this statement does not hold as a generalisation for all bilingual children. In the introduction I predicted language transfer to occur in those areas of the syntax where the two languages being acquired differed, and pointed out the location of [+DEF] in DPs and the placement of the finite main verb as potentially problematic areas for English/Norwegian bilingual children.

In chapter 2 I discussed some central issues in bilingual first language acquisition, and I focused specifically on the phenomenon of language mixing and transfer. I crucially argued that language dominance does not *determine* the direction of language transfer. Rather, I suggested that the frequency and direction of both sporadic and systemic language mixing might be an indication of which is the stronger language in the bilingual child. I also discussed how bilingual children may use language transfer as a relief strategy in the acquisition process.

Chapter 3 provided a syntactic analysis of both placement of the finite main verb and of definite noun phrases in English and Norwegian. I further discussed how children would acquire these constructions. Three predictions were made concerning the acquisition process, and I suggested that this process would be effected by both cues and structural complexity. For bilingual children, I predicted that an interaction between cues and structural complexity would influence the nature of language transfer.

In chapter 4 I presented the data from Emma, focusing specifically on her development of verb placement and definite DPs in English and Norwegian. Adopting Paradis and Genesee's definition of interdependency as systemic grammatical mixing from one language into the other, I claimed that my data provide evidence that Emma does not develop her two languages

autonomously. I have shown that Emma's language acquisition exhibits clear signs of cross-linguistic interdependency, i.e. transfer. I also found the systemic mixing to go in both directions, indicating that the notion of language dominance was not the major force behind the language transfer. I found sporadic mixing involved in both the lexicon and the syntax, and in both domains the mixing rate was significantly higher from Norwegian into English than vice versa. Based on this finding I suggested that Norwegian might be Emma's stronger language.

I have analysed economy in language acquisition as based on grammatical consistency rather than simply low cost constructions. Following this analysis, I have further suggested that children seek the most economical grammar when acquiring a language. The strive to organise different cues and measuring their strength against the structural cost of the constructions they trigger, become even more apparent in children acquiring two (or more) languages simultaneously. Bilingual children have a much wider set of input to organise. In this respect, their advantage, so to speak, over monolingual children is that when faced with a problematic construction in one language, they may temporarily make use of their analysis of the corresponding structure in their other language, i.e. bilingual bootstrapping. However, my data also indicated that receiving input from two different languages may have a weakening effect on specific cues in one of the two languages. The result may be that the child transfers elements from one language into the other. Hence, the bilingual nature of the input potentially creates cue conflicts and thus leads the child to make the wrong analysis for a certain part of the grammar. Finally, the data from Emma suggest that the process of language transfer is more sensitive to the strength of cues than to the notion of markedness.

The conclusions made on language transfer in bilingual first language acquisition in this thesis are mainly based on the data from only one bilingual child. Obviously, data from more children acquiring two (or more) languages simultaneously are needed to evaluate the general validity of my analyses, both concerning English/Norwegian bilingual children, as well as bilingual children in general. As we have seen, both markedness and cues have been claimed

to be important in language acquisition. I believe the study of transfer in bilingual first language acquisition may enlighten us on the relative importance of derivational cost and cue complexity in language acquisition of both bilingual and monolingual children. Maybe some day Emma will be right when she says: *Now can <du> see it!*

REFERENCES

Abney, P.S. (1987): *The English Noun Phrase in its Sentential Aspect* . Unpubl. diss. MIT, Cambridge, Mass.

Aldridge, M. (1989):*The Acquisition of INFL*, Bloomington: Indiana University Lingusitic Club.

Chomsky, N. (1970): "Remarks on Nominalisation" [Remarks] in R. Jacobs and P. Rosenbaum, eds., *Readings in English Transformational Grammar* , Ginn and Co., Waltham, Mass, pp. 184-221.

Chomsky, N. (1986): *Knowledge of Language: Its Nature, Origin, and Use*. Praeger, New York.

Chomsky, N. (1993): "A Minimalist Program for Linguistic Theory", pp. 1-45 in K. Hale and S.J. Keyser (eds.) *The View form Building 20*. Cambridge, MA: Massachusetts Institute of Technology Press.

Chomsky, N. (1995a): *The Minimalist Program*. Cambridge, MA: Massachusetts Institute of Technology Press.

Chomsky, N. (1995b): "Bare phrase structure", pp. 383-439 in G. Webelhuth (ed.) *Government and Binding Theory and the Minimalist Program*, Oxford: Blackwell.

Clark, R. and Roberts, I. (1993): "A computational approach to language learnability and language change", *Linguistic Inquiry* 24, pp. 299-345.

De Houwer, A. (1990): *The Acquisition of Two Languages from Birth: A Case Study*. Cambridge: Cambridge University Press.

De Houwer, A. (1995): "Bilingual Language Acquisition", pp. 219-250 in P. Fletcher and B. MacWhinney (eds.) *The Handbook of Child Language*, Oxford: Basil Blackwell.

De Houwer, A. (1997): "The role of input in the acquisition of past verb forms in English and Dutch: Evidence from a bilingual child", pp. 153-162 in E. Clark (ed.) *The Proceedings of the Twenty-eighth Annual Child Research Forum*, CSLI Publications.

Delsing, L.O. (1993): *The Internal Structure of the Noun Phrase in the Scandinavian Languages. A Comparative Study*, Malmö: Team Offset.

Dépres, V. and Pierce, A. (1993): "Negation and functional projections in early grammars", *Linguisitc Inquiry*, 24 (1), pp. 25-67.

Dépres, V. and Pierce, A. (1994): "Crosslinguistic evidence for functional projections in early child grammar", pp. 57-83 in T. Hoekstra and B. Schwartz (eds.) *Language Acquisition Studies in Generative Grammar*, Philadelphia: Benjamins.

Dresher, E. (1999): "Charting the learning path:cues to parameter setting", *Linguistic Inquiry* 30, pp. 27-68.

Dresher, E. and Kaye, J. (1990): "A computational learning model for metrical phonology", *Cognition* 34, pp.137-195.

Döpke, S. (1997): "Is the simultaneous acquisition of two languages in early childhood equal to acquiring each of the two languages individually?", pp. 95 - 112 in E. Clark *The Proceedings of the Twenty-eighth Annual Child Research Forum*, CSLI Publications.

Döpke, S. (1998): "Competing language structures: the acquisition of verb placement by bilingual German-English children", *Linguistic Inquiry* Vol. 24, No. 1, pp. 555-584.

Emonds, J. (1978): "The complex V-V' in French", *Linguistic Inquiry* 9, pp.151-175.

Erreich, A., Valian, V. and Winzemer, J. (1980): "Aspects of a theory of language acquisition", *Journal of Child Language* 7, pp.157-179.

García, E. (1983): *Early Childhood Bilingualism*, Albuquerque: University of New Mexico Press.

Gawlitzek-Maiwald, I. and Tracy, R. (1996): "Bilingual bootstrapping", *Linguistics* 34, pp. 901-926.

Genesee, F., Nicoladis, E. and Paradis, J. (1995): "Language differentiation in early bilingual development", *Journal of Child Language* 22, pp. 611-631.

Grosjean, F. (1998a): "Studying bilinguals: Methodological and conceptual issues", *Bilingualism: Language and Congnition* 1, pp. 131-149.

Grosjean, F. (1998b): "Transfer and language mode", *Bilingualism: Language and Congnition* 1 (3), pp. 175-176.

Haegeman, L. (1994): *Introduction to Government and Binding Theory* 2nd edn, Oxford: Blackwell.

Harris, T. and Wexler, K. (1996): "The Optional-Infinitive stage in Child English", pp. 1-42 in H. Clahsen (ed.) *Generative Perspectives on Language Acquisition*, Amsterdam: Benjamins.

Hasselgård, H., Johansson, S. and Lysvåg, P. (1998): *English Grammar: Theory and Use*, Oslo: Universitetsforlaget.

Henry, A. and Tangney, D. (1999): "Functional categories and parameter setting in the second-language acquisition of Irish in early childhood", pp. 239-253 in M. DeGraff (ed.) *Language Creation and Language Change: Creolization, Diachrony, and Development*, Cambridge, Mass.: MIT Press.

Hulk, A. and van der Linden, E. (1998): "Evidence for transfer in bilingual children?", *Bilingualism: Language and Cognition*, 1 (3), pp. 177-180.

Hyams, N. (1996): "The underspecification of functional categories in Early Grammars", pp. 91-127 in H. Clahsen (ed.) *Generative Perspectives on Language Acquisition*, Amsterdam: Benjamins.

Jackendoff, R. (1977): *X-bar-Syntax: A study of Phrase Structure*. Linguistic Inquiry monographs 2. Cambridge, Mass.: MIT Press.

Köppe, R. (1996): "Language differentiation in bilingual children: the development of grammatical and pragmatic competence", *Linguistics* 34, pp. 927-954.

Kuczaj, S. and Maratsos, M. (1983): "Initial verbs of yes-no questions: A different kind of general grammatical category", *Developmental Psychology* 19, pp. 440 - 444.

Lanza, E. (1992): "Can bilingual two-year-olds code-switch?", *Journal of Child Language* 19, pp. 633-658.

Lanza, E. (1997): *Language Mixing in Infant Bilingualism: A Sociolinguistic Perspective* . Oxford: Claredon Press.

Leopold, W. (1939): *Speech Development of a Bilingual Child: A Linguist's Record*, Vol. I *Vocabulary Growth in the First Two Years*, Evanston, Ill.: Northwestern University Press.

Leopold, W. (1947): *Speech Development of a Bilingual Child: A Linguist's Record*, Vol. II *Sound Learning in the First Two Years*, Evanston, Ill.: Northwestern University Press.

Leopold, W. (1949a): *Speech Development of a Bilingual Child: A Linguist's Record*, Vol. III *Grammar and General Problems*, Evanston, Ill.: Northwestern University Press.

Leopold, W. (1949b): *Speech Development of a Bilingual Child: A Linguist's Record*, Vol. IV *Diary from Age 2*, Evanston, Ill.: Northwestern University Press.

Lightfoot, D. (1999a): *The Development of Language: Acquisition, Change, and Evolution*, Blackwell: Oxford.

Lightfoot, D. (1999b): "Creoles and cues", pp. 431-452 in M. DeGraff (ed.) *Language Creation and Language Change: Creolization, Diachrony, and Development*, Cambridge, Mass.: MIT Press.

Lindholm, K. and Padilla, A. (1978): "Language mixing in bilingual children", *Journal of Child Language* 5, pp. 327-335.

Marantz, A. (1995): "The Minimalist Program", pp. 349-382 in G. Webelhuth (ed.) *Government and Binding Theory and the Minimalist Program*, Oxford: Blackwell.

McLaughlin, B. (1984): *Second Language Acquisition in Childhood*, vol. i: *Preschool Children*, 2nd edition, Hillsdale, NJ: L. Erlbaum Associates.

Meisel, J. (1986): "Word order and case marking in early child languages. Evidence from simultaneous acquisition of two languages", *Linguistics* 24 (1), pp. 123-183.

Meisel, J. (1989): "Early differentiation of languages in bilingual children", in K. Hyltenstam and L. Obler (eds.) *Bilingualism across the Lifespan:aspects of acquisition, maturity and loss* , Cambridge: Cambridge University Press, pp. 13-40.

Meisel, J. (ed.) (1990): *Two First Languages: Early grammatical development in bilingual children*, Dordrecht: Foris.

Meisel, J. (ed.) (1994): *Bilingual First Language Acquisition: French and German grammatical development*, Philadelphia: Benjamins.

Müller, N. (1996): "V2 in first language acquisition. Early child grammars fall within the range of UG", *Linguistics* 34, pp. 992 - 1028.

Müller, N. (1998): "Transfer in bilingual first language acquisition", *Bilingualism: Language and Cognition* 1 (3), pp. 151-171.

Nelfelt, K. (1990): "The development of definite singular in a Swedish boy", *Gothenburg Papers in Theoretical Linguistics.*

O'Grady, W. (1997): *Syntactic Development*, Chicago: The University of Chicago Press.

Ouhalla, J. (1999): *Introducing Transformational Grammar: From Principles and Parameters to Minimalism*, 2nd ed. London: Arnold.

Padilla, A. M. and Lindholm, K. (1984): "Child bilingualism: the same old issues revisited", pp. 369-408 in J. L. Martinez, Jr and R. H. Mendoza (eds.) *Chicano Psychology*, Orlando: Academic Press.

Paradis, J. and Genesee, F. (1996): "Syntactic acquisition in bilingual children: autonomous or interdependent?", *Studies in Second Language Acquisition* 18, pp. 1 - 25.

Petersen, J. (1988): "Word-internal code-switching constraints in a bilingual child's grammar", *Linguistics* 26, pp. 479-493.

Pierce, A. (1992): *Language Acquisition and Syntactic Theory*, Dordrecht: Kluwer.

Pinker, S. (1984): *Language Learnability and Language Development*, Cambridge: Harvard University Press.

Platzack, C. (1996): "The Initial Hypothesis of Syntax", pp. 369 - 414 in H. Clahsen (ed.) *Generative Perspectives on Language Acquisition*, Amsterdam: Benjamins.

Plunkett, K. and Strömqvist, S. (1990): "The acquisition of Scandinavian languages", in J. Allwood (ed.) *Gothenburg papers in theoretical linguistics.*

Pollock, J.-Y. (1989): "Verb movement, universal grammar, and the structure of the IP", *Linguistic Inquiry*, Vol. 20, No. 3, pp. 365-424.

Radford, A. (1988): *Transformational Grammar: A First Course*, Cambridge: Cambridge University Press.

Radford, A. (1995): "Phrase structure and functional categories", pp. 483-507 in P. Fletcher and B. MacWhinney (eds.) *The Handbook of Child Language*, Oxford: Blackwell.

Radford, A. (1997): *Syntactic Theory and the Structure of English: A Minimalist Approach*, Cambridge: Cambridge University Press.

Roberts, I. (1999): "Verb movement and markedness", pp. 287-327 in M. DeGraff (ed.) *Language Creation and Language Change: Creolization, Diachrony and Development*, Cambridge, Mass.: MIT Press.

Ronjat, J. (1913): *Le developpment du langage observé chez un infant bilingue*, Paris: Champion.

Romaine, S. (1995): *Bilingualism* . Oxford: Blackwell.

Santelmann, L. (1993): "The Distribution of Double Determiners in Swedish: *den* support in D°", *Studia Linguistica* 47(2), pp. 154-176.

Schlyter, S. (1998): "Directionality in transfer?", *Bilingualism: Language and Cognition* 1 (3), pp. 183-184.

Schlyter, S. and Håkansson, G. (1994): "Word order in Swedish as the first language, second language and weaker language in bilinguals", *Scandinavian Working Papers on Bilingualism* 9, pp.

Svartholm, K. (1978): *Svenskans artikelsystem* (Ph.D.Diss), MINS #3, University of Stockholm: Department of Scandinavian Languages.

Svenonius, P. (1992): "The Extended Projection of N: Identifying the Head of the Noun Phrase", *Working Papers in Scandinavian Syntax* 49: 95-121. Lund: Institutionen för nordiska språk.

Svenonius, P. (1993): "Selection, Adjunction, and Concord in the DP", *Studia Linguistica* 47(2), pp. 198-220.

Taeschner, T. (1983): *The Sun is Feminine. A Study of Language Acquisition in Bilingual Children*, Berling: Springer.

Vihman, M. (1985): "Language differentiation by the bilingual infant", *Journal of Child Language* 12, pp. 297-324.

Volterra, V. and Taeschner, T. (1978): "The acquisition and development of language by bilingual children", *Journal of Child Language* 5, pp. 311-326.