

“I can speak German - und Deutsch”

The Development and Use of Code-Switching among Simultaneous
and Successive English-German Bilingual Children

Inaugural-Dissertation

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CONTENTS

<i>List of Figures</i>	vi
<i>List of Tables</i>	vii
<i>Acknowledgements</i>	ix

O. INTRODUCTION _____ **1**

0.1 Introduction _____ **1**

0.2 Overview _____ **3**

1. THEORETICAL BACKGROUND _____ **6**

1.1 Bilingual Language Acquisition _____ **6**

1.1.1 Bilingualism	6
1.1.1.1 Definition and research areas	6
1.1.1.2 Types	7
1.1.1.3 Degree	8
1.1.1.4 Factors influencing bilingualism	9
1.1.1.5 Bilingualism and Intelligence and Cognition	10
1.1.2 Becoming and Staying Bilingual	11
1.1.3 Language Acquisition	13
1.1.3.1 Bilingual First Language Acquisition	14
1.1.3.2 Successive Language Acquisition	15
1.1.3.3 One or Two Language Systems?	18
1.1.3.4 Language Input	21

1.2 Code-Switching _____ **23**

1.2.1 History to the Study of Code-Switching	24
1.2.2 Language Contact Phenomena	25
1.2.2.1 Code-Mixing and Code-Switching	25
1.2.2.2 Borrowing	27
1.2.2.3 Interference	28
1.2.3 Grammatical Aspects to the Study of Code-Switching	29
1.2.3.1 Constraints	30
1.2.3.2 The Matrix Language	33
1.2.3.3 Code-Switching Types	34
1.2.4 Neuro- and Psycholinguistic Aspects of Code-Switching	35
1.2.4.1 Lateralisation and Storing	35
1.2.4.2 Switching Mechanisms	37
1.2.4.3 Triggering	38
1.2.5 Sociolinguistic Aspects of Code-Switching	39
1.2.5.1 Code-Switchers	39
1.2.5.2 Attitudes towards Code-Switching	41
1.2.5.3 Language Choice	42
1.2.5.4 Reasons for Code-Switching	43
1.2.6 Pragmatic Aspects of Code-Switching	46
1.2.6.1 Functions of Code-Switching	46
1.2.6.2 Conversational Code-Alternation	50
1.2.7 Comprehensive Approaches to Code-Switching	52

1.3 Summary _____ **53**

2. THE USE OF CODE-SWITCHING IN FORMER CASE-STUDIES	54
2.1 Previous Studies	54
2.1.1 Simultaneous Studies	54
2.1.1.1 Leopold (1939, 1947, 1949, 1949)	55
2.1.1.2 Volterra and Taeschner (1978), Taeschner (1983)	57
2.1.1.3 Saunders (1982-88)	58
2.1.1.4 Kielhöfer and Jonekeit (1993, first published 1983)	61
2.1.1.5 DUFDE	63
2.1.1.6 Führer-Nicod (1994)	65
2.1.1.7 Other studies	66
2.1.1.8 Summation of simultaneous studies	72
2.1.2 Successive Studies	74
2.1.2.1 Kenyeres (1938)	74
2.1.2.2 Fantini (1975, 1978)	75
2.1.2.3 Felix (1978)	76
2.1.2.4 Wenzel (2000)	77
2.1.2.5 Other studies	78
2.1.2.6 Summation of successive studies	80
2.1.3 Growing up in a Bilingual Community	81
2.1.3.1 Huerta (1977)	81
2.1.3.2 McClure and Wentz (1975)	81
2.2 Existing Theories	84
2.2.1 Acquisition sequence by McClure and Wentz	84
2.2.2 The DUFDE project	87
2.3 Summary	89
3. CASE-STUDY	91
3.1 Data Collection	91
3.1.1 Informants	91
3.1.2 Data Type	94
3.1.3 Questionnaires	95
3.2 Data Analysis	96
3.2.1 Transcriptions	96
3.2.2 Language Competence and Dominance	96
3.2.2.1 Mean Length of Utterance	97
3.2.2.2 Index of Productive Syntax	98
3.2.2.3 Other Methods of Assessing Language Competence and Dominance	99
3.2.3 Mixing and Switching	100
3.3 Limitations to the Analysis	102
3.3.1 Diversity among Informants	102
3.3.1.1 Similarities and Differences	102
3.3.1.2 Character Differences	103
3.3.2 Data Corpus	104
3.3.3 Method	104
3.4 Participants	105
3.4.1 Leah and Tessa	105
3.4.2 Fiona and Neeve	112
3.4.3 Hannes and Peter	118
3.4.4 Daniel and Faye	126
3.4.5 Paula and Lucy	134
3.4.6 Johannes and Jacob	144

3.4.7 Lena and Kai	152
3.4.8 Jan	158
3.4.9 Anna	163
3.4.10 Lara	165
3.4.11 Lou	168
3.5 Summary	174
4. MIXING AND CODE-SWITCHING	175
4.1 Discussion of Results	175
4.1.1 Mixing in Bilingual Children	175
4.1.1.1 Discussion	175
4.1.1.2 Summary	184
4.1.2 Code-Switching in Bilingual Children	185
4.1.2.1 Code-Switching Functions	186
4.1.2.2 First Occurrence of Code-Switching Functions	188
4.1.2.3 Frequency of Code-Switching	191
4.1.2.4 Simultaneous and Successive Bilinguals	200
4.1.3 Summary	210
4.2 Evaluation of Different Code-Switching Acquisition Sequences	210
4.3 The acquisition of code-switching	216
5. Conclusion	218
Bibliography	225
Appendices	234
A. CHARTS	234
B. TABLES	241
C. GENERAL NOTES FOR THE TRANSCRIPTIONS	244
D. ABBREVIATIONS	245
E. BACKGROUND INFORMATION	246
F. CONSENT FORM	251

FIGURES

2.1	Stylistic code-switching functions by McClure (1977)	86
2.2	Functions of code-switching for Ivar (Köppe/Meisel, 1995)	87
2.3	Functions of code-switching for Annika (Köppe/Meisel, 1995)	87
2.4	Code-switching functions and their first occurrence (DUFDE study)	88
4.1	Mixing rates in relation to age	179
4.2	Mixing rates in relation to age in dominant and non-dominant language settings	180
4.3	Code-switching functions and their usage range	190
4.4	Distribution of skill-related and stylistic code-switching functions	194
4.5	Distribution of individual skill-related and stylistic code-switching functions	194
4.6	Distribution of skill-related code-switching functions among simultaneous and successive speakers	206
4.7	Distribution of stylistic code-switching functions among simultaneous and successive speakers	208
Figure I	MLU Faye	234
Figure II	MLU Jacob	234
Figure III	MLU Jan	235
Figure IV	MLU Johannes	235
Figure V	MLU Kai	235
Figure VI	MLU Lara	236
Figure VII	MLU Leah	236
Figure VIII	MLU Lou	236
Figure IX	MLU Lucy	237
Figure X	MLU Neeve	237
Figure XI	MLU Peter	237
Figure XII	MLU Tessa	238
Figure XIII	IPSyn Jacob	238
Figure XIV	IPSyn Kai	238
Figure XV	IPSyn Lara	239
Figure XVI	IPSyn Leah	239
Figure XVII	IPSyn Lucy	239
Figure XVIII	IPSyn Peter	240
Figure XIX	IPSyn Tessa	240

TABLES

Table 2.1	Case-studies on simultaneous bilingual language acquisition _____	71-72
Table 2.2	Code-switching functions in studies on simultaneous bilingual children _____	73
Table 2.3	Case-studies on successive bilingual language acquisition _____	79-80
Table 2.4	Code-switching functions in studies on successive bilingual children _____	80
Table 3.1	Brown's stages of language development, MLU range, age range _____	97
Table 3.2	Relation of age and MLU and IPSyn _____	98
Table 3.3	Similarities and differences in informants' background _____	102
Table 3.4	Overview of recordings of Leah and Tessa _____	107
Table 3.5	Overview of recordings of Fiona and Neeve _____	114
Table 3.6	Overview of recordings of Hannes and Peter _____	121
Table 3.7	Overview of recordings of Daniel and Faye _____	128
Table 3.8	Overview of recordings of Paula and Lucy _____	136-137
Table 3.9	Overview of recordings of Johannes and Jacob _____	146
Table 3.10	Overview of recordings of Lena and Kai _____	154
Table 3.11	Overview of recordings of Jan _____	160
Table 3.12	Overview of recordings of Anna _____	164
Table 3.13	Overview of recordings of Lara _____	166
Table 3.14	Overview of recordings of Lou _____	170
Table 4.1	Average mixing rates in relation to time of L2 exposure _____	177
Table 4.2	Average mixing rates in relation to manner of L2 acquisition _____	178
Table 4.3	Relation of average mixing rates and age _____	179
Table 4.4	Relation of average mixing rates and age in dominant and non-dominant language settings _____	180
Table 4.5	Average mixing rates in relation to input conditions _____	182
Table 4.6	Average mixing rates in relation to sibling constellations _____	183
Table 4.7	First occurrence of skill-related functions of code-switching _____	189
Table 4.8	First occurrence of stylistic functions of code-switching _____	190
Table 4.9	Code-switching behaviour in relation to manner of L2 acquisition _____	196
Table 4.10	Relation of average code-switching percentages and age _____	196
Table 4.11	Code-switching behaviour in relation to input conditions _____	197
Table 4.12	Code-switching behaviour in relation to language dominance _____	197
Table 4.13	Code-switching behaviour in dominant and non-dominant language settings _____	198
Table 4.14	Code-switching behaviour depending on gender _____	199
Table 4.15	Code-switching behaviour depending on sibling constellations _____	199
Table 4.16	Code-switching of simultaneous and successive learners in dominant and non-dominant language settings _____	201

Table 4.17	Average first occurrence of situational code-switching functions for simultaneous and successive speakers _____	202
Table 4.18	Average first occurrence of skill-related code-switching functions for simultaneous and successive speakers _____	203
Table 4.19	Average first occurrence of stylistic code-switching functions for simultaneous and successive speakers _____	203
Table 4.20	Comparison of code-switching acquisition sequences of simultaneous and successive learners _____	204
Table 4.21	Code-switching in relation to first exposure to L2 _____	205
Table 4.22	Code-switching behaviour among simultaneous and successive bilinguals _____	205
Table 4.23	Percentages of individual skill-related code-switching functions for simultaneous and successive language learners _____	206
Table 4.24	Percentages of individual stylistic code-switching functions for simultaneous and successive language learners _____	209
Table 4.25	Comparison of code-switching acquisition sequences of simultaneous learners __	212
Table 4.26	Comparison of code-switching acquisition sequences of successive learners ____	213
Table I	Overview Children's Background _____	241
Table II	Overview Recordings _____	242
Table III	Mode of recordings _____	243

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0. INTRODUCTION

0.1 Introduction

“I can speak German – und Deutsch”. This is the statement of a 4-year-old English-German bilingual girl who was recorded in the course of the present study on bilingual children. The interest in the study of bilingualism has been steadily growing since the 1960s. The phenomenon of code-switching has also attracted the attention of more and more researchers within the last years. The switching from one language to the other is one of several language contact phenomena in bilingual conversations. Very little is still known, however, about the development of switching skills in infants and young children growing up bilingually. This thesis shall help to fill this gap.

The present book introduces an empirical study on eighteen simultaneous and successive English-German bilingual children. Its main purpose is the description and analysis of empirical data in order to find out more about the development and use of code-switching among bilingual children. Only very few studies so far have dealt with the topic of code-switching among children. By providing more data, the present study adds to a more complete picture concerning this subject.

Active bilingual speakers are able to express themselves in more than one language. They need to choose the appropriate language for different settings and participant constellations. They also have the option to switch between their languages within a single conversation or even a single sentence. Their language choice is influenced by numerous factors: not only the setting and the participants determine their choice but also factors like their personal language preferences or their specific intention in a message. Whereas monolingual speakers may vary their utterances through intonation or different speech registers, for example, bilingual speakers have the same range of options in even two languages at their disposal, plus the option of code-switching. This renders communication among bilingual speakers more complex, as they apply a variety of strategies in their language use and behaviour that are irrelevant to monolingual speakers.

Code-switching used to be seen as a demonstration of poor linguistic competence. But research over the last years has brought to notice that it may also be considered as an additional resource for bilingual speakers in order to achieve particular conversational goals. In this sense, research on the topic of code-switching is far from being complete and many questions remain open: What are the factors that influence code-switching behaviour? What are the motivations for code-switching? Are motivations different for

adults and children? Do children switch for social reasons and does their switching also have pragmatic functions? In how far is a speaker's age and linguistic competence relevant to their code-switching behaviour? These are only some of the questions and aspects that will be dealt with in this book. General questions in code-switching research have been how, why and when people code-switch. Psychologists, sociologists, anthropologists, educationists and linguists have examined the issue from different angles and tried to provide answers from their point of view. It seems, however, that a description of the phenomenon of code-switching needs to be multifaceted and requires explanations and answers from different approaches.

The present study focuses on code-switching among bilingual children. Eighteen children from similar backgrounds between the ages of 1;8 to 7;4 were observed and regularly tape-recorded over a certain period of time. They were all acquiring English and German under varying circumstances. Some children grew up in mixed marriages, were exposed to both languages from birth and used words from both languages when they started to speak. These are the simultaneous language learners. The successive language learners only became exposed to the second language later. The fact that the informants were observed at different stages of their language development presents a special challenge for the comparison of their code-switching behaviour. However, most of them were observed over many months and this longitudinal aspect of the present study allows us to compare the use and development of code-switching within this period. Several children underwent similar internal and external changes during the study, such as a change of their dominant and preferred language due to the relocation to a new linguistic environment, for example.

We will mainly be concerned with the questions of why children code-switch, what the underlying motivations for their code-switching are, which factors influence code-switching and in how far children's switching can have pragmatic functions. Pragmatic reasons for code-switching have been recognised in the speech of adults but it is still an open question when children start using pragmatic functions of code-switching. A further interesting issue is the question of the role of linguistic competence in bilingual speakers and how competence influences language behaviour. A major part in the present analysis of code-switching behaviour of bilingual children will therefore be the question of when (at what stage in their development) children start using which function of code-switching.

In order to have a broader data base for the analysis of code-switching functions among bilingual children, the present study does not only use its own data material but also

provides the data of various studies presented in the relevant literature. Although the data from former studies on bilingual children of varying languages helps compare and evaluate the data of the present study, it is important to note that empirical data is always limited. Regardless of the amount of data we can look at, the present study can only be of descriptive nature.

The aim of this study is to contribute to the research on code-switching behaviour among bilingual children. Therefore, the present book provides an overview over the research on code-switching that has been done so far, in particular on children and their mixing and switching behaviour. The addition of more data from the present case-study extends the existing data base, which allows a comparison of results and the integration of all data into a new and more substantial model for the use of code-switching functions among bilingual children.

0.2 Overview

As background to the analysis of the development and use of code-switching among bilingual children, some basic knowledge of bilingualism and bilingual language acquisition in general is necessary. The first chapter of this book (1.1) therefore provides a short introduction into these fields, including various definitions of bilingualism, its main types, an overview over the factors influencing bilingualism as well as an introduction to the major research areas. Different types of language acquisition, in particular bilingual language acquisition, and the major factors influencing it are also presented.

The subsequent chapter (1.2) provides an insight into different code-switching theories. I first present the historical development of code-switching research, definitions of various language contact phenomena and the principal types of code-switching. Approaches from several disciplines are then outlined and their prevalent theories and models described. The brief discussion of the grammatical aspects and the findings from neuro- and psycholinguistics is followed by the introduction to the sociolinguistic and pragmatic or interactional approach. The concepts and models proposed in the literature which proved helpful in analysing the data of the present case-study are reviewed in more detail; primarily those of the sociolinguistic and the pragmatic approach. Although it may seem desirable to try and combine different approaches in order to arrive at a more complex picture of code-switching, only very few researchers have attempted such an integration into a more comprehensive model. One of these attempts is Myers-Scotton's

Matrix Language-Frame model, which is shortly introduced at the end of the theoretical introduction to the study of code-switching.

Even if much of the theoretical background chiefly applies to the code-switching behaviour of adults, I tried to integrate as much information as available on code-switching behaviour of children. A crucial reason for the scarce information on this subject is certainly that there is still no agreement among researchers on the questions of whether children are able to code-switch at all and at what age they are aware of their bilingualism and language behaviour. Whereas the interest in studying bilingualism among children has grown significantly, code-switching is often only treated on a superficial level in these studies.

The second chapter of this book is concerned with code-switching in case-studies on bilingual children. The studies are split into three groups: studies on simultaneous language learners, on successive language learners and on children growing up in bilingual communities. More and more studies ask the question of how bilingual children deal with their two languages and therefore concentrate on different aspects of bilingual language acquisition. The selection of the studies discussed in this book was based on the criteria of whether the studies were concerned with code-switching at all and whether the authors provided speech samples that could be analysed for the purpose of the present study. We find influential studies primarily among the studies on simultaneous language learners as these represented the classic bilingual child. Most of the studies deal with language contact phenomena, mainly interference and mixing, but only very few explicitly mention code-switching among children. Whereas some point out the use of specific code-switching functions, only two studies propose a developmental sequence for the acquisition of different functions: McClure and Wentz's sequence as well as results of the DUFDE project are presented at the end of the second chapter.

In chapter three, the present case-study on code-switching behaviour among bilingual children is introduced. Basic information about the data collection and data analysis is provided. Difficult issues concerning data analysis in general will be discussed. The main part of this chapter, however, is the introduction of the eighteen participants of the present case-study. I described their personal background, their bilingual language development, the individual recording sessions and each participant's code-switching behaviour. Although this study concentrates on the individual code-switching behaviour of a limited number of informants, it provides further data material in order to determine advantages and disadvantages of established theories and models on code-switching.

Chapter four summarises and evaluates the data presented in the previous chapter. The mixing and code-switching behaviour of the informants is analysed in relation to the time and manner of their second language acquisition, their age, specific settings, the input conditions, their degree of bilingualism, and their gender and sibling constellation. With regard to code-switching, all functions that occurred in the data are put forward. The first occurrence and the frequency of individual code-switching functions are analysed. I then also compared the different acquisition sequences of code-switching functions among simultaneous and successive bilingual speakers as well as differences with regard to the frequency in which various functions are used by these two groups. The acquisition sequences are then compared with those in the literature.

As much data material as possible and different proposals concerning the acquisition of code-switching functions shall be integrated into my own proposition of an hypothesis about the development and use of code-switching functions. This shall conclude the present book with which I hope to be able to contribute to the ongoing discussion about code-switching among children. I want to raise questions about new issues in order to give stimuli for further research in the area of children's code-switching.

1. THEORETICAL BACKGROUND

This first chapter introduces the fields of bilingualism, bilingual language acquisition and code-switching. The main focus will be on demonstrating code-switching as one phenomenon of language contact. The chapter provides an overview of the research history and definitions of relevant terms, and introduces different types of bilingualism and bilingual language acquisition. The introduction to the study of code-switching provides an insight into the main areas of code-switching research.

1.1 *Bilingual Language Acquisition*

1.1.1 Bilingualism

1.1.1.1 Definition and Research Areas

Over half of the world's population is thought to be bi- or multilingual.¹ The ubiquity of the phenomenon does not make its definition any easier. There are countless publications on bilingualism, and scholars of various disciplines and of most diverse opinions define bilingualism for their own use. It is often described on a scale of degree. At one end, we find maximalists like Bloomfield, characterising bilingualism as “native-like control of two languages” (Bloomfield, 1933:56). At the other end, there are minimalists like Macnamara who consider minimal competence in the use of any skill of a second language sufficient to regard a speaker as bilingual (cf. Macnamara, 1969:82). In the present study, the term *bilingual* is used to describe people, in particular children, who have regular contact with more than one language and are able to communicate in at least two languages. Since it is difficult to define what ‘communication’ means for a pre-school child, it shall suffice for the purpose of this book to call a child bilingual if he or she has regular, in this case daily, contact with more than one language and shows awareness for different linguistic settings. This awareness includes at least that the child reacts to more than one language, even though some children might not speak more than one language at all times during their observation.

Bilingualism is researched in different disciplines. Psychology is involved in investigating the effects of bilingualism on the speakers' intelligence, on mental processes and even on personality. Sociology examines the function of different languages and

¹ Following Mackey (1962) in saying that two or more languages might be involved in bilingualism, the term also includes multilingualism.

possible cultural conflicts within a community, whereas ethnographic studies describe multilingual populations. Pedagogues try to find ways of teaching foreign languages most effectively. In the field of international studies, bilingualism is considered an essential element for cross-cultural communication. Linguists are fascinated by the fact that many bilinguals master more than one language in the same way as monolinguals master one. They look at parallels and differences between monolingualism and bilingualism, examine the acquisition process of two languages at the same time and study special language phenomena that occur in relation with the use of more than one language.

1.1.1.2 Types

In order to be able to better describe different aspects of bilingualism, this vast field has been classified into different types. A distinction has been made between *individual* and *societal bilingualism*, i.e. the difference of the phenomenon in the individual speaker and its occurrence in a multilingual society.² Both types overlap in bilingual societies with many bilingual speakers. This book deals with individual bilingualism, where the speakers do not live in multilingual societies.

A further distinction of types of bilingualism has been made by Lambert (1977), who introduces the terms *additive* and *subtractive bilingualism*. Additive bilingualism is referring to situations in which speakers benefit from their bilingualism. It occurs when the social environment supports and values both languages and considers their knowledge advantageous. It is enriching for the speakers, adds to their cultural knowledge and has a positive influence on their social and cognitive abilities.³ Subtractive bilingualism often occurs among immigrant speakers. The acquisition of a second language impedes the stable existence of the first, established language. The two languages commonly have a very different status, the minority language having low prestige in comparison with the high status of the majority language. The prestige of a language and other people's attitude towards it seems to be of great importance for the competence of bilingual speakers. If both languages have a high status, the learners are more motivated to communicate in both languages and will also be more likely to switch than if one language has a very low status. A cultural equilibrium seems to be a necessity for balanced bilingualism. In the present study, all informants are additive bilinguals. There was no cultural imbalance or major difference in status between their two languages German and English.

² See Fishman (1965) for more details on societal bilingualism.

³ Cenoz and Hoffmann (2003:4) further mention the importance of an additive environment for a positive influence on third language acquisition.

For an overview of many more types of bilingualism that have been worked out by various researchers but are not relevant to the purpose of this book, see Pohl (1965).

1.1.1.3 Degree

The degree of bilingualism in individual speakers has been of great interest to researchers in the field. Bilingual speakers have been categorised from *ambilingual*, meaning that they are perfect speakers of at least two languages (cf. Halliday, 1968) or *equilingual*, meaning that their language competence is the same in both languages, to *semilingual*, meaning that they know neither of their languages to a sufficient degree.⁴ Another distinction regarding the degree of competence is that of *active* and *passive* bilingualism (also referred to as *productive* and *receptive*). Speakers who are fully competent in one language and master one productive language skill (speaking or writing) in a second language are active bilinguals, whereas if they master a receptive language skill (reading or understanding) in a second language, they are passive bilinguals. Receptive bilingualism is a common pattern in many bilingual families as several studies show that a common outcome of the *one person - one language strategy*⁵ is that a child understands the languages of both parents but speaks only the language of the environment (cf. Romaine, 1989).

Usually, the languages of bilinguals are not completely balanced but speakers have one *dominant* or *preferred* language. Dominance, however, is not static but can change. It is determined by various factors, such as how often speakers use a language (quantity of exposure and variety of contexts of use), how proficient they are and what the language of the environment is. Emotional, social and personal aspects also play a role in the bilingual's language choice and competence. It is therefore possible that a speaker's mother tongue (first acquired language) is dominated by another language at a later time. Dominance of one or the other language can also vary between different domains, i.e. that one language is dominant in one area (e.g. at home) and the other in another area of life (e.g. at work). Several researchers developed tests in order to assess not only a speaker's degree of bilingualism but also their dominance.⁶ However, many authors mention difficulties in determining dominance. An unambiguous determination is difficult,

⁴ For a detailed discussion, see Beatens Beardsmore (1982:10-12).

⁵ This method is based on the French phonetician Grammont, who wrote in a letter to his linguist friend Ronjat: "Il n'y a rien à lui apprendre ou à enseigner. Il suffit que lorsqu'on a quelque chose à lui dire on le lui dise dans l'une des langues qu'on veut qu'il sache. Mais voici le point important: *que chaque langue soit représentée par une personne différente.* [...] *N'intervertissez jamais les rôles.*" (Ronjat, 1913:3)

⁶ Lambert conducted several studies with the aim of determining dominance in bilinguals (cf. Dil, 1972) and Jakobovits (1971) proposed different tests for measuring language dominance.

especially for children, who do not yet master all language skills. For the use in this book, it shall therefore suffice to describe the child's dominant language as the one he or she is more proficient in (measured in Mean Length of Utterance (MLU)) and prefers if given the choice.⁷

1.1.1.4 Factors Influencing Bilingualism

There are further factors that influence the degree and outcome of bilingualism. The *context* of the acquisition of a second language is important for the distinction between *natural* (also referred to as *primary*, *untutored* or *undirected*) and *artificial* (also *secondary*, *tutored* or *directed*) bilingualism. In this study, we are concerned with natural bilingualism since all informants acquired their languages in natural settings. As seen in the distinction between additive and subtractive bilingualism, the *social status* of the languages is another important factor, as well as *attitude*. A positive attitude to both languages, their respective cultures and to bilingualism in general is of crucial importance for the education of bilingual children.⁸ If children feel that one of their languages is not accepted in the society, they may refuse to use it. Immigrant children with a positive attitude towards the new community are more likely to make friends and to find opportunities to practice the new language than isolated children refusing the integration. The children in this study are all exposed to English and German, both languages being equally accepted and having a comparable social status in the relevant communities.

Among further factors influencing bilingualism are the *order* of acquisition as well as the *duration* and *frequency of exposure* to the languages. The speaker's *age* at the time of acquisition of a second language determines whether we speak of *early* or *late* bilingualism. Children who speak more than one language are early bilinguals, whereas adults acquiring a second language are late bilinguals. The line between the two terms, i.e. at what time a child becomes an adult from a linguistic point of view, is difficult to draw but is often set at the beginning of puberty. In this study, we are concerned with early bilingualism, which seems to provide advantages over late bilingualism with regard to linguistic competence. It has been noted, for example, that early bilinguals acquire a native-like accent, fluency and intonation pattern with much more ease than late bilinguals. Some studies even support the claim that early bilinguals reach a better syntactic ability. The neurologists Penfield and Roberts (1959) proposed that a child's brain has a

⁷ Another factor that simplifies the discussion in the present case is that the relevant domain is always the same in this study since almost all recordings are taken at the child's home and in a play setting.

⁸ See Oliver and Purdie (1998) for details.

specialised capacity for learning a language and that this capacity decreases with the years. Lenneberg (1967) formulated the *Critical Period Hypothesis* in order to describe this particular time in which children are especially capable of acquiring languages. Since then, the notion of a critical period has been used to explain the higher level of second language competence reached by younger language learners. In recent years, though, more and more studies showed that there is no convincing evidence for a critical period in second language learning. Bialystok (2001) argues that although children are indeed better second language learners, this is not necessarily an argument for a critical period but may be caused by other circumstances. In her view, differences in second language learning could arise from different general cognitive processing: young children are ready to establish new categories for new concepts whereas older learners try to assimilate patterns into existing schemas. Also, learning generally becomes harder with aging. Bialystok (2001:87f.) proposes to apply the critical period only to a limited range of phenomena and summarises that the “continuous and gradual change in ability is more amenable to cognitive explanations than to biological ones”.

Many early bilinguals also have the advantage of being children who do not worry about correctness of their utterances but are highly motivated to get their message across. Most children also adapt a lot easier to new situations than adults do and it is usually easier for children to overcome social barriers.

1.1.1.5 Bilingualism and Intelligence and Cognition

The correlation of bilingualism and intelligence has received great attention from the earliest days of research in the field of bilingualism. The negative effects of bilingualism on intelligence and even on character formation were stressed in many studies until a number of methodological weaknesses in the applied tests became apparent. The most important change in thought was brought about by the tests of Peal and Lambert in 1962. They showed that bilinguals actually performed better than monolinguals in both verbal and non-verbal intelligence tests. They found that bilinguals had a wider experience and were mentally more flexible and superior in concept formation. Bilinguals seemed to have more linguistic tolerance and creativity, a more diversified structure of intelligence and a greater sensitivity to perceptual feedback.⁹ Their cognitive functioning was believed to benefit from bicultural experience and from positive transfer between languages, which

⁹ Cf. also Ben-Zeev (1977) who shows that bilinguals analyse language more intensely than monolinguals. She also found that bilinguals are capable at an earlier age than monolinguals of separating the meaning of a word from its sound.

means, for example, that experiences they made in one language helped them to understand new concepts in their other language.¹⁰

Although there have been many more studies in the last 40 years that have pointed to advantages of child bilingualism, there are still many prejudices. Critics still say that bilingual children are retarded in their language acquisition or acquire neither of their languages satisfactorily. In opposition to this, we find that many young children acquire second languages with much more ease and success than older children who learn foreign languages at school. The question of whether there are any cognitive advantages or not to bilingualism remains unresolved.¹¹ For the participants of the present study it can be noted that they all appear to benefit from their bilingualism, especially in terms of social experiences and linguistic advantages in a globalising world.

1.1.2 Becoming and Staying Bilingual

There are two major ways for children of becoming bilingual. One way is through immigration, when children moving abroad pick up the language of the host country if they are regularly exposed to it. The other way is through growing up in mixed marriages where each parent speaks their mother tongue to the children. We find bilingual families of the following constellations:

- 1) The parents share the same native language which is different from the language of the community (e.g. linguistic minorities or immigrant families).
- 2) Children grow up with both parents speaking different languages and addressing the child in their mother tongue. The language of the environment is either the mother's or the father's or a third one.
- 3) The parents have different mother tongues but both parents speak the non-dominant language (the one not present in the society) with the children who are exposed to the language of the environment only outside home.

Five children in the present study live in a family of type one, seven of type two and four of type three. Two children living in Germany are exposed to English through their English-speaking au-pair. Their situation is similar to the so-called *élite bilingualism* that also occurs with children following special immersion programs or foreign language

¹⁰ See Cenoz (2003:72ff.) for a review of the cognitive advantages of bilinguals over monolinguals, such as higher scores in tests of divergent or creative thinking, a higher ability to reflect on language and to manipulate it or the use of more varied communication strategies. For more details on the effect of bilingualism on cognitive development and metalinguistic awareness, see also Bialystok (1991).

¹¹ Advantages and disadvantages of bilingualism have been analysed in different areas. For studies on childhood bilingualism and metalinguistic skills, see Cromdal (1999). He found that bilinguals dominated over monolinguals in tasks requiring high control of linguistic processing. They can also access knowledge of formal aspects of language earlier than monolinguals. Oller et al. (1998) examined phonological translation in monolinguals and bilinguals and found that bilingual children performed better. Rūķe-Draviņa (1967) discusses more general advantages and disadvantages of bilingualism and monolingualism.

classes in school.¹² There are other types of bilingual families that will not be discussed here, for example, families where both parents are bilingual and languages are constantly mixed or families in which one or both parents address their children in a language which is not their mother tongue, different from the language of the environment and different from the spouses' mother tongue.

The outcome of the children's bilingualism also depends on the amount of exposure they have to their languages. Families in which both parents have different mother tongues (type 2 and 3) may have a special interest in the successful language development of their children since each parent wants to maintain their mother tongue. Lambert (1977) found that children of mixed marriages seem particularly well trained in tolerance and open-mindedness. Bilingualism is very successful among these children as they often consider themselves automatically members of both ethnic groups and rarely show signs of personality disturbances, social alienation or anxiety. They can identify with both their parents and thereby with both ethnic groups (cf. *ibid.* pp. 20f.).

Once children have become bilingual, the difficult task of maintaining both languages arises in many families. Even if the children have regular contact with both languages, they may refuse to use one of them. Success in reaching active bilingualism has been reported from families using the *one person - one language strategy*. It seems to be especially favourable if the person is not a fluent speaker of both the child's languages but only speaks his or her own mother tongue well. The child is then forced to make an effort to speak the probably less preferred language in order to communicate. Some families choose strategies of language alternation at specific times, e.g. one day one language, another day another language. This seems a rather unnatural way of language alternation but one of the families in the present study reports success. One child was asked to speak English once it was dark outside. The family was able to maintain this strategy for more than a year and the child even requested that English be spoken.

It seems important for a successful result of bilingualism that children experience emotional and linguistic affection as well as a positive attitude to both their languages and bilingualism in general. In the case of the *one person - one language strategy* in particular, it is crucial that both parents have time to speak to their children. Children might attach themselves emotionally to one language, which can lead to dominance of that language or even to a refusal of the other language.

¹² Skutnabb-Kangas (1981:75f.) uses the term *élite bilingualism* to describe children who go to boarding schools to be taught in a foreign language.

A language is not acquired once and for all but bilinguals and especially bilingual children may forget one of their languages. If they do not need and use more than one language, they may keep a passive understanding for a while until they completely lose their bilingualism. Children as well as adults need to use both their languages regularly in order to retain them. Especially vocabulary is lost quickly, or at least the access delayed so that a word is easier to access in the dominant language. Grosjean (1982:179) explains that children have a special need to communicate with those who play an important role in their life and that “as long as these factors are important to the child, he or she will remain bilingual; when they lose their importance or are removed altogether, the child will just as naturally revert to monolingualism”. Although it seems likely that it is easier to re-acquire a formerly known language than to acquire it for the first time, this is an almost unresearched area. It would be highly interesting to find out whether there is some kind of ‘basic competence’ that, once acquired, remains even if the speaker loses access to vocabulary and grammar of that language.

1.1.3 Language Acquisition

The term language acquisition is used here as a generic term to describe all forms of acquiring a language. Language acquisition is to be differentiated from language learning, the latter being a conscious decision to study a language through formal instruction. We must further distinguish first and second language acquisition. First language acquisition usually happens under natural conditions where children acquire the language they are exposed to in their environment. If they are exposed to a second language in a natural setting once the first language is already partly or totally established, we speak of second language or successive language acquisition. If children are exposed to more than one language from birth, we speak of bilingual first language acquisition, which is the main interest in this study.

Different models have been proposed in order to describe the acquisition of language. For a long time, it was thought to be a process of imitation and reinforcement. The fact that a child does not acquire language without input, led researchers to the belief that language acquisition can be described as a response to a stimulus, with the learners being utterly dependent on input. But this *empiricist* view, or later known as *behaviourist approach*, proved not sufficient to explain why children replace, for example, irregular past tense forms or irregular plurals with forms based on the regular patterns. An alternative proposal, known as *nativism*, occurred in the 1960s: “the mind must have some pre-existing structure

in order to organize and interpret experience” (Hoff, 2001:14). Noam Chomsky, as the most prominent representative of nativism, introduced the concept of the *Language Acquisition Device* (LAD). He claims that every child is born with the ability of acquiring a language systematically and once the children come into natural contact with a language, the LAD sets off and helps them to adapt to their linguistic environment. In recent years, more alternative accounts have evolved, often trying to combine different approaches. The psychologist Jean Piaget proposed a relationship between language acquisition and cognitive development. This position has also been called *constructivism*, since language is constructed by the child using innate mechanisms but operating on input. For future child language research, it will be a challenge to unravel the interdependence of inborn mental equipment, input and cognitive developmental stages.¹³

Even though the acquisition of the mother tongue appears easy in comparison to the long and labour-intensive process of foreign language learning¹⁴, it is extremely complex. Children need a lot of input and exposure to the language and they actually spend a lot of time on their language acquisition.¹⁵ It requires children to formulate and re-formulate hypotheses on all linguistic levels over several years. Thus, they acquire language in many stages.

1.1.3.1 Bilingual First Language Acquisition

When a child acquires two languages as first languages at the same time, we speak of simultaneous or bilingual first language acquisition. For the simultaneous acquisition of two languages, a child needs to acquire not only the grammatical aspects of two languages but also pragmatic and semantic aspects. It is not enough for a bilingual child to know the words and the grammar of two languages, but they need to develop communicative competence, i.e. they learn how to make statements and ask questions, how to talk to different people in a different manner, etc. Hoffmann (1991:34) explains: “Language is an essential ingredient of the child’s socialization process.”

A still unanswered topic in the field of bilingual language acquisition is the question of whether the acquisition process of two languages undergoes similar stages at a comparable pace to the monolingual acquisition process. DeHouwer (1995:244) concludes in a review of the literature that “bilingual and monolingual development are highly

¹³ For more details, see Hoff (2001).

¹⁴ The term ‘foreign language’ is used here to describe a non-native language taught in school. A foreign language is not a routine medium of communication in the country where it is learned.

¹⁵ Dittmann (2002:76) notes that children need approximately 1500 days in order to acquire the basics of their mother tongue.

similar” in the course and the rate of language development. Hoff (2001), on the other hand, points out that the research base on bilingual language acquisition is still too small to draw conclusions of this sort. She mentions a few studies on phonological, grammatical and vocabulary development that all show some evidence of delay in bilinguals.¹⁶ This delay may arise from interference from the other language or simply by the fact that bilinguals need to learn more than monolinguals. Their total vocabularies, for example, will usually be bigger than the vocabulary of a monolingual child at the same age. Hoff further emphasises the fact that most of the empirical data on bilingual language development comes from children of linguists, who might be a privileged linguistic group. Whereas there is certainly more research needed in order to come to definite conclusions about similar or different acquisition rates, there seems to be more agreement on the similarity of the course of language development of monolingual and bilingual language acquisition. Padilla and Lindholm (1976) discuss a study by Hatch¹⁷, who examined the language behaviour of 40 children acquiring English as one of two languages. He found that all children acquired English “in the same rule-governed manner regardless of the particular child’s language preference or language background” (ibid. p. 98). Thus, second languages do not seem to interfere in the gradual language development. But here again we have to consider that the research based on languages other than English is still very small and that the results may be very different for other languages.

Some studies on bilingual first language acquisition will be analysed with respect to code-switching aspects in chapter 2.1.

1.1.3.2 Successive Language Acquisition

McLaughlin (1984) coined the terms of *simultaneous* and *successive* acquisition of languages. He speaks of successive acquisition if one language is already ‘established’ at the time when a second language is introduced. But as it is difficult to determine whether a language is ‘established’ or not, McLaughlin arbitrarily sets the cut-off point at a child’s third birthday. This arbitrariness has led other authors to re-define the notion of successive, or consecutive, acquisition. For DeHouwer (1990), a child needs to be exposed to the second language within the first week after exposure to the first language to be called simultaneous; she considers all other forms of exposure as successive. This definition certainly appears too restricted as a child’s brain can probably compensate weeks or even

¹⁶ For more details, see Hoff (2001:373ff.).

¹⁷ E. Hatch, 1974, “Second language leaning - universals?” *Working Papers on Bilingualism* 3. (Toronto: The Ontario Institute for Studies in Education), 1-16.

months of unbalanced or very low input.¹⁸ Möhring (2001), who studied 4- to 5-year-old German-French successive bilingual children, was able to show that the children acquired the French gender system in the same way as children exposed to both languages from birth. She concludes that bilingual first language acquisition must therefore also be possible later than only one month after birth (ibid. p. 20).

Strictly speaking, simultaneous language acquisition means that two languages are acquired at the same time but does not imply that both languages are at the same developmental stage at the same time. We could therefore speak of simultaneous language acquisition up to the point where the first language or mother tongue is fully acquired, i.e. a child masters all major constructions. Although nothing essential is missing from the linguistic competence of most 4-year-olds, their language acquisition continues for several years. Crystal (1976) mentions a study on intonations of reinforcement, for example, that shows that they were not fully appreciated by children under the age of ten. Also, it is only at school that children learn written language and they continue to learn new grammatical structures until around puberty. The acquisition of new vocabulary certainly continues until well into adulthood. The terms *simultaneous* and *successive* seem inappropriate to closely *characterise* the language acquisition of pre-school children since all of them are more or less still in the language acquisition process but they can be used to *differentiate* between children with early and children with later exposure to the second language.

Since we want to find out whether the outcome of language is different depending on the time of exposure, we need to set a cut-off point. Research in phonological development has shown that 10-11-month-old children undergo a critical phase in which the ear and hearing capacity change. An infant is able to distinguish sounds from diverse languages and has the capability to acquire any language. But the infant loses the ability to perceive some phonemic contrasts at around ten months – at the same time when it is able to recognise its mother tongue on the basis of sound patterns.¹⁹ This could be an appropriate cut-off point since there is some biological and thereby conditional change. However, this still seems too early as we have seen above that children appear to be able to compensate a few months of very low input. Another biological change of the conditions is the fact that the brain loses plasticity with age. Neurobiologists have suggested that the brain grows

¹⁸ Hoff (2001:58) provides evidence from studies that show that the language of children who suffered left-hemisphere brain damage is comparable to that of other children of the same age after a few years. Although their language development is delayed, they seem to catch up and the development is within the normal range.

¹⁹ See Hoff (2001:122f.) for references.

connections until around the age two. At that point, there is a great redundancy of connections, and parts of the brain can take over functions they do not usually serve. But after age two, the brain starts losing connections, and plasticity decreases.²⁰

It seems more appropriate to differentiate the children between simultaneous and successive learners at an earlier stage than their third birthday. I would like to set the cut-off point at around the age of two but this would be just as arbitrary as McLaughlin's separation. It is crucial to look at the individual child and the stage of their language development when exposure to the second language begins. 24-month-old children produce between 50 and 550 words depending on their developmental stage (cf. Fenson et al., 1994). The size of their vocabulary is but one factor that does undoubtedly have an effect on the development of a possible second language. It seems therefore likely that exposure alone to a second language cannot be the only criterion in the distinction between simultaneous and successive bilinguals but that language output should also be considered. Consequently, for the present analysis, the language output of the individual participants of this study at age 2;0 will be considered. Children who actively use both languages at this point will be considered simultaneous learners and children who use only one language actively at this point are considered successive bilinguals.

The question of whether simultaneous or successive acquisition of two languages is better for children remains unresolved. There has not been much more detailed research in this area since Weinreich (1963) commented: "the effects of exposing children to a second language at various ages have never been properly tested" (quoted in Rūke-Draviņa, 1967:17). Several studies suggest that young children are better at acquiring a language than older children and adults. Nonetheless, there is also evidence against Lenneberg's proposal of a *Critical Period* (see above) that ends at puberty. One problem in comparing the acquisition process of younger children and older children or adults is that the input conditions are usually very different. Studies have shown that if younger and older children are given the same experience with a second language, i.e. the same input conditions, the older children learn faster (cf. Hoff, 2001:70f.). Researchers further agree that the outcome of bilingualism, i.e. the degree of bilingualism the children reach in the end, depends on many factors.

Research in the area of early second language acquisition is astonishingly scarce. McLaughlin (1984) summarises the most influential ones. Most authors so far concentrated either on interferences, emphasising the existence of them but not analysing their influence

²⁰ See Hoff (2001:59f.) for references.

on second language acquisition, or they tried to show that first and second language acquisition mainly followed the same acquisition pattern. Felix (1978) thinks that the problem is much more complex and that we can neither say that first and second language acquisition follow the same pattern nor that they are fundamentally different. He points out differences between the first language (L1) and the second language (L2) in the acquisition sequence of morphological endings and sentence types but finds parallels in the areas of negation and interrogation (cf. *ibid.* p. 222). Concerning differences, for example, he found that L1 learners had a pure 2-word phase whereas this could not be shown in L2 learners. Felix further points out that L2 learners use only one single structure at the beginning of their L2 acquisition (the equational structure, i.e. a structure in which the verb constituent is manifested only through the copula ‘to be’) whereas L1 learners use a variety of sentence structures from early on. Differences between L1 and early L2 acquisition have often been traced back to the fact that an L2 learner has more linguistic and cognitive knowledge and must thus have different ways of acquiring the new language. A few more studies on successive language acquisition will be discussed with respect to code-switching in chapter 2.1.2.

1.1.3.3 One or Two Language Systems?

An interesting issue in relation to children’s bilingualism has been the question of whether infant bilinguals go through an initial mixed stage, as, for example, proposed by Leopold (1939-49)²¹, or if they develop their two languages independently from the very beginning of their language acquisition. The two opposing views became known as the *Unitary Language System Hypothesis* and the *Independent Development Hypothesis*. Since most studies on bilingual children confirm a period of more or less language mixing²², researchers mainly rely on the amount of children’s early vocabulary mixing in order to argue for a fused or two separate language systems. Although mixing rates vary considerably from one study to the other, they seem to decrease with age or to be precise with advancing linguistic development and growing ability to control the languages. Meisel (2000:5) points out, though, that “other findings [...] suggest that to generalize in this fashion and to claim that mixing decreases with increasing grammatical knowledge is not warranted by the empirical facts”.²³

²¹ Referring to his data, he suggests that very young bilinguals have only one fused system and only one word for each referent. Different words for the same referent would function as synonyms and thus be superfluous.

²² For a definition, see chapter 1.2.2.1.

²³ Cf. Genesee (1989:164) for an overview on more studies.

Volterra and Taeschner (1978) account for lexical as well as syntactic mixing in their three-stage model of language development for bilingual children. In the first phase, the child possesses one lexical system composed of words from both languages. During the second phase, the child begins to separate the vocabularies, but the same rudimentary grammatical rules are applied to both languages. Only in the third phase are vocabulary and grammar of the two languages completely separated. The detection of various stages in a gradual process of language differentiation supports the idea of a single system at the onset of language acquisition. But many recent studies have shown that there is a better separation of the languages than presumed by Volterra and Taeschner.

Researchers supporting the independent development hypothesis pointed out that children produced very few mixed utterances and were able to separate their linguistic systems at an early stage. Based on their data of Spanish/English bilingual children, Lindholm and Padilla (1978/1978a) conclude that even very young children are able to distinguish between their languages since they maintain the structural consistency of their utterances.²⁴ Marilyn Vihman (1985), based on her data of a 2-year-old informant, relates the early differentiation of languages to growing pragmatic competence. She observed that mixed utterances decreased once the child became aware of the expected language choice. She also notes that language mixing increased again during the acquisition of code-switching strategies. Once the child was able to differentiate between the languages in a monolingual context, he developed code-switching strategies in a bilingual context. Vihman characterises this as “a step forward in metalinguistic and pragmatic sophistication” (ibid. p. 317). Fred Genesee (1989) also strongly supports the idea of an early language differentiation. He states that bilingual children are able to use their developing languages in contextually sensitive and functionally differentiated ways. In a review on studies claiming that mixing is indicative of the unitary language system hypothesis, he explains the shortcomings of these studies and provides alternative suggestions for the interpretation of mixing. Mixing can be explained by language dominance, by the lack of the appropriate lexical item in one language, by the restricted use of a specific item or by choosing a simpler or more salient word. He also points out that adults mix languages as well. Gawlitzek-Maiwald and Tracy (1996) see language mixing as a skill that reflects a potential: it helps the bilingual individual to bridge

²⁴ Lindholm and Padilla observed, for example, that in Spanish utterances, the functors agreed in number with the substituted English nouns. Also, there was no overlap in meaning in lexically mixed utterances (cf. 1978a:32).

temporary lexical and structural gaps. Language A can fulfil a booster function for language B, which they call “bilingual bootstrapping”. They show that “after English modals, auxiliaries, and third person agreement features have been acquired (age 2;9), language mixes decrease in frequency (to under 3%)” (ibid. p. 915). Jürgen Meisel is another supporter of the Independent Development Hypothesis. He thinks that the human “language making capacity” (cf. Slobin, 1985) allows the bilingual individual to separate the grammatical systems from early on.

Particularly in recent years, most researchers agree that language differentiation happens rather early.²⁵ This is supported by evidence from diverse studies showing how young bilinguals are aware of the fact that they are surrounded by more than one language and how they express this awareness. Even though many young bilinguals have not yet acquired the metalinguistic terms for their languages (e.g. English or German), they know that there are different ways of denoting things. They show bilingual awareness by using (as much as they can) the appropriate language with different people. Several case-studies report examples of this early manifestation of language awareness. Hoffmann (1991) describes that her daughter Cristina showed signs of distinguishing the two systems around the age of two.²⁶ Kielhöfer and Jonekeit (1993) claim that their son Olivier knew at the age of two that his parents spoke different languages and was able to address them in the right language. At 2;2 he already used the abstract terms *French* and *German* for his parents’ languages, and his translation can be seen as a further sign of linguistic awareness.

The question remains why children mix their languages if they are able to differentiate them from early on. A few authors have suggested answers (see above). Volterra and Taeschner, although they argue for a fused system, also provide an explanation: some instances of early mixing can be explained by the fact that children seem to attach certain words to certain specific things or elements, as in the following example:

(001) F: questa è una molletta
Giulia (2;2) [having learned the German word about a month before]: no, non è molletta, è *eine Klammer* (Volterra and Taeschner, 1978:318)

The child has learned the German word first and is not immediately accepting a new linguistic form for it. The context in which children first learn a word seems to play an important role and they need to learn to generalise the meaning of words. Volterra and Taeschner (ibid. pp. 317f.) note: “The child must detach one word from a certain specific context and identify that word with the corresponding word in the other language.”

²⁵ Cf. Meisel (1989), DeHouwer (1990) or Genesee et al. (1995).

²⁶ For details, see Hoffmann (1991:80-85).

Vihman (2002) proposes a different approach to the question of whether there are one or two systems in early bilingual language development. In her view, “one system versus two” is not the right question because various studies of the early bilingual lexicon not only fail to support the *Unitary Language System Hypothesis* but also the analysis of syntactic learning in the same children fails to support the *Independent Development Hypothesis*. Based on her data providing evidence for interaction between the two languages, Vihman (2002:240) suggests “two independent but mutually supportive routes to learning phonology”.

Another alternative approach to the “one system versus two” question was made by Arnberg and Arnberg (1992). Based on Piaget’s cognitive-stage theory, Gibson’s theory of perceptual development and Vygotsky’s theory concerning the relation between language and thought, they claim that there are two types of learning processes involved in language acquisition and separation: elementary and higher mental functions. These functions would explain why children mix languages at all, why particular children mix much more than others, why they do not mix all the time and why mixing stops at some point in language development. Arnberg and Arnberg studied 18 English/Swedish bilingual children between the ages of 1;8-4;0, investigating the concept of awareness. They noticed that age or linguistic level alone does not determine when the awareness for different languages develops. Another issue of their study were educational measures by the parents involved: some parents used bilingual language strategies like repeating an inserted word in the correct language, literacy training or explicit talk about the minority language whereas other parents used neither of these strategies. Arnberg and Arnberg found that a trained child showed an increase in awareness by lower mixing rates and concluded that early awareness can assist the bilingual child in organising the two languages and in eliminating confusion between them.

Schlyter (1987) and Genesee (1989) also suggest that parents’ strategies seem to play a decisive role for the separation of languages as well as input factors, which shall be examined in the following chapter.

1.1.3.4 Language Input

We have seen earlier that input plays an important role in language acquisition. Faingold (1996:524), for example, found that specific linguistic inputs can play a central role in early phonological and lexical acquisition. Input also affects language production and code-switching behaviour. Researchers supporting the *Independent Development*

Hypothesis have claimed that children only mix their languages if they receive mixed input. Bergman (1976:94) comments:

in cases of simultaneous language acquisition, each language will develop independently of the other [...] unless it is the case that the lines between the two languages are not clearly drawn in the linguistic environment of the child. In such a case, which may be caused by code-switching patterns in the bilingual community or by deviations in the adult language of the child's environment from the norm in the monolingual community, the child will sort out the systems according to the input that he receives.

Goodz (1989) also found positive correlations between parental rates of mixing and that of their children.

There are very few studies investigating the effect of exposure to mixed and code-switched input during language acquisition (see chapter 2.1.3). Doyle et al. (1978:13) conclude from a study with very young bilinguals that clearly separated input "may foster language acquisition". In a later study, though, they point out that "there was no relationship between amount of mixing of input languages and vocabulary attainment" (ibid. p. 17). Huerta (1977), who studied a child growing up in a bilingual community, underlines that the process of the child's bilingual language acquisition was the same or highly similar to that of children growing up bilingually in an environment without code-switchers. Code-switched input did not seem to affect the child's bilingual language acquisition negatively. Fantini (1978) experienced clear language separation in his two children growing up with Spanish and English. He sees the reasons for their distinctive use of the two codes in the clear and consistently differentiated use of the languages by the parents and the overt and covert insistence by the mother on the exclusive use of Spanish. He underlines the distinctive environments in which the codes were used and the fact that the children closely associated Spanish with their family and their identity. Genesee (1989:171) suggests that "bilingual children with differentiated language systems may still mix because the input conditions permit it or because the verbal interaction calls for it". Genesee, Nicoladis and Paradis (1995) did not find any indications of a significant role of input. They think that dominance is an important source of language mixing.

As the results of the various studies show, there is still no answer to the question of whether children's lexical mixing is modelled on mixed input. There is still no evidence that language input must be separated by different participants, topics or locations for optimal vocabulary growth. We know, however, that parents use code-switching for various purposes in conversation with their children. García (1983:143), for example, found that mothers switched for clarification and used code-switching as a teaching aide.

A child's language development may also be influenced by the parents' reaction to mixing and switching of the child. Goodz (1994) explains that mothers feel a strong desire to communicate with their children and are therefore more likely to use whatever language captures their child's attention. They want to encourage language output by their children, irrespective of its form, and they want to indicate to their children that communication has been received. Fathers, in general, are stricter about the *one person - one language strategy* (cf. *ibid.* p. 71). Lanza (1992) proposes five discourse strategies of parents towards child language mixing in her *Parental Discourse Hypothesis* (PDH): adults may request clarification and thus initiate repairs (minimal grasp strategy and expressed guess strategy), they may repeat the content of the child's utterance in the other language (adult repetition), they may move on in the conversation (move on strategy), or they also code-switch. A study conducted by Nicoladis and Genesee (1998) did not support Lanza's findings, probably because the studies are undertaken in rather different sociolinguistic contexts. The present data, though, suggests that the parents' attitude towards mixing and switching as well as their reaction to mixed and switched utterances by their children influences the children's output to some extent, which will be shown below (see chapter 4.1.1.1).²⁷

1.2 Code-Switching

Bilingual speakers do not only have to cope with two different language systems but also with additional phenomena arising from the parallel use of two languages. One of these language contact phenomena is code-switching. Weinreich (1968:73) defined "the ideal bilingual" as someone who "switches from one language to the other according to appropriate changes in the speech situation [...], but not in an unchanged speech situation, and certainly not within a single sentence". In theory, Weinreich may be right, at least if he wishes to define an "ideal bilingual". But reality shows that switches in an unchanged speech situation or within a single sentence are common among many bilingual speakers, ideal or not. Whereas Weinreich refers to code-switching as "lexical interference", it is considered here as a special potential of bilinguals.

In the following chapters, I will first outline the basics of the history of code-switching research before the notion of code-switching and related language contact phenomena will further be defined. I will then present some central ideas of the major approaches to code-switching: the grammatical approach, neuro- and psycholinguistic

²⁷ However, this study cannot directly be compared with those of Lanza (1992) and Nicoladis and Genesee (1998), as the definition of mixed utterances applied here is more restricted.

aspects of code-switching, the sociolinguistic and the pragmatic approach. A few authors have tried to find comprehensive approaches, which shall conclude this chapter. Whereas the neuro- and psycholinguistic approach simply serve as background knowledge, the other approaches are more important for the present analysis. The grammatical approach analyses the formal properties of code-switching and although these are not the focus of the present book, they provide the frame in which code-switching can take place. The focus then is on sociolinguistic and pragmatic code-switching.

1.2.1 History to the Study of Code-Switching

Until the 1970s, code-switching was studied only by a few experts, often in combination with other topics. For a long time it was seen as a negative occurrence in the speech of bilinguals, caused by their inability to differentiate their linguistic systems. As a result, it did not warrant further research.

However, the phenomenon started to attract the attention of more people, including linguists. This increased interest possibly arose from a more intense language contact in the industrialised world. The first studies concentrating on code-switching tried to prove that code-switching is not only a random occurrence among poorly competent bilingual speakers but that it can also be seen as a natural strategy of language production and a skilled performance with social motivations. The focus of these first studies lay on social functions of code-switching. Social contexts (like the community, different settings, participant constellations, etc.) in which speakers produced mixed utterances were examined. From these findings, sociolinguists and psycholinguists described socio-psychological functions of code-switching.

About ten years later, Shana Poplack changed the direction of code-switching research by focusing on the grammar. On the basis of her data collected in New York (Spanish-English) and Ottawa (French-English), she proposed the first structural constraints - grammatical rules that restrict the occurrence of code-switching. Her claim of universal validity for her constraints challenged many researchers to find counterexamples. The search for universal constraints on code-switching thus occupied research in the 1980s. Up to this day, no universal constraints without counterexamples from other language pairs have been proposed. Although the search for universal constraints continues, the focus of code-switching research has yet another aim: instead of formulating constraints, researchers try to find explicative models. They wish to account for universal and variable aspects of code-switching. On the one hand, the attention lies on grammatical and syntactic

aspects, on the other hand, social and pragmatic aspects attract more and more interest. Concentrating on the more recent trend in code-switching research, Gumperz (1982:72) pointed out that “motivation for code switching seems to be stylistic and metaphorical rather than grammatical”.

The widespread phenomenon has now been studied all over the world: in India by Gumperz and Singh, in Australia by Clyne, in East Africa by Myers-Scotton, in the United States by Pfaff, Poplack, Timm and others, in North Africa by Bentahila and Davies and in Europe by Beatens Beardsmore, Blom and Gumperz, Romaine and many others. The research on what appears to be a language universal in the behaviour of multilingual speakers continues in many bilingual communities and other places of language contact.

1.2.2 Language Contact Phenomena

The use of more than one language in an individual or in a conversation provokes interaction between the languages. This linguistic interaction takes on various forms such as code-mixing, code-switching, borrowing and interference, all of which will be discussed in this chapter. The problem of definitions is that many researchers have their own terminology and use the same terms for diverse concepts and ideas. Code- or language mixing, code- or language switching and code- or language alternation can all mean the same or imply slightly different meanings depending on the person who uses the terms. This is also true for the terms borrowing or transfer, and interference or transference. The terms and definitions relevant to the present book will be provided below.

1.2.2.1 Code-Mixing and Code-Switching

In this book we are concerned with two different languages, German and English, and thus do not need a distinction of *language* and *code*, the latter including varieties and dialects.²⁸ The terms *language* and *code* are therefore used alternatively.

Code-mixing and *code-switching* are the most important language contact phenomena for the purpose of this book. *Code-mixing* is the use of elements from more than one language within one utterance without a clear change from one to the other language. There are often not only lexical but also grammatical morphemes from more than one language in a single phrase. The matrix or “base” language can usually not be identified.²⁹ An example of code-mixing is the following:

(002) Lara (2;5): <die Lara> show *mal* you a *Fenster*

²⁸ See Auer (1998:27f.) for a detailed comment on the question of what is involved in the definition of *code*.

²⁹ Cf. chapter 1.2.3.2 for a finer definition of the matrix language.

As seen above, code-mixing has been a major topic in bilingual language acquisition mainly in relation to the question of whether young bilinguals have one or two language systems. Whether, to what degree, and until what age language mixing occurs, seem to depend very much on the bilingual individual. It is often assumed that code-mixing occurs at least as long as there is no language differentiation. But this cannot be the only criterion as even adults mix their languages to some extent, although this differs from code-mixing in children. Whereas adults usually insert single words, often nouns and verbs, and thus rather use borrowing (see below), young children insert words from different word classes. Although many authors point out that children also mainly insert nouns³⁰, Meisel (1994:427) found in his French-German data that frequent mixes are *ja*, *nein*, *non*, *auch*, deictic elements (*da*, *das*, *dies*, *ça*), particles (*auf*, *zu*, *ab*), adverbials (*alle*, *noch*, *autre*, *encore*) and expressions like *so*, *fertig*, *doch*. Vihman (1985) noted for her 2-year-old informant that she also mainly inserted function words. Meisel's as well as Lanza's data support the finding that at least with very young bilinguals "there is generally a greater degree of grammatical mixing than lexical mixing" (Lanza, 1992:644). Lexical mixing seems to be characteristic of more mature bilingual code-switching. However, Lindholm and Padilla (1978) found that mixing occurred predominantly at the lexical level. They suggest that language mixing in children occurs "either when they lack the lexical entry in the appropriate language or when the mixed entry is more salient to the child" (*ibid.* p. 334). I agree with this statement in that language gaps and salience are certainly two reasons for code-mixing, and I would like to add that the same reasons are valid for insertions and mixing by adults.

Code-switching is a phenomenon of language contact that is generally defined as the alternate use of two or more languages within a single conversation, usually marked by a clear break between the languages and often fulfilling a specific function. Accordingly, it is used in this book as a term for the juxtaposition of two languages within the same utterance or same conversation. The terms *code-switching* and *code-alternation* are not further distinguished. Code-switching is significant on two different levels: on the macro-level as language behaviour of a community and on the micro-level as language behaviour of the individual. On the micro-level, code-switching is an often 'intentional' but sometimes also subconscious change by the speaker from one to the other language, e.g.

(003) Lou (4;7): *nein, du bist die Königin Englisch sprechen und ich bin die Königin deutsch sprechen, ich ich i[x] I I will speak deutsch and you speak English, ok?*

³⁰ See, for example, Lindholm and Padilla (1978), who indicate for their data that the element most commonly inserted in both languages was a noun.

Although this example shows the speaker's uncertainty about how to continue the sentence, a language shift is not necessarily marked by hesitation pauses, changes in sentence rhythm, pitch level or intonation contour. The switch can be integrated in the language flow as in Poplack's title of an article: "sometimes I'll start a sentence in Spanish y terminó en español". We also want to keep in mind that code-switching not only occurs in bilingual interaction as alternation of different languages, but also in monolingual interaction as alternation of different styles, registers or varieties.

The line between the notions of code-mixing and code-switching is sometimes difficult to draw, and several factors such as the general degree of language differentiation or the speaker's intent have to be taken into consideration. That is why I do not agree with some researchers who see a structural distinction between code-mixing and code-switching in that code-mixing is used as coinciding with intra-sentential code-switching. For my own data, I want to differentiate between intra-sentential code-switching and code-mixing, although it is harder with children's data to set the boundaries of a sentence and thus define intra-sentential code-switching.

As for a distinction between code-switching and code-mixing from a sociolinguistic perspective, Auer (1998a) explains that code-switching occurs in communities with a preference for the use of one language at a time, whereas code-mixing occurs in communities without such a preference.³¹

1.2.2.2 Borrowing

Borrowing will be defined as the reproduction of patterns in one language previously found in another language, if the reproduction is conventionalised and the embedded pattern becomes part of the other language. If it is not conventionalised, we speak of single word *insertion* or a *single lexical switch*. There is agreement that many cultural and technological terms can be defined as borrowings. Whereas some of these terms have very specific implications or there is no equivalent concept in the other language, other borrowings are simply used because they are shorter, easier to use or more usual or precise than their translation. Examples are the use of *wanderlust* in English or words like 'cool', 'chatroom' or 'download' integrated into German.

The distinction between *borrowing* and *code-switching* for single words has been discussed in great detail in several publications but remains a controversial subject.³²

³¹ For a discussion on definitions of code-switching, -mixing, and -alternation see Boeschoten (1998).

³² See, for example, Romaine (1989:131-147) or Myers-Scotton (1990).

Haugen (1956), who uses the term *transfer* for borrowing, proposed a distinction based on the degree of phonological and morphological integration undergone by the item in question.³³ Syntactic integration has been added by other authors. Full integration at all levels is mostly agreed on as borrowing, whereas code-switched words are often not well integrated into the other language.³⁴ Scotton (1988a) did not look at the structural side but emphasises the role of the social content of a word: switched words which carry social significance constitute code-switching, while those which do not are borrowings. It is not possible to classify every occurrence of inserted single items as code-switching or borrowing. Linguistic criteria may have to be combined with social criteria and the question of how frequent and accepted the switched elements in the community are. An interesting point, however, is that the terms *borrowing* and *code-switching* make different claims about the competence of a speaker: borrowing is common among monolingual and non-fluent bilingual speakers, whereas code-switching can only be done by skilled bilingual speakers, since it requires competence in both languages.

1.2.2.3 Interference

Weinreich (1968:1) defines *interference* as “instances of deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than one language”. Accordingly, the term interference, sometimes also called *transference*³⁵, is used here as a speaker-specific deviation from the norm due to language contact. It may occur on all linguistic levels. Typical examples of phonological interference in the present data are the use of rhotic [r] or the bilabial approximant [w] in German words. Other children use the German pronunciation [v] for /w/ in words like ‘wait’ and ‘away’. We find morphological interference when children simply add the English plural morpheme –s to German plurals (e.g. *Tellers, Bilders, Kinders*). Lexical interference often appears through literal translations, as in *ich bin ganz schlecht* as translation for ‘I am sick’ or *er weiß nicht das Spiel* for ‘he doesn’t know the game’. We also find quite a few examples of syntactic interference, here from German to English: ‘want you be (the) first?’ or ‘when going we to X?’.

³³ Words may be unassimilated, partially assimilated or wholly assimilated. Haugen thus distinguishes *loanwords* (unassimilated), *loanblends* or *hybrid loans* (partially assimilated), and *loanshifts* or *loan translations/calques* (fully assimilated and integrated).

³⁴ It has to be pointed out for German, though, that many borrowed items from English are not integrated phonologically.

³⁵ Cf. Clyne (1967), who distinguishes between the phenomenon (*transference*) and examples of the phenomenon in actual speech (*transfer*).

As pointed out before, interference has been a popular research topic in second language acquisition. McLaughlin (1984:66) redefines the term interference in this context as “errors that occur in the learning of a second language (B) that reflect the acquisition of a previous language (A) and that are not found in the normal development of those who acquire that language (B) as a first language”. While many linguists found evidence of diverse types of interference in their data, others claimed that there was no interference at all. Hakuta (1976:347) argues that “it is impossible to prove that there is no language transfer, for there always remains the possibility that the researcher is simply looking at the wrong place”. Although interferences are not the main focus, they are used in the data analysis as indicators of language dominance. Therefore, we need to extend McLaughlin’s statement that transfer occurs from the first to the second language to the suggestion that transfer usually happens from the stronger to the weaker language.

Until the 1960s, there was a tendency to label all language contact phenomena observed in bilingual production as interference. This implied that they were all valued very negatively and considered abnormal. It shows progress that researchers now differentiate the various phenomena and are able to characterise their different features.

1.2.3 Grammatical Aspects to the Study of Code-Switching

One area of code-switching research is concerned with the structural description and grammatical analysis of sentences containing elements from more than one language. Some researchers try to answer the question of whether there are grammatical rules for code-switching, and aim at identifying constraints on where code-switching can take place in a sentence.³⁶ Whether and how these rules and constraints differ depending on the typology of the languages involved, is also being investigated. Other linguists simply describe different types of code-switching.

This chapter shall outline the history of grammatical approaches to code-switching, its main research topic being structural constraints. I will briefly describe the most important ones and review their validity for code-switching among children. We also need to touch on the topic of a matrix language in this context, although this is not a purely grammatical issue. The last part will be concerned with major code-switching types discussed in the literature.

³⁶ Grammatical constraints are of course only relevant to intra-sentential code-switching.

1.2.3.1 Constraints

In first attempts to find grammatical rules for code-switching, researchers simply described switching sites. They did not yet formulate specific constraints because it was believed that “there are perhaps no syntactic restrictions on where the switching can occur” (Lance, 1975:143). Only later did linguists find constraints blocking switches at certain sites, but the first proposed constraints were still descriptive rather than structural. Most of them were developed on the basis of data from one linguistic area and could therefore not be applied universally. Timm (1975:477f.), for example, notes that in her data on Spanish-English code-switching, some segments of speech were never switched: “one of the strongest restrictions against switching applies to pronominal subjects or objects [...] and the finite verbs to which they belong. [...] A second restriction blocks switching between finite verbs and their infinitive complements.”³⁷ Joshi (1985) proposed a constraint on switching of closed class items: determiners, quantifiers, prepositions, tense morphemes, auxiliaries, complementisers, pronouns, etc. cannot be switched. Many other authors formulated constraints on the basis of their respective data material, as for example, the *Functional Head Constraint*, proposed by Belazi et al. (1994). But it shall suffice here to outline the most influential ones.

Sankoff and Poplack (1981:5), studying a Puerto Rican community in the U.S., claim that “there are only two general linguistic constraints on where switching may occur”: the *Free Morpheme Constraint* and the *Equivalence Constraint*. The first constraint entails that switches do not occur between a bound morpheme and a lexical form unless this form is phonologically integrated into the language of the bound morpheme. This means that forms like *run-eando will not occur in the speech of bilinguals whereas flipeando constitutes a possible switch. The equivalence constraint implies that code-switching is restricted to sites where the juxtaposition of elements from two languages does not violate the syntactic rules of either language.³⁸ Since Sankoff and Poplack defended their constraints as being universally applicable, their validity was tested by several researchers on diverse language pairs. And although it was generally recognised that the constraints seemed valid for Spanish-English code-switching, they did not apply to all other data and could therefore not be labelled universal constraints. The *Free Morpheme Constraint* proved invalid for structurally different languages, such as English and a highly inflected or agglutinative language. The *Equivalence Constraint* was impossible to apply to

³⁷ Cf. Timm (1975:473-482) for details.

³⁸ For more details, see Sankoff and Poplack (1981) or Poplack (1980).

language pairs with highly different word order. Thus, similar typologies seem conducive to code-switching.

Although Poplack and Sankoff's constraints proved invalid as code-switching universals, they formed a starting point for further research. Some authors soon emphasised that the grammatical principles underlying code-switching seemed to rely more on hierarchical than on linear relations. DiSciullo, Muysken and Singh (1986), for example, found that government relations of elements within a sentence seemed to be of much greater importance for the process of code-switching. As a result, they developed the *Government Constraint*, following Chomsky's *Government and Binding Theory* (cf. Chomsky, 1981). Their main contention was that code-switching can only take place between elements that are not lexically dependent, i.e. there is no code-switching between verb and object or between preposition and noun-phrase in a prepositional phrase. The authors proposed certain sites in the sentence suitable for code-switches and claimed universal validity for their constraint.³⁹ But the empirical verification of the *Government Constraint* for different language pairs soon indicated that it was not universally applicable either. Numerous violations to the constraint from other language pairs proved it to be too restrictive.

While many researchers tried to find constraints on where code-switching can take place, Azuma (1998) focused on the size of switched units. Any segment, called 'chunk', which can meaningfully stand alone in the speaker's mind, may be code-switched. Azuma came to a similar finding as Joshi (1985), namely that open class items may be switched, whereas closed class items are usually not switched. He explained that open class items are content words and can thus meaningfully stand alone, whereas closed class items are function words which cannot meaningfully stand alone unless they contain semantic or pragmatic content. Azuma thus implied that discourse functions also play a role in code-switching. Other researchers also redirected their focus away from purely grammatical aspects to code-switching. Gumperz (1982:89f.) suggested that constraints depend on pragmatic aspects rather than on grammar: "switching is blocked where it violates the speaker's feeling for what on syntactic or semantic grounds must be regarded as a single unit". We will further consider his ideas in the discussion on the pragmatic approach to code-switching (see chapter 1.2.6).

Since we are primarily concerned with code-switching behaviour of bilingual children in this book, we have to ask whether structural constraints can be applied to children's

³⁹ For details, see DiSciullo, Muysken and Singh (1986:1-24).

code-switching. Boeschoten and Verhoeven (1987:211) indicate that the mixes in their Dutch-Turkish data suggest “the lack of validity of the equivalence constraint, and similar constraints that have been proposed”. Köppe and Meisel (1995), however, note that grammatical constraints on code-switching are respected in the overwhelming majority of cases once the children have access to functional categories in their grammar. At first sight, Boeschoten and Verhoeven’s statement appears to contradict Köppe and Meisel’s findings, had the latter not added that speakers need to have access to functional categories in order to respect constraints. Meisel (1994) believes that elaborate grammatical knowledge is required for code-switching (defined as rule-governed linguistic behaviour). In his view, young children do not violate constraints but the constraints do not apply since children have not yet learned relevant grammatical relations (cf. *grammatical deficiency hypothesis*). Until children have developed functional categories, their code-switching will not be guided by syntactic principles. Köppe and Meisel (1995:290) explain:

The exact sentential position of a switch is difficult to determine as long as children omit obligatory elements in the sentence. Consequently, if the child’s utterances apparently violate certain syntactic constraints on code-switching, we have to determine whether it is the constraint which is not yet acquired by the child, or whether the child’s grammar simply lacks the necessary elements to which the constraint applies.

We need to keep in mind that the constraints we focussed on in this chapter apply to intra-sentential code-switching, which demands a high degree of competence and experience in using both languages. The following statements and findings show that it is rare in the speech of young children: McClure and Wentz (1975) note that children below the age of eight are rarely found to use complex code-switching structures but that they rather switch for one word. Romaine (1989) even remarks that code-switching occurs most frequently at sentence level for children up to the age of about ten. McClure and Wentz (1975a) made a similar observation in their data of children’s narratives, where the children generally switched for entire sentences. McClure (1977:97) concludes from results of different studies that “the ability to use nonsentence code-changes productively is acquired relatively late”. Although I agree that complex code-switching seems to be rarer in young children, the present data will prove that even young children do not only switch for single words.

To summarise, I want to point out that so far there have always been a number of counterexamples from diverse language pairs to each proposed constraint on code-switching. Code-switching seems to be structured differently in various communities and contact situations. The diversity may partly be related to typological differences of the

languages involved. The question of whether there are any universal constraints remains hitherto unresolved. Myers-Scotton (1993) rejects all early constraints and criticises the fact that the existence of a matrix language is nowhere taken into account. Indeed, many of the constraints do not provide for any differences between the roles of the two languages and although violation of constraints is proven, they are often violated only in one direction.

1.2.3.2 The Matrix Language

There are two opposing views regarding the relationship of languages involved in code-switching. One view proclaims an equal partnership and the other explains that the languages fulfil different roles, one language being super-ordinate. Joshi (1985:191, note 4) first proposed a distinction between *host* and *guest language* but later adopted the terms *matrix* and *embedded language* to account for the need of expressing asymmetry between the languages. The matrix language (ML) is the ‘base’ language and the embedded language (EL) is the ‘contributing’ language. The ML is not permanent but can change in the course of a conversation. Such an alternation within the same conversation may occur under various conditions: when a change of situational factors occurs, when code-switching itself is the unmarked choice or when a language shift is in progress (cf. Myers-Scotton, 1993).

Determining which language is the matrix and which is the embedded language, can be a difficult task. Myers-Scotton (1993:232) handles this difficulty by counting morphemes: “The ML is the language with the higher frequency of morphemes in a discourse sample in which CS [code-switching] occurs”.⁴⁰ The number of morphemes or words uttered in each language can indicate the ML on a statistical basis, but for a complex identification, sociolinguistic and psycholinguistic aspects must also be considered. The ML is often the speaker’s first language or at least the one he or she is more competent in. It contributes quantitatively more material as it is the language which is more frequent in specific interactions and in the community. Switching is mostly from this language to the other and not in the other direction. Discourse-oriented researchers proposed that the ML be the language of the conversation, but this may be difficult to define in communities where code-switching is a mode of conversation. Others suggested that the finite verb or the syntax play a crucial role or that the sociolinguistic context determine the ML (cf.

⁴⁰ Myers-Scotton (1993) remarks that in data sets involving typologically different languages (e.g. an isolating and an agglutinative language), counting words appears to make more sense than counting morphemes.

Bentahila and Davies, 1998). Speakers engaged in a bilingual conversation are usually able to identify the ML, which shows that a speaker's judgement may be a further factor in determining the matrix language.

In this book, the matrix language is defined as the base language to an utterance or a conversation. It is determined by the setting, the generally preferred language of the participants and the number of words from each language.

1.2.3.3 Code-Switching Types

Some authors have discussed different types of code-switching. Poplack and Sankoff distinguish three switching types in their *variation theory*: tag-switching, intersentential code-switching and intra-sentential code-switching (cf. Poplack, 1980). Each type is characterised by switches of different constituents and reflects different degrees of bilingual ability. Tag-switches are inserted into an utterance in the other language as tags or set phrases of one language (e.g. you know, I mean). Inter-sentential code-switching is the switching of languages at clause or sentence boundaries. Competence in both languages must be greater in intersentential switching than in tag-switching, since the speaker utters complete clauses or sentences in each language using the respective grammatical systems and different underlying rules. Intra-sentential code-switching, the switching of phrases or smaller constituents within a clause or sentence boundary, is the most complex type. It demands the greatest competence because for many language pairs it usually does not violate the syntactic rules of either language (cf. equivalence constraint). It has also attracted the greatest attention of researchers.⁴¹

Another relevant type of code-switching is interactional code-switching (cf. García, 1983:143ff.). In interactional code-switching, the bilingual participants usually speak different languages, each one using their preferred or dominant language, and the language of the conversation thus changes with each turn. This behaviour is common in many bilingual families where parents try to maintain a family language but the children reply in the language of the environment.

Code-switching among children differs from adult code-switching in that both employ different strategies. Very young children, for example, may repeat a 1-word utterance several times in both languages. Redlinger and Park (1980) refer to this as *lexical duplication*. Köppe and Meisel (1995) explain the phenomenon by suggesting that the

⁴¹ See, for example, Muysken (1995), who further distinguishes three separate patterns of intra-sentential code-switching: *alternation*, *insertion* and *congruent lexicalisation*.

children try to assure that they are understood. But there may be other explanations such as that the children may ignore that they use two words in two different languages. They may also want to emphasise the word, test whether the words are synonyms or address more people at once. The difficulty in interpreting lexical duplication arises from the fact that we cannot ask 2-year-old children about their intention in using specific constructions, and it is therefore unclear whether this language behaviour has any function at all. Somewhat older children may use code-switching as a way of hiding vocabulary gaps: they may interrupt their utterance and switch to the other language, repeating a part of the utterance in the new code – a way of gaining fluency and establishing discourse coherence. But before this and further functions of code-switching among children are discussed, we want to reflect on some aspects related to the neurology and psychology of the bilingual brain.

1.2.4 Neuro- and Psycholinguistic Aspects of Code-Switching

With regard to the functioning of bilingualism and code-switching in the brain, researchers seek to answer the questions of whether the bilingual's linguistic systems are stored together or separately, how bilinguals keep their languages apart, how interaction of languages works in the brain and what enables bilingual speakers to switch between their languages. In short, they want to find out more about how the bilingual brain operates.

A detailed discussion of the operation of the bilingual brain would go beyond the scope of this book, but some basic aspects shall be outlined in order to gain a better understanding and a more complete picture of the diverse factors involved in bilingualism and code-switching. The first aspect is the lateralisation in the brain, followed by the question of whether bilinguals store their linguistic knowledge in one or two stores. Different approaches have been put forward, some of which are briefly described. Another topic of this chapter is the question of how bilingual speakers switch between their languages. Although some switching theories are mentioned, the question remains unanswered. In the last part, I will present Clyne's theory of switching, in which triggers are described as special causes for code-switching.

1.2.4.1 Lateralisation and Storing

We know from previous research that the left hemisphere of the brain is responsible for the main part of language processing in monolingual speakers (cf. Romaine, 1989).⁴² However, the degree of hemisphere dominance varies from individual to individual. Albert and Obler

⁴² This is primarily true for monolingual right-handed males. Females and left-handed people show more bilateral participation in language, i.e. they are less language-lateralised.

(1978) came to the conclusion that the involvement of the right hemisphere was much stronger in language processing of bilinguals than of monolinguals. It was later pointed out, though, that the age of the acquisition of the bilingual's second language seems to play a decisive role in hemisphere dominance. While the authors thereby launched a whole new research wave, there are still vast areas of the functioning of the brain and the bilingual brain in particular that remain obscure. Researchers continue to explore which hemisphere is involved in what part of bilingual speech. This investigation is especially complex since various language-specific factors such as the typology or tonality of a language also seem to influence lateralisation and the degree of right hemisphere involvement. Moreover, several factors influencing bilingualism, i.e. age, context and order of language acquisition, also influence the cerebral organisation of bilinguals (cf. Romaine, 1989).

Other major questions in this area have been how the languages are organised, stored and accessed in the bilingual brain during speech production and reception. Research regarding these issues can be summarised in the following two opposing positions:

- the *extended system hypothesis*: both languages form one single system (one stock with elements from both languages) and the elements are supported by the same neural mechanisms

- the *dual system hypothesis*: the languages are stored in the same general language area but represented separately in the human brain; different networks of neural connections underlie each level of language (phonology, grammar, lexicon, etc.) (cf. Paradis, 1981)

The idea behind the extended system hypothesis is that the bilingual brain stores all information in one tank. This information can be described as a set of mental representations that is not yet language-specific. The bilingual speaker can access this single tank equally with both languages and organise the information in different ways depending on the language he or she actually needs. In the dual system hypothesis, however, the bilingual speaker controls two separate tanks that store information in linguistically associated ways, i.e. an English-German bilingual speaker has one English and one German tank.

The question of storing the lexicons in the bilingual brain has attracted much attention. Many studies have been carried out in order to provide evidence for one or the other hypothesis. Summarising them, Appel and Muysken (1987:79) point out that "most studies undertaken give evidence in favour of the one-store hypothesis". But some authors did not want to neglect the empirical support for independent storage, and further findings indicated that bilinguals actually combined parts of both hypotheses in actual speech situations.

This encouraged Paradis (1980) to formulate a compromise hypothesis. He proposed that the two separate language tanks, or lexical stores, are both connected to a third superordinate tank: the “conceptual-experiential information store” (ibid. p. 422). This conceptual store, also called semantic memory, is language-neutral and both a bilingual’s languages have direct access to the common store. It has been defined by Appel and Muysken (1987:78) as follows: “the semantic memory is not strictly linguistic, containing as it does the mental representation of the individual’s knowledge of the world”. Paradis thus proposes a three-store model. His suggestion seems to be an elegant and constructive way of resolving the difficult question of whether bilingual speakers have one or two lexicons, although more evidence for his hypothesis is needed.

Romaine (1989:95) points out that “some aspects of storage may be different for different languages” so that speakers might have different strategies of storage and access, depending on the languages they speak.

1.2.4.2 Switching Mechanisms

The bilingual brain not only stores two languages but also needs to switch between them, which could be a special challenge. Early research on the processing of languages in bilingual speakers led first Leischner (1948) and then the neurologists Penfield and Roberts (1959) to propose the so-called *single-switch theory*: some unknown mental device, called *switch*, was thought to switch one language off when the other one was switched on, thereby avoiding interference. But evidence against this theory followed soon. The fact that bilinguals can understand what is said in one language while they speak another language showed that both languages of bilinguals could be active at the same time.⁴³ This supposes a partial independence of the production and perception systems in bilingual speakers. Macnamara (1967) developed Penfield and Roberts’ theory into a hypothesis of an input and an output switch, the *two-switch model*. The output switch would be controlled by the speaker, whereas the input switch reacted automatically to the incoming language signal. Macnamara’s model first appeared to find support in various studies but was later rejected for being too theoretical (cf. Appel and Muysken, 1987:80). Also, it did not seem likely that the systems are either ‘on’ or ‘off’. It is now generally felt that the bilingual brain does not operate through a switch.

Oblor and Albert (1978) propose a monitor system that is operating continuously throughout language processing. It helps speakers to determine which language is spoken

⁴³ Cf. also the bilingual version of the Stroop test (Romaine 1989:89).

at a particular time. The monitor scans incoming data for cues of one or the other language. These cues can be specific phonemes or consonant clusters. The speaker also considers what language was spoken before as well as extra-linguistic, environmental information. The incoming element is then channelled to the lexical items in that language. Although the monitor system first checks the items in one language, it is always prepared to process them in the other language. It is therefore flexible and sensitive to changes in the environment and never switches one language entirely off.⁴⁴

The information presented above shall suffice for the purpose of this book. Research in this area continues, but it is especially challenging because every brain functions differently. It is even more difficult to find out more about a child's bilingual brain since many neurologists rely on patients with brain damage for their research, which is much rarer in children.

1.2.4.3 Triggering

Triggers can cause bilingual speakers to switch between their languages. Triggering is the central notion of Michael Clyne's approach to code-switching. He distinguishes between externally and internally conditioned code-switching. Externally conditioned code-switching depends on external factors, such as setting, participants or topic. While we are concerned with these instances of code-switches in the present study, Clyne's terminology of externally conditioned code-switching will not further be used. It is usually referred to as situational code-switching. Internally conditioned code-switching (= *triggering*), on the other hand, is a useful term to describe other types of code-switches in the present data that seem psycho-linguistically determined. Especially in typologically close languages such as German and English, special trigger words may initiate code-switches. The following words can function as trigger words:

- lexical transfers/borrowings: *ich hab ein RENDEZ-VOUS⁴⁵ à six heures*
- proper nouns: "vous voulez un GUMMIBÄRCHEN?" – *oh ja!* (cf. Kielhöfer and Jonekeit, 1983:40)
- bilingual homophones: "*der Ladenbrot ist nicht so gut wie MAMIS/MUMMY'S bread*" (Saunders, 1988:87)

All three examples contain trigger words that introduce the switch. Clyne (1967:84ff.) calls this phenomenon *consequential triggering*. It occurs when speakers use a word which constitutes an overlapping area between the two languages. Speakers may forget which language they are actually speaking and continue in the other language. Clyne (*ibid.* pp.

⁴⁴ Cf. Obler and Albert (1978) for a detailed discussion.

⁴⁵ Throughout this chapter, trigger words are underlined and in small capitals.

86-91) also describes other possibilities of triggering: *anticipational triggering* occurs when speakers think ahead of what they are about to say and they anticipate a word that belongs to the other language. In *contextual triggering*, it is not a specific word or expression that constitutes the trigger but the entire context of the situation.

Triggering can account for a large part of code-switches in the present data that are unintentional and do not have social or pragmatic functions. But it is still only an example of the complex process of switching in a bilingual brain and does not provide an explanation. Many questions remain, and psycholinguists have the difficult task of developing their theories based on experiments with individual bilingual speakers who may differ in dominance, proficiency and other variables such as age and context of their language acquisition. It is almost impossible to find different bilingual individuals who possess exactly the same pre-conditions. In the following chapter, we will be able to observe how much the language behaviour of bilingual speakers may vary even if the just mentioned pre-conditions are similar.

1.2.5 Sociolinguistic Aspects of Code-Switching

The title of a paper by Joshua Fishman (1965), “Who speaks what language to whom and when?”, describes the focus of sociolinguists in relation to code-switching. Sociolinguists study on the one hand multilingual communities and on the other hand the bilingual individual. In multilingual communities, they investigate the role of each language and how and why two linguistic varieties are maintained. As for bilingual individuals, sociolinguists identify code-switchers, analyse attitudes towards code-switching, look for factors determining code choice and reveal reasons and strategies of code-switching. Switches are interpreted with regard to the question of whether they carry specific social meanings.

For the purpose of this book, we are only concerned with the bilingual individual. In the first part of this chapter, I will describe different types of code-switchers. Concerning factors that influence a speaker’s code choice, I will begin by discussing attitudes towards code-switching. Further factors are mentioned in the succeeding chapter, which presents the major early sociolinguistic approaches to code-switching. In the last part, I will focus on personal and contextual reasons for code-switching.

1.2.5.1 Code-Switchers

Franceschini (1998) described the prototypical code-switcher as a young lower class member of a minority group with a strong ethnic group identity, coming from a

multilingual background. Code-switching typically seems more common among speakers sharing the same social, educational and ethnic background. It is mostly used in informal settings and in-group conversation, thus also supporting the establishment of an identity. Whereas Franceschini certainly refers to bilingual speakers living in bilingual communities in which code-switching is not only common but may even be the norm, I want to point out that code-switching can occur in any setting where two or more different linguistic systems meet, and with any speaker who has knowledge of more than one language. Code-switching is no longer seen as the incapacity of bilingual speakers of poor language competence to keep their languages separate but it has become a characteristic of the speech of more and less competent bilinguals. The phenomenon of code-switching has gained more importance in recent years since international exchange has grown and educated people speak more languages more fluently. They become potential code-switchers and may at some point change the picture of the prototypical code-switcher.

Researchers have asked from what age children are able to code-switch. The answer to this question is especially difficult because the definitions of code-switching vary so much. Several authors have identified code-switching in the speech of bilingual children three years old and older but few studies investigate the speech of younger children. Based on the data of a 2-year-old Norwegian/English bilingual, Lanza (1992:637) observed that the girl differentiates her language use in contextually sensitive ways:

A crucial distinction should be drawn between the type of linguistic behaviour that occurs in bilingual contexts as opposed to monolingual contexts. It is the child's inappropriate use of language mixing that must be examined as an indicator of the child's lack of bilingual awareness.

Lanza points out that the child did indeed code-switch although not with the same pragmatic sophistication as older bilinguals. Meisel (1994) strongly contradicts Lanza's claim and argues that language mixing before the age of about three differs not only in function but also in form from code-switching. He differentiates two age ranges presented in the relevant literature: age two to three, when children use basic code-switching, and age five to six, when more subtle pragmatic and sociolinguistic abilities are available. Unfortunately, he does not further characterise the switching types used by the different age groups but he provides evidence of code-switches of very young children in his own data material. It needs to be pointed out, though, that Meisel is mainly concerned with the linguistic form, whereas Lanza emphasises a social aspect, namely the child's sensitive reaction according to certain contexts. This may be one explanation for different views on the question of when children are able to code-switch.

Based on my own data, I also think that even 2-year-old bilingual children can code-switch. My definition of code-switching is thereby closer to Lanza's in that I think that young children are able to react according to certain circumstances. Children do code-switch for pragmatic reasons although these may be less varied than code-switching functions in adults. I also agree with Meisel in that the form of the code-switches differs from adult forms. One reason for this is the fact that the degree of competence in a bilingual speaker enables more or less complex code-switching. Intra-sentential code-switching, for example, requires a higher level of linguistic proficiency in both languages than other switching types. Whereas speakers of low linguistic proficiency may code-switch for linguistic reasons, speakers with higher language competence will also code-switch for stylistic reasons.

We have seen that several factors seem to influence the language behaviour of potential code-switchers. One of these factors is attitude, which will be further evaluated in the following chapter.

1.2.5.2 Attitudes towards Code-Switching

Just as the attitude towards bilingualism in general had been rather negative for a long time, code-switching was also widely condemned. It was considered a negative side-effect of bilingualism and a grammarless mixture of two languages. It was even given pejorative names such as *Français*, *Spanglish* or *Tex-Mex*. Bilinguals were expected to keep their languages separate.

More recently, people began to see code-switching also as a special competence of proficient bilingual speakers. It is now often recognised as a very useful communication resource. For many bilingual speakers, it is a natural language strategy. But others still disapprove of code-switching and would deny its occurrence in their own speech. The attitude towards code-switching certainly differs a lot from community to community. In some communities, it is widely accepted or may even be the norm. Speakers from these communities may be more eager to switch, especially if they personally have a positive attitude towards it. In other communities, however, code-switching may be viewed very negatively and is probably only used in intimate interactions among speakers sharing the same social background.⁴⁶ Myers-Scotton (1998) further interprets bilingual speakers' code-switching as follows: much code-switching is indicative of positive associations with both languages and little code-switching indexes a polarisation within the society. As a

⁴⁶ A popular way of assessing code-switching attitudes is through the use of questionnaires.

consequence, there will be less code-switching in societies marked by inter-group tensions.⁴⁷

While societal attitude is less important for the analysis of the present data, the attitude of the informants' parents towards code-switching seems to play an important role. Input as well as the parents' reaction to code-switching influences the informants' switching behaviour.

1.2.5.3 Language Choice

Bilingual speakers need to make appropriate language choices in different monolingual and bilingual settings. In monolingual settings, the speaker selects the relevant language and the interaction continues like one of two monolinguals. Language choice in a bilingual setting is more complex since the speakers do not necessarily choose one language and suppress the other, but they can change the chosen language during the interaction and even have the possibility of choosing code-switching as their language.

Early research in the field of code-switching started in sociolinguistics. Researchers were concerned with the question of how a speaker chooses the appropriate language in a bilingual setting. Herman (1961), for example, proposed that language choice depends on *personal needs* (proficiency, emotional attachment, etc.), the *immediate situation* and the *background situation*. Depending on the conditions, one of the three factors has the highest potency (=valence and salience) and determines the speaker's language choice.⁴⁸ Fishman (1965) also lists three controlling factors involved in language choice: *group membership*, *situation* and *topic*. Concerning group membership, Fishman points out physiological and sociological criteria, such as age, sex, race or religion, as well as subjective socio-psychological criteria. While most of these are less relevant in relation to the informants of the present study, the children still seem to express their group membership through their language choice: many children give the language of the environment preference over the family language since they want to belong to the group of children of their age. The factor *situation* or *setting*, also mentioned by Herman, concerns the participants, the physical setting and the style and functions of discourse. It certainly also plays an important role in children's language choice. As for *topic*, speakers may prefer one language for discussing certain topics and another language for other topics – a factor that seems less relevant to children from mixed marriages since they are usually able to use either language. Children

⁴⁷ For a more detailed discussion on attitudes towards code-switching, see Romaine (1989:258-269).

⁴⁸ For details, see Herman (1961).

who speak a language at home that is different from the language of the environment may have more difficulties, for example, when they have to talk about kindergarten activities in their family language.

The most influential approach has been proposed by Blom and Gumperz (1972). They combine former approaches and point out that, aside from purely linguistic factors, a bilingual speaker's language choice is affected by the *participants*, the *setting* and the *topic*. A bilingual speaker chooses his or her language according to a particular constellation of people, gathered in a particular surrounding and talking about a particular topic (cf. *ibid.* pp. 421ff.). At least three factors are involved in language choice based on the participants: language proficiency, language preference and social identity. The setting can be home, school or work, for example. In the present data, children often addressed the same participant in different languages depending on the setting, thus favouring the setting over the participants in language choice. Saunders (1982), on the other hand, shows that background knowledge about a participant may be strong enough as to always choose the same language with one person, even if the setting changes. He provides examples of his wife addressing their children in German, although she usually talks to them in English. The children reacted in English as they were used to without considering her language shift (cf. Saunders, 1982:79).

Blom and Gumperz (1972:421) point out that social factors restrict the selection of linguistic factors. That means that a speaker first verifies the requirements of the social situation, including the setting, the participants and the topic, before making their language choice. Since a speaker's own preference will usually play a minor role, it could be added that social factors also dominate over personal factors in code choice.

An interesting claim has been made by Gumperz (1982:75), who points out that, since speakers understand each other, there must be a "sharing of codes and principles of interpretation" and "tacit presuppositions". While speakers are creative and free in their code choice, the interpretation of their choice is restricted. The discussion shows that macro-sociolinguistic as well as micro-sociolinguistic aspects are involved and need to be considered in a complete analysis of a speaker's code choice.

1.2.5.4 Reasons for Code-Switching

In the previous chapter, factors influencing a speaker's language choice have been identified. We now want to focus on reasons for code-switching not only in the bilingual individual but also in bilingual communities.

Scotton investigated code-switching in mixed ethnic groups in East Africa. Based on their data, Scotton and Ury (1977) suggest two main reasons for code-switching: the avoidance of a definition of an interaction, and the redefinition of a situation. As for avoidance, Scotton (1976) describes that bilingual speakers use code-switching as a strategy of neutrality in cases where it is unclear which components of the situation are most important. Heller (1988a:81) argues similarly that “by creating ambiguity, code switching offers opportunities for the interpretation of social action that would otherwise be unavailable”. Ambiguity is created either by violating conventional associations, by refusing to redefine them or by refusing to choose among them. Code-switching is therefore attractive as a strategy in situations where speakers want to avoid the definition of the social significance of an interaction. As for the redefinition of a situation, a speaker has the choice between the marked and the unmarked language.⁴⁹ If they opt for the marked code in a conventionalised situation, they change social relationships. Scotton and Ury’s (1977:5) hypothesis is that “code-switching occurs because at least one speaker wishes to redefine the interaction by moving it to a different social arena”. A speaker can vary his or her identity by code-switching and can thereby also change the power relation.⁵⁰

Although the aforementioned strategies are mainly valid for switching behaviour in bilingual communities, they can of course also occur in bilingual individuals in a different setting. But there are certainly more immediate reasons for code-switching in the bilingual individual. Since a code-switch can be seen as a speaker’s *new* language choice, the factors determining the reasons for code-switching are similar to those determining language choice. These reasons can be personal, contextual or stylistic.

Personal Reasons

Personal reasons for code-switching can be related to proficiency, personal preference or emotional involvement in one or the other language. If a speaker has one clearly dominant language, he or she will usually try to use it. In this case, proficiency is closely related to personal preference. Bilingual speakers, especially children, also code-switch for lexical gaps. Either a language does not provide a particular term⁵¹ or the child has not yet acquired the word. It is also possible that a word is more easily available in one language

⁴⁹ The terminology derives from Scotton’s markedness model which claims that a code choice is either marked (= unexpected) or unmarked (= neutral or associated with the normative and expected practices in a given community). It is part of the speaker’s innate communicative competence (see below) to know which is the marked or the unmarked choice.

⁵⁰ See Scotton (1983 and 1988) for details.

⁵¹ See, for example, Boeschoten and Verhoeven (1987), who studied Turkish children growing up in the Netherlands. The children inserted Dutch words into Turkish when their first language vocabulary was not adequate to express new realities (e.g. for food or culture-specific concepts).

than in the other because a particular topic is always discussed in only one language. Many children show a clear language preference for the language of the environment if they are regularly exposed to it. It is thus not uncommon that parents address their children in one language (the family language) but the children reply in the other language. In the present study, this tendency proves to be even stronger among single children. As for emotional involvement in one or the other language, this can be important for immigrants, who may have difficulties in giving up their mother tongue as main means of communication. But it may also play a role for children in mixed marriages if they have qualitatively different relationships to their parents. They may refuse one language because of a problematic relationship to one parent.

Contextual and Stylistic Reasons

Contextual (elsewhere called situational) reasons for code-switching are changes in the setting, the participant constellation or the topic. Children as well as adults usually switch languages if a change in the context requires the switch. Although 'setting' is an important factor for appropriate language choice, it seems somehow less important for code-switching since it does usually not change abruptly. Whereas 'topic' also seems to be less relevant to a child's language choice, the participant constellation may be the most common and obvious decisive factor for a contextually motivated code-switch.

If bilingual speakers switch languages for emphasis, elaboration, clarification, attention attraction and other similar reasons, it is for stylistic or pragmatic purposes. These reasons will be discussed in relation to the pragmatic approach, where code-switches are interpreted and considered as a means of communication.

We need to keep in mind that not each switch necessarily carries a meaning. Bilingual speakers may switch languages without any reason at all. In many situations, they may also be unaware of their own code-switching since their main concern is the content of their message rather than the form. Grosjean (1982:310f.) notes:

Making a bilingual aware of code-switches or borrowings is very similar to making a person conscious of hesitation phenomena. For a short while the person tries not to hesitate, and the bilingual tries not to code-switch, but as the conversation starts up again and content becomes paramount, the person no longer hears the hesitations and the bilingual is no longer aware of each code-switch or borrowing.

We have seen that contextual and personal factors influence a speaker's language and switching behaviour. The sociolinguistic approach simplifies the correlation of language and social meaning. It does not leave much space for a speaker's individual and spontaneous choice and is not interpreted locally. This is done in the pragmatic approach.

1.2.6 Pragmatic Aspects of Code-Switching

The pragmatic approach to code-switching has its roots in the sociolinguistic approach. But rather than to just identify various aspects of code-switching, it seeks to develop models for its interpretation and shows us why bilingual speakers also switch languages in an otherwise unchanged situation. Pragmatic aspects of code-switching are central to this study since the main concern is the analysis of communicative functions and the speaker's intent of individual instances of language alternation in conversation.

In the following chapter, we will first look at a range of different functions of code-switching. Blom and Gumperz laid the foundation to various models on code-switching functions in their distinction of situational code-switching, i.e. the redefinition of a social situation, and metaphorical (later referred to as conversational) code-switching, i.e. switching that enriches a situation. This distinction has also helped the few researchers who have investigated uses of code-switching among children. Based on Gumperz's ideas, Auer further developed the pragmatic approach. For his model of code-switching, he relies on conversation analysis and Gumperz's theory of contextualisation cues. He analyses code-switching in conversation and presents various patterns of typical switching sequences.

1.2.6.1 Functions of Code-Switching

We are concerned with two main questions in this chapter: first, why do people switch between languages in unchanged situations, and second, how can these switches be interpreted by other participants? An influential approach concerning functions of code-switching has been proposed by Blom and Gumperz (1972). They showed that bilingual speakers systematically exploited code-switching as an additional resource in order to express a number of social and rhetorical meanings. As a result of their study on code-switching behaviour in a small Norwegian community, Blom and Gumperz introduced the concepts of *situational* and *metaphorical* code-switching. *Situational switching* is defined as being controlled by the speech event, i.e. the actual situation: a change of the topic or of the participant constellation triggers a switch because it redefines the situation. Gumperz (1982) notes that in situational code-switching, only one code is employed at any one time. Language alteration corresponds to structurally identifiable stages or episodes of the speech event. Whereas there is a simple, almost one-to-one relationship between language usage and social context in situational code-switching, this relationship is much more complex in *metaphorical code-switching*. Metaphorical code-switching allows allusion to

more than one social relationship. The violation of the one-to-one relationship makes it meaningful and invites conversational implicatures. Gumperz (1982:81) describes metaphorical code-switching as “a shift in contextualisation cues, which is not accompanied by a shift in topic or in other extralinguistic context markers that characterise the situation”⁵², i.e. a speaker switches languages in an otherwise unchanged situation. In a later publication, Gumperz (1982) re-terms his notion of metaphorical code-switching as *conversational code-switching*. By stressing the fact that code-switching is frequent in numerous instances of conversational life of bilinguals and that it should be seen as a discourse mode, he laid the foundation to the pragmatic approach to code-switching.

Relying on discourse analysis⁵³, Gumperz (1982:73ff.) uses data extracts in order to identify the following conversational functions of code-switching:

- *quotations or reported speech*
- *addressee specification* (directing a message to one of several possible addressees, e.g. to invite monolingual speakers to participate in a conversation)
- *interjections or sentence fillers*
- *reiteration* of what has been said and thereby clarify, amplify or emphasise a message
- *message qualification* by a qualifying construction (sentence and verb complements or predicates following a copula)
- *personalization versus objectivization* – e.g. the distinction between talk about action and talk as action, the difference between personal opinions and knowledge, or reference to specific instances or a generally known fact, etc.

Gumperz points out that his list only illustrates the most common uses of code-switching that could be found in speech samples of his own data. But functions of code-switching have been identified and classified in various models, and other authors use different terms or different categories, especially if they rely on their own data material. McClure and McClure (1988), for example, show that conversational code-switching can also serve as *role identification* in that the insertion of lexical items of another language may mark a speaker as educated, urbane or sophisticated. Timm (1975), who investigated Spanish-English code-switching, notes for her data that switching to Spanish expressed personal feelings, such as affection, loyalty, commitment, respect, pride, challenge, sympathy or religious devotion, whereas switches to English signalled feelings of detachment, objectivity, alienation, displeasure, dislike, conflict of interest, aggression, fear or pain.

⁵² For an explanation of *contextualisation cues*, see the following chapter.

⁵³ See, for example, Henne and Rehbock (1979).

From the given facts it can only be concluded that functions of code-switching differ from community to community.

One of the more comprehensive models on code-switching functions has been put forward by Appel and Muysken (1987:118ff.) who base their classification on data and results of several authors such as Gumperz, Poplack and Scotton. Analogous to the functions of language proposed by Jakobson⁵⁴, they reveal the following functions of code-switching: *referential, directive, expressive, phatic, poetic* and *metalinguistic*.

- Code-switching has a *referential* function when bilinguals switch languages in order to refer to a new topic or for the discourse about special subjects. They may either want to accommodate their own linguistic abilities or they assume one language to be more appropriate.
- Code-switching serves *directive* or *integrative* functions when the speaker switches languages in order to exclude or include people in an interaction. All participant-related code-switching but also attention attraction and retention can be seen as fulfilling the directive function.
- Code-switching has an *expressive* function in which speakers communicate their attitude and individuality. It can help speakers emphasise their mixed identity.
- Code-switching has a *phatic* function when it is used to indicate a change in tone of the conversation, for example, for side-comments, quotation, etc.
- The *poetic* function refers to code-switching for word plays, jokes, puns, or rhymes but also for clarification, emphasis or similar functions.
- Code-switching has a *metalinguistic* function when it is used to comment on the languages involved, for example, when speakers switch languages to show off.

Although Appel and Muysken's catalogue is also only one descriptive model of code-switching functions, these six groups cover many uses referred to in other models. As mentioned above, the functions have originally been identified by Jakobson as functions of language in general. This means that they do not only occur as code-switching functions in bilingual speakers but also as general discourse functions in monolingual speakers if they wish, for example, to elaborate utterances, clarify them or emphasise special elements.

Functions of Code-Switching among Children

Only very few researchers have tried to analyse pragmatic functions of code-switching among children. The most notable investigation on children's code-switching as a stylistic device was done by McClure and Wentz (1975).⁵⁵ In accordance with Gumperz, the authors distinguish between situational and stylistic code-switching. All setting-, topic- and participant-related code-switching is considered as situational code-switching. They further provide instances of code-switching for role selection: children switch languages in order

⁵⁴ Cf. Pelz (1996:27ff.) or Appel and Muysken (1987:29f.).

⁵⁵ See also chapters 2.1.3.2 and 2.2.1.

to comfort younger siblings or to assume a position of authority. Their main focus however is on stylistic functions of code-switching, which they divide in the following categories:

- *emphasis* often in the form of commands
- *focus* to bring into prominence a part of a sentence
- *elaboration* as expansion of utterances
- *clarification* to resolve ambiguity or clarify a lack of understanding
- *attention attraction or retention*
- *mode shift* e.g. between narration, commentary, interrogation, etc.
- *shifts from neutral to affect loaded content*

In another publication, McClure (1977) adds code-switching for *topic shifts* and *addressee shifts*.⁵⁶ The majority of these code-switching functions can most often be observed in free, informal conversation. When McClure and Wentz (1975a) studied code-switching in children's narratives, they found that the phenomenon was usually inhibited in interrogation and narration. It only occurred for specific purposes such as to mark quotations or shifts out of a story (asides to the audience and comments on the performance), to preserve original titles, to bound the narrative (with formulaic openings and closings) or to introduce and make puns.

There are further functions of code-switching among children that are not mentioned by McClure and Wentz, presumably because they did not occur in their data. Köppe and Meisel (1995:288) note that a child may use marked language choice "in order to create funny effects by playing with the two languages". Another pragmatic or stylistic function of code-switching is power-wielding.⁵⁷ Jørgensen (1998), in relation to his data on Danish/Turkish bilingual children, describes how language choice is a tool of power-wielding because it symbolically expresses convergence with one code and divergence from another code. Jørgensen claims that children acquire and develop a comprehension of global factors which give power in conversation and that they also develop skills in manipulating these factors locally, in order to influence events according to their own desires (cf. *ibid.* p. 256). Language choice can thus be used to control a situation.

Other functions of code-switching that may be used by children are initiated repairs (parents or other participants request clarification), self-corrections (the child realises the use of the inappropriate language and corrects the language choice) and code-switching in

⁵⁶ Topic shifts are to be distinguished from situational switches related to the topic. In the first case, speakers switch languages simply in order to signal the introduction of a new topic. In the latter case, speakers find it easier to talk about a specific topic in only one language (e.g. school, household, etc.).

⁵⁷ Scotton (1988) describes code-switching as a strategy of negotiating power among adults. The speakers may either have statusful power or gain interactional power through multiple switching. Switching initiates change and asserts multiple identities for the speaker, which makes them powerful.

order to avoid the insertion of a word from their second language. All these functions are directly related to a child's language competence.

We will be able to identify most of the above-mentioned functions of code-switching in various other studies mentioned in the relevant literature as well as in the data of the present study. Even though studies of various language combinations (such as English/Spanish, French/German, Danish/Turkish, etc.) reveal similar functions, the findings differ in the frequency of occurrence of specific functions and the children's age at which they make use of a particular code-switching function.

1.2.6.2 Conversational Code-Alternation

Peter Auer analyses code-switching from the perspective of a conversationalist, which means that he examines interactive exchanges between bilingual speakers. Although he emphasises the importance of other approaches, he reveals their failure to provide information about the interactional value, i.e. the meaning of code-switching in ongoing interactions in which bilingual speakers display and ascribe their bilingualism to each other. Auer (1984:7) notes: "you cannot be bilingual in your head, you have to use two or more languages 'on stage', in interaction, to show others that and how you can use them".

One framework for Auer's analysis of code-alternation is Gumperz's theory of contextualisation. His idea is that speakers in a conversation need to provide a context for the participants and that their propositions have to be embedded and become interpretable only in this particular context: "any utterance can be understood in numerous ways, and [...] people make decisions about how to interpret a given utterance based on their definition of what is happening at the time of interaction" (1982:130). The context, including intentions of how something is to be understood and interpreted, is signalled through contextualisation cues. These cues are devices that 'comment' on the context of an interaction. They can be of prosodic or syntactic nature or can concern the vocabulary. They do not have referential (de-contextualised) meaning but can be interpreted differently on different occasions.⁵⁸

Auer (1984) suggests that code-switching can represent a contextualisation cue when it is used in language negotiation. Although bilingual speakers could define the language of their interaction on a metalinguistic level, this does not seem to be the rule. They would rather engage in negotiation sequences and define the language of the interaction through the participants' code-switching behaviour. The fact that language alternation is not

⁵⁸ For details, see Gumperz (1982:130-152).

interpreted according to pre-established patterns but locally, supports Auer's suggestion that code-switching can be seen as contextualisation cue.

Auer uses the frameworks of conversational analysis and Gumperz's theory of contextualisation for an incorporation of the two approaches into a third one. Central to his approach is the significance of the sequentiality of code-alternation. He points out that "any theory of conversational code-alternation is bound to fail if it does not take into account that the meaning of code-alternation depends in essential ways on its 'sequential environment'" (1995:116). Therefore, his interest is procedural rather than classificational. In order to account for the interactive meaning of code-switching, Auer proposes a model with two basic category pairs for the interpretation of code-switching and -mixing: *discourse-* vs. *participant-related* language alternation and *transfer* vs. *code-switching*. Discourse-related language alternation provides cues for the organisation of the ongoing interaction (turn-taking, repair, etc.) and participant-related language alternation provides cues about attributes of the speaker (their competence and preference). Participants in a bilingual conversation thus need to master two general types of tasks: one concerns the organisation and the other one concerns the finding or negotiating of the adequate language for the interaction. As for the second pair, the term transfer (or insertion⁵⁹) is used for language alternation tied to a certain unit (a word or a sentence), whereas code-switching is tied to a particular point in conversation without a structurally determined return into the first language. The two dichotomies provide the following different sequential patterns of language alternation:

- discourse-related code-switching (a shift in topic, participant constellation, etc.):

Pattern Ia: A1 A2 A1 A2//B1 B2 B1 B2⁶⁰ (= prototypical example of conversational code-switching)

Pattern Ib: A1 A2 A1 A2 A1//B1 B2 B1 B2 (language alternation takes place within a single turn of the same speaker)

- participant-related (also preference-related) code-switching:

Pattern IIa: A1 B2 A1 B2 A1 B2 A1 B2 (both speakers consistently use different languages)

Pattern IIb: A1 B2 A1 B2 A1//A2 A1 A2 A1 (one participant accepts the language choice of the other participant during the conversation)

⁵⁹ Auer replaces this term in more recent publications by *insertion* in order to distinguish it from its use in second language acquisition.

⁶⁰ Letters stand for languages and numbers for speakers.

- participant/discourse-related code-switching:
 - Pattern IIIa:* AB1 AB2 AB1 AB2 (a speaker switches within a single turn and the addressee continues in this mode)
 - Pattern IIIb:* AB1//A2 A1 A2 (the addressee keeps to one of the languages)
- participant/discourse-related transfer:
 - Pattern IV:* A1 [B1] A1 (an insertion with a predictable end occurs in the middle of a speaker's turn without affecting the language choice for the interaction)⁶¹

The advantage of the conversation-analytic approach over other formerly proposed approaches is that it gives priority to the sequence of language choice in conversation. In conversational analysis, researchers aim to describe methods that are actually used by bilingual participants in 'real' interaction. In Auer's view, speakers do not interpret language alternation according to pre-established patterns, but they dispose of certain general procedures to come to a local interpretation resulting from contextual information and these general procedures. The integration of contextual information into the local interpretation of code-switches forms the core idea of the pragmatic approach.

Although a different terminology will be used for the analysis of the present study, Auer provides the framework for how code-switching takes place in conversation. While the focus of the present analysis is on why the switches occur, their interpretation is based on the structures proposed in the pragmatic approach.

1.2.7 Comprehensive Approaches to Code-Switching

In the previous chapters, various aspects of the main approaches to code-switching have been presented. Several authors have tried to combine different approaches and to find a more comprehensive explanation of the phenomenon of code-switching.⁶²

One of these broader approaches has been put forward by Myers-Scotton (1993), who attempts to combine the grammatical and the sociolinguistic approach. She found it impossible to fit her results from data taken in East Africa into any existing patterns of structural constraints in code-switching research. This led her to formulate a general theory of code-switching, placing major emphasis on socio-psychological motivations and social negotiations between interlocutors. Her Matrix Language-Frame (MLF) model shows on the one hand, how the knowledge of multiple languages is exploited for socio-pragmatic purposes and on the other hand, the socio-psychological motivations for code-switching.

⁶¹ See Auer (1995:125f.).

⁶² A combined model is, for example, the Dynamic Model of Multilingualism (DMM). It tries to integrate sociolinguistic perspectives into the psycholinguistics of multilingualism. For details, see Herdina and Jessner (2002).

The MLF model is based on “classic codeswitching”, meaning that participating speakers are proficient in all participating varieties. In later publications, Myers-Scotton introduced an additional submodel of the MLF model: the 4-M model. In combination with the MLF model, the 4-M model is not only said to predict the distribution of morphemes in classic code-switching more precisely but it can even be extended beyond code-switching and be seen as a theoretical model of linguistic structure.⁶³

Myers-Scotton’s model contrasts sharply with Auer’s approach since code-switches are not interpreted locally. It seems that, although her model combines different approaches and accounts for numerous variables, it can still not be applied universally and to all occurrences of code-switching. Several instances of switching in the data of the present study, for example, do not correspond to Myers-Scotton’s definition of “classic codeswitching” and thus, do not fit into her model.

So far, no comprehensive model for the explanation of code-switching has been proposed that can universally be applied, although a number of models deal well with the data they are designed for. The question remains whether it is possible to find a universal model at all. Since language use as well as code-switching use differ so much from community to community, it may only be possible to indicate certain recurring tendencies.

1.3 Summary

The previous chapters have shown numerous aspects that contribute in different ways to the broad fields of bilingualism and code-switching. The introduction into some basic features of bilingualism will later help the reader to understand various aspects in the language behaviour of the informants of the present study. The introduction into the field of code-switching was necessary in order to allow for the present study to be placed within the frame of code-switching research, and in particular, the code-switching research on children. Whereas the grammatical and the neuro- and psycholinguistic approaches will only marginally be further used in the present book, the later analysis is mainly based on the sequential approach developed by Auer within the framework of conversation analysis. The main focus will be the analysis of different code-switching functions in the speech of bilingual children. Functions of code-switching have been presented above but only some of them are useful for the present analysis. The following chapter will provide an overview over the studies that have been done in this field so far. Most of them have a different focus but provide examples that can be used for the purpose of the present study.

⁶³ For details, see Myers-Scotton and Jake (2000).

2. THE USE OF CODE-SWITCHING IN FORMER CASE-STUDIES

There have been a large number of case-studies on bilingual children of diverse language combinations. Many focus on phonological, lexical or grammatical aspects of bilingual language acquisition and most studies deal with a small number of children. The interest in the phenomenon of code-switching in general has recently also grown significantly. But the literature offers hardly any publications on code-switching among children and in particular the acquisition of code-switching. For a long time, the main questions dealt with in the relevant literature have been whether and at what linguistic level children are able to separate their languages and whether children are able to code-switch at all. A further step was to ask at what age children know how to code-switch according to grammatical, social and pragmatic rules. But research in this area is still at its beginning.

In the following chapter, we will look at several case-studies on bilingual children. I will start with a detailed discussion of a few studies on simultaneous bilingual language acquisition. The second part will introduce some case-studies on the successive acquisition of two languages. Although most of these studies do not deal with code-switching and code-switching acquisition in particular, I will attempt to outline the children's switching behaviour based on examples provided by the authors. It is especially difficult to interpret other researcher's data since we usually do not know much about the context the data is gathered in, the typical language behaviour of a child at a particular time and other circumstances that help interpret code-switches. The third part of the following chapter deals with case-studies done in bilingual communities. The authors of these studies mention and discuss the topic of code-switching. Two models on the acquisition of code-switching will be described at the end of this chapter.

2.1 Previous Studies

2.1.1 Simultaneous Studies

The first detailed study on childhood bilingualism was done by Jules Ronjat in 1913. His goal of raising his son Louis as a French-German bilingual is reported as having been very successful. Ronjat emphasises that the sharp language separation according to the Grammont formula: *one person - one language* facilitates learning. Leopold (1939-49) applied the same method in the upbringing of his daughter Hildegard, whose language development, and in particular her code-switching behaviour, will be the starting point for the description of previous case-studies in this chapter. Except for these two early studies

(and very few others, as for example, Pavlovitch, 1920), it has only been in the last 25 years that linguists became more interested in the study of bilingualism. I will initially focus on those studies that provide a large variety of code-switching examples. Although they will be presented in chronological order, it will soon become obvious that there has not been a gradual development in code-switching research. The number of different code-switching functions that can be identified depends on the nature of the data.

2.1.1.1 Leopold (1939, 1947, 1949, 1949)

Leopold's publication on the speech development of his English-German bilingual daughter is still regularly cited, in particular because of its complexity: he recorded Hildegard's language development for more than 15 years. In the first volume, Leopold analyses his child's vocabulary, in the second volume the child's sound-learning in the first two years of life, in the third volume, he discusses Hildegard's grammar as well as general problems in her language development, and the fourth volume records Hildegard's and her sister Carla's language development from two years onwards. Hildegard grew up in the U.S. with her mother speaking English and her father speaking German to her and his wife. English is her dominant language. Despite numerous speech samples provided by the author, it is difficult to find examples of code-switching in the data on Hildegard. Many examples from her two languages are presented, but there is often not enough context provided in order to make out clear code-switches by the child. From the point where she showed understanding in both German and English (around age 0;6-0;8), both languages developed normally. Her early vocabulary contained German and English words. From about 1;9, Hildegard used sentences of several words and "did not hesitate to mix German and English words in her sentences" (Leopold, 1939:161). Leopold notes that Hildegard did not associate the languages with definite persons at this early stage and that a distinction by persons was only beginning to emerge at the end of the second year. This observation contrasts with many other more recent studies claiming early differentiation of languages. One reason for this could be that Hildegard's father was fluent in English and German and did not insist on being addressed in German. Interactional code-switching, i.e. the father speaking German and Hildegard answering in English, was thus common. Only at around age 3;0, Hildegard was asked "in a few cases that she speak German" (Leopold, 1949:38).

Leopold describes two instances in which Hildegard (1;9) used English and German words alternately, *Ei* and 'egg' and *nein* and 'no'. He interprets these as possible but

untrustworthy first indications of language differentiation and comments: “she used *nein* playfully as a variation of the ordinary *no*” (Leopold, 1947:175). If Hildegard used the words ‘playfully’, it certainly is a sign of differentiation. She seems to try out various linguistic forms. Another even earlier example of Hildegard’s language awareness is the following:

- (004) M: what did Mama tell you?
Hildegard (1;6): no, no
M: don’t you know what ‘no, no’ means?
Hildegard: *nein, nein* (ibid. pp. 179f.)

Hildegard clarifies the utterance through translation. There are further examples in which she makes use of her second language for the purpose of clarification:

- (005) Hildegard (2;6): what is in you, Papa?
F: *Knochen*
Hildegard: beans?
F: *nein*, bones
Hildegard: *Bohnen* (Leopold, 1949:31)

The additional difficulty in this last example arises from the phonetic similarity of the words ‘bones’ and ‘Bohnen’ and the unexpected use of an English word by her father.

Another function of translations in Hildegard’s language use is code-switching in order to include participants:

- (006) F [asking Hildegard]: *hast du geschlafen?*
[Hildegard’s cousin wants to know what F said] Hildegard (4;1): *hast du geschlafen?* have you been sleeping? (ibid. p. 58)

Since Hildegard’s father is the only German speaker in her environment, she is used to having to translate for monolingual English speakers. Hildegard also code-switches for purely linguistic reasons, i.e. for self-correction or to bridge lexical gaps:

- (007) Hildegard (3;5): this is a *Wasser* – water (ibid. p. 46)
(008) Hildegard (5;7): *mein Opa, der* – I want to show you something (ibid. p. 125)

Self-correcting mixes is a first step in the process of language differentiation, followed by avoiding them. Leopold describes how Hildegard had often broken off a sentence in German and started over in English in order to avoid mixed utterances. Her data shows a clear development from early mixing to a separation of the languages. At around age five to six, rather than to mix words from both languages, Hildegard asks her mother to translate for her father when she is faced with lexical gaps. Another strategy is to phonologically disguise the mix, which Leopold judges as a step forward in her language development:

- (009) Hildegard (4;9): *kann ich deinen Wasch[klas juzn]?* (ibid. p. 74)

The lexical gaps are filled with English words pronounced as if they were German. For some children, this seems to be a popular strategy. Leopold, describing his bilingual

daughter at age 5;7, notes that “switching from one language to the other is not easy for her” (ibid. p. 126). Using German seems to require a conscious effort. English is clearly her dominant language as can be seen in the following example. This could even be an affect-loaded code-switch.⁶⁴

(010) Hildegard (5;5): *Papa, wenn du das Licht ausmachst* then I'll be lonesome (ibid. p. 119)

Leopold provides several examples of code-switching from Hildegard's data: she clearly switches participant-related, for clarification (age 1;6 or 2;6), for initiated repairs (age 3;0), for self-correction (age 3;5) and in order to include participants (age 4;1). We find affect-loaded code-switching (age 5;5) and code-switching in order to avoid mixing (age 5;7).

2.1.1.2 Volterra and Taeschner (1978), Taeschner (1983)

Volterra and Taeschner (1978) and Taeschner (1983) observed two children between the ages of 1;0 and 4;0 growing up simultaneously with Italian and German. The father speaks Italian and the mother, herself a Portuguese-German bilingual, speaks German to their children. Since Volterra and Taeschner argue for a fused system at the outset of language acquisition, many utterances containing words from both languages are not considered code-switches in their analysis but early mixing. They nevertheless explain the following example not by mixing, but by saying that children use synonyms in slightly different contexts: Lisa is said to use German *da* for things present and visible, while Italian *là* is used for things not visible at the time of speaking (cf. Volterra and Taeschner, 1978:315):

(011) Lisa (1;10): *miao, miao*
M: *wo ist miao?*
Lisa [while pulling mother outside]: *là miao*
M: *wo ist miao?*
Lisa: *da ist miao* (ibid.)

This could also be explained as initiated repair, for which they provide further examples in both publications:

(012) Giulia (2;2): *metti tavolo di Giulia*
M: *wo soll ich's hintun?*
Giulia: *das da, das da auf Tisch von Giulia* (ibid. p. 319)

(013) Giulia (2;2): *dov'è Schlappen?*
F: *cosa vuoi?*
Giulia: *dov'è pantofole?* (Taeschner, 1983:199)

⁶⁴ This example proves how difficult interpretation of unknown data can be: we do not know how easily Hildegard switches to English at this point, if, since it is her preferred language, she switches in almost every sentence or if she just does not know how to continue in German.

Volterra and Taeschner note that clear language separation only occurs at the end of the second stage.⁶⁵ They nevertheless provide obvious examples of participant-related code-switching, for example, from earlier stages (from 1;9):

(014) Giulia (2;3) [to Italian boy]: *quetto parla no* [to mother] *das hier splecht nicht* (Volterra and Taeschner, 1978:320)

Taeschner points out how the children use equivalents for attention attraction, which also occurs extremely early in her data:

(015) Giulia (1;9) [in the car with her mother and grandmother who are talking - they only pay attention to her after her language switch]: *elato, elato, elato, elato – Eis, Eis, Eis* (Taeschner, 1983:43)

Code-switching for clarification can be found in the following example, where Lisa insists on her way of expressing her idea:

(016) Lisa (3;3): *tanto tanto tanto*
M: *so ganz viel*
Lisa: *nein, viel, viel, viel!* (ibid. p. 187)

Another example of a switch is the following mode shift:

(017) Lisa (2;8): *Landkarte sagt: natale a Roma* (ibid. p. 66)

The two girls, especially Lisa, also like to play with language, as can be seen in the following example:

(018) Lisa (3;9): *die Fische sind hässlich und die kleinen und die großen*
M: *die großen?*
Lisa: *das hier pesciolini, das hier pesciolone*
M: *was ist das?*
Lisa: *pesciolone, fescione*
M: *fescione?*
Lisa: *ja, ein Fisch ganz groß, pesciolone, fescione!* (ibid p. 119)

Despite many examples of mixed utterances in the data, it is impossible to identify more code-switching functions since Volterra and Taeschner do not provide the context. But we find very early examples of participant-related code-switching (from age 1;9), attention attraction (from age 1;9), self-correction and initiated repair (from age 1;10), mode shifts (at age 2;8), clarification (from age 3;3) and the use of both languages for fun (age 3;9).

2.1.1.3 Saunders (1982-88)

George Saunders describes the bilingual language development of his sons Thomas and Frank and his daughter Katrina up to the ages thirteen, eleven and almost six respectively. His case-study differs from others in that his children grow up bilingually with no native speaker around them. The parents are both Australian and the family lived in Australia

⁶⁵ Although Volterra and Taeschner do not indicate age spans for the different stages, it is implied that the third stage starts around age 2;9.

with the exception of a 6-month stay in Hamburg, Germany, when the children were eleven, nine and three. The father, a passionate linguist, spoke German to his children, who had no authentic language source other than books, a few films and very occasional encounters with German speakers. The issues of language and bilingualism are strongly emphasised in the family and the parents are very keen on the bilingual development of their children.

Saunders provides many speech samples of his children's bilingual language development. Among the earliest are lexical duplications as in the following example:

(019) Frank (1;11): hot *heiß!* (Saunders, 1988:53)

In Saunders's view, the child is still unsure which word is appropriate and thus uses both words. This implies, of course, that the child knows at this stage that both words mean the same but are used in different contexts. Only a few months later, a repetition (or translation) of this kind, only much more complex, is interpreted as participant-related code-switch in order to include both parents:

(020) Frank (2;7): I wanna wash my hands *ich will meine Hände waschen* (ibid. p. 55)

This sort of translation is common in the children's speech whenever they want to address different people. First examples of clear participant-related code-switching occur around age 2;2 in Saunders' data. Next to participant-related code-switching, the children code-switch in order to hide lexical gaps or to avoid mixing:

(021) Frank (3;1): *das, das, ah, auf englisch sagt man*: "The kettle is boiling." (Saunders, 1982:104)

In the following example, this is further hidden in a participant-related switch:

(022) Thomas (5;6): Mum, I want to climb a mountain...and then put a flag up when I've climbed it. It shows that I've, I've, that I've, ah, *Bert, das zeigt, dass ich der Gipfel erreicht habe*. (Saunders, 1988:58)

It is interesting to see that Frank's rather elegant way of avoiding a mix occurs earlier in the data than initiated repairs and self-corrections:

(023) F: *und wo hat der Zimmermann das Holz herbekommen?*
Thomas (3;5): he got it off sawmill
F: *woher?*
Thomas: *aus'n Sägewerk* (ibid. p. 124)

(024) Frank (4;3): *der Ladenbrot ist nicht so gut wie MAMIS bread, ah, Brot* (ibid. p. 87)

The use of the English 'bread' was triggered by the preceding word [mʌmɪ(s)], which can be interpreted as German or English. Saunders further provides examples of code-switching for attention attraction, another function that can often be found among very young bilinguals:

(025) Frank (2;0) [to mother]: drink! drink!
M [failing to hear because of background noise]: what?
Frank: *Flasche! Flasche!* (ibid. p. 54)

Frank reverts to German, feeling that he cannot get his message across in English. The following example is an example of code-switching for clarification:

- (026) M [didn't understand Frank's request]: what?
Frank (3;2): *Spielteig* – playdough (ibid. p. 77)

Direct translations can also be used for emphasis or, as in the next example, of expressing authority:

- (027) Thomas (6;8): put the arrow back!
Frank (4;9): no!
Thomas: *steck der Pfeil zurück!* (ibid. p. 65)

Thomas might think that their father's language, German, may be more effective in order to convey authority. The following example shows a completely different form of expressing authority. Thomas seems to believe that his explanation is more convincing in English:

- (028) Frank (4;7): *bist du geboren in Deutschland?*
F: *nein, in Tasmanien*
Frank: ah!
Thomas (6;6) [to Frank]: ah, *er hat* – but, Frankie, he lived there (Saunders, 1982:157)

Rather varied are diverse forms of code-switching in mode shifts. Quotes in the original language are common in the children's speech:

- (029) Thomas (3;8): Mikie said, "*kommt nicht ins Haus, ihr doofe Hühner!*" (Saunders, 1988:96)

Saunders further provides many examples of code-switching in role-plays:

- (030) Katrina (2;3): Anna's sick. Where's my telephone? I ringing up Daddy. *Guten Tag, Bert. Anna ist krank.* (ibid. p. 70)

This switch is certainly also participant-related but since the father is not present, it should be considered as an abstract role-play. Saunders' own interest in language and language play seems to support the children's use of role-play and language switches for fun. He engages the children in thinking about language and playing with it. His data is especially rich of these switches for language play and switches only for fun:

- (031) Frank (3;10) [to mother]: *haben wir Briefe?*
M: what?
Frank: *haben wir Briefe?*
M: what language are you speaking, Frank?
Frank: I'm speaking *Deutsch* (Saunders, 1982:78)

- (032) Thomas (5;5) [smiling, to a friend]: I was at the *schule* (ibid. p. 62)

The latter example is close to teasing the girl for not knowing German. The children also do this with monolingual relatives:

- (033) Thomas (3;4) [addressing his monolingual uncle]: This would be a good book for you, Graeme. This is the page Frankie likes. *Fuchs kann nicht rein. Bauer hat Tor abgeschlossen.* (ibid. p. 126)

The children seem to consider their bilingualism as an advantage since they have a 'secret' language that other people do not understand. They also code-switch in order to purposely exclude participants or to avoid being understood:

(034) Thomas (10;9) [in Germany]: *Kuck mal Bert!* She's got heaps of cigarettes. *Siehst du?* (Saunders, 1988:84)

The last category of functions of code-switching are topic shifts:

(035) Frank (8;4) [to sister]: Here's your cornflakes. [short pause] *Wir gehen heute zu Timo.* (ibid. p. 68)

In some cases, the children mix and switch languages without any apparent reason at all. Especially Frank sometimes mixes English and German when playing by himself, as in the following examples:

(036) Frank (3;5) [playing with a toy plane and talking to himself]: *Oh, oh, es hat abgestürzt!* Broke to pieces! *Total Kaputt! Verflixt noch mal!* (ibid. p. 69)

(037) Frank (4;5): *Ein paar Menschen waren getötet. PCCH! Kaputt hat sein Kopf gegehen! PCCH! BRRM! Too old, too – Und dann war ein Mensch angezündet und getötet. Sein Kopf war aufgeschnitten! Er muß straight to Krankenhaus gehen. PCCH! He cut his belly off. Seine Hosen haben abgefallen. He's got no arms [...]* (Saunders, 1982:68)

Saunders' data is especially rich in examples of children's code-switching. Participant-related code-switching occurs at the age of 2;2. Even earlier, we find an example of attention attraction at age 2;0. First role-plays are reported at age 2;3 and code-switching in order to include participants at age 2;7. Code-switching to avoid language mixing occurs around age 3;1, code-switching for clarification at 3;2, for fun and teasing at 3;4 and initiated repairs at age 3;5. Self-corrections are only reported at age 4;3, and code-switching in order to express authority only occurs around age 6;8. We further find a topic shift at age 8;4 and a clear example of purposely excluding people only at age 10;9.

2.1.1.4 Kielhöfer and Jonekeit (1993, first published 1983)

Kielhöfer and Jonekeit (1993) provide a detailed description of the bilingual education of Olivier and Jens, the second author's sons, growing up simultaneously with French and German. The father speaks German and the mother French to the children, the family language being German. Olivier stayed at home until age 3;5 and his younger brother Jens until 2;10. Olivier's early vocabulary contained words from both languages whereas Jens used only French words at the beginning (but is said to be balanced by age 1;10). The authors claim that differentiation of languages started at age 1;7 to 1;8. Whereas Olivier strongly disapproved of mixing, Jens was much more flexible in regard to language rules: he adapted easily to new situations and addressed people in the language he was addressed in. He mixed a lot around age 3;0 to 3;6 but then seemed to become more attentive to the differentiation of his languages. The study ends with Olivier aged 5;0 and Jens 3;8. I presume Kielhöfer and Jonekeit are mainly referring to Olivier's age when they claim that after this age parents are no longer the primary influence on their children's language development.

They provide numerous examples of code-switching in their study. Among the earliest switches are those in which the children start to differentiate the languages. In the following example, Jens proves his awareness by marking switches:

(038) Jens (2;1): *Papa: nee-mann*, *maman: homme-neige* [...] *Papa: tuhl*, *maman: chaise* (ibid. p. 66)

Participant-related code-switching occurs early in the data since the parents are addressed in different languages. The children soon also start to address each other in German (but their mother in French). Exceptions to participant-related code-switching occur, for example, when the children are angry and speak German to their mother or try to exclude her from their conversation by using German. There are also several examples of self-correction in the data:

(039) Jens (2;2) [to his father]: *bat...Boot* (ibid. p. 39)

After a false start, Jens switches to the appropriate language. Self-corrections often follow a wrong start that is triggered by earlier conversations (Jens had earlier talked about the boat with his mother) or by preceding words or utterances, as in the following examples:

(040) Olivier (3;7): *Arrête! Comment on dit en allemand 'J'ai mal au doigt'?*

M: *Mein Finger tut weh!*

Olivier: *Was...eh...quoi?* (ibid. p. 41)

Kielhöfer and Jonekeit also provide examples of mode shifts. The first switch is an example of a role-play, the second of a switch between narration and quotation:

(041) Jens (3;2) [plays in German, calls his mother]: *T'es pompier maintenant. Viens vite!*

M: *Pimpon...j'arrive. C'est grave, monsieur?*

Jens: *Non, t'es un pompier allemand! Pas comme ça!*

M: *Ah bon! Ta-tü-ta-ta. Wo ist der Unfall?*

Jens: *Da, Feuerwehr, schnell!* (ibid. p. 30)

(042) Olivier (4;1) [telling his mother about an incident at his kindergarten]: *Alors j'ai dit a Frau Herrmann: Diana ärgert mich! Frau Herrmann a dit a Diana d'arrêter [...]* (ibid.)

The authors mention that both children are very interested in languages and in their own bilingualism. They like to play with language and we thus also find code-switching for fun:

(043) [Jens (no age) is addressed in German by his French uncle]

Uncle: *Tag!*

Jens: *Tag, na?*

Uncle: *ja*

Jens: *kommst du mit?*

Uncle: *jaja*

Jens: *ich bin mit dem Auto gefahren, du auch?*

Uncle: *arrête! je n'ai rien compris!*

Jens: *où est ta voiture?* (ibid. p. 34)

Kielhöfer and Jonekeit provide examples of participant-related code-switching from around age 2;1, self-correction from age 2;2, mode shifts from age 3;2 and code-switching for fun.

2.1.1.5 DUFDE

Jürgen Meisel led the complex longitudinal study DUFDE⁶⁶ on 13 German-French bilingual children living in Hamburg, Germany. All subjects have been observed from between age 1;0 to 1;6 until at least age 5;0. Based on the data, Meisel intends to provide evidence for an early differentiation of languages in bilingual children. He states that the children were able to select the appropriate language from around age 1;4 onwards. In Köppe and Meisel's publication on pragmatic functions of code-switching (1995), most of the examples by the 2;0- and 2;1-year-old children only show them using the words *ja*, *nein*, non and oui in exchange with their parents. Although these words may indicate awareness of the linguistic setting, they could also be placed appropriately by chance since they also belong to the most often mixed words (cf. Köppe, 1990:47).

With regard to code-switching, Meisel suggests that it is a performance phenomenon and favoured by balanced bilingualism. Köppe (1990) points out that clear examples of code-switching can only be found in the data at the age of 2;3 and 2;5 respectively but Köppe and Meisel (1995) provide examples of participant-related switching from the 2-year-old informants Annika (2;0) and Ivar (2;5).⁶⁷ Initiated language repairs, i.e. language adaptations in reaction to a participant, occur before the children self-initiate participant-related code-switching. Other forms of initiated repair first occur at age 2;6:

- (044) X: on fabrique quelque chose avec des légos?
Ivar (2;6): non, *ein haus*
X: une maison?
Ivar: une maison (Köppe, 1990, ex. 30)

At a later stage, the children sometimes change the addressee in mid-sentence in order to hide vocabulary gaps:

- (045) Annika (3;1): du lait et puis de- [to X] *eier ne?* (ibid. ex. 306)

Köppe and Meisel also reveal role-play as one of the earliest functions of code-switching, first used by the children at age 2;3 and 2;5 respectively. This includes taking on different roles as well as talking with a modified voice in order to express the new role (cf. also Köppe, 1990, ex. 27 and 54):

- (046) X: oui on veut manger
Ivar (2;8) [leaves the room and pretends to buy something]: *so ham wir - hier sieben mark, so* [to X]
on va- on va manger (Köppe and Meisel, 1995:288)

⁶⁶ DUFDE = *Deutsch und Französisch - Doppelter Erstspracherwerb* {German and French – Bilingual First Language Acquisition}

⁶⁷ The descriptions on these two informants are the most detailed ones from the DUFDE study. Both children are German-dominant. They speak German in monologues (cf. Köppe, 1990:86), sometimes react in German to French utterances and insert more German words into French sentences than vice versa.

In a more detailed analysis, Köppe (1996) also presents examples of self-correction. Without knowing more about the context, it is again difficult, though, to differentiate between self-correction and clarification, both of which could serve as explanation for the following examples:

(047) X: *was ist denn weg?*
Annika (2;5): le mouton – *schafe* (ibid. p. 948)

(048) X: *qu'est-ce que c'est?*
Ivar (2;6): *will das nehmen* – ça prendre – Marie-France, *nimm ça* (Köppe, 1990, ex. 36)

More obvious examples of self-correction (cf. ex. 49) and clarification (cf. ex. 50) only occur at a later age:

(049) X: *frag sie doch mal 'was ißt du denn gern'*
Ivar (2;8) [to Y]: *eh, brot?* du pain? de pain? (Veh, 1990, ex. 315)

(050) Ivar (3;8): *j'ai pas entendu moi*
X: un schtroumpf
Ivar: *ein strumpf?* (Köppe, 1990, ex. 122)

Köppe further provides examples of code-switching for elaboration:

(051) Annika (3;5): *là-dedans* – *nur aus Spaß* (ibid. ex. 327)

Köppe explains that lexical duplication occurs from around age 2;0 and may in some cases already express emphasis. More evident examples of emphasis can only be found later:

(052) Ivar (4;4): *i-i-il faut que je répare* – non non non *nein!* (ibid. ex. 183)

Ivar probably does not only want to emphasise his utterance but also express disagreement or even anger. We find other examples of affect-loaded code-switching in Ivar's data:

(053) Ivar (4;3): [...] *je peux en mettre plus dans la piscine*
M: *oui oui ça suffit ton père a dit*
Ivar: *si je veux* – *bitte Mama* (Veh, 1990, ex. 371)

As for another function of code-switching, we find that Ivar seems to want to exclude a person from his thoughts in the following exchange:

(054) Ivar (4;4): *böse kleine männchen und dann ham sie a(ber) bestimmt angst*
M: *elle comprend pas Marie-Claude, tu sais*
Ivar: *ça fait rien* (Köppe and Meisel, 1995:289)

On other occasions, the bilingual child may want to explicitly include a person or several participants with different languages. This is often realised through translation and can occur from rather early on:

(055) X: *ça fait mal?*
Annika (2;6): *oui fait mal* – mal [to Y] *aua aua* (Köppe, 1990, ex. 284)

Ivar also uses marked language choice in order to create funny effects. In the following example, he does not react in the appropriate language, although he usually addresses his mother in French:

(056) M: *qu'est-ce que tu regardes?*
Ivar (4;4) [being silly]: *uhr sehn* – *mein stock* – *mein stock* (Köppe, 1990:93)

Köppe (1990) also mentions quotations, including switches for songs, nursery rhymes or culture-specific words as another function of code-switching. Köppe and Meisel (1995) further discuss code-switches in order to ask for translations or to make metalinguistic comments. These switches are usually just for one word and are not considered code-switches in the present analysis. But the fact that children make use of these strategies shows awareness for the differentiation of their linguistic systems.

The DUFDE data provides many examples of code-switching: we find participant-related switching and initiated repairs from age 2;0, code-switching in order to include (age 2;0) or exclude participants (age 4;4), role-play (from age 2;3), self-correction (from age 2;5), code-switching for clarification (age 2;6), switching in order to avoid language mixing (from age 3;1), code-switching for elaboration (from age 3;5), affect-loaded switching (from age 4;3), code-switching for fun (from age 4;4) and code-switching for emphasis (from age 4;4).

2.1.1.6 Führer-Nicod (1994)

Führer-Nicod (1994) conducted a case-study on French-German bilingualism. Their main informants are three French-German bilingual children growing up in France with a German mother and a French-speaking father. First occurrences of code-switching are initiated repairs:

(057) Victoria (2;0): [bwa]
 M: boire *ist französisch*, sag es auf deutsch
 Victoria: [dos] {Durst} (ibid. p. 127)

Early code-switching can also be observed in the following example of switching for emphasis⁶⁸:

(058) Victoria (2;4): où est biberon - wo ist er? (ibid. p. 203)

Führer-Nicod provides several examples of code-switching for clarification, the earliest occurring just before the child's fourth birthday:

(059) Victoria (3;11): *ich, Fisch is des, ein bateau* (ibid. p. 307)

Victoria is having difficulties with the differentiation of the German words *Fisch* and *Schiff* but she knows how to use her second language in order to clarify utterances.

(060) Victoria (4;3): *welchen Fisch wollen wir nehmen?* {*welches Schiff...*}
 M: *welchen Fisch?*
 Victoria: *nein, quel bateau?* (ibid. p. 174)

⁶⁸ Without more details about the context, especially without knowing the addressee, it is difficult to definitely characterise this switch.

In the following example, Victoria switches because of a vocabulary gap, in order to avoid a mix:

- (061) M: *und was wird des?*
Victoria (3;11): *des des is a- je te montre après quand j'ai fini* (ibid. p. 303)

Führer-Nicod further provides examples of Charlotte in which she switches to French in a German context when she is upset. This can be considered as affect-loaded code-switching, especially because the author adds that Charlotte's tone is aggressive. She presumes that Charlotte is upset by her mother's use of the words '*denn da*', which can mark a reprimand:

- (062) M: *was machst du denn da, Charlotte?*
Charlotte (3;11): *je répare alors!* (ibid. p. 283)

Next to participant-related code-switching (Victoria addressing X or the teddy bear), we find role-play and quotation in the following example:

- (063) X: *hier ist nochmal eins*
Victoria (4;1): *ah, ich mach des ich mach des dahin ich mach* [to teddy bear] *tu veux jouer, Dotzi? tu veux jouer? – mais non – der da gesagt der da gesagt: mais non, je n'ai pas envie de jouer, maman* (ibid. p. 137)

Führer-Nicod provides examples of code-switching in initiated repairs (age 2;0), for emphasis (age 2;4), code-switching for clarification (from age 3;11), to avoid mixing (age 3;11), affect-loaded code-switching (at age 3;11) and code-switching in role-plays (from age 4;1).

2.1.1.7 Other studies

Many other researchers mention the same or one or two other functions of code-switching in the description of their data on bilingual children. Regardless of whether the authors are advocates of the *Unitary Language System Hypothesis* or the *Independent Development Hypothesis* and regardless of the focus of the case-study, most authors observe *participant-related code-switching* at an early stage, usually around age 2;0, in a bilingual child's language development. Relating to results from several other studies, Lanza (1992) claims that "the earliest systematic code-switching among [...] children [is] situational and a function of the participant" (ibid. p. 654). Code-switching as a stylistic device is said to "not appear until the ages of five or six" (ibid.). Concerning the last part of Lanza's claim, it will become evident in the following chapters that there are numerous examples of younger children using code-switching as a stylistic device.

In order to be able to understand the chronology of the acquisition of code-switching, different switching functions that are mentioned in various studies will be introduced in the order in which they usually seem to occur. *Code-switching for emphasis* is one of the first

stylistic functions bilingual children use. It can occur in the form of commands or translations. Although it has been pointed out before that it is often difficult to clearly categorise switches, lexical duplications could be a first realisation of emphatic code-switching. Vihman (1985), who studied her English-Estonian speaking children Virve and Raivo (1;7-2;10), mentions instances of lexical duplication, some of which can be interpreted as code-switching for emphasis. First instances occur at age 1;8. Redlinger and Park (1980) also discuss the phenomenon of lexical duplication in relation to their study with four children growing up bilingually in a German-speaking environment. They point out examples of 2-year-olds that can be interpreted as cases of emphasis:

(064) Danny: look, *guck!* (ibid. p. 350)

(065) Henrik: oui, *ja* (ibid.)

Even if lexical duplications cannot clearly be categorised as code-switching for emphasis, DeHouwer (1990) offers an example that involves more than lexical duplication, i.e. more than one word in each language. She conducted a very detailed study from age 2;7 to 3;4 on the bilingual language acquisition of the girl Kate, growing up with Dutch and English simultaneously. The following example shows that even very young bilinguals use code-switching for emphasis:

(066) Kate (2;7): Nog! Once more time. (ibid. p. 323)

Lanvers (2001:456) found that code-switching for emphasis occurs when speakers are clearly dominant in one language and want to make sure that their utterance is understood correctly. Older children may use code-switching for emphasis for that purpose, thus providing more obvious examples.

Goodz (1989) provides a more complex example of code-switching which can be interpreted as switching for elaboration. She examined interactions between parents and children in bilingual families.

(067) Nellie (2;9) [to French-speaking father]: Laisse les barrettes, touché pas les barrettes, Papa [desperately turning to English] – Me's gonna put it back in the bag so no one's gonna took it! (ibid. p. 41)

Next to this example, not many other case-studies seem to provide instances of code-switching for elaboration. We can assume that it is rather rare among children as stylistic function of code-switching.

Another early function of code-switching that is mentioned in many studies on bilingual language development is *initiated repair*: children correct their language choice and either choose the appropriate language or correct a mix in reaction to a participant's initiation. This function can be considered fundamentally different from stylistic code-switching as the speaker does not switch to the other language for pragmatic or stylistic

reasons but only because he or she is reminded of the appropriate language choice by another person. This “reminder” or initiation can take on very different forms: from a simple ‘hm?’ or ‘what?’ to ‘what’s that in English/German?’. Lanza (1997), who studied the Norwegian-English bilingual children Siri (1;11-2;8) and Tomas (1;9-2;8) growing up in Norway, points out very early instances of initiated repair:

- (068) Siri (1;11): woman
F: Woman. Hva sier Papa da? {What does Papa say?}
Siri: damen
F: En dame. Ja. (ibid. p. 202)

Gawlitzek-Maiwald and Tracy (1994) also find initiated repairs in the data of the English-German bilingual girl Hannah, who thus corrects her mixed utterance:

- (069) Hannah (2;4): *ich hab geclimbed* up
M: what?
Hannah: I climbed up (ibid. p. 914)

Such a simple request (e.g. ‘what?’) from another participant like in the last example is often taken as a request for clarification. The children translate their utterance, sometimes probably without noticing that they are thus adapting to the setting. But *code-switching for clarification* can also occur without initiation. Swain and Wesche (1975), who analysed a 3-year-old French-English bilingual child from a psycholinguistic perspective, provide an example that shows a child’s wish to clarify his utterance:

- (070) M. (3): Un autre Johnnie. Another one. (ibid. p. 18)

This is also the case when bilingual children provide translations, as follows:

- (071) Child: milk quiere decir leche (Lindholm and Padilla, 1978a:37)
(072) Child: it broke, se quebró (ibid.)

Closely related to initiated repair is *code-switching for self-correction*, a function that is mentioned by several researchers. In this case, the children do not even need the parents’ request in order to adjust their language but they self-correct mixes, wrong starts or a wrong language choice. Redlinger and Park (1980) provide an example from their 2;5-year-old informant Danny, who self-corrects his utterance addressed to his mother:

- (073) M: Don’t you speak English anymore?
Danny (2;5): *Nein*. German.
M: Why?
Danny: *Guck, der Esel. Mehr books.* More books. (ibid. p. 343)

Many other studies give evidence of code-switching for self-correction from 3-year-old bilingual children. Lindholm and Padilla (1978) examined the data of five Spanish-English bilingual children between the ages of 2;10 and 6;2, and in a later study (1978a), 18 Mexican-American children, aged 2;0-6;4. They provide the following example of self-correction:

- (074) Child: a mí me gusta ese most...más, más, um, más muchos (ibid. p. 331)

Swain and Wesche (1975) explain that their informant used translations for self-corrections:

(075) M. (3): y veut le man...He want to eat him? (ibid. p. 18)

(076) M. (3): elle put on your coat, ma...my mommy (ibid. p. 19)

Swain and Wesche (1975) also provide an example in which the child switches to his preferred language in order to *prevent language mixing*:

(077) M. (3): Marcel's going to be...Marcel va être le payeur (ibid. p. 19)

Whereas some children seem to prefer to repeat an entire sentence in their second language when they are confronted with a vocabulary gap, other children simply insert single words from their other language. In the following example, the child cannot continue the sentence in English and after some hesitation simply inserts the remaining words in German:

(078) Hannah (2;9): I found that but I I see of it-s – if – of – ob des schmeckt (Gawlitzeck-Maiwald, 1997:109)

Code-switching in order to avoid mixes is mainly competence-related (later also referred to as skill-related). The children switch to their dominant language because of their richer vocabulary in that language.

We find one example of *addressee specification* in Lanza's (1997) data. Although it seems rather rare among children, Lanza (1992:644) says about her informant that she "switch[es] back and forth between languages in order to single out a particular addressee or to gain one or [sic] her parents' attention". Addressee specification can easily be mistaken for participant-related code-switching. But in the following example it is obvious that Siri only wants to address her father. She waits for her father to react and does not reply to her mother, although there are numerous other examples at this stage that prove her understanding of English:

(079) Siri (2;3): godt og godt – godt

M: was it good?

Siri: godt – godt – godt

F: er det godt, ja?

Siri: mhm (Lanza, 1997:212)

Lindholm and Padilla (1978a) further provide an example of code-switching in order to purposely exclude an experimenter from the conversation or even to make fun of him:

(080) Child: know what's wrong with your teeth?

Experimenter: what about my teeth? [...]

Child [giggling]: es chueco (ibid. pp. 35f.)

Another interesting occurrence of code-switching is described by Oksaar (1970) who reports on her son's simultaneous acquisition of Estonian and Swedish. Estonian was the family language, but Oksaar observed that the child, from about age 2;8, switched to Swedish when his parents spoke a third language, namely German or English. The child

then tried to recount an event or to distract the parents. Oksaar suggests the following explanation for this behaviour: the child, inspired by his parents' deviant linguistic behaviour, also wants to produce an alternative linguistic behaviour. The boy thus code-switched in order to show awareness for different linguistic setting.

One study mentions a child's use of code-switching in order to maintain and assert her authority as leader of an activity. The child was generally able to speak the language of the interlocutor, but insisted on her language choice if she was leading an activity (cf. Bauer et al., 2002:68f.).

Some functions of code-switching only occur with older children. Once they can tell more elaborative narratives, we sometimes find what Vihman (1998) calls *code-switching for framing*.⁶⁹ Vihman (1998) examined conversations between her children (ages 2;8-6;7 for Raivo and 5;11-9;10 for Virve), in which English was used, for example, as introduction to a fantasy play:

(081) [Virve and Raivo have been playing in Estonian] Virve (5;11): Get away from the ämblikud!
{spiders}
Raivo (2;8): Mul on kahju, Vilve. {I'm sorry, Virve.} No, he's not gonna eat you up. (ibid. p. 79)

Romaine (1989), in her data of Tok Pisin/English bilingual children, provides an example of code-switching "to animate the speech of characters" in narratives:

(082) Na disla liklik got ia, lasbon goat, em wokabaut I kam na disla troll ia kirap na em harim na em kirap na tok: 'Who are you?' Em kirap na tok, liklik got ia kirap na tok: 'I am the small goat.' (ibid. p. 208)

Although Romaine does not indicate the age of the narrator, we can tell from the complexity of the narration that it must have been an older child who used this rare function of code-switching.

For the analysis of the present study, I will later use the term of skill-related code-switching (see chapter 3.2.3). Skill-related switching includes different code-switching functions that are neither situational nor stylistic, as several of the above-mentioned switches: initiated repairs, clarification, code-switching for self-correction or code-switching in order to avoid language mixing. Similar to these are triggered code-switches, i.e. the speaker does not intend to switch the language but the switch is triggered by the linguistic circumstances. Mixing, for example, may trigger a language switch:

(083) Hannah (2;4): *ich hab gemade* you much better (Gawlitzek-Maiwald and Tracy, 1994:911)

Many code-switches by children are simply preference- and thus also skill-related. The child probably does not mean to change the language of the conversation but simply wants to be able to use his or her preferred language. Without consideration of what might

⁶⁹ More generally, framing can be seen as a mode-shift since the speaker switches between narration and commentary.

be the appropriate language, a child's spontaneous utterance will often be in their preferred language. Code-switching for culture-specific words and songs will also be considered as skill-related. These items are acquired in one language and belong only to this language. A switch for a song can neither be seen as purely situational nor as stylistic. In many studies, we find examples of code-switching for single words or songs from very young bilingual children (about age 2;0).

In other cases, it seems impossible to conclusively categorise a switch since it can have several functions and we cannot ask a 2- or 3-year-old child about their intention in a language switch. Gawlitzek-Maiwald (1997) provides an example that could show preference-related code-switching, or the child might want to change the topic or exclude other participants:

- (084) Adam (5;5): I can speak to you English or German.
 X: But usually we speak English, don't we?
 Adam: hm – [vɛn] I want I can speak English. *Weißt du was, Ira?* (ibid. p. 98)

To conclude this chapter, I want to provide a list of other case-studies on simultaneous language acquisition in bilingual children. The following list is by no means complete but shall provide references for further research⁷⁰:

year	author	languages	no. of children
1913	Ronjat	French-German	1
1920	Pavlovitch	Serbian-French (1;1) ⁷¹	1
1939-1949	Leopold	English-German	2
1959	Burling	English-Garo (1;4)	1
1962	Tabouret-Keller	French-German	1
1967	Rūķe-Draviņa	Latvian-Swedish	2
1970	Oksaar	Estonian-Swedish	1
1975	Swain & Wesche	English-French	1
1975	Padilla & Liebmann	English-Spanish	3
1975	McClure & Wentz	English-Spanish	40-50 ⁷²
1976	Bergmann	English-Spanish	1
1977	Huerta	English-Spanish	1
1978	Lindholm & Padilla	English-Spanish	5
1978	Volterra & Taeschner	German-Italian	2
1980	Redlinger & Park	Engl./French/Spanish-Germ.	4
1982/1988	Saunders	English-German	3
1983	García	English-Spanish	24
1983	Taeschner	German-Italian	2
1983	Kielhöfer & Jonekeit	French-German	2
1985	Ferguson	English-German	1

⁷⁰ For a discussion of some of the studies, see McLaughlin (1984).

⁷¹ The age at which exposure to the second language started is indicated in brackets.

⁷² The number of informants varies between the publications.

year	author	languages	no. of children
1985	Vihman	English-Estonian	1
1987	Klausen & Plunkett	English-Danish	2
1988	Petersen	English-Danish	1
1989, 1994	Goodz	English-French	13
1989-2000	Meisel	French-German	2
1990	DeHouwer	English-Dutch	1
1990-1997	Köppe	French-German	2-3
1992-1997	Lanza	English-Norwegian	2
1992	Döpke	English-German	6
1992	Arnberg & Arnberg	English-Swedish	18
1994	Führer-Nicod	French-German	2
1994-1997	Gawlitzeck-Maiwald	English-German	1
2000	Deuchar & Quay	English-Spanish	1
2001	Lanvers	English-German	2

Table 2.1 – Case-studies on simultaneous bilingual language acquisition

2.1.1.8 Summation of simultaneous studies

We have seen great variation in the aforementioned studies on simultaneous bilingual language acquisition: every study reveals different functions of code-switching. The age and order of the first use of a number of code-switching functions vary from one study to another. Despite variation, it is not difficult to detect some tendencies. These can be grouped under two main headings: the order of first occurrence of code-switching functions and the frequency of their occurrence.

Almost all studies bring up examples of participant-related code-switching from 2;0-year-olds or slightly younger children. Code-switching for songs and fixed expressions is often mentioned for children at a similar age. Few studies report attention attraction but when it occurs, very young bilingual children (age 1;11) make use of code-switching for this purpose. Initiated repairs appear between the second and third year, and usually before self-correction is first observed. At the end of the third year, most bilingual children know enough of both their languages in order to draw on more code-switching. Within a period of two to three months, many children start using code-switches for emphasis, for mode shifts (mainly role-plays), for self-correction, for clarification and for fun. They also code-switch at this stage in order to include participants, often monolinguals. Code-switching in order to exclude participants seems to occur only at a later stage. Code-switching for elaboration may appear at the same time but only in children who are fairly advanced in their language development. For many children who are more advanced in one of their languages, code-switching in order to avoid language mixing is a useful function that occurs sometime in their fourth year. Affect-loaded code-switching appears still later in the

data presented in the literature. For all functions that are mentioned in only one study, it is even more arbitrary to fix the occurrence of that code-switching function at a certain age. Therefore, it needs to be mentioned that code-switching for addressee specification, in order to show awareness of a different linguistic setting and code-switching in order to express power do occur but we are unable to predict a typical age of first occurrence. As for code-switching for framing and for topic shifts, the children making use of these code-switching functions must have been older (school age children) because of the complexity of the utterances in which these switches occurred. Lanvers (2001:440), though, notes that topical switches have been reported from studies of 3-year-old children.

CS function	age range	average age
CS for attention attraction	1;9 - 2;0	1;11
participant-related CS	1;9 - 2;2	2;0
CS for songs	ca. 2;0 (in several studies)	2;0
addressee specification	2;3 (mentioned only once)	2;3
initiated repair	1;10 - 3;5	2;4
CS for self-correction	1;10 - 4;3	2;9
CS to include participants	2;0 - 4;1	2;11
mode-shift	2;3 - 4;1	2;11
CS for emphasis	2;0 - 4;4	2;11
CS for clarification	1;6 - 3;11	2;11
CS for elaboration	2;7 - 3;5	3;0
CS for fun	3;4 - 4;4	3;10
CS to avoid mixing	3;1 - 5;7	3;11
affect-loaded CS	3;11 - 5;5	4;6
CS for power	6;8 (mentioned only once)	6;8
CS to exclude participants	4;4 - 10;9	7;7
topic shift	8;4 (mentioned only once)	8;4

Table 2.2 – Code-switching functions mentioned in studies on simultaneous bilingual children; indicated are the age range during which different studies mention the occurrence of particular switching functions as well as the average age at which the functions occur

Some of the rarer functions of code-switching have been mentioned. A bit more often, we find code-switching in order to include or exclude participants, affect-loaded switching and code-switching for attention attraction and for emphasis. These functions may still be observed less frequently than others not because they do not occur but because they are misinterpreted. Code-switching in order to include or exclude participants may be taken as participant-related switching, affect-loaded switching as preferred language choice and attention attraction as code-switching for emphasis or vice versa. Rather frequent are self-corrections, initiated repairs, code-switching in order to avoid mixing, mode-shifts, code-switching for clarification and for fun (or playing with language). We have to keep in mind, though, that many of these functions are also easy to detect in data sets. Initiated repairs, mode-shifts and code-switching for clarification can even be triggered by an

interviewer and may therefore occur more often. Participant- and setting-related code-switching are frequently observed simply because there is no code-switching without participants or setting. They define and characterise a situation and thus, help the speakers to choose the appropriate language.

2.1.2 Successive Studies

Case-studies of children growing up monolingually at first and then picking up a second language in their early childhood are much rarer than those on simultaneous bilingual language acquisition. This is surprising in that these successive learners present an independent, new and interesting research topic. We certainly need to distinguish second language acquisition in childhood from second language acquisition in adulthood, the latter having been a popular research topic for some time now. Children seem to learn differently, their first language is not yet fully established (so that they cannot as easily resort to it) and they have a different attitude towards culture and language. Whereas second language learning in school is another well investigated subject, it is again to be distinguished from second language acquisition in a natural setting.

Among the existing case-studies, it is difficult to find examples of code-switching since most studies are concerned with very different topics. Most of the earlier studies deal with speech sounds and interference. More recent studies also touch on topics like syntax, word order and developmental sequences but none of the studies mentioned in McLaughlin (1984:112), nor many other studies available, deal with code-switching. Although it is impossible to provide a similar overview of code-switching functions for the successive learners as done for the simultaneous ones, several case-studies on successive bilingualism will nevertheless be presented and their main results in relation to code-switching reported. Successive bilingualism is certainly growing in a globalising world where families with young children move abroad. Nowadays, it may get easier to find informants growing up with two languages successively.

2.1.2.1 Kenyeres (1938)

Kenyeres describes her daughter Eva's language acquisition of French as a second language. Eva moved from Hungary to Geneva at age 6;10. She only showed interest in learning French after her first meeting with French-speaking children when she realised the existence of communication problems. Kenyeres points out that children easily adapt to a new language since they have a strong need to play and conform with other children.

The first element Eva acquires of the French language is “l’élément sonore d’une phrase” (ibid. p. 327). She imitates the intonation of an utterance without knowing the grammar or understanding the exact meaning.⁷³ Kenyeres further describes that Eva often resorted to Hungarian in order to verify understanding. This is an option open only to the second language learner. Ravem (1968:184) points out: “the first language [...] is a source the learner can draw on”. Code-switching for clarification seems to be a useful tool in Eva’s second language acquisition but is the only function of code-switching mentioned in the study. We have to assume, though, that the girl uses participant-related code-switching only a few days after her first exposure to the second language since she is somehow communicating with her French teacher.

Eva is said to speak French like a native French child of her age after ten months. She did not follow the same developmental sequence as children acquiring French as a mother tongue nor as students learning French as a second language. Kenyeres explains this by the fact that Eva’s second language acquisition was more conscious than first language acquisition usually is, that learning a language can be seen as a game for a child and that she had support from her mother tongue, but was still less dependent on her mother tongue and culture than adults usually are.

2.1.2.2 Fantini (1975, 1978)

In several publications, Fantini describes language choices of his son Mario (and later also of Mario’s younger sister Carla), growing up in the U.S. with Spanish and English. Spanish is spoken at home although their father is a native Italian. The children are considered here to be successive learners since they had had no regular contact with English until they started kindergarten. Mario joined his kindergarten around age 2;2 and uttered his first English words at age 2;6; from age 2;8, English is described as manifesting itself as a productive skill.

Fantini (1975:90) explains that the child made appropriate language choices from the very beginning of his bilingualism (age 2;6). The participants, the setting, the function and the form of a speech act, but not the topic are said to be considered decisive for Mario’s language choice. Participants are judged by appearance and through the context as English or Spanish speakers and addressed in the appropriate language. Other early instances of code-switching in Mario’s language are switches to English for emphasis, “common between his second and third year” (ibid. p. 101):

⁷³ Similar observations were made in the present study (cf. chapter 3.4.11).

(085) Mario: mira...look, look! (ibid.)

(086) Mario: ven, ven, papá; come! (ibid.)

Mario also code-switches for role-plays:

(087) Mario (3;5) [recounting a show seen on TV]: y un policía ... um ... “wha happen?” (ibid. p. 102)

Mode-shifts also occur in situations like the following, in which Mario speaks English with a friend but then thinks aloud in Spanish:

(088) Mario (6;1) [playing with a friend]: The one you didn't saw. His name is Shazam! [to himself] Algo 'sta mal. [to friend] Wait a minute. (ibid. p. 100)

Other occasions for code-switching are the use of quotations, songs and jokes told in the original language (age 7;2-7;4). Fantini describes how Mario uses the marked code choice on purpose: “when he wished to amuse his parents, he jokingly spoke English; to tease his grandparents, he sometimes rattled words off in Spanish; to exclude his aunt, he defiantly persisted speaking Spanish in her presence” (ibid. p. 99). Language switches in order to include or exclude participants are mentioned from age 8;1. Mario's language choice is said to depend on his mood, thoughts and feelings.

Fantini concludes that Mario easily switches between his languages and is able to communicate native-like in both codes. He is able to differentiate the languages and uses code-switching from early on (“a few days after the introduction of English words into the child's active speech” (ibid. p. 108)). The use of code-switching as a code itself is noted at age 7;1 when conversing with another code-switching speaker.

2.1.2.3 Felix (1978)

Felix describes natural second language acquisition by seven successive language learners in his case-study. He compares the second language acquisition sequence of the boy Paul, reported on in Huang (1971), and the children Rune and Reidun, reported on in Ravem (1968), with that of his own informants. These are four English-speaking children acquiring German in Germany: Guy (7;6-8;2), his sister Julie (5;4-6;0), Geoffrey (3;4-3;9) and David (5;3-6;1). Whereas Geoffrey and his parents have German friends and try to adapt to German society, Guy, Julie, David and their parents rather keep within the English-speaking society and are not too happy in Germany. Unfortunately, Felix does not further elaborate whether this difference is represented in the proficiency level of the children after a certain time. Nevertheless, Felix points out differences between his informants and Paul, for example, which can be traced back to structural and typological differences or similarities between L1 and L2.

Since Felix's main emphasis is on the acquisition sequence and on differences and similarities of first and second language acquisition, there is no direct reference to language mixing and switching. Whereas we find insertions and language mixing in the data, the only example of a possible code-switch is the following:

(089) Julie (5;8): *cookie ist ein Kekse* (ibid. p. 50)

As reported for the child in Kenyeres, Julie also uses translation as a means of clarification.

2.1.2.4 Wenzel (2000)

Wenzel (2000) describes the bilingual language acquisition of a young girl growing up with German and Dutch. Dutch was introduced as family language around the child's second birthday. Since the child is used to speaking German with her parents, there is no immediate need for an active use of Dutch. Her second language acquisition starts with the comprehension of words that sound similar in both languages but the first Dutch output contains words that sound very different.

Wenzel provides examples of participant-related code-switching showing that the girl understands that people outside her home speak German. In the following example, we find participant-related switching in combination with self-correction:

(090) Lea (2;10) [baking taartjes when the phone rings]: *Ich sag Opa mal dass ich taartjes bak! ... Du Opa, ich hab kleine taa...eh...kleine ta...Ku...kleine Ku, KÜch, eh kleine Brötchen gebacken.* (ibid. p. 250)

The girl knows that her grandfather does not understand Dutch. Thus, she needs to find German words for her activity. In another instance, she switches for clarification:

(091) Lea (3;2): *was ist das für Joghurt?*
M: eh.. framboos
Lea: *Johannis...?*
M: nee, framboos?
Lea: boos? *is das boos?*
M: nee, die is niet boos, daar zitten frambozen in
Lea: *Aprikosen?* (ibid. p. 249)

We also find an example of initiated repair in Wenzel's data but without indication of the girl's age at the time:

(092) Lea: *fertig!*
M: zeg dat even in het Nederlands!
Lea: [fe:rtix] (ibid. p. 257)

On her mother's request, Lea repeats her German utterance with Dutch pronunciation.

An exact depiction of when the girl starts using which function of code-switching is difficult because of the limited information but it can be concluded that she uses participant-related code-switching, initiated repair and code-switching for clarification within her first year of exposure to a second language.

2.1.2.5 Other studies

Most of the studies on successive bilingual language acquisition that were available focus on interference and on similarities and differences in the acquisition process of first and second language learners. When language contact is discussed, the authors describe interference on the phonological, morphological, syntactic or semantic level. Even language mixing does not nearly get the same attention as in simultaneous language acquisition research. Although we do not obtain a lot of information on code-switching in the studies, a few interesting results can be pointed out in order to help us understand differences in the data of the informants of the present study.

Temperamental differences and proficiency level

Valette (1964:91) mentions a brief report on successive language acquisition in which Métraux describes a group of children growing up with English and French. Métraux had split the children into the following two groups: in one group were talkative, out-going, easily adaptable children, eager to express themselves and in the other group quiet, timid and reserved children. Métraux found that the first group learned the second language much quicker than the second. The study stimulated Valette to closer examine the acquisition of French by her English-speaking son aged 3;3 when the family moved to France. He was described as belonging to the group of quiet and timid children. Valette's main result is that the child after a daily nine-month immersion in French "had only acquired the proficiency of a 3-year-old in his new language" (ibid. p. 97). He turned to English in case he needed confirmation. Valette concludes that "language learning, even for the young child, is a complex and length [sic] process" (ibid.).

Unfortunately, Valette does not provide any criteria as to how she determined her son's language proficiency. It is difficult to further assess his language proficiency, especially since variation of a few months in the language acquisition process is common. Rūķe-Draviņa (1967:51) mentions a study on the Finnish girl Sirkka, who even after one year in Sweden still did not speak "perfect Swedish". She summarises that second language acquisition at pre-school age is indeed not quick, but the only advantage of children over adults is the better acquisition of pronunciation. McLaughlin (1984:104) further reports a study by Francescato, in which it took the Italian-speaking children about one year of exposure to Dutch to reach the language proficiency of their peers in Dutch. On the other hand, Kenyeres (1938:362f.) said about her informant that she spoke French like a native French child of her age after ten months of exposure. The different results of these studies show that second language acquisition varies in pace (just as first language

acquisition does) and that the assessment of a speaker’s proficiency can certainly be rather subjective if there is no index, let alone a uniform measure for it.

Phonological adjustment

Another interesting observation was made by Ravem (1968) in his study on his 6-year-old Norwegian-speaking son Rune acquiring English as a second language. He explains that Rune “made use of Norwegian vocabulary items frequently and without hesitation, as if they were available English words. [...] Norwegian words were often given an English pronunciation.” (ibid. p. 178) Very similar observations were made in the present data not only from successive language learners but also from simultaneous ones (cf. chapter 5.).

Replacement of the first language

Several of the studies presented in the literature do not only describe successive language acquisition but rather the replacement of the mother tongue by a second language. When a young child is brought to a new linguistic environment, he or she does not automatically become bilingual. Although they will usually pick up the language that other children in their environment speak, a conscious effort is often demanded by the parents if they wish for their child to retain the mother tongue (or first language). Rūķe-Draviņa (1967:51), for example, reports on a study by Zaręba, who describes his daughter’s acquisition of Swedish from age 2;6-5;6, that the girl hardly managed to maintain the active use of her first language Polish despite her parents’ effort.

To conclude this chapter, the following table shall provide an overview over case-studies on successive language acquisition. We find references for further research but the list is certainly not complete⁷⁴:

year	author	languages	no. of children
1938	Kenyeres	Hungarian-French (6;10) ⁷⁵	1
1945	Malmberg	Finnish-Swedish (4½)	1
1948	Tits	Spanish-French/Flemish (6)	1
1964	Valette	English-French (3;3)	1
1968	Ravem	Norwegian-English (6½)	1
1971	Huang	Taiwanese-English (4;11)	1
1974	Milon	Japanese-Hawaiian Creole (7)	1
1975	Cancino	Spanish-English (5)	2 ⁷⁶
1975, 1978	Fantini ⁷⁷	Italian-English (~2;2)	1, 2

⁷⁴ For further discussion of some of the studies, see Mclaughlin (1984). For more studies on successive language acquisition, see E. Hatch (1978).

⁷⁵ Indicated in brackets is the age at which exposure to the second language started.

⁷⁶ Cancino et al. (1975) also describe the language acquisition of two adolescents and one adult in the same paper.

year	author	languages	no. of children
1976	Hakuta	Japanese-English (4;11)	1
1978	Felix	English-German (2;7, 4;11, 5;1, 7;1)	4
1978	Itoh & Hatch	Japanese-English (2;7)	1
1978	Wode	German-English/English-German	8
2000	Wenzel	German-Dutch (2;0)	1

Table 2.3 – Case-studies on successive bilingual language acquisition

2.1.2.6 Summation of successive studies

It is not possible to simply indicate the age at which a certain function of code-switching occurs in successive language learners since it depends on the age at which they were first exposed to their second language. Therefore, the order and frequency of the occurrence of different functions is a lot more revealing.

Fantini's study is the most useful source on code-switching functions in successive language learners. The child uses participant-related code-switching only four months after first L2 exposure. Most other studies also mention participant-related code-switching as one of the first switching functions. Fantini further mentions code-switching for emphasis, occurring soon after participant-related switching. About a year later, the child uses code-switching for mode-shifts. Other functions include code-switching for songs, in order to include or exclude participants and code-switching for fun. These occur much later at a time when the child is a balanced bilingual. The manner of acquisition of his languages probably does not influence code-switching behaviour at this point anymore.

Wenzel found initiated repairs and switching for self-correction in her data. The only function of code-switching described in several other studies on successive language acquisition is code-switching for clarification. In one case, it occurred only days after exposure to the second language, in another case a few months later. In a study by Itoh and Hatch (1978:82), clarification occurs at a stage where the child starts to actively use his second language (after three months of exposure).

CS function	frequency of occurrence
participant-related CS	mentioned in several studies as the 1 st CS function
CS for clarification	mentioned in several studies as early CS function
CS for emphasis, mode-shifts, CS for songs, CS to include and exclude participants, CS for fun, initiated repair, CS for self-correction	mentioned only once

Table 2.4 – Code-switching functions and their frequency of occurrence mentioned in studies on successive bilingual children

⁷⁷ Fantini's study is generally considered as a study of simultaneous language acquisition. But Fantini indicates that close contact to the children's second language English only started when they joined the English-speaking kindergarten. For Mario, this was between age 2;2 and 2;4.

2.1.3 Growing up in a Bilingual Community

A special situation for growing up bilingually arises for children growing up in bilingual communities. Whereas some bilingual communities consist of several groups of monolingual people, other communities are practically composed of only bilingual speakers, along with all related language phenomena such as code-switching. Some children grow up with continuously mixed (and code-switched) input. Whether this influences their language acquisition or not has not yet been systematically investigated. Nevertheless, the two following studies provide an insight into the speech development of children growing up in bilingual communities.

2.1.3.1 Huerta (1977)

Huerta analyses the development of Christopher, a 2-year-old (2;1-2;10) growing up in an area of Texas where code-switching is a normal mode of conversation. She shows that the bilingual environment, and in particular the code-switching environment, does not negatively affect the acquisition of English and Spanish. Huerta provides numerous examples of single word insertions. Most of Christopher's insertions in mixed utterances seem preference-related. The only instances of code-switching presented in Huerta's data are interactional switches, which also appear to be preference-related:

(093) X: Cristóbal, ya recoga sus toys
Christopher (2;7-2;10): what for?
X: paraque ya se vaya a acostar
Christopher: no go sleep (ibid. p. 20)

There are probably not more examples of code-switching because Christopher is still at an early stage of language development. But for two exceptions, all of his utterances are 3- to 5-word utterances and he does not yet use subordinate clauses.⁷⁸ Most likely, he is just starting to acquire code-switching patterns.

2.1.3.2 McClure and Wentz (1975)

McClure and Wentz (1975) were the first to do a study on functions of code-switching in bilingual children. They studied about forty Mexican-American children between the ages of three to fifteen, growing up in a bilingual and bicultural environment with respect to communicative intent in their code-switches. The authors do not indicate whether the children acquired Spanish and English simultaneously or successively but most children

⁷⁸ Huerta also does not provide many dialogues but rather presents many isolated examples, which makes an analysis with regard to code-switching patterns all the more difficult.

came from Spanish-speaking families and were presumably regularly exposed to English only once they enrolled in kindergarten and pre-school.⁷⁹

McClure and Wentz declare participant-related code-switching as the earliest systematic function of code-switching but do not provide examples of children younger than four and five years old. Although they mention a few situational switches (without analysing them in great detail), the study's emphasis is on stylistic functions of code-switching. Their data provides instances of code-switching related to emphasis, focus, elaboration, clarification, attention attraction, mode-shift, topic or addressee shift and shifts from neutral to affect loaded content. The majority of the code-switches for emphasis in McClure and Wentz's data involve direct translations:

(094) Boy (8): yo soy segundo...I'm second (ibid. p. 426)

The following examples qualify as focal code-switching in McClure and Wentz's analysis: a speaker wants to bring into prominence a part of a sentence.

(095) Boy (8): este Ernesto, he's cheating (ibid.)

(096) Boy (11): no voy a estar aquí en next week! (ibid.)

McClure and Wentz are the only researchers to point out this category of code-switching for focus which seems rather vague and difficult to define. More obvious are the examples of elaboration (as repetition of a message including additional information) and of clarification:

(097) Girl (7): yo lo también ... lo pu<edo> quebrar. I can break this easy with my nose. (ibid. p. 427)

(098) Girl (7): you<r> dog

X: you dog? my woof?

Girl: you<r> dog! tu perro! (ibid.)

Attention attraction can be very similar to emphasis or clarification in that it may also involve simple translation. It is only possible to categorise the different instances by taking the specific circumstances into account. McClure and Wentz provide the following example:

(099) Girl (7): Este es el roof. This is the roof. This is the roof. (ibid. p. 428)

Mode shifts, according to McClure and Wentz, may mark switches between narration and commentary, as in the following example⁸⁰:

(100) Boy (8) [finishes a story he just told in Spanish]: [...] respiran las llantas del tren, y ... that's all I could think (ibid.)

⁷⁹ In the American context, most children we are concerned with go to pre-school first and usually spend the last year before first grade in kindergarten. If they joined a school before the age of 2;0, we speak of day-care centres. In the German context, only the term kindergarten is used in this book.

⁸⁰ A similar switch would be described as code-switching for framing by Vihman (see above, chapter 2.1.1.7).

In another study, McClure and Wentz (1975a) concentrated on code-switching in children's narratives and found code-switching to mark quotations (and titles) and also for shifts out of the story. They summarise that code-switching may be part of narrative style but that it occurs much less in spontaneous narratives than in previously known stories where the children were explicitly asked to code-switch (cf. *ibid.* p. 349). Another function of code-switching among children is to introduce a new topic. McClure (1981:78) points out that *topic* only influences the language selection in a few "culturally bound" words.⁸¹ She provides the following example as code-switching for a topic shift:

(101) X: dile que es una casa sin techo
Girl (6): we have a pretty, uh, Christmas tree (McClure, 1977:110)

Without knowing more details about the child's usual language behaviour, this could also be considered an instance of preferred language choice. The same is true for different addressee shifts provided by McClure and Wentz (1975). Although they classify several examples as addressee shift, none of them is clear. The authors themselves point out that *language preference* is an important factor for code-switching. They even provide examples of 5-year-olds choosing their language not only with regard to their own preferred language but to the preferred language of the addressee (cf. *ibid.* p. 423). The last category mentioned by McClure and Wentz are shifts from neutral to affect-loaded content. These are certainly rare in the data on children but the authors provide the following example:

(102) Girl (9): [...] yesterday, veníamos de Watseka, I almost fell down, cause Ramón venía atrás [...] (*ibid.* p. 429)

In another story told by a 9-year-old boy, McClure and Wentz (1975a) also identify differences between more and less affect-laden passages, the former in Spanish, the latter in English.

Next to the previously mentioned stylistic functions of code-switching, McClure and Wentz (1975) describe code-switches occurring in relation to a specific role definition. They provide examples of children who switch the language in order to comfort younger children, thus conveying a position of authority.

(103) Pat (9): Stop it Roli. You're stupid!
Roli (3): You stupid Pat.
Pat [laughing and holding R off]: Don't hit me! [R trips and begins to cry] Ay, Roli! Mi hijito qué pasó? (*ibid.* p. 425)

⁸¹ Although McClure does not further explain this statement, I presume that she considers insertions of "culturally bound" words as topic shifts. In the present analysis, I consider them as simple insertions and thus not as code-switches.

Although McClure and Wentz (1975) differentiate between code-switching for style and code-switching for role, the last example shall still be classified as stylistic code-switching.

In conclusion, we find examples of the following code-switching functions in McClure and Wentz's data: code-switching for clarification from 3-year-olds, participant-related code-switching of 4- to 5-year-olds, mode shifts from 5-year-olds, topic and addressee shifts by 6-year-olds, and switches for focus, elaboration, emphasis and attention attraction from 7-year-olds.⁸² Shifts from neutral to affect loaded content already occur with 5-year-olds. Role-related code-switching appears only later, among 9-year-old bilingual children.

2.2 Existing Theories

The majority of the case-studies just cited mention single functions of code-switching but do not suggest a general order for the acquisition of code-switching. This has only been attempted in the following two studies.

2.2.1 Acquisition Sequence by McClure and Wentz

McClure and Wentz (1975) were also the first researchers to formulate a thesis on the acquisition of code-switching. The basis of their approach is very similar to Gumperz's sociolinguistic investigations regarding adults' code-switching – Gumperz's central findings being firstly his distinction between situational and metaphorical code-switching and secondly, referring to situational code-switching, that adults' code choice is directly affected by the participants, the setting and the topic of an interaction. McClure and Wentz also distinguish between situational and metaphorical code-switching among children. In their use, situational code-switching also refers to code-alternation reflecting a change in the participants, setting or topic of an interaction. Metaphorical switching refers to alternation which enables allusion to more than one social relationship among the same participants in an interaction, the situation remaining constant (cf. McClure and Wentz, 1975).

Based on their data on bilingual Mexican-American children, McClure and Wentz (1975) suggest a developmental sequence for the acquisition of code-switching. They indicate that children first acquire situational code-switching, i.e. they learn to code-switch according to a change in the participants, the setting or the topic of the interaction. A second step is metaphorical and stylistic code-switching followed by the acquisition of

⁸² Although McClure (1981) mentions that attention attraction and retention occurs rather early, she provides only examples of 7-year-olds.

rules governing marked code choice, i.e. code-switching for affective purposes. Their acquisition sequence is as follows:

1. situational code-switching (concrete)
2. metaphorical and stylistic code-switching (abstract)
3. marked code choice (cf. *ibid.* p. 429)

A more detailed look at the single steps will help us understand the origin of this model. McClure and Wentz found that the earliest systematic function of code-switching in children's speech is related to the participants. While young children simply seem to decide whether somebody knows a language or not without evaluating a person's language proficiency, older children also consider language facility, preference and social identity (cf. McClure and Wentz, 1975). As seen above, data from other studies confirm the observation that participant-related code-switching is among the first systematic uses of code-switching. Whereas children growing up with two languages, switch languages at a very early age depending on who they are talking to, some studies indicate that setting- and topic-related code-switching seems to occur later in the speech of bilingual children.

As for the second step in the acquisition of code-switching, McClure (1977:111) acknowledges in a later publication that their data does not indicate a uniform developmental sequence in the use of code-switching as a stylistic device but that the behaviour depends very much on the individual informant. Nevertheless, she indicates a general tendency:

- code-switching for *clarification* seems to be learned rather early
- switching in order to *attract or retain attention* also appears very early and is the most frequently used function of code-switching in McClure's data
- code-switching in order to mark *mode shifts* is first recorded in the speech of a 5-year-old child
- instances of code-switching relating to *topic and addressee shifts* were found in the speech of 6-year-old children
- *focal* and *elaborative* code-switching did not appear in the speech of children under seven years of age
- there are very few examples of *emphatic* code-switching by young bilinguals⁸³

⁸³ McClure (1977:111) explains that code-switching for emphasis occurs only among 7-year-olds because there are very few examples of commands in the data, in which emphasis is most obvious.

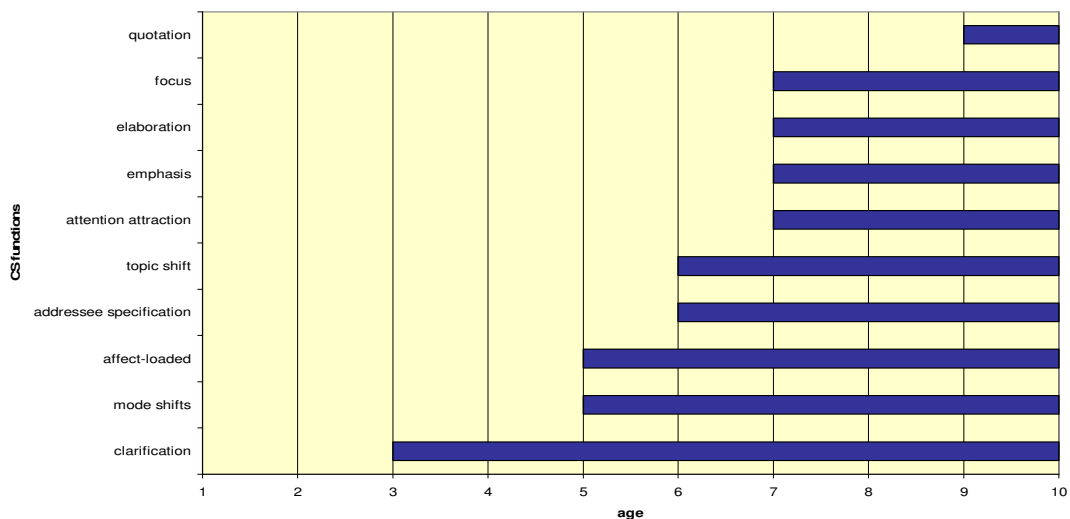


Figure 2.1 – Stylistic code-switching functions by McClure (1977) as indicated through speech samples

The general tendency for a gradual development of code-switching skills indicated by McClure is generally recognised. Even studies dealing with different languages and a different focus than McClure’s confirm some of her findings. Related to the early occurrence of clarification, Lanza presents examples of conversational repair in her data of a 2-year-old child (cf. Lanza, 1992). Köppe and Meisel (1995) report on a study in which two children ask for translations and make metalinguistic comments at age 2;5, which can be seen as a form of clarification. The early use of attention attraction is also noted by Köppe and Meisel (1995). Boeschoten and Verhoeven (1987) indicate for their data that there is no clear sequential development but that a general tendency can be seen: code-switching as stylistic device is much rarer among younger children. González and Maez (1980:9f.)⁸⁴ conclude that pre-school bilingual children exhibit little code-switching, that situational code-switching emerges first and that conversational code-switching does not appear until age six or seven. Auer (1998:235), describing European migrant communities, notes that “rhetorical and more subtle discourse-related functions of code-switching [...] do not seem to appear [...] before age 10 or 12”.

One of McClure’s central conclusions is that code-switching among children is not a random occurrence and clearly not the result of a language deficit. Style seems to be a relevant parameter in the analysis of code-switching, not just for adults but also for children.

⁸⁴ Quoted in García (1983:135).

2.2.2 The DUFDE Project

In a summarising conclusion of various results of the DUFDE study, Köppe and Meisel (1995:286) suggest the following sequence for the acquisition of different functions of code-switching in two of their informants:

for Ivar:

1. code-switching upon request (initiated repair) and role-play
2. self-initiated code-switching
3. metalinguistic comments
4. marked language choice

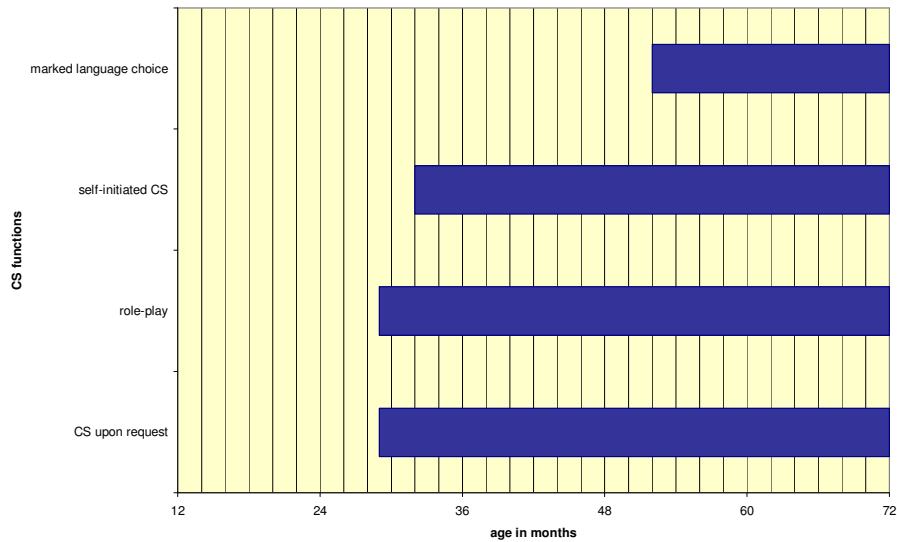


Figure 2.2 – Functions of code-switching for Ivar (cf. Köppe and Meisel, 1995:286)

for Annika:

1. code-switching upon request (initiated repair) and self-initiated code-switching
2. role-play
3. metalinguistic comments

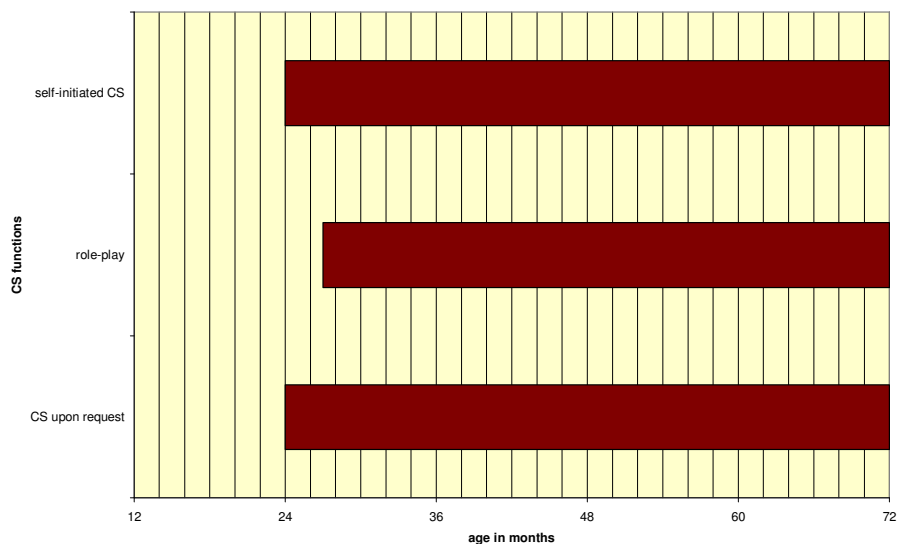


Figure 2.3 – Functions of code-switching for Annika (cf. *ibid.*)

Unfortunately, the authors do not include more categories into their summary, although they provide more examples of other code-switching functions at various points of the analysis (see above, chapter 2.1.1.5). Figure 2.4 includes most code-switching functions used in their data:

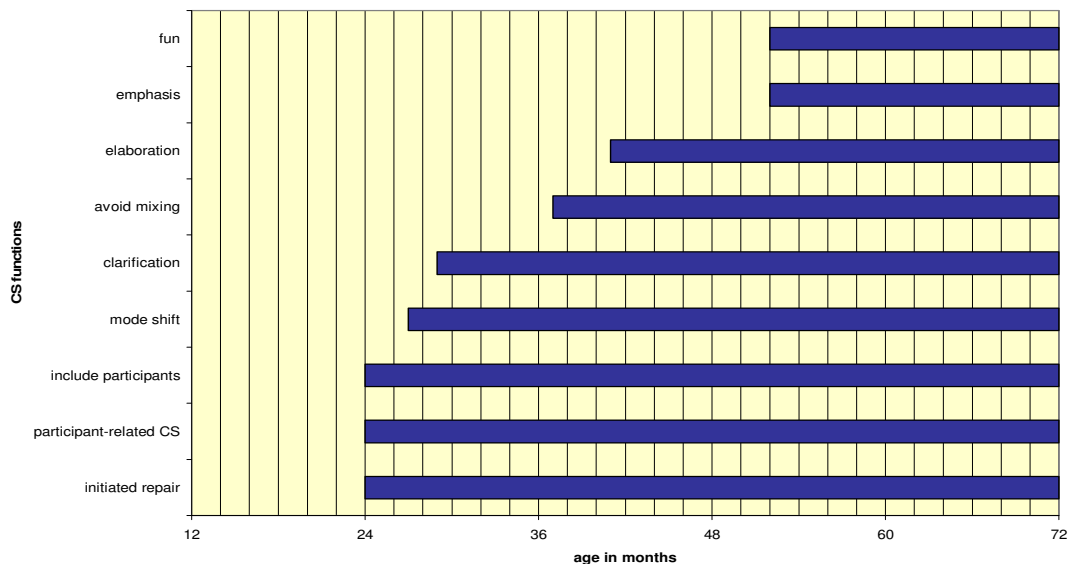


Figure 2.4 – Code-switching functions and their first occurrence provided in the data of the DUFDE study

Surprisingly, Köppe (1990:77) summarises that the age of the acquisition of stylistic functions of code-switching in Ivar and Annika corresponds to the ages quoted in the relevant literature. But she presents many examples recorded at a much earlier age than provided anywhere else in the literature on code-switching among children. She finds that many social and stylistic functions of code-switching are mastered around age 2;5 to 3;0. Even more complex metaphorical functions are said to be mastered by the children at age 2;3 and 2;6 respectively. Although the results of his own DUFDE study show that young children are able to code-switch, Meisel (1994), in an attempt to generalise the results of diverse studies on code-switching functions, suggests that code-switching of young children differs from adult code-switching. He points out that sociolinguistically determined switching that respects subtle and sophisticated variables seems to be learned only at age five and above.

Another publication dealing with developmental aspects of code-switching was presented by Vihman (1998). She also supports the idea that early and later code-switching of children should be differentiated. Vihman summarises that bilingual children start off by mixing their languages and only show increased sensitivity to the appropriate language usage once their lexical and syntactic development is sufficient to allow independent

sentence formation in each language. More adult-like code-switching may occur later if both languages are actively maintained and supported.

Further case-studies are certainly needed in order to verify whether there is a difference between early and late code-switching. Another study investigating early code-switching has been presented by Lanvers (2001). She investigates the language alternation in two bilingual children between the ages of 1;6 to 2;11 and finds several instances of very early code-switching. Lanvers notes early pragmatic switching in the form of emphasis and appeal (elsewhere labelled as attention attraction) from age 1;6, switching because of lexical preference or linguistic constraints from age 1;7 and quotational and topical switches from age 1;8 and 1;9. Social switching, in this case accommodating other speakers' preferences or including speakers in a conversation, is noted from age 1;11. An initiated repair is first documented at age 1;6 followed by self-correction at age 1;7 and 1;10 respectively. Lanvers' results underline that first instances of code-switching can occur very early.

2.3 Summary

The previous chapter has introduced various studies on the simultaneous and successive acquisition of two languages by young children. I have tried to extract as much information as possible on the children's code-switching behaviour although this was not the focus of most of the studies.

Only two models on the acquisition of different code-switching functions have been presented in the literature. McClure and Wentz provide a good overview but emphasise that they can only indicate a general tendency for the use of stylistic code-switching. And although the data on the DUFDE study offers many different functions of code-switching among children, only a few are mentioned in each study. The various results of the DUFDE study have apparently not been put together in order to form a more general developmental sequence of the acquisition of code-switching.

Comparing the data gathered by McClure and Wentz and the DUFDE project, we find an obvious explanation for the age differences for the first occurrence of specific code-switching functions: the DUFDE data deals with much younger children than McClure and Wentz's data. Unfortunately, neither McClure and Wentz nor Köppe provide details about the cognitive development and stage of their informants. Although their age is indicated, a developmental sequence of the acquisition of functions of code-switching should not only be based on age but also on cognitive development.

To summarise, it can be noted that the research suggests that some kind of code-switching emerges somewhere from age two onwards but that more sophisticated forms of code-switching develop only later. In the following chapter, I will present my own case-study. I shall try to fill some of the gaps left in the literature related to code-switching acquisition in children. Among the chief aims will be to point out the use of more code-switching functions used by children at pre-school age. In the analysis, I will then compare the functions mentioned in the studies in this chapter with the results of the present study.

3. CASE-STUDY

In the following chapter, I will present my own case-study on mixing and code-switching behaviour of English-German bilingual children. A case-study appeared to be the only way of obtaining the data needed in order to learn more about the acquisition and use of different functions of code-switching in pre-school children.

I want to point out that this study is challenged in two essential ways: first, it is difficult to decide what exactly constitutes a code-switch, especially since researchers do not agree on the question of whether young children are able to code-switch at all. And second, it is difficult to interpret code-switches made by children because we cannot ask them about what they mean and intend by their switch or whether it has any meaning at all. McClure (1981:71f.) further points out that “it is extremely difficult to get children to judge their own language choice”.

I will first outline the basics of my study: how the informants were chosen and how the data was collected, transcribed and analysed. I will also point out limitations and difficulties in the data analysis. The largest part of this chapter is reserved for the individual introduction of each informant. Their personal background as well as their language development will be indicated. All recordings will be discussed in detail with special focus on the children’s code-switching behaviour.

3.1 Data Collection

There are a number of procedures available for obtaining linguistic data. It can be gathered through tests or in free conversation, in large groups or with an individual speaker. Central to any linguistic data collection are informants as a data source. This study is based on spontaneous data elicited from 18 English-German bilingual children.

3.1.1 Informants

The main criteria for the choice of the informants were their age (between one and five at the beginning of the study) and their natural English-German active bilingualism. Although the time of the acquisition of the second language is taken into account in the analysis, it was not a main criterion when the informants were first selected. The family language and whether the informants were dominant in English or German did not affect the selection either; nor did the question of whether the mother or the father was the transmitter of the dominant or non-dominant language. Although it is plausible that gender influences language behaviour to some extent, no attempt was made to control the sex of the children,

i.e. to choose only girls or only boys or the same number of girls and boys for the present study, since gender differences are not the main focus.⁸⁵ The same is true for the question of whether the informants are single children or have younger or older siblings. There are not enough informants to make any claims concerning this topic, but we should keep in mind for the later analysis that siblings may influence a child's language behaviour. There are thus seven pairs of siblings and four single children, out of which eleven are girls and seven are boys. The number of 18 informants is random. A larger number would certainly have made the results more representative but under the given conditions, it would have been unmanageable to deal with a much larger amount of data.

The informants of the present study were chosen in three different locations. A first group (eight children) comprises four pairs of siblings whose families live in or near the city of Freiburg in the southwest of Germany. Three of the four mothers are native English speakers whereas all four fathers are native German speakers. In one case, the children have a native English speaker as their regular caretaker. A second group of eight children, three pairs of siblings and two single children, were selected in New Haven, Connecticut in the U.S. As for their parents, three of the five couples are German native speakers (one mother is Dutch but addresses the children in German) and two couples are mixed with an English-speaking father and a German-speaking mother. Two other children with native German parents lived in Richmond, Virginia in the U.S. The fact that this study comprises informants in Germany and in different areas of the U.S. was not intended but rather due to personal circumstances. Sociologists would probably ask for a detailed sociological comparison of the different locations before comparing the informants. But this is not the main purpose here and would go far beyond the scope of this book. There are several reasons that make it unlikely in this case that the different locations have a significant effect on code-switching behaviour: first, we are concerned with German and English, and both languages seem to enjoy a similar status, i.e. English in Germany and German in both relevant areas in the U.S. Second, all informants' parents affirm that the environment supports the bilingual upbringing of their children. More important than the current residence in Germany or in the U.S. was that all the children came from a similar social background. All parents have benefited from higher education and all but one father speak both English and German more or less fluently. They all actively encourage the bilingualism of their children.

⁸⁵ Döpke (1992:28) points out that "young boys and girls have hardly ever been shown to differ significantly in their linguistic proficiency".

Whereas all informants have a similar social background, they acquired their second language under different circumstances. Nine of the informants grow up with a family language that is different from the language of the environment: five of these nine children have parents who speak the same language and the other four have parents with different mother tongues but both speak the non-dominant language. As for the other nine informants, seven have parents with different mother tongues and each parent usually speaks their mother tongue to the child. Two other children growing up in Germany have German parents but are looked after during the day by an English native speaker. They nonetheless had lived in an English-speaking environment before the recordings started.

Most challenging is the division of the informants into groups according to the time of their L2 acquisition. All informants had some contact with their second language before their second birthday but to varying degrees. There are five children who received regular input from both languages from birth. Another nine children had some input from both languages from early on, but the input of the second language was rather low, presumably below 10%. In case of immigrant families, for example, the children heard the language of the environment on regular but rare occasions, for example, when they went shopping or a neighbour called. The other four children were exposed to the second language between their second and third year. How much input of each language the individual informant received is difficult to tell. As indicated above, I therefore split the informants into two groups according to their language output at age 2;0. Nine informants were active bilinguals, able to use both languages at age 2;0. The other nine informants presumably had such low input from one of their languages that they did not actively use the language at age 2;0. Therefore, we deal with nine simultaneous and nine successive learners. The division of the informants in the two groups will become clear after the detailed analysis of each informant's data.

We need to keep in mind that not only the time and manner of language acquisition influence language behaviour. The input conditions (see chapter 1.1.3.4) are also significant and vary among the informants of the present study. In some families, the children receive partly mixed input or the parents do not insist on a clear language separation. They may or may not correct the child's mixes. In other families, the parents are strict about language differentiation, insist on correct usage of both languages and correct their child's mixes if necessary.

Although there are obviously several parameters that vary among the informants, the description of their code-switching behaviour still seems to provide noteworthy results.

3.1.2 Data Type

Among various ways of obtaining data, I chose to collect spontaneous data in a natural setting. The informants were thus recorded and observed in free play. For several reasons, I considered this method to be the best to provide the most natural results. First, it was intended to find out if, how and why bilingual children switch languages in a *natural* bilingual language situation and not in tests. Also, a natural setting seems to encourage switching behaviour, probably because bilingual speakers try to avoid switching when they are observed, since it is still considered inappropriate in many contexts. In her study on bilingual children, McClure (1977) found that code-switching was most often used in free conversation whereas it was held back in interrogation and narration. A second reason for my choice was the fact that I did not want to intrude further than necessary into the informants' lives and thus chose to collect the data in their familiar environment, usually at their home. Due to the informants' age, only speaking and listening but no reading and writing skills could be examined. Especially for the younger children, tests could only have been used to a very limited degree.

Recordings were chosen as the method of data collection for the present study because they enable the researcher to analyse natural data more accurately: parts of speech can be listened to repeatedly in order to make sure what exactly was said. This is especially helpful for the analysis of the speech of very young children, which is often difficult to understand. The informants of the present study were recorded between three to eleven times over a period of between twelve and 27 months (but for two exceptions). The present data includes 66 recordings, about 25 800 utterances and a total recording time of about 72 hours.⁸⁶ 46 recordings plus one session in which the child was simply observed were taken by the interviewer. The other recordings (video and audio tapes) were taken by the informant's parents. Usually, the children did not know nor notice that they were being recorded. Although it may be easier to make a child forget that they are being observed, I was still concerned about the so-called observer's paradox, the question of how to observe the behaviour of people when they are not being observed. Many informants behave differently if they know that they are being observed, which represents a problem for many case-studies. A problem that still remains with tape recordings is that the quality may be bad and speech is often unclear or ambiguous. Therefore, it is generally advantageous to take notes about non-verbal behaviour of the participants (gestures, facial expression, etc.)

⁸⁶ As in two thirds of the recordings more than one informant is observed at a time, we cannot simply add up all recordings and the total time recorded that is indicated in the tables in the appendix B.

and the general context, which was done for most recordings. The parents also provided extra information about their children's language development.⁸⁷

The recordings for the present study usually lasted between 60 and 90 minutes and took place at the informant's house. In some cases, the child's mother, father, another family member or a friend were also present. The informants usually freely chose what they wanted to do during the recordings. Most of the time, the interviewer just played with the children. On some occasions, she engaged the informants in role-plays in order to elicit code-switching.⁸⁸

The informants were ideally recorded every four to six weeks but this was not always possible.⁸⁹ Because it was considered more important for the purpose of this study to have a larger amount of data than to have collected it regularly, almost every recording was used for the analysis, even if there was a larger gap between two recordings. Even with data collected irregularly, the code-switching functions used by a child at a certain age can be described. In contrast, the very first occurrence of a particular function cannot be verified but it can only be indicated when it first occurred in the data.

3.1.3 Questionnaires

In addition to the recordings, all parents were asked to provide background information about their child. Through questionnaires, I inquired about the child's general development, their language development, language exposure and language use. Information was also gathered about the parents' educational and linguistic background as well as their language use. It was also valuable to know more about the parents' attitude towards bilingualism and in how far they and the child's environment supported a bilingual education.⁹⁰ Most parents provided additional information in personal conversations with the interviewer.

In some cases, it can be problematic to rely on parental reports for an evaluation of the parents' language use or for the assessment of young children's language competence because it may not always be objective and reliable. Goodz (1994), for example, found that parental reports of language use differed from the actually documented use. However, parent reports for the assessment of language competence have proved to be a valuable

⁸⁷ For an overview of all recordings, see appendix B, tables II and III.

⁸⁸ Switches were more often provoked by the parents when they felt that their child did not show clearly enough in front of the interviewer that they were bilingual.

⁸⁹ Recordings had to be rescheduled because of a child's illness or a family vacation. Also, not all parents were able to record their children while the interviewer was absent for a stay abroad.

⁹⁰ See appendix E for the questionnaire.

tool.⁹¹ For the present study, it was mainly used in addition to other methods (see below) and in order to complete information about the informants from the time before or between the recordings.

3.2 Data Analysis

3.2.1 Transcriptions

All recordings were transcribed as soon as possible after the sessions. They were complemented with notes on the context, the participants and other relevant factors, for instance, if there had been a significant change in the child's environment. All transcripts were done by the interviewer. In cases of doubt, particular chapters were reviewed by other bilingual speakers or the informant's parents were consulted about specific words or pronunciations of their child. Whereas all utterances made by the children were transcribed, the interviewer's or parents' utterances were only transcribed if they occurred in direct interaction with the child. Most of the transcript is made in ordinary orthography. Phonetic transcriptions according to the International Phonetic Alphabet (IPA) were only used for unintelligible parts, a child's idiosyncratic pronunciation of certain words or made-up words as well as for words that sound similar in English and German. In this last case, I did not want to determine through the transcription whether the informant used the German or the English word, for example, *Mami* or 'mommy', *Bär* or 'bear', *mein* or 'mine' or *Schuh* and 'shoe'.⁹²

3.2.2 Language Competence and Dominance

For the purpose of the present study, it is important to be able to compare different informants' language behaviour. Comparing different speakers can be challenging because language behaviour is influenced by numerous factors and the common basis for comparison may be ambiguous. Several parameters that are comparable among all the informants have been mentioned above. Their age differences are significant, though. Even if we only compared the informants of the same age (given that age can be a possible factor for comparison), there is still great variation of language competence at a specific age. Therefore, it is useful to determine each informant's language competence independent of their age. In addition to this, it is important to assess a child's language competence in each language independently and to determine the dominant language.

⁹¹ See, for example, Dale (1991), who finds "impressive validity" for parent reports (in his analysis in relation to the MacArthur Communicative Development Inventory).

⁹² See appendix C for more details on the formal aspects of the transcriptions.

Language competence may vary greatly between the child’s first and second language and particularly between the child’s dominant and non-dominant language.

There are different methods of assessing how a child’s language development and competence compares with that of other children the same age. One can either analyse a speech sample according to standardised norms or test different areas of speech production and perception. Diverse researchers have collected data in various studies as a basis for evaluation for different methods, some of which will be discussed below.

3.2.2.1 Mean Length of Utterance

The mean length of utterance (MLU) is an index of a child’s level of grammatical development. New grammatical knowledge generally increases length. Although some authors count words or syllables, counting morphemes appears to be the most reliable way of determining a child’s grammatical stage. The counting of morphemes is usually based on a data set of at least 100 utterances (starting on the second page of the transcript). The index is useful only up to a MLU between 3.0 and 4.0. After this point, a child is able to use such a variety of grammatical constructions that the length of an utterance depends on the character of the conversation rather than on the child’s grammatical knowledge.⁹³

We find a list of MLU scores in relation to age in Miller and Chapman (1981:160).

Brown’s stage	MLU range	age range ⁹⁴
early I	1.01-1.49	16-26 months
late I	1.50-1.99	18-31
II	2.0-2.49	21-35
III	2.50-2.99	24-41
early IV	3.0-3.49	28-45
late IV/early V	3.50-3.99	31-50
late V	4.0-4.49	37-52
post V	4.50+	41-

Table 3.1 – Relation of Brown’s stages of language development, MLU range and age range

Brown’s five different stages of grammatical development have been set in relation to a certain MLU score. Relying on data from several studies, an age range is also provided. Table 3.1 thus helps to find out if a child’s language competence at a certain age is within the normal range.

For the present study, the MLU was calculated for each child for each recording. The scores were determined separately for English, German and mixed utterances.

⁹³ For details, see Brown (1973:54), who outlines the rules for the calculation of MLUs.

⁹⁴ The age range is computed including standard deviations.

Interestingly, the MLU score for mixed utterances was usually the highest. On one hand, this is not surprising as an utterance usually needs to contain at least two words in order to be considered mixed. On the other hand, the division of MLU scores in three sub-scores decreased the score for either German or English MLU in some cases because the (often long) mixed utterances were not counted as English or German but as mixed utterances. The fact that all children's MLUs usually still ranked within the normal range (see detailed descriptions below) either shows that the variation resulting from the introduction of a third score is negligible or that the children scored well above average. The scores are used here only as rough indications and in order to assess whether the children can be compared among each other. Therefore, we do not need to further investigate any resulting consequences.

3.2.2.2 Index of Productive Syntax

Another possibility of evaluating grammatical complexity is the Index of Productive Syntax (IPSyn). It can be used for the analysis of speech samples of 2- to 4-year-old children, i.e. usually a little longer than MLU. The IPSyn assesses language development through four separate areas of language knowledge and structure: noun phrases, verb phrases, questions/negations and sentence structures. Overall, 56 syntactic and morphological forms are counted up to two times, i.e. the highest attainable score in data sets of 100 utterances is 112.⁹⁵ Scarborough (1990:9) also provides a table of means and standard deviations from these means of IPSyn and MLU scores (both based on 100 utterances) according to age. It is based on a longitudinal sample of 15 children:

	24 months	30 months	36 months	42 months	48 months
MLU	1.63 (0.39)	2.63 (0.43)	3.41 (0.63)	3.74 (0.49)	3.80 (0.32)
IPSyn	32.14 (12.03)	58.80 (10.67)	73.87 (10.95)	79.53 (6.37)	85.80 (4.21)

Table 3.2 – Relation of age and MLU and IPSyn

Especially for the older informants of the present study, their IPSyn rather than their MLU were determined. Unlike the MLU scores, only one IPSyn score was determined per data set even if it included English, German and mixed sentences. The main problem with this evaluation was the fact that the IPSyn has been developed only for English data sets. For many structures, it is easy to determine the equivalent forms in German but not for all. It is hardly possible to find two examples of the progressive suffix -ing, for instance, in a predominantly German data set. I slightly adjusted some of the 56 categories in order to

⁹⁵ See Scarborough (1990) for details.

use them for a German data set. Adjective endings in German, for example, were counted in Scarborough's (1990:15) category of "any other bound morpheme on N or adjective", a category that is probably rather rare in English data sets. Counting adjective endings may compensate the lack of other forms in the German data sets. Analogous to this alteration, I counted all persons' singular present tense suffixes in German in the category of "third person singular present tense suffix".

I do not claim to be able to adapt Scarborough's Index of Productive Syntax to any German data set and the IPSyn scores are probably not comparable to those of other studies. But they helped to compare the language development of the informants of the present study.

3.2.2.3 Other Methods of Assessing Language Competence and Dominance

Much the same way child language researchers use MLUs for the comparison of children's language development, researchers in cognitive development like to determine a child's mental age. One of the standardised measures for cognitive development that has recently come into wide use is the MacArthur Communicative Development Inventory (CDI)⁹⁶. It provides checklists on the child's comprehension and production of gestures, words and word combinations. The child's behaviour is evaluated by their parents. Regrettably, the CDI has so far only been developed for 8- to 30-month-old children. Scarborough (1990:2) further mentions some other scoring methods developed by various authors for their research purposes but points out that they proved invalid for the analysis of other data corpora.

For the present analysis, several aspects were considered in order to determine language competence and dominance. With regard to language competence, I evaluated mainly MLU and IPSyn scores, but also a child's general language behaviour in the form of metalinguistic comments and mixing percentages (see below). Concerning language dominance, I compared the German and the English MLU, looked at interactional code-switching related to language preference and the informant's spontaneous language choice, considered the direction of interferences and other similar aspects.⁹⁷ If the child's MLU and/or IPSyn score (depending on whether both were still relevant) in the dominant

⁹⁶ For details, see Fenson et al. (1994).

⁹⁷ The problem of determining dominance has been discussed in many papers. Weinreich (1968:74-80) specified several possible criteria for determining language dominance, Lambert conducted several studies with the aim of determining dominance in bilinguals (cf. Dil, 1972) and Jakobovits (1971) proposes different tests for measuring dominance.

language reached the average range indicated in the literature, I assumed the child to be at a cognitive level comparable to that of other children the same age.

The background information provided by the parents about the informants' language development, use and behaviour also helped in assessing language competence, dominance and the child's cognitive stage.

3.2.3 Mixing and Switching

A further step in the analysis of the present data was the marking of all language contact phenomena through different colours in the transcripts: German insertions into English, English insertions into German, language mixes, code-switches and interferences in different linguistic areas. Other phenomena related to the informants' use of two languages, such as metalinguistic comments, unusual code choices (e.g. due to repetition), translations and made-up words were also indicated. Some categories will not be discussed any further but their indication added to a more complete illustration of an informant's language competence and preference.

In addition, the percentage of mixed utterances made by each informant was calculated for each recording. Every utterance containing morphemes from more than one language was considered a mixed utterance. Grammatical and lexical mixing was not distinguished. Thus, for the present analysis, mixed utterances include utterances for which a matrix language can be defined, i.e. utterances that are clearly English or German, and that contain single word insertions (but no borrowings) from the other language or intra-sentential code-switches. Although insertions and intra-sentential code-switches certainly differ from code-mixing as defined above, they were included in the counting of mixed utterances, mainly in order to be able to determine how much and for which purposes even more advanced bilingual speakers use their second language.⁹⁸ Studies that distinguish code-mixing and single word insertion either focus on the difference between these two language contact phenomena, which is not the main purpose here, or they are concerned with very young bilinguals who may demonstrate language awareness through the differentiated use of these two phenomena. Whereas the total mixing percentage helps, on one hand, to determine the informant's cognitive stage, it may, on the other hand, also just indicate input conditions or the acceptance of the use of mixed utterances in the child's environment. Thus, it cannot reliably be used as a factor for language differentiation.

⁹⁸ The inclusion of intra-sentential code-switches did not have a major influence on mixing percentages since their number is rather low. How much the inclusion of utterances with single word insertions into the category of mixed utterances influences results about mixing behaviour, will be discussed in the analysis.

The next step in the data analysis was the identification of the code-switching functions used by each participant of the study. Based on various approaches proposed in the relevant literature, the following switching categories are used in the present analysis:

- situational code-switching: referring to a language shift in reaction to a change in the participant constellation or the setting; changes in the topic were not considered as situational switches as they only occurred in the form of topic shifts in order to signal the introduction of a new topic. Some switches in order to include participants (or elsewhere named addressee specification) and some specific cases of role-play may also fall into the category of situational switching.
- skill-related code-switching: all code-switches that are driven by language preference and dominance of the speaker, including initiated repairs, self-corrections, switching in order to avoid language gaps or mixing⁹⁹, clarification but also switching for songs, rhymes or culturally-based expressions – most affect-loaded switching can be referred to language preference and the speaker's spontaneous choice¹⁰⁰
- stylistic code-switching: code-switching for stylistic reasons as for emphasis, elaboration, attention attraction, authority/power or in order to exclude participants – monolingual speakers may express similar stylistic changes through paraphrases, gestures or changes in prosodic patterns - conversational code-switching: conversational code-switching is considered as a sub-category of stylistic code-switching. It includes mode-shifts, topic shifts and framing. These functions are directly related to turn-taking in the course of a conversation - language play or code-switching for fun¹⁰¹: all cases of code-switching in order to play with the languages and code-switching for fun

Although most studies concerned with code-switching only distinguish between situational and metaphorical or conversational code-switching, the need for a third category, namely that of skill-related code-switching, quickly became evident in the course of the analysis. Situational code-switching is the easiest and most obvious to identify. There is always a setting and often at least one other participant to a situation, which makes it possible to determine whether a speaker adapts to the situation or not. If a code-switch cannot be directly related to a change in the setting or participant constellation, it is usually referred to as a metaphorical switch. But a non-situational code-switch can still have two basically different motivations: one is the usually conscious decision to make use

⁹⁹ Zentella (1990) uses the term *crutching* for instances in which bilinguals switch in order to maintain fluency and avoid communication breakdowns. Some speakers do not switch to their second language but make up words in order to avoid language gaps. Lanvers (2001:458) also notes that one of her informants switched to unintelligible or neutral items when unsure of the appropriate language.

¹⁰⁰ This category comprises very different types of code-switching that are grouped differently in other approaches. In Auer's approach, for example, preference belongs to participant-related code-switching and repairs to discourse-related code-switching. The category still seemed to work well, though, applied to the data of the present study.

¹⁰¹ This last sub-category is less important for the analysis and seems rather rare among children. It is difficult, though, to clearly categorise it: while it is mostly done consciously and often for stylistic reasons, it may also be skill-driven.

of the second language for stylistic reasons, the other is not related to style but only to a speaker's language dominance and preference in a certain area. I hope to be able to clarify the distinction between the two motivations and the need for it in the analysis of the code-switching functions used by each participant.

3.3 Limitations to the Analysis

Before the language behaviour of each informant will be discussed in detail, I want to point out some problems that render an analysis particularly difficult. Most case-studies dealing with natural data have similar problems: the diversity among the informants, the limited data corpora and limitations to the method employed.

3.3.1 Diversity among Informants

3.3.1.1 Similarities and Differences

A special challenge to every empirical case-study is the diversity among informants. Since speakers are individual human beings, it is impossible to find different speakers with identical backgrounds. Their individual language behaviour is influenced by numerous factors and often difficult to compare.

A number of similarities and differences among the informants of this study have been mentioned above (see chapter 3.1.1). Table 3.3 shall provide a better overview.

similarities	differences
English-German bilingualism	- time of acquisition of second language - degree of bilingualism - dominant language
natural bilingualism	exposure to both languages at home vs. exposure to one language at home and the second language in the environment
English-German bilingual input	- balanced vs. unbalanced input - mixed vs. clearly separated input (varying attention to language separation)
pre-school child at first recording	age range for all recordings from 1;8 to 7;4
living in monolingual society	Germany vs. U.S.
social background: e.g. educated bilingual parents	degree of parents' bilingualism
supportive environment	-
-	single child vs. one sibling ¹⁰²
-	gender

Table 3.3 – Similarities and differences in informants' background

¹⁰² In three families, a first or second sibling was born towards the end of the recordings but was too young to influence the informants' language behaviour.

The similarities among the informants make the comparison of several aspects of their language behaviour possible. We need to keep in mind, though, that some characteristics of their code-switching behaviour may be influenced by their varying background.

3.3.1.2 Character Differences

Another challenge in the comparison of different speakers are character differences. Switching behaviour is not only influenced by the time and manner of L2 acquisition, language dominance, input conditions, the social background, the environment and similar aspects, but also by an informant's personal temperament and character. These are especially difficult to determine. Some speakers are talkative and outgoing, whereas others are very timid and quiet. This general behaviour also seems to influence their language and switching behaviour.¹⁰³

One distinction in order to account for individual differences in children's language development has been made between the holistic and the analytical approach. Children using the holistic approach use unanalysed chunks and thus produce rather long sentences at an early stage of their language development. They also often experiment and play with their languages. They usually start speaking early but constantly need to "update" their grammar (cf. chapter 1.1.3). Correct language use seems to be less important for these "experimenters" than getting their message across. The children using the analytical approach ("analysers"), on the other hand, usually start speaking later. They experiment much less with language but analyse it first in order to be able to utter correct sentences. After this first phase of primarily analysing the language, they usually rapidly catch up with other children the same age. Most children use both strategies, though, but vary in how much they rely on one strategy or the other.¹⁰⁴ A similar distinction can be made among bilingual language learners. We also find experimenters and analysers. The experimenters, for example, mix their languages a lot more, whereas analysers pay more attention to language separation.

For the present study, it is not possible to provide a detailed sketch of each informant's character. I mainly relied on information provided by the informant's parents. But the child's general behaviour during the recordings was also considered, as well as specific language phenomena as, for example, a child's word coinages. Thus, I was able to identify at least substantial differences among the informants.

¹⁰³ See, for example, Hayashi (1994) for details.

¹⁰⁴ See, for example, Nelson (1973) for details.

3.3.2 Data Corpus

It is important to note that all corpora, independent of their size, are limited in their coverage. A larger corpus with more informants and more data from each informant would, of course, have provided a broader base for the analysis. It would also have been advantageous to elicit the data for the present study on a more regular basis and to have the same amount of data from each informant. On the other hand, I wanted to obtain natural data. It was important that the interviewer knew all informants personally. Most of the time, I was accepted as a friend of the family who came to play with the children. It was also important not to interfere too much in the informants' family life. Therefore, I accepted the circumstances that led to the present data corpus as they were.

3.3.3 Method

Another issue that shall be mentioned is related to the method of the present analysis. A researcher faced with a large amount of data needs to make a choice concerning the main focus of their study. While the focus of the present study was set on code-switching functions soon after the first recordings, the data offers many more research options and could be used as a corpus for a variety of other research.

For the purpose of the present analysis, I indicated, among other things, the first occurrence of a specific code-switching function in the data. One problem with this approach is that it is impossible to know whether a function is established or not after its first occurrence. It may be misinterpreted or appear in one recording but not in another, depending on the topic and the kind of the interaction. Also, a function may even disappear again. The available data can thus only be described.

A particular challenge in the analysis of empirical data is for a researcher to remain objective. Trying to find evidence of specific phenomena in a given data set may encourage the researcher to see only what he or she is looking for. Moreover, even if one is determined to be objective in the analysis, additional, intra-linguistic difficulties may occur. In the present case, the phonological similarity of some words in German and English often made it difficult to decide whether the child mixed or switched between the languages or used the words correctly. For German-English word pairs like *mein*-‘mine’, *bei*-‘by’ or *hier*-‘here’, it is impossible to know for certain whether the German or the English word was used. And even less similar word pairs like *von*-‘from’ or *des is*-‘that is’ are often hard to assign to one or the other language.

The analysis of empirical data is a complex task. It needs to be done with attention to detail and in view of the individual situation. It is crucial to point out again that the analysis can only be of descriptive nature.

3.4 Participants

In this chapter, each participant will be introduced with respect to their personal background, their language development and their code-switching behaviour. Each recording is discussed in detail. Siblings are introduced together in only one chapter since large parts of their background are similar and they were usually recorded together. We need to keep in mind, though, that some sibling pairs differ in significant aspects as, for example, the time of the L2 acquisition or the developmental stage at which a major change in their environment took place. These aspects will of course be discussed individually.

The participants will basically be introduced in the order in which they were recorded. This also implies that the first children are those who were observed for a longer time period than the following ones.¹⁰⁵ A table with an overview of all informants is provided in the appendix (cf. appendix B).

3.4.1 Leah and Tessa

Background

Leah and Tessa were born in Germany as the first and second child of their English-speaking (South African) mother and German father. The family lives in Germany but their family language is English. Both parents claim to always use English, but for occasional insertions of German words, some fixed expressions or nursery rhymes in German. The mother spends much more time with the children. Her German is good despite a slight accent and occasional grammatical mistakes. The father's English is very good. The girls are regularly looked after by a Polish au-pair for several hours a day, who has better knowledge of English than of German, her English still being rather basic.

Leah started kindergarten at age 3;5 and Tessa at age 2;5 for 15 hours a week. Their daily language exposure to English remained higher than to German (60:40%, at weekends even 80:20%). Language exposure included German-speaking adults for five to seven hours a week, bilingual adults for about two hours a week and German-speaking playmates

¹⁰⁵ In addition to this, the children are presented in groups according to the three different locations in which they were recorded. But as mentioned above (see chapter 3.1.1), differences resulting from the informant's place of residence will not be discussed further.

for about five hours a week. The children had hardly any contact with English speakers other than their parents and the au-pair. They were exposed to about the same amount of English and German media, each about one hour a day.

Despite her premature birth, Leah developed normally without any indication of delayed language development and is talkative and outgoing. Tessa developed normally without any indication of delayed language development and is talkative in familiar settings but rather shy with strangers. The parents are very happy with the bilingual development of the girls. Nevertheless, they also experience some negative feedback towards bilingualism in their environment.

Language Development

Leah used some German words from very early on although her parents spoke only English with her. She probably picked up single words from conversations that her mother had with neighbours or on the telephone. Leah's more active use of German developed only when she started kindergarten. Her dominant language until then was English which was soon replaced by German. German became more and more dominant towards the end of the recordings but Leah still used English with her mother and therefore also improved her English. Although Leah's MLU and IPSyn scores are generally within the normal range, there are several recordings in which either the German or the English MLU score is below average (cf. Figure VII). In the fourth recording, her IPSyn score is also rather low (cf. Figure XVI). While it still appears to be likely that Leah was at a cognitive stage comparable to other children her age, she seemed to have more difficulties dealing with two languages at once than other bilingual children. Her mixing rates during the recordings varied greatly without indicating a clear increase or decrease. They usually ranked between 0% and 9%, with two exceptions at 13% and 17%. She rarely mixed the languages until German became more dominant. She then often inserted German verbs into English sentences, but also some English words into German sentences. When she mixed, she sometimes hesitated before an insertion from the other language or she did not seem to notice the mix. Her English syntax and word order seemed to be influenced by her dominant language German.

Tessa started speaking English at around twelve months. Although both her parents spoke English to her, she also used some German words from very early on. Her more active use of German developed only after she had started kindergarten. In the first recording, English was clearly Tessa's dominant language. Shortly before the second recording, she had started kindergarten, which strongly increased her German input. Her

languages remained rather balanced for some time until German syntax became more dominant. But Tessa also continued to speak English actively. Her MLU and IPSyn scores grew steadily in both languages (cf. Figures XII and XIX). Tessa was rather advanced in her language development, especially in comparison to her older sister, and her scores are usually above average. According to her mother, Tessa rarely mixed the languages. When she did, she did not seem to notice the mix but was usually corrected by her mother who repeated the utterances without mixing. Her mixing rates in the recordings still ranked from 2% to 7%, for one recording even at 11%, but they seemed to decrease with age. Tessa played in both languages and used 50% German and 50% English when playing with her older sister.

At the completion of this book, Leah (age 6;8) and Tessa (age 5;3) are active bilinguals.

Recordings

Leah and Tessa were recorded seven times over a period of 24 months. Five recordings were taken by the interviewer. The parents provided further material on video. An additional video recording of Leah at age 1;8 was also provided by her parents. Leah's data from age 1;8 to 5;0 includes about 1470 utterances in about 550 minutes. The first recordings of Tessa were made at age 1;8 and continued until she was 3;7. Her data includes about 1050 utterances in about 500 minutes. It was easy to establish a good relationship to Leah and Tessa and they enjoyed playing with the interviewer.

recording	age	setting	utterances	remarks
Leah 1	1;8	English	ca. 38	mainly 1-word utterances
Leah 2	3;1	mixed	ca. 302	
Tessa 1	1;8		ca. 135	
Leah 3	3;11	English	ca. 120	recording less than 30 minutes
Tessa 2	2;6		ca. 75	
Leah 4	4;1	mixed	ca. 60	recording only ca. 20 min., German friend present
Tessa 3	2;8		ca. 65	
Leah 5	4;7	English	ca. 175	
Tessa 4	3;2		ca. 155	
Leah 6	4;10	English	ca. 65	bad recording quality (faulty microphone)
Tessa 5	3;5		ca. 45	
Leah 7	4;11	first English, then German	ca. 410	
Tessa 6	3;6		ca. 345	
Leah 8	5;0	English	ca. 300	
Tessa 7	3;7		ca. 230	

Table 3.4 – Overview of recordings of Leah and Tessa

Leah 1: The first recording is a video recording with Leah's parents who speak only English. Leah, at age 1;8, understands English and talks in 1-word-utterances in German or

English. It is surprising that she uses German words like *da*, *nein* and *aus* in the English context with English speakers.

Leah 2/Tessa 1: The second recording is an audio recording with Leah, Tessa, their mother and the interviewer, who speaks mainly German with the children. It can be seen from Leah's reactions that she understands some German but certainly less than a monolingual 3-year-old. The interviewer occasionally switches to English for clarification. Leah clearly tries to adapt to the setting by using more German than she usually does with her mother: she repeats words in German and uses simple German words like *dann*, *Auto* or *Mann*. In most situations, Leah uses English although the interviewer speaks German. We find some phonological interference from English into German pronunciation, as for example the use of [w] in *Wasser*.

Tessa speaks mainly English at this point and only uses German when repeating the interviewer, for a nursery rhyme and for single words like *nein*, *mein(s)* and *da*.

Leah 3/Tessa 2: This recording is again a video recording with Leah, Tessa and their parents, the setting thus being English. Tessa has just joined her sister at kindergarten and enjoys singing the songs they learn there. The children are presenting these songs on the video and therefore often switch between the German songs and their comments in English. The parents are generally addressed in English but Leah switches to German as reaction to her mother using German. She also inserts several German words into the English context and even mixes the morphology in the word *tanzing*. This may be due to the phonological similarity of English 'dance' and German *Tanz*.

Both children seem to enjoy playing with their languages. Whereas Tessa creates new rhymes and changes the lyrics of the songs, Leah repeats the following switch several times:

(104) Leah (3;11) [singing]: *die Löwe und die Tiger catchen cold*

We find several cases of phonological interference from English into the German songs for both children: they pronounce German words with a rhotic [r] and dark [ɫ] (e.g. in *fidirallala*) and Tessa uses [w] in words like *zwei* or *schwimmen*. In the first recording, Tessa mainly mixed due to the bilingual setting whereas in this recording, she mixes because she has acquired more German words.

Leah 4/Tessa 3: Leah's fourth and Tessa's third recording is also a video recording taken by their parents. In this setting, a German friend of Leah is present. The children speak German but Leah and Tessa usually address their father in English. Switching thus occurs mainly participant-related between the girls' utterances directed to their friend or among

each other and those directed to their father. Next to occasional mixing, Leah often starts her sentences in German, the setting being German-dominant, even when addressing her father. Tessa manages well to switch between the languages although her German is not without interference from English. She occasionally inserts German words into English.

Leah 5/Tessa 4: This recording is an audio recording with the interviewer, who speaks mainly English but also some German depending on the girls' language choice. Leah's preferred language is now German and she often switches to German although all people present speak English. Only the presence of her mother triggers more adjustment to English, but as soon as her mother leaves the room, Leah initiates a switch to German. Although the interviewer continues in English, Leah insists on German but for short and simple expressions. She even speaks German to her dog that had always been addressed in English before. Leah inserts German words into an English context but also some English words into the German context. Her German is getting so strong that she uses German syntax and translates literally into English:

(105) Leah (4;7): X didn't make with {X didn't participate}

Tessa adapts well to both languages and is more consistent in her language choice than her sister is. She even clarifies her sister's utterances:

(106) I: what's that? [...]

Leah (4;7): *die sind was zu turnen*

Tessa (3;2): ballet

Mixing occurs when she inserts German words when telling her mother about her day at kindergarten.

Leah 6/Tessa 5: This recording is taken by the interviewer, who speaks English to the children. Unfortunately, the microphone was malfunctioning during this recording and large parts are incomprehensible.

Leah switches clearly between German and English, without mixing the languages. She rhymes and plays with her languages in German. Her English sentences are rather short and simple but fairly consistently directed to her mother. She seems to separate her languages between a play language and a 'talk' language: matter-of-fact questions are asked in English, more spontaneous utterances are in German.

Tessa adapts well and hardly mixes the languages. She uses German only for some attention attraction. There is some syntactical interference from German in sentences like: 'Leah, want you be (the) first?' or 'When going we to X?'

Leah 7/Tessa 6: At the beginning of this audio recording with the children's mother and the interviewer, the setting is English. Leah generally adapts to the setting and speaks

mainly English with several insertions from German. She also inserts English words, though, when speaking German. Leah mixes some morphological elements, as in *Stuhls*, *turnen* or *comet*, and continues to translate literally from German into English. Spontaneous exclamations like *manno! doch! guck mal!* are in German.

Towards the end of the recording, the mother and the interviewer switch to German. Leah uses both languages appropriately and switches for clarification in both directions. Tessa also adapts well again but still inserts several German words into English. She also uses German a few times to play with the languages or for fun.

Leah 8/Tessa 7: The last recording is again taken by the interviewer, who speaks English with the children. Leah clearly prefers German but makes an effort to speak English with her mother and the interviewer - with occasional insertions from German. She switches to German for spontaneous comments, for songs and sometimes for clarification. There is evidence for lexical and syntactical interference from German.

Tessa adapts well to the English setting with occasional insertions from German. She only switches to German for fun and for songs.

Code-Switching Leah

Leah has been observed over a longer time span than other informants and her language behaviour underwent several changes within this period. Whereas no code-switching at all can be identified in the first recording, she tries to adapt her language choice to the setting and the participants from the second recording on, although her language competence in German is still rather limited at that point. In most recordings, the setting seems to have greater influence on her language choice than the participants but Leah also uses her preferred language with bilingual speakers, which is first English and then German, disregarding the setting.

Next to situational switching, Leah switches most often for songs. One reason for this is certainly that she learns German songs at kindergarten and most recordings take place in an English setting. Besides, the children are explicitly asked to sing in the video recordings taken by their parents. The code-switches thus occur in the alternation of Leah presenting songs and commenting on them in English:

(107) Leah (3;11): *jetzt* one other song

F: ok

Leah [singing]: *zwei kleine Schlangen schwimmen heute Nacht*

Other skill-related code-switches are rather rare. There are a few examples of clarification and self-correction. Since some of them occur at such an early stage in Leah's language

development, it is impossible to characterise their exact function for certain. They resemble lexical duplication of very young bilinguals:

(108) Leah (3;1): no, it's not (*aching*)_ *nich'*

(109) Leah (3;1): I need (*dies*)_ *haben*

Only in later recordings, their function is more obvious. Leah clarifies her utterances through translations:

(110) Leah (4;7): *kleiner Hase_ Hase*

I: what is it? [...]

Leah: *Hase*

I [not listening but looking at the stuffed animal]: oh, it's a doggie

Leah: no, *Hase* [...] *ein* bunny

(111) Leah (4;11): she is a a father, she's a child, she's a mother

I: what is she?

Leah: a father_ *Vater*

As for stylistic code-switching, there is only one example of attention attraction in Leah's data, strongly underlined here by her intonation:

(112) Leah (4;1): *ich auch_ ich auch_ X*, I al- {also}

We further find a few mode-shifts which generally occur through a language change between Leah's monologues in German and utterances directed to her mother or the interviewer in English. The following example can be considered as a topic shift:

(113) I: are you sleeping?

Leah (4;7): no_ *kannst du ein Dach(e) hier machen?*

It seems unlikely here that Leah just wants to switch back to her preferred language since she usually manages well to adapt her language choice at this point.

To sum up, it can be noted that Leah uses both her languages in the appropriate settings. Whereas situational switching is rather frequent, skill-related switching mainly occurs in the form of songs. Other skill-related switches as well as stylistic code-switching occur once per recording at the most. The ages at which certain functions occur vary a lot and a clear sequence cannot be identified.

Code-Switching Tessa

Tessa uses both English and German actively. Her German is very limited at the beginning of the recordings but she still inserts a few words in order to show adjustment to the setting. It is not clear whether Tessa is able to switch participant-related in the first recording but it becomes obvious from the second recording on. From there on, she is generally very good at situational code-switching.

Code-switching related to language skill occurs extremely often in the form of songs and nursery rhymes. Tessa is very keen on singing and rhyming and quickly picks up new songs at her kindergarten. In the very first recording, the insertion of *hoppe hoppe Reiter*

primarily functions as a sign of her adjustment to the German setting. In later recordings, the songs are often brought up on request. Tessa is generally very creative in her language use and often plays with language in rhymes and songs:

- (114) [Tessa, Leah and the interviewer have been speaking English] Leah (4;11) [spoken rhythmically]:
with a other silver plate-
Tessa (3;6) [following the rhythm]: *in die Hose* [dɪŋdə blet]

We further occasionally find a code-switch for clarification in Tessa's data from about age 3;2. In some cases, she even clarifies her older sister's utterances, as in the following example:

- (115) Tessa (3;7) I did sit on a horsie
I: on a horsie?
Leah (5;0): I also
I: wow!
Leah: on a *echte* horsie [...]
Tessa: on a real horsie

The only example of stylistic code-switching is the following example of attention attraction which occurs rather early in her speech:

- (116) Tessa (2;8) [jumping up and down on a bed]: *ich kann nicht, Papa, hier, ich kann's nicht_ daddy-* [...]
Leah, daddy, I [kɔnt] I get I not going_ Le- I not going bum here

To sum up, it can be said that Tessa uses situational code-switching regularly whereas other forms are rather rare. Only skill-related code-switching in the form of songs occurs in almost every recording. Although Tessa plays a lot with her languages and seems to be an experimenter, she only very rarely makes use of code-switching.

3.4.2 Fiona and Neeve

Background

Fiona and Neeve were born in Germany as the first and second child of their Irish mother and German father. The family lives in Freiburg, Germany and their family language is German but the mother has always spoken English to the children. The family spends two to three weeks every summer in Ireland, where the children get intense English input.

From age 0;4, Fiona spent three days a week in a German-speaking family with four children. She started kindergarten at age 3;9. Her language exposure at the time of the recordings included mainly German-speaking adults and playmates and German media. In addition to this, she had some English-speaking friends and went to an English class until she started school at 6;9. Generally, Fiona's daily language exposure to German was much higher than to English.

Neeve started kindergarten at age 3;1. Her language exposure during the time of the recordings included mainly German-speaking adults and playmates as well as German

media. She also participated in an English class for one hour a week. The children were occasionally looked after by an English-speaking babysitter. Generally, Neeve's daily language exposure to German was much higher than to English.

Fiona and Neeve developed normally without any indication of delayed language development. Whereas Fiona is very talkative and outgoing, Neeve is rather shy. Their environment supports their bilingual upbringing.

Language Development

Fiona's first words were in German (at about 15 months) although she had also been exposed to English regularly from birth. She did not speak English - but for a few words like 'yes' or 'no' - until around age 3;6, following an extended stay in an English-speaking environment. From about age 6;7, she had no problems switching between her languages and speaking English in an English setting. Her English constantly improved from there on.¹⁰⁶ But Fiona is used to answering her mother in German and only occasionally replies in English. Her dominant language has always been German. Her MLU and IPSyn scores are not representative since she was too old at the beginning of the recordings. But her German seemed comparable to that of other children her age (she had no problems expressing herself and did well at school). Fiona's mixing rate was extremely low at only 3% in the very first recording and no mixing at all in the following two. When Fiona mixed her languages, it was only for single word insertions (mainly nouns).

Neeve started speaking at about 18 months. Her first words were in German although she had also been exposed to English regularly from birth. Like her sister, Neeve always answered her mother in German and did not speak English - but for short words like 'yes' or 'no' - until she turned four. That summer, she spent several weeks in a row with English-speaking people and was subsequently able to adapt to an English setting. Her dominant language, though, remained German. Her German MLU and IPSyn scores are within the normal range whereas the MLU score in her non-dominant language English is below average (cf. Figure X). Neeve has always mixed her languages, though only to a very limited degree. Her mixing rates during the recordings ranked from 2% to 6%. When she mixed, it was mainly for insertions of single English words (introduced by her mother) into German sentences. While the direction of her insertions seems surprising, there is a simple explanation for it: throughout the recordings, Neeve did not use many full English sentences and did thus not speak enough English in order to insert words from her

¹⁰⁶ By age 8;10, Fiona's English is very good, she can express herself very well and reads some English. She still prefers German with her mother and usually answers in German.

dominant language German. According to further information provided by her mother, Neeve also separates her languages well in a purely English-speaking setting. At the completion of this book, Neeve (age 6;4) copes quite well in an English setting but is often searching for words. Due to the lack of English settings, her English is improving only slowly and she very rarely uses English with her mother. Fiona, on the other hand, is coping well with both languages by age 9;0.

Recordings

Fiona and Neeve were recorded three times over a period of 25 months. Further information about their bilingual language development was provided by their mother. The first recordings of Fiona were made at age 5;4 and continued until she was 7;4. Neeve was recorded between age 2;8 and 4;8. Fiona, Neeve, their mother and the interviewer were present at all recordings. Neeve arrived late for the second recording in which Fiona is playing with a friend. It was rather difficult for the interviewer to establish a good and intimate relationship to the girls. Fiona's data includes about 520 utterances in 200 minutes and Neeve's data only approximately 195 utterances in 180 minutes.

recording	age	setting	utterances	remarks
Fiona 1	5;4	mixed	ca. 165	monolingual German-speaking cousin present
Neeve 1	2;8		ca. 70	
Fiona 2	6;9	first German, then mixed	ca. 280	plays with German friend
Neeve 2	4;1	mixed	ca. 55	joins later, shy because of sister's friend
Fiona 3	7;4	English, children speak German	ca. 75	
Neeve 3	4;8		ca. 70	

Table 3.5 – Overview of recordings of Fiona and Neeve

Fiona/Neeve 1: The first recording is an audio recording with Fiona and Neeve, their German-speaking cousin, their mother and the interviewer. The setting is English but both children speak German most of the time. They are used to addressing their mother in German despite her use of English with the girls. They soon notice that the interviewer is also bilingual and thus feel no pressure to speak English.

Fiona switches to English for several replies directly to the interviewer and when she is explicitly asked to do so. But her first and spontaneous reactions and comments are always in German.

Although almost all of Neeve's utterances are in German, she seems to try to adapt to the setting. When directly addressed by the interviewer in English, she answers with 'yeah' several times. Although this affirmation was usually categorised as non-language-specific,

it is unmistakably English in this case.¹⁰⁷ English also occurs as repetition of somebody else's utterance:

(117) I: be careful, there's a car coming – careful!
Neeve (2;8): car coming

Neeve hardly mixes her languages since she is clearly German-dominant. English occurs only in repetitions and single word utterances. In one instance, she introduces a German question with 'why', presumably also as a sign of adapting to the setting.

Fiona/Neeve 2: The second recording is taken over a year later. Fiona has started school and Neeve kindergarten in the meantime. Both generally get even less English input at this point. But the recording is taken just a week after their return from Ireland, where they spent their summer holidays. Hence, the girls have just had intense English input and Neeve has started to speak English in an English-speaking environment.

At the beginning of the recording, Fiona is playing with her German-speaking friend. For the most part, the interviewer adapts to the German setting and addresses Fiona in German. The setting is then purely German and there are no traces of any language contact phenomena. Fiona does not mix her languages, not even for single word insertions. She uses a few short English sentences, though, in reply to the interviewer and switches to English for several songs since they have an English tape running in the background.

Neeve and her mother join later. The setting is now mixed with the adults speaking English and the children mainly German. Most of Neeve's utterances are in German, including replies to her mother who addresses her in English. But when she is directly addressed by the interviewer in English, she answers in English. Her English sentences are rather short and her syntax is strongly influenced by German, which can be seen in the following examples:

(118) Neeve (4;1): Fiona sleeps there up {*Fiona schläft da oben*}

(119) Neeve (4;1): I playing not Barbie

Neeve also uses English for single word insertions or when repeating somebody else:

(120) Neeve (4;1) [reacting to and repeating her mother]: *du bist* upside down

Although Neeve does still not fully adapt to the setting, she makes an effort and tries to address the interviewer in English.

Fiona/Neeve 3: The third recording is again taken with Fiona, Neeve, their mother and the interviewer. The setting is English but the children prefer German.

¹⁰⁷ In many cases, it is not possible to hear the difference between German and English pronunciation of the affirmative *ja* or 'yeah'. Only cases of a clearly pronounced [jeə] can be categorised as English. But the English affirmative is often realised as [jɛ] or [jʌ].

Fiona usually replies in German, but also uses some English words, especially in short answers. Her spontaneous reactions and comments are in German. She does not mix the languages but does not seem to have a clear system of when replying in English and when in German.

Neeve does not want to speak English and clearly expresses this. She insists on being able to speak it, though:

- (121) Neeve (4;8): *Mama, ich will nich Englisch reden*
M: you don't have to then, she'll write down that you only speak German, that you can't speak English, yeah, 's that ok <with you>?
Neeve: *ich kann Engl-*
M: huh?
Neeve: I can_ English
M: what? you can what?
Neeve: English [ʃpi:k]

German is by far Neeve's more dominant language so that speaking English is a real effort for her. She tries to speak English when directly addressed by the interviewer. She replies in English in some 1- and 2-word sentences or repeats part of an English utterance.

Code-switching Fiona

Fiona is able to switch and clearly separate between her two languages but she mainly speaks German. While she often addresses the interviewer appropriately in English, she does neither fully adapt to the English setting nor to English-speaking participants.

Next to the some situational switches, we only find skill-related code-switching in Fiona's data. In the first recording, she switches for an initiated repair (ex. 122) and in order to avoid mixing (ex. 123):

- (122) I: can you ride your bike?
Fiona (5;4): *ja, aber is' zu klein*
I: it's, what is it?
Fiona: too small
- (123) Fiona (5;4) [explaining how the interviewer can pass her]: if you give me a eh eh s- *wie heißt Strauß_Blumenstrauß?*

Although there are a few mixes in Fiona's data, ex. 123 shows that she rather asks for a word in English than to insert the German word. In later recordings, we find several examples of switching for songs and a few examples of code-switching for clarification:

- (124) Fiona (6;9) [talking about the interviewer]: *Mama? Mama, weißt du ob die deutsch redet?*
M: I don't know, you could ask her.
Fiona: she <?> talks German_ *sie redet deutsch*

Why exactly Fiona repeats her utterance in both languages is not clear. All participants who are present understand German, and Fiona would usually speak German to her mother. Her switch to English may be triggered by her mother's utterance and Fiona quickly clarifies it, probably also in order to explicitly include everybody. While Fiona

prefers German with her mother and her spontaneous utterances are German, it seems natural to use both languages with her:

- (125) Fiona (7;4) [trying to find a better picture on their TV]: *Mama, des is komisch*
M: just turn it [...]
Fiona: eh how-
M: no, not on that, on the other one
Fiona: that one?
M: see if the video is on [Interviewer and M continue talking in English]
Fiona [sounding very impatient]: *'s is ganz komisch*

This last switch seems to be affect-loaded: Fiona is losing her patience and finally wants her mother to help her. Whereas she uses English for pure information, she switches to her dominant language German when she gets emotional.

To sum up, although it is not possible to indicate a sequence for Fiona's acquisition of code-switching since she was too old when the recordings started, her concrete use of code-switching can be shown. We find frequent but inconsistent situational code-switching, mainly in the form of participant-related switching. In purely English settings, though, Fiona is able to adapt her language. We have to rely on her mother's information in this respect since I did not have the opportunity to observe Fiona in a monolingual English setting. Her data further includes the occasional use of skill-related code-switching in the form of songs, initiated repairs, clarification and in order to avoid mixing. There are no examples of stylistic code-switching. The reason for this is probably Fiona's strong dominance in German. According to her mother, Fiona uses some more English in German contexts at a later point in her language development: this occurs mainly when she wants to show off in front of her friends or wants to explicitly exclude someone from a conversation with her mother.

Code-switching Neeve

Code-switching is extremely rare in Neeve's data. The main reason for this is certainly her unambiguous dominance in German. She uses English only for single word insertions, a few repetitions and very short answers.

There is no code-switching in the first recording although there are a few hints that Neeve tries to adapt to the English-speaking interviewer and thus also to the setting. In the second and third recording, this effort is somehow more obvious since she now replies several times in English (not only with 'yes' and 'no'). At this point, we also find two instances of initiated repair, one of which is the following:

- (126) I: What is that? Neeve, do you know what it is?
Neeve (4;1): ja *Bad*
I: What is it?
Neeve: a *Bad*

Neeve tries to make her utterance English by using an English determiner. In the same recording, she also switches to English for songs. Despite some mixing, Neeve usually separates her two languages rather well. In the following example, she switches in order to avoid mixing:

- (127) I [talking about Neeve's rabbit]: what's his name?
Neeve (4;8): *Mama, sag's du's*
M: no, you can say her name
Neeve: *ich kann's nich' in English*

Rather hard to categorise is the following switch:

- (128) Neeve (4;8): *Mama, ich will aber nich* {speak English}
M: why not? cause you can't?
Neeve: *doch*
M: so where're we going on holidays?
Neeve: to England

The conversation continues in English. Neeve might have switched to English for different reasons. Most obvious is probably that she simply accepts her mother's demand to speak English. In that case, it would just be a setting-related code-switch. Another possibility, though, is that the topic is so closely related to English (they continue talking about friends and family) that Neeve still decides to opt for her generally weaker language.

To sum up, there is situational code-switching in Neeve's data to a very limited degree. There are only a few examples of skill-related code-switching but no examples of stylistic code-switching. At a later point in her language development, she is able to adapt to an English setting, although she still prefers German.

3.4.3 Hannes and Peter

Background

Hannes was born in Germany as a first child. When he was ten months old, his family moved to the U.S. where his younger brother Peter was born. Their parents are both German and speak almost only German to their children. They also speak good English, though, and admit to mixing words occasionally. The family returned to Freiburg/Germany after three years when Hannes was 3;10 and Peter 1;9. Hannes' American pre-school teacher followed the family to Germany three months later and stayed with them until Hannes was 6;8 and Peter 4;7. As their caretaker, she considerably influenced the family language. Since she had only a very basic knowledge of German, the family language was 80% English when everybody was present.

Hannes went to a day-care centre in the U.S. as soon as the family had settled there. It was a very diverse school and many children spoke Italian, French, Spanish or German as first languages at home. During that time, Hannes was exposed to more English during the

day and English became his primary play language. Back in Germany, he started going to an English-speaking kindergarten at age 4;0. Most of the children spoke German there, which thus soon became his dominant language. In addition to his English kindergarten, he started going to a German-speaking kindergarten twice a week from age 6;1 and started school at age 6;9.

Although Peter had been looked after by an English-speaking caretaker in the U.S. for several hours a day for a few months, he did not speak any English when the family moved to Germany. He was then again looked after by an English speaker but still did not use English actively. He started going to an English-speaking kindergarten in Germany at age 2;7 but most children's dominant language there was German. Peter's active use of English until the end of the recordings was basically restricted to single words and repetitions. In addition to his English kindergarten, he started going to a German-speaking kindergarten twice a week from age 4;0.

During the time of the recordings, Hannes and Peter were regularly exposed to English media about half an hour a day and about an hour to German media. Generally, their daily language exposure to German and English was about the same on weekdays but almost only German at weekends. Hannes and Peter developed normally without any indication of delayed language development. Whereas Hannes is rather talkative and outgoing, Peter is talkative in familiar settings but rather shy with strangers. Most people in their environment think positively about the bilingual education of Hannes and Peter and their parents are very happy with it.

Language Development

Hannes' first words were in German at about 15 months. He was first exposed to English at about ten months and started using English a few months after his first German words (at about 18 months). English soon became his dominant play language during his stay in the U.S. It is not possible to further assess his language competence and dominance until the recordings started. Hannes' dominant language at the first recording at age 4;5 is German. Although he was too old at this time in order to use his MLU and IPSyn scores for an evaluation of his language competence and dominance, it is clear from his language behaviour that German became more and more dominant. He also adapted well, though, to English settings. According to his parents, Hannes had always mixed the languages but improved separation around age four. Since then, he usually only mixed when speaking English. Mixing increased in phases after which his language exposure to English was significantly reduced. His caretaker usually did not correct mixes but rather inserted

German words into her English. Hannes' mixing rates in English were extremely high between 19 and 29%, with two exceptions in the first and fifth recording, where he mainly spoke German (5% and 0%). The high mixing percentages are presumably due to the circumstances in which Hannes acquired English: he was usually not corrected and got a lot of mixed input through his kindergarten and his caretaker. In addition to this, all English speakers in his environment were bilinguals and understood him despite his mixing. Relying on further indications related to his language behaviour (e.g. the complexity of his sentences), Hannes still appeared to be at a cognitive level comparable to other children the same age.

Peter's first words were in German at about 15 months. Although Peter had been exposed to English more or less from birth, he barely used any full English sentences until the end of the recordings at age 4;3. During the family's stay in the U.S., he was still too young in order to make contacts with many English speakers, and back in Germany, his English-speaking caretaker got used to making out his German utterances. Peter's older brother also translated for him and most children at their English kindergarten in Germany spoke German as first language. Consequently, Peter was never forced to speak English in order to express himself. German has always been his dominant language. Whereas, for his age, he was rather advanced in German, his English MLU was far below average (cf. Figure XI). This is not surprising since he only used single English words (often as repetitions) and very short sentences. His IPSyn score was within the normal range and he showed awareness of the two languages. He rarely mixed in a purely German setting but rather when he tried to adapt to an English setting through the insertion of single English words. Since he did not speak entire sentences in English, his mixing only came from these single word insertions into German. His mixing rates ranked between 2% and 8%, with one exception at 18%. Rather striking in Peter's data were his coinages. He was very creative in making up rhymes and words and he played a lot with his languages.

At the completion of this book, Hannes (age 8;0) and Peter (age 5;11) only meet their former caretaker once a week for three hours. Whereas Hannes still understands English but mixes a lot when he tries to speak it, Peter has more and more difficulties even understanding English.

Recordings

Hannes and Peter were recorded seven times over a period of 24 months. Their mother provided additional material about their language development and use. The first recordings of Hannes were made at age 4;5 and continued until age 6;4. The first

recordings of Peter were made at age 2;4 and continued until age 4;3. All seven recordings of Hannes and Peter were taken by the interviewer. Their English-speaking caretaker was usually in the house but only occasionally participated in the dialogues. It was easy to establish a good relationship to Hannes and Peter. Both enjoyed playing with the interviewer. Hannes was especially eager to talk and wanted to be entertained all the time. He never played on his own when the interviewer was present. He sometimes even excluded his younger brother Peter from playing. Peter, on the other hand, also enjoyed playing by himself. Hannes' data includes about 2500 utterances in about 585 minutes and Peter's data about 2140 utterances in about 585 minutes.

recording	age	setting	utterances	remarks
Hannes 1	4;5	English	ca. 500	
Peter 1	2;4		ca. 185	
Hannes 2	5;9	English	ca. 405	
Peter 2	3;8		ca. 270	
Hannes 3	5;11	English	ca. 340	Hannes is very tired
Peter 3	3;10		ca. 340	
Hannes 4	6;1	English	ca. 390	caretaker had been away for three weeks
Peter 4	4;0		ca. 435	
Hannes 5	6;2	English, German towards the end	ca. 45	bad recording quality (faulty microphone)
Peter 5	4;1		ca. 55	
Hannes 6	6;3	English	ca. 390	
Peter 6	4;2		ca. 545	
Hannes 7	6;4	English	ca. 430	
Peter 7	4;3		ca. 310	

Table 3.6 – Overview of recordings of Hannes and Peter

Hannes/Peter 1: The first recording is taken by the interviewer, who speaks English with Hannes and Peter. Most of their replies are in German while Hannes shows an effort to use some English. Although they are used to hearing English from their caretaker, they also do not consistently reply to her in English: whereas Hannes generally addresses the caretaker in English, Peter uses mainly German.

At the beginning of the recording, Hannes only replies in German. He uses English for a few insertions ('candies', 'just', 'because', etc.) or to repeat the interviewer. He once counts in English and occasionally utters a short sentence in English, like 'I not', 'is that all?', 'nobody'. His use of English increases during the recording but he still also uses German. It is impossible to detect a system in his language choice and he mixes in both languages. Whereas he fills just any lexical gaps in English with German words, his insertions of English words into German are often rather specific terms that his family might have agreed upon, as for example, 'candy'. It is rather striking that Hannes does not

use the German dative forms *mir* and *dir* but always uses the accusative *mich* and *dich*, e.g.:

(129) Hannes (4;5): *das ist von mich*

(130) Hannes (4;5): *soll ich dich was Lustiges sagen?*

Although the accusative is often overgeneralised, also in monolingual German children, (see, for example, Mills, 1985:183f.) this should no longer be the case by age 4;5, the time of Hannes' first recording. It is possible that his language development in German is somewhat delayed because his play language used to be English until a few months before the recording. There are also many examples where he uses the auxiliary *haben* instead of *sein*.

Peter uses almost only German but tries to adapt to the English setting through inserting 'that' and 'that one' into German, some counting in English and a few short exclamations, like 'no' or 'stupid Hannes'. He repeats one or two English utterances from the interviewer or from his caretaker and in one case even replies in English:

(131) I: [...] is there another one? [...]

Peter (2;4): there's not a one

It is obvious that Peter's English is strongly influenced by his dominant language German.

Hannes/Peter 2: The second recording is taken by the interviewer over one year later. The children are just back from a 3-week holiday with their parents during which they only spoke German. This may explain the rather high mixing rates for this recording since the setting is English.

Hannes clearly adapts to the setting now and speaks mainly English but every fourth utterance contains German insertions.¹⁰⁸ He switches languages in order to address his brother in German and for several spontaneous reactions. Interference from his dominant language German can be seen in the following instances:

(132) I [talking about a teddy bear]: it doesn't say anything

Hannes (5;9): *aber* he cans *aber* [...] it goes *mit* battery *aber* the battery is not going [...]

(133) Hannes (5;9): that's a cool country, there is the eh houses full just out sand

Peter does not clearly adapt to the setting. German is by far his dominant language, although he shows some effort by inserting several English words like 'that (one)', 'that's' or 'for', words for colours and numbers and even short sentences like 'and that is mine' or 'it's no book'. Other insertions further result from repeating the interviewer's utterances. Due to his effort of adapting to the English setting, his mixing rate is somewhat higher than in the first recording.

¹⁰⁸ If we disregard English utterances in which he uses German *aber* or *von*, his mixing rate is at 17% since 41% of the insertions are either *aber* or *von*.

Hannes/Peter 3: The third recording is taken by the interviewer about two months later. There are no major changes in comparison to the last recording.

Hannes adapts well to the setting but still inserts many German words into the English context; his mixing rate is at 20%. He addresses his brother in German, thus providing plain participant-related switches. Some spontaneous exclamations are in German and we find examples of interference from German syntax:

(134) Hannes (5;11): when you have this one then you get so one

We also find morphological interference in examples where Hannes adds the English third person singular -s to several inserted words from German, as in 'he *fliegs*' or 'he *gewinns*'.

Peter is still clearly dominant in German and speaks German during most of the recording. English occurs only for single word insertions and in repetition of someone else. These insertions show his adjustment to the setting. His longest utterance in English is a reply to the question of whether he can count in English:

(135) Peter (3;10): *aber* not so b- big Englis(c)h

Peter's caretaker reports for the following month that Peter addressed her for the first time with an entire English sentence:

(136) [Peter and X in X's room talking about her lights] X: it's not all that great
Peter (3;11): no X, this light is not too good
X [surprised at his English]: what was that?
Peter: *nein, nich' so gut*

Hannes/Peter 4: The fourth recording is again taken by the interviewer about two months later. The setting is English and there are no major changes in the children's language behaviour.

Hannes still inserts many German words into English sentences: 19% of his utterances are mixed. Common insertions are words like *aber*, *von*, *auch*, *bis*, *mit*, *zu* or *mein* but also some nouns and verbs. With such a high number of insertions, it is rather surprising that Hannes sometimes seems to be aware of mixes and wants to avoid them:

(137) I [asking the children about a funny object]: but what is it?
Hannes (6;1) : I know it *aber* I don't know it *auf* English

Although he still inserts many mixes without hesitation, he also now self-corrects mixes more often, as in the following example:

(138) Hannes (6;1): it was eh *bei* a *Geschenk*_ a present it was on it [...] can we *spiel* now something?_ play something?

We further find several examples of syntactical interference, as for example:

(139) Hannes (6;1): I don't say it you

Peter speaks mainly German but seems to insert even more English words than in the last two recordings, presumably in order to show adjustment to the setting. He still uses

only a small number of English words but utters a few full English sentences, as for example:

(140) Peter (4;0): that is eh that is that is not the glitter

(141) Peter (4;0): and one is black_ one baby is black

Peter is very creative in his speech and rhymes a lot. He makes up many words that make no sense but rhyme others.

Hannes/Peter 5: The fifth recording is taken by the interviewer a month later. Due to a disc error, most of Hannes' and Peter's utterances are incomprehensible and cannot be further analysed. Overall, there seemed to be no major changes in the children's language behaviour. The interviewer speaks English at the beginning of the recording but switches to German towards the end when the children's mother arrives at home. Both children easily adapt to the German setting and there are no insertions and no switches to English.

Hannes/Peter 6: The sixth recording is again taken by the interviewer about one month later. At the beginning, Peter plays by himself and is later joined by Hannes. The setting is thus German until the interviewer joins them and speaks English with them. Whereas Hannes switches to English, Peter basically continues his game in German. He again rhymes a lot and makes up words, some of which sound English. But his dominant play language remains German and he only uses English for a few single words and when repeating somebody else. Hannes switches more in this recording since the dialogue often changes between him and his brother and him and the interviewer. He still inserts many German words into English (but no English words in German contexts) and his syntax is strongly influenced by German.

Hannes/Peter 7: The last recording takes place in the same setting as the previous six ones and there are no major changes in the children's language behaviour. Hannes still fills any lexical gaps in English with German words, which leads to his high mixing rates. Although he gets English input through his caretaker and at his kindergarten, he has no contact with native English speakers who do not understand German. His German is constantly getting stronger since he has now also joined a German-speaking kindergarten three times a week.

Peter's language behaviour towards the caretaker and the interviewer is similar: he usually replies in German to their English utterances and uses only very few English words. There is thus no apparent participant-related switching.

Code-Switching Hannes

Although Hannes uses both languages, German is clearly dominant. Since the setting for all recordings is English, Hannes always needs to express himself in his non-dominant

language. In the first recording, he does not yet clearly adapt to the English setting but speaks German with the interviewer most of the time, although he usually addresses the caretaker in English. But from the second recording on, Hannes always adapts to the setting and the participants despite major vocabulary gaps in English.

Apart from these situational code-switches, there are several examples of skill-related switches in Hannes' data. Code-switching for self-correction occurs in several recordings:

- (142) X: I think they used to have a tiger at one point [...]
Hannes (5;9): yes, *aber* it's *gestorben*
I: oh!
X: did it really?
Hannes: yes, it died

We further find one example of avoiding a mix and one example of an initiated repair. Both are rather surprising since Hannes usually mixes a lot and does not seem to pay attention to language separation. Very occasionally, Hannes also switches languages for a song.

As for stylistic code-switching, Hannes switches for emphasis on at least two occasions, one of which being the following:

- (143) Hannes (5;11) [talking about marbles in a racetrack]: they're already down_ [in a higher voice for emphasis] *die sind schon runter*

In one recording, Hannes elaborates several of his utterances in his dominant language German:

- (144) Hannes (6;1) [playing a board game with the interviewer and commenting on his cards]: pirate! oh no! *da muss ich was abgeben* [...] oh, that's good_ *da krieg ich einen Edelstein* [...] got two of those_ *endlich mal_ endlich mal werd' ich mal 'n bisschen reicher_* and who's now turn?

To sum up, Hannes uses situational code-switching as well as occasional skill-related code-switches. Stylistic code-switching first occurs at age 5;11 and is extremely rare in his data. Despite Hannes' age, the range of code-switching functions that he uses is rather limited.

Code-Switching Peter

Although Peter easily understands both English and German, his language output is predominantly German because this is clearly his dominant language. He still seems to make an effort in trying to adapt to the setting which is English in all but one recording: whereas he hardly ever uses English words with his parents or his brother, he does so during the recordings in utterances directed towards the interviewer or the caretaker. It can therefore be concluded that he is well aware of the different participant constellations but unable to explicitly adapt to the setting, due to his limited active language competence in English.

While Peter seems to express awareness of an English setting through the insertion of English words, it is impossible to detect a system in his insertions and to define when he inserts English words and when he does not. Some insertions are repetitions and others probably a spontaneous reaction according to the situation. Consequently, it is also impossible to identify code-switches since even when he uses English words, there is no clear switch between the languages. The only obvious switches to English are for a song, for the demonstration that he can count in English and for the spelling of an English word that his brother has taught him.

There are no further functions of code-switching in Peter's data. His English is presumably not advanced enough for him to switch between his languages.

3.4.4 Daniel and Faye

Background

Daniel and Faye were born in Germany as the first and second child of their English-speaking mother and German father. The family lives in Germany and since the mother's knowledge of German is better than her husband's knowledge of English, the family language is German when everybody is present (90:10%). Whereas the father thus usually speaks German, the mother uses English when she is alone with the children. But both parents admit to using different languages depending on the situation, which means that the mother also speaks German to the children when other German-speaking children are present and the father also occasionally uses English. Daniel, as the older child, was only spoken to in English from birth until he was about three years old. The parents wanted to establish English as Daniel's first language before he started a German-speaking kindergarten. The parents were unable to apply the same strategy with Daniel's younger sister, partly due to the linguistic influence of her older brother who started using more and more German at home.

From age 2;9, Daniel went to an English-speaking kindergarten for ten hours a week and from age 3;0 for 20 hours a week. Daniel changed to a German-speaking kindergarten only at age four. He started school at age 6;9. Faye started kindergarten (German-speaking) at age 3;2 for 20 hours a week. During the time of the recordings, the children's daily language exposure to German was higher than to English (70:30%), although it was about the same at weekends. Other language exposure included an English class which they took for two hours a week, contacts with bilingual adults at least two hours a week, English-

speaking playmates one to two hours a week but generally more German-speaking playmates. They were exposed to about the same amount of English and German media.

Daniel and Faye developed normally without any indication of delayed language development and are both talkative and outgoing. The environment supports their bilingual development and their parents are very happy with it.

Language Development

Daniel's first words were in English. His exposure to German was very low in his first three years. Only around age 3;0, he came into contact with German-speaking children regularly and slowly started using German actively. Daniel's dominant language remained English for some time but changed over to German with increased German input through kindergarten and school. At the time of the first recording, Daniel's languages were rather balanced but German was clearly stronger from the second recording on. Daniel's MLU and IPSyn scores are not representative since he was too far in his language development when the recordings started. But his scores are markedly above the average scores for 4-year-olds (the age at which most lists for the scores end). Daniel further showed strong language awareness, insisted on speaking the appropriate language according to the situation and was able to switch between his languages without any problems. He mixed rarely but when he did, he was able to repair mixing on request or even self-corrected it. He used mainly German when playing but was able to and did switch to English for role-plays.

Although Faye's mother mainly spoke English to her, Faye's first words were in German. Since her brother Daniel's play language slowly changed from English to German when Faye was about five months old, her German input increased significantly. Their father also started using more German at home. But Faye's first English words occurred only shortly after her first German words, at about 15 months. Faye started out as a rather balanced English-German bilingual child and used both languages in appropriate situations. Her English was slightly stronger until she started kindergarten. German then became continuously stronger and was clearly her dominant language towards the end of the recordings. Faye's MLU in German thus increased constantly whereas her English MLU decreased (cf. Figure I). Her scores were in the normal range in the first recording but clearly below average in recording two, three and five. This is mainly due to the fact that she had to use her non-dominant language English in these recordings. Her MLU score in German, on the other hand, was always within the normal range. This fact, in addition to her metalinguistic comments and her low mixing rates, seemed to show that she was at the

same cognitive stage as other children the same age. Faye mixed only when speaking English because German was her stronger language. She sometimes borrowed single words from German but usually rather preferred to stop in mid-sentence than to mix. Her mixing rates were usually at 2% and below but for one recording at 5%. In later recordings, she used almost only German when playing and sometimes refused to speak English back to her mother, although she was able to express herself, with some hesitation and shyness, towards other English-speaking adults.

At the completion of this book, Daniel (age 9;0) and Faye (age 6;5) are active bilinguals but clearly prefer German.

Recordings

Daniel was recorded four times and his sister Faye five times over a period of 24 months. Their mother provided additional information about their language development and use. The first recordings of Daniel were made at age 5;5 and continued until he was 7;4. The first recordings of Faye were made at age 2;10 and continued until she was 4;9. Their mother, the interviewer and Faye were present at all recordings. Daniel left after a few minutes in the third and fourth recording because of other appointments. It was easy for the interviewer to establish a good relationship to Daniel and Faye and they enjoyed playing with her. Both are very talkative and outgoing. Daniel's data includes 1300 utterances in about 275 minutes and Faye's data about 900 utterances in about 305 minutes.

recording	age	setting	utterances	remarks
Daniel 1	5;5	mainly English, some German	ca. 415	
Faye 1	2;10		ca. 250	
Daniel 2	6;9	English	ca. 425	
Faye 2	4;2		ca. 140	
Faye 3	4;6	English, later German	ca. 115	
Daniel 3	7;2	mixed setting	ca. 10	bad recording quality (faulty microphone), monolingual German friend present
Faye 4	4;7		ca. 45	
Daniel 4	7;4	English	ca. 450	
Faye 5	4;9		ca. 350	

Table 3.7 – Overview of recordings of Daniel and Faye

Daniel/Faye 1: The first recording is made with Daniel, Faye, their mother and the interviewer. English is spoken most of the time but the interviewer switches to German on two occasions in order to trigger code-switching. The children immediately react to the switches.

Daniel is used to speaking English with his mother and insists that she and the interviewer speak English. When speaking to himself, though, spontaneous utterances are in German. About 2% of Daniel's utterances are mixed.

Only in this first recording of Faye, she switches to English deliberately. At this point, she is still English-dominant or at least used to using English with her mother. So when her mother addresses her in German, Faye switches back to English:

- (145) M: *gehst du jetzt einkaufen?*
Faye (2;10): *nein*
M: *nein? was kaufst du ein? [...]*
Faye: bread
M: bread?
Faye: that was English!

Faye even clarifies her utterance by a metalinguistic comment.

Daniel/Faye 2: The second recording is again made with Daniel, Faye, their mother and the interviewer. This time, the interviewer speaks only English. Daniel has started school and Faye kindergarten in the meantime and their German is becoming more and more dominant. The children prefer speaking German among themselves. But both have no problems to switch between the languages and speak English when the setting requires it. Their mixing is very low (5% and 1% respectively) and only occurs in their non-dominant language English. Daniel mixes for a few single word insertions (from German into English) for phonologically similar words (like *von*-‘from’, *für*-‘for’).

Faye 3: Faye and the interviewer are on their own for the third recording. The interviewer speaks only English at the beginning. Faye answers in English but in very short sentences with very restricted vocabulary like ‘that’s this’, ‘there to that’, ‘look here’, ‘that one’, etc. Her syntax is also strongly influenced by German:

- (146) Faye (4;6): you know it not

In order to give Faye the chance of speaking with more confidence, the interviewer switches to German after a while. Faye immediately reacts to the switch and uses longer sentences. She does not switch back to English and there are thus no further examples of any language contact.

Daniel 3/Faye 4: In the fourth recording, Faye is playing with a German-speaking friend. The children speak German as is appropriate in the setting. The interviewer speaks English when addressing Daniel or Faye but switches to German when addressing all three children. The setting is thus mixed. Daniel and Faye both react in English to the interviewer. Daniel has another appointment and leaves after a few minutes.

Unfortunately, the microphone did not function properly during this recording. But since Faye spoke only German when she continued playing with her friend, there was no further mixing or code-switching.

Daniel 4/Faye 5: The last recording takes place with Daniel, Faye and the interviewer. They are later joined by their mother but only for a short time. English is spoken but for a few turns between the children who prefer German. Although the mixing rates are rather low at 4% for Daniel and 5% for Faye, interference from German syntax is now obvious in both children's utterances:

(147) Daniel (7;4) [asking if it is harder to do the puzzle without a picture]: and when no pictures there are?

(148) Daniel (7;4): a a grey one is there but not on

(149) Daniel (7;4): but me too not

(150) Faye (4;9): no, no, that goes not

(151) Faye (4;9): say's me {tell me it}

Towards the end of the recording, Faye speaks more and more German and does not react to switches to English anymore. She switches for mode-shifts (comments) and when she addresses her brother. She also inserts some German nursery rhymes.

Code-Switching Daniel

Daniel is able to adapt his language to the setting and the participants from the first recording onwards. He sometimes does not immediately react to a setting change but adjusts his language after a few turns. Although he is more likely to address his sister in German and his mother in English, he uses both languages depending on the situation. He easily switches between English and German. It is impossible to define an order for the acquisition of code-switching functions for Daniel since he was already 5;5 when the recordings started. He switches for a number of reasons, though, which are listed below.

Next to setting- and participant-related switching, Daniel occasionally switches languages in order to include everybody in the conversation. In the following example, he wants to address both his parents at once:

(152) [The setting had been English with Daniel, Faye, their mother and the interviewer. Daniel's father joins them but needs to leave again right away.] Daniel (6;9): Faye, you cannot come – I'm not <coming> - [to his parents] *oh, ich muss euch noch was geben*

Several of Daniel's code-switches are determined by his stronger language German. The direction of his switches is thus usually from English to German. We find rare examples of switching for initiated repairs and self-correction, like the following:

(153) Daniel (5;5) [explaining memory cards to the interviewer]: a [kæm] {German: *Kamm*}

I: a [kæm]?

M: in English

Daniel: eh English_ a brush

(154) Daniel (5;5): and that is ski jumper, that is swim duck, that is_ summer, *Sonnen*, no_ sunglasses

The following switch is triggered by Daniel's use of *mit* instead of 'with':

- (155) Daniel (5;5): yes, we can play that
M: no we're missing pieces
Daniel: that's ok, Papa played *mit mir mit mit mir ohne* [...]

The confusion of *mit* and 'with' is a phenomenon that occurs with several bilinguals, presumably because of the phonological closeness of the English and the German word. The switch may thus not have a specific function. But on other occasions, Daniel replaces 'with' by *mit* and still continues his sentence in English. His switch to German in this case could therefore also be setting-related: Daniel remembers the situation, in which he spoke German with his father.¹⁰⁹ Another example of a triggered switch is the following affect-loaded switch:

- (156) Daniel (5;5): [...] but but we have a but but th- th- we we we the the the there th th they have have have the the they have eh- still still still a a *Verkehrsteppich*, a *Verkehrsteppich* <i-> *will auch mal*

Daniel stutters because he wants to avoid the German insertion and is looking for the English equivalent. After finally inserting the German word, he fully switches to German. His whiny voice indicates that the switch is affect-loaded. It could, of course, also simply be a way of hiding a vocabulary gap, as we find Daniel stuttering on other occasions before a switch to German:

- (157) Daniel (6;9) [talking about the cards everybody collected during a game with his mother, sister and the interviewer]: and you know something? but but but *ihr habt nichts zu essen*

We further find an example of clarification in Daniel's data:

- (158) Daniel (7;4): *Fayeli, wo hast du dein Lego?*
Faye (4;9): *mein Lego?*
Daniel: where where you got it?

As to stylistic code-switching, it is obvious that style is an important reason for Daniel to use code-switching, although the specific purpose of each of Daniel's switches is not always evident. A rather clear example of code-switching for emphasis is the following:

- (159) Daniel (7;4): cause this is *se- se- sehr sehr sehr sehr* hard

In the next example, Daniel elaborates his utterance in German (again hesitating before the insertion and the following switch):

- (160) Daniel (6;9): oh *ja*, I gonna take my eh eh play *Lastwagen mit mir oder was des is'*

Among the less obvious examples concerning their stylistic function is the next one which may express attention attraction or may be a form of emphasis or elaboration:

- (161) Daniel (6;9) [commenting on a memory game]: I know it I know it I know it next door is it next door *gegenüber gegenüber echt Mami gegenüber, ich bin mir ganz sicher gegenüber-*

¹⁰⁹ Although there is no actual setting change in this case, Daniel remembers the German context of a different setting.

A similar situation is the following, in which Daniel elaborates his utterance by giving the reason for his demand. But he may also want to attract his mother's attention or even sound more authoritarian in English:

(162) Daniel: (5;5): *du kannst aufräumen, Faye* – you, you're won, Faye

In a later recording, we find an obvious example of code-switching in order to express power or authority:

(163) Daniel (6;9): Faye, your lying on my money – you're not gonna steal any money from me, Faye!– *du! – des kriegst du_ unter deinen Haar ist es*

In addition to the switch, the intonation on the switched word *du* is very menacing.

Rather frequent in Daniel's data are mode shifts. Many occur when Daniel switches between monologues in his spontaneous choice German and participating in the general setting in English. He thus interjects several spontaneous German utterances in the frame of playing a board game in English with his mother, his sister and the interviewer. We also find a topic shift in the data. Daniel switches in order to introduce a new topic:

(164) Daniel (5;5): *Fayeli, was hast du gemacht?* - we should play a game

To sum up, situational code-switching is frequent in the data, especially in the form of participant-related code-switching. We also regularly find skill-related switches but not more than five per recording. Daniel further switches several times for various stylistic reasons and we find three to four examples of stylistic code-switching per recording. In addition to these, he makes regular use of mode-shifts. Daniel's data is particularly rich of many examples of different code-switches. The fact that he actively uses both his languages seems to encourage the use of code-switching.

Code-switching Faye

From the first recording, Faye switches languages in order to adapt to setting and participants. She reacts to switches by the interviewer, which shows that she is flexible in her language use and does not categorise speakers easily. From the second recording onwards, she prefers German with her brother and often switches to German in order to address him. Her preferred choice with her mother also changes from English to German at some point during the recordings, although Faye addresses her in different languages depending on the situation. In the following example, she is playing with a German friend and switches to German in order to include everybody:

(165) [Faye and her German-speaking friend are preparing the cards for a memory game] M: shall I help?
Faye (4;7): yes – *ihr sollt mitspielen, Mami*

Next to situational code-switching, we find various other examples of switches in Faye's data from the second recording onwards. In each recording, there are several

examples of self-correction, always from German to English following the insertion of a German word:

(166) Daniel (6;9): and the snake is Ka
I: oh yeah
Faye (4;2): *ja u- {und}* and that one's_ is

(167) Faye (4;6): I gonna do *jetz-* now

(168) Faye (4;9): *kann* can I have a bit from you?

Faye is either about to continue in her dominant and preferred language German but switches to English before finishing the word or immediately repeats an inserted word in the appropriate language. In the last recording, we also find other switches that are clearly triggered by vocabulary gaps. Faye tries to find words from only one language for her utterance, switching from English to German and back to English:

(169) Faye (4;9): we gonna do that *dass* when the cat comes *da da da dann hast du* we go (that) there and when blue comes *dann* then we do that then can the cat not come

Also in the last recording, we find three examples of code-switching for nursery rhymes.

With regard to stylistic code-switching, Faye makes regular use of mode-shifts. Although several may arise from her spontaneous language choice, some are clear switches between the actual English setting and her side comments in German: at one point, all participants are playing a board game in English when Faye inserts in German that she is too warm and takes her sweater off. Immediately following this situation is the next one: the interviewer takes her stuffed animal, a hippopotamus, and looks at it. Faye comments this in German, although she had been speaking English before (in the setting and to the interviewer):

(170) Faye (4;2): *Hippo mag des gar nicht*

Other examples of code-switching in Faye's data are occasional switches for attention attraction:

(171) [M and I talking in English] Faye (4;2): and I have got got got got *Cinderella – u- und ich hab Cinderella*

The following code-switch may have several reasons: it could be another example of attention attraction but it could also be an instance of elaboration, since Faye elaborates her utterance by specifying the object:

(172) Faye (4;2): look! – *guck mal Regenbogen*

In a later recording, we find another example of elaboration in which Faye switches to German in order to better express herself:

(173) I: [...] do you play with all of them? [...] {memory cards}
Faye (4;9): yes – but like that no, *so- so- sonst räumt der Danny wieder alles ab, weil der Danny räumt immer alles ab*
I: is he good at it?
Faye: yes

In the last recording, we also find a demonstration of code-switching in order to express power, followed by several code-switches for emphasis:

- (174) Faye (4;9): [...] I show you not, I show you not
Daniel (7;4): I want to try something
Faye [shouting]: *nein, Danny, nich alls rausräum'!* - *ich hab gesagt, nicht alles rausräum'!*
Daniel: *ich räum'ja auch nicht alles raus*
Faye: *doch, guck mal [...]* – go out, *komm*, go out, *komm*, go out, go out

This example is particularly strong since Faye usually uses German with her brother.

To summarise, it can be said that Faye uses situational code-switching frequently, particularly setting- and participant-related code-switching. Skill-related code-switching, mainly in the form of self-corrections, occur regularly from age 4;2. There are occasional insertions of nursery rhymes. Stylistic code-switching occurs in various forms but only occasionally (three to four times per recording) and only after age 4;2. Mode-shifts are most frequent.

3.4.5 Paula and Lucy

Background

Paula was born in Germany as a first child. When she was ten months old, her family moved to the U.S. where her younger sister Lucy was born. Their parents are German but also fluent in English. They speak mainly German to each other and to the children but use different languages depending on the situation and admit to switching languages within a conversation and to occasionally mixing words from both languages. The family moved back to Germany almost four years later when Paula was 4;9 and Lucy 2;11.

Paula went to a pre-school in the U.S. from age 2;5 for five hours a week (two days for 2.5 hours) and a year later for about eleven hours a week (three days for 3.5 hours) until age 4;9. Lucy went to pre-school twice a week from age 2;7 to age 2;11 for 3.5 hours. Whereas the children had initially got more German input, their daily language exposure to English increased after they had started pre-school. It then became about 60% English and 40% German, although the exposure to German was higher at weekends than on weekdays. Language exposure included contacts with English-speaking adults (about 16 hours a week) and bilingual playmates at least nine hours a week. Paula and Lucy were exposed to more English than German media. When the family decided to go back to Germany, the parents increased the use of English at home so that the children heard (and used) even less German. Back in Germany, the children continued to use mainly English for a few months until they started kindergarten: Paula at age 5;2 and Lucy at age 3;4.

Paula was a pre-mature baby but developed normally without any indication of delayed language development. Her sister Lucy developed normally and both are very talkative and outgoing. The environment supports their bilingual development and the parents are very happy with it.

Language Development

Paula started speaking at about 16 months. Her first words were in German. First exposure to English started when Paula was 0;10 but was rather sporadic at the beginning. She still used her first English words at around age 1;6. Full English sentences only occurred around age 3;9 after she had started pre-school. At the beginning of the recordings (age 4;0), German was Paula's dominant language. But in the following months, this slowly changed over to English as her dominant play language. Whereas the family language remained German, Paula had more and more contact with English-speaking children and thus steadily increased the use of English until the family moved back to Germany. Paula then continued to speak English for two to three months but her use of English stopped rather abruptly when she started going to a German kindergarten (age 5;2). German became her dominant language again. But for the first scores, her MLU and IPSyn scores are not representative since the recordings started when she was too old. They are still high enough to assume that Paula was at a cognitive stage comparable to other children her age. She also proved her language awareness through metalinguistic comments. On the other hand, Paula's mixing rates in the first six recordings are rather high between 8% and 21%. Her mixing rates dropped dramatically from the seventh recording to below 6% and no mixing at all in the last recording. Paula started mixing her languages when her English vocabulary grew bigger and she used sentences of at least four words. During the time of the recordings in the U.S., Paula mixed mainly when speaking German and inserted English nouns and verbs. Her English contained far less mixing. Back in Germany, she rarely mixed in German but when she spoke English, she mixed a lot and used German grammar, thus producing utterances like: '[he] have *gesaid er kommt* in a minute'. Paula generally did not seem to notice mixing, at least did not hesitate or stop before a mix. But she often made English words sound German when inserted into a German sentence. Her parents sometimes corrected mixes but often just switched themselves or continued the conversation without comment.

Lucy started speaking at about 18 months. While she got regular input from both languages from early on, German input was certainly stronger at the beginning. She still started using German and English words, including translations (e.g. 'juice' and *Saft*), at

about the same time. At the beginning of the recordings, her languages were rather balanced but the use of English soon increased. English became her dominant play language and remained it until a few months after the family's return to Germany. When she started German kindergarten at age 3;4, German became dominant. Lucy's MLU and IPSyn scores are within the normal range (but for one score below average in German at a time when she hardly spoke any German, cf. Figures IX and XVII). Her mixing rates were usually below 7% but for two exceptions at 10% and 16%. According to her parents, Lucy has mixed her languages from early on but never seemed to notice the mixes. She was rarely corrected and her parents often rather found her mixing amusing.

Paula and Lucy's parents have tried to keep up their children's English even after their return to Germany. They continued to read English books to the children and they went to an English class once a week for one hour. Up to age 6;8, Paula has kept a passive understanding of English but does not speak much. A few English words were still used after quite some time back in Germany, such as '*mal seh'n* if *das geht*' or '*das ist scary*'. Although Paula usually answers in German, she makes an effort to speak English with English native speakers. Lucy, at age 4;10, still has a passive understanding of English. She translates single words into English when asked to do so but insists on the fact that she cannot speak English anymore. She usually reacts in German even to English native speakers.

Recordings

Paula and Lucy were recorded ten times over a period of nine months. An eleventh recording was taken over a year later when the family had returned to Germany. Their mother provided additional information about their language development and use. The first recordings of Paula were taken in the U.S. at age 4;0 and continued until she was 4;8. Recordings of Lucy started when she was 2;2 and continued until she was 2;10. The first recordings are made by the interviewer and further recordings by Paula's parents. It was easy to establish a good relationship to the children and they enjoyed playing with the interviewer. Paula's data includes about 2000 utterances in about 600 minutes and Lucy's data about 1200 utterances in about 580 minutes.

recording	age	setting	utterances	remarks
Paula 1	4;0	mixed (M = German, I = English)	ca. 105	
Lucy 1	2;2		ca. 20	
Paula 2	4;1	German	ca. 175	rec. only ca. 25 min.
Lucy 2	2;3		ca. 20	
Paula 3	4;2	German	ca. 110	rec. only ca. 20 min.
Lucy 3	2;4		ca. 100	

recording	age	setting	utterances	remarks
Paula 4	4;3	German	ca. 235	
Lucy 4	2;5		ca. 90	
Paula 5	4;4	mainly German	ca. 440	
Lucy 5	2;6		ca. 280	
Paula 6	4;5	German with parents, English among children	ca. 220	
Lucy 6	2;7		ca. 175	
Paula 7	4;6	German with adults, English among children	ca. 250	
Lucy 7	2;8		ca. 165	
Paula 8	4;7	German, English among children	ca. 115	rec. only ca. 30 min.
Lucy 8	2;9		ca. 30	
Paula 9	4;7	alternating between English and German	ca. 120	rec. ca. 40 min.
Lucy 9	2;9		ca. 70	
Paula 10	4;8	German	ca. 105	rec. only ca. 30 min.
Lucy 10	2;10		ca. 65	
Paula 11	5;9	English	ca. 125	
Lucy 11	3;11		ca. 185	

Table 3.8 – Overview of recordings of Paula and Lucy

Paula/Lucy 1: The first recording is taken by the interviewer, who speaks mainly English with the children and German with their mother.

Paula uses both English and German depending on the situation. She addresses her mother in either language but preferably in German. She had only just started to use full English sentences. She inserts several English words into German, often adapting them morphologically, as in *'kannst du das flushen?'* Paula is aware of the fact that she speaks two languages but she does not yet use the metalinguistic terms correctly since she points out to the interviewer that she speaks *'German und Deutsch'*.

Lucy is still very young when the recordings started and uses only 1- and 2-word utterances. She uses English or German words or mixes both. According to her mother, Lucy likes singing English songs but does not seem to understand the words. Her imitation is close but the words incomprehensible for somebody who does not know the song.

Paula/Lucy 2: The second recording is taken by Paula's and Lucy's mother. She speaks German with the children.

For the most part, Paula replies in German but also inserts single English words. At the beginning of the recording, Paula makes up words and rhymes and plays with her languages. She again adapts several insertions morphologically, as in *'die war'n in ein' Boot, wo keiner kann den catchen'* or *'Riesen könn' den auch gar nich' getten'*. Similar blended verbs that occur in her data are *diggen*, *fitten*, *sleepen*, *saven* or *antouchen*. Paula self-corrects several of her utterances but sometimes inserts the mix in the "correction":

(175) Paula (4;1): *keiner, der groß is' _ keiner, der giant is'*

Paula's syntax is influenced by English syntax at this point and she sometimes translates literally, as can be seen in utterances like '*und jetzt der babysaurus kann den ein' ride geben*'.

Lucy uses English, German and mixed 1- to 3-word utterances in this second recording.

Paula/Lucy 3: The third recording of Paula and Lucy is again taken by their mother, who is playing with them. She speaks German but the children reply in English, German or mixed utterances.

Paula uses mainly English when playing by herself, usually German when addressing her mother and sister, and English or German in role-plays. Her mixing rate is high at over 20% mixed utterances but Paula is usually willing to correct it. She also will self-correct mixed utterances. Whereas German insertions into the English setting are rare, she inserts many English words in the German setting, sometimes adapting them morphologically:

(176) Paula (4;2): *aber als es noch morning war, dann da hat der gingerbread gewoke*

Lucy uses both English and German words in mainly 1- and 2-word utterances but we now also find a few longer ones (up to five words). Lucy's German in the recording is limited to the words *nein, haben, große(r), kleine(r), und, dies, Mama, Papa*. Otherwise, she seems to adapt to the setting with her sister's preferred play language English.

Paula/Lucy 4: The fourth recording is taken by the interviewer, who speaks German. Whereas Paula generally replies in German with several English insertions, Lucy uses German and English.

Paula still adapts many insertions morphologically (e.g. *catchen, poken, criet*). Some of her insertions are rather exceptional, as for example, '*wie kann das be?*'. Although it was discussed above that constraints were usually proposed for specific language pairs and that many can therefore not be applied to other data (cf. chapter 1.2.3.1), it still seems rather rare to switch languages between the finite verb and the infinitive complement. On the whole, Paula seems very interested in the fact that she can speak more than one language. She tells the interviewer that she can speak English and German, asks which language she should speak and even wants to teach the interviewer. She demonstrates her knowledge by some translations, e.g. '*eine Sandkiste in Englisch geht so: sandbox*'.

Lucy is rather quiet in this recording and uses only very short sentences; 88% are 1- and 2-word utterances. The majority of her utterances are in German but we also find English and mixed ones. An obvious scheme for her language choice cannot be detected but she rather seems to use whatever language comes first to her mind.

Paula/Lucy 5: The fifth recording is taken by the interviewer, who speaks German. At the beginning of the recording, Paula and Lucy are playing by themselves. Their play language is English and they always switch to English when they are alone. As soon as the interviewer joins, they switch to German.

Whereas there are hardly any German insertions into English, Paula inserts English words into the German context (*'da können die 'drin hiden, dass der monster gar nicht die getten kann'* or *'der hat den lobster's tail gegettet'*). There is also some interference from English syntax into German.

Lucy adapts to both settings but also mixes in both settings: she inserts German words when playing with her sister in English and inserts English words in the German setting with the interviewer.

Paula/Lucy 6: The sixth recording is a tape recording of rather bad quality taken by Paula's and Lucy's parents. The setting is German when one of the parents is present, but English when the children are alone.

Paula still inserts quite a few words from English into German, also still adapting them morphologically: *'was means das?'*, *'ich kann auch noch eine slide builden für dich'*, *'das tag hab' ich so gemiss[t]'*, *'wenn eine birdie seine wings ausspreadst, dann kann er fliegen'*. However, she is basically able to separate her languages and even asks for translations as in the following example:

(177) Paula (4;5) [presenting a puppet show]: *wir sind cow und lobster_ wir always geh' for a ride_ aber ich weiß gar nicht wie ride auf deutsch geht*

Lucy speaks English most of the time but usually switches to German if she is directly addressed in German. Mixing occurs mainly through insertions of English words into German but is rather low since Lucy speaks less German in this recording.

Paula/Lucy 7: The seventh recording is another tape recording taken by Paula's and Lucy's mother. A German-speaking friend of the family is also present. The setting is German but the children generally speak English when playing.

Although English is certainly Paula's dominant language at this point, she still tries to use German if the setting requires it. She still inserts English words into German but mixing clearly decreases. Paula also rhymes a few lines in German.

Lucy also adapts to the different settings: whereas she generally addresses the adults in German, she speaks mostly English when alone with her sister.

Paula/Lucy 8: This recording is a tape recording taken by Paula's and Lucy's parents. A bilingual friend of the family with her son Jan (see below) is also present. The adults speak

German and ask the children to do the same. They agree but switch to English as soon as they get involved in their playing.

Paula and Jan start off playing in German as proposed by Paula's mother. But they soon switch to English after only a few utterances. They point out to each other several times that they are supposed to speak German, use German for a short exchange and switch back to their dominant play language English:

- (178) [Paula and Jan playing and speaking in English] Jan (4;10): ohoh
Paula (4;7): <what?>
Jan: *wir müssen deutsch sprechen, weißt du's noch?*
Paula: *ja, ja, wir müssen deutsch sprechen_ oh, da sind welche [...]* they're gonna turn all the way round

While Jan is somehow more consistent in his language choice of German, he usually quickly adjusts to Paula's choice of English, who is clearly English dominant at this point. Although they both speak German with their parents, it seems almost unnatural for them to speak German with each other when playing. Paula's mixing has by now decreased even more noticeably.

Lucy is hardly involved in this recording. She mainly plays by herself and does not speak much. The few recorded utterances are either in English or in German, depending on the participants in the specific setting.

Paula/Lucy 9: The ninth recording is another tape recording taken by Paula's and Lucy's parents. At the beginning, the children play in English without any insertions or interference from German. Paula then asks her mother whether they should speak German and they decide to do so. Towards the end of the recording, they switch back to English.

It takes a conscious effort for Paula to speak German when playing. It only works if her mother gives constant input in German through questions and comments; otherwise, Paula quickly reverts to English. She still inserts English words into German but her mixing rates are below 5% at this point.

During most of this recording, Lucy is playing with her sister in English. A few utterances directly addressed to her mother are in German. When her mother asks her to speak German, she tries to but immediately switches back to English because of a vocabulary gap:

- (179) Lucy (2;9): *ich bin_ I can_ ich_ ich can fly*

Lucy sometimes does not accept being corrected but insists on some English words:

- (180) Lucy (2;9): *ein eine wall*
M: *eine Mauer?*
Lucy: *nein, a wall*
M: *eine Wand?*
Lucy: *nein, ei- eine wall*

Paula/Lucy 10: This tape recording is also taken by Paula's and Lucy's mother. She is cooking with the children and thus present all the time. The setting is German. Paula speaks German but for occasional false starts in English and a few insertions. The false starts are often propositional complements like 'I think' or 'you know'. Lucy speaks English at the beginning of the recording but then slowly adjusts to the German setting.

Paula/Lucy 11: The last recording is taken by the interviewer over a year later, exactly one year after the family's return to Germany. Paula, Lucy, their mother, an American friend and the interviewer are present. The children play by themselves most of the time. They are rather quiet and only occasionally come to join the adults, who have a lively conversation in English. Paula easily switches between English and German, depending on whether she addresses her mother or sister (in German), or the friend or the interviewer (in English). Although Lucy does not seem to have problems understanding English, she usually replies in German. She only uses English in repetitions and for very short sentences. It is influenced by German syntax, as can be seen in sentences like 'I like it not'.

Code-Switching Paula

Paula switches setting- and participant-related from the first to the second last recording. In the last recording, she still uses participant-related switching but clearly prefers German.

Skill-related code-switches also occur in various forms in almost every recording from the first one on. Initially, Paula switches for self-correction and for clarification. Self-corrections are sometimes difficult to identify when Paula uses both her languages without necessarily meaning to self-correct her utterances. Rather obvious, though, are the following examples:

(181) M: *wo gehen die hin?*
Paula (4;2): *eh_ in their beds*
M: *in ihre Betten*
Paula: *die geh'n in ihre Betten*
M: *was machen die da?*
Paula: *die slee- die schlafen*

(182) Paula (4;4): *nein, dann dann sind die sunburned*
I: *ach so_ hm_ das is' natürlich schlecht*
Paula: *dann ham' die einen Sonnenbrand*

Code-switching for clarification can also be found on several occasions in Paula's data:

(183) Paula (4;3): *ich kann dir Englisch_ ich kann dir_ ich kann dir Englisch eh_ eh_ eh_ eh_ eh_ eh_*
[forbøra]
I: *vorbraten?*
Paula: *vor_ verraten*
I: *verraten? hmh, was denn?*
Paula: *ich kann dir teachen how das geht*

In the dialogue following this last example, Paula switches a number of times for the translation of single words in order to show how well she knows both languages. The next

example will also be interpreted as a code-switch (in this case an insertion) for clarification:

- (184) Paula (4;1): *hallo, kann ich ein Sitz haben?* [...]
M: *was brauchst du noch?*
Paula: *ein seat*
M: *ein was?*
Paula: *ein Mann's seat*

Since Paula mixes her languages only after her mother's question, the switch cannot be considered as an initiated repair although it is similar. Initiated repairs, though, occur in the third and fourth recording:

- (185) I: *was willst du denn noch malen?*
Paula (4;3): *ein sandbox*
I: *eine was?*
Paula: *eine Sandkiste*

Paula also switches for songs, rhymes or fixed expressions from early on. In the following example, she uses German for a nursery rhyme but immediately switches back to the setting:

- (186) Paula (4;0): *eene meene miste, es rappelt in der Kiste, eene, meene, meck, und du bist weg* you

Even stylistic code-switches occur very early in the data. The following example could be a first instance of elaboration:

- (187) M: *jetzt läuft der weg?*
Paula (4;0): *ja – jetzt run der away_ in this home*

There are even more obvious examples from the second recording on. The first clear example of emphasis in Paula's data occurs when she tells off her sister:

- (188) Paula (4;5): *no, not yet [...]* Lucy, not yet [...] *nein, noch nich' jetz'*

We further find mode shifts very early in Paula's data. In almost all recordings, she switches for role-plays or between her monologues (playing and talking to herself in English) and answers to her mother or sister in German:

- (189) Paula (4;0) [to her mother]: *ich meine dieses [...]*
M: *Paula, mir wird schon kalt, wenn ich dich nur sehe*
Paula [to herself]: *it's gotta be in here*
M: *meinst du, dass du richtig genug anhast?*
Paula: *ja – [to herself] he's got to be really in this house*
- (190) Paula (4;2) [playing and talking to herself]: *and that wasn't fair of the gingerbread cause they made their broccoli fast awake [...]* [to her mother]: *und weißt du, was noch happened?*

On one occasion, she switches languages in a role-play with different animals. A first topic shift occurs in the form of a metalinguistic comment when Paula, in an English setting, points out in German that she also speaks German (*ich spreche Deutsch*). We find another interesting stylistic code-switch in two of Paula's recordings:

- (191) Paula (4;8) [German setting; Paula has been speaking German so far and is now addressing her sister]: *leave it like this, ok? ah!_ and don't touch it!*

Although English may at this time be the more natural way for Paula to address her sister, she directs several German utterances to her in the same recording. This can therefore be considered as a demonstration of power or authority in this context. We further find one example in which Paula switches a few times in order to play with her languages.

To sum up, it can be stated that Paula is a very active code-switcher. Next to regular situational switches, skill-related code-switches are also frequent, especially in the form of clarifications and songs. Stylistic code-switching is also used although it is a lot less frequent with about one switch per recording. Mode-shifts occur extremely often, though.

Code-Switching Lucy

Lucy was observed at an early stage of her language development. Since she used single words from both her languages and mixed so much at the beginning of the recordings, it is hard to tell whether she adapts to setting or participants, especially when the setting is bilingual. But her mother pointed out that Lucy also mixed in monolingual German settings. In the third recording, it becomes somehow more obvious that Lucy adapts to her sister's play language English, although she still also uses German words. In the following recordings, there is a much clearer adjustment to the setting, which is lost again in the last two recordings. In the pre-ultimate recording, her English is so dominant that she has problems adapting to the German setting and in the last recording, her German is so dominant that Lucy is no longer able to clearly adapt to an English setting. From about age 2;5 until the pre-ultimate recording, Lucy adapts her language choice to the participants.

Skill-related code-switching occurs from age 2;7, first as an initiated repair but also in the form of clarification. The following example shows both functions:

- (192) Lucy (2;7): that's the daddy, that's daddy
M [in German]: ja, das is' der daddy [...]
Lucy: *das is' Papa*
M: *das ist der Papa, ach so*
Lucy: daddy

Another skill-related switch occurs at age 2;9 where Lucy switches because of a vocabulary gap (see above).

With regard to stylistic code-switching, Lucy first switches for attention attraction. Already in the second recording, at age 2;3, she calls her mother, alternating between *Mama* and 'mummy'. But since her mixing rate is still rather high at this point, the function of this lexical duplication is not evident. Much more obvious are Lucy's first switches for mode-shifts, mainly in the form of role-plays, at age 2;6. She first joins in her sister's role-plays but then also initiates them herself. She also uses a mode-shift for a quotation.

To sum up, situational code-switching occurs frequently during the time when Lucy is able to use both her languages actively. Although there are a few examples of skill-related switching, it is rather rare with less than one example per recording. Even rarer is stylistic code-switching with only one example of attention attraction and some mode-shifts in one recording. Although Lucy is able to use both English and German during most of the recording period, she does not make much use of code-switching.

3.4.6 Johannes and Jacob

Background

Johannes and Jacob were born in the U.S. as the first and second child of their Dutch mother and German father. They have another younger brother. The family has lived in the U.S. since before Johannes' birth. The parents speak German to each other and are usually very consistent in their language choice of German within the family. But both are also fluent in English and admit to using different languages depending on the situation. The mother initially tried to speak Dutch with Johannes but stopped once he seemed to have problems sorting out three different languages. At the time of the recordings, she had started again to use some Dutch (about 10%) with the children but did not insist on them using it. Jacob deals a lot easier with this third language than his older brother. The father's active knowledge of Dutch is rather limited but he can follow a conversation.

Johannes started pre-school at age 2;6, but only went there two days a week for 2.5 hours. From age 4;6, this increased to 7.5 hours a week. Jacob started pre-school at age 3;0. He also went there two mornings a week for 2.5 hours and three mornings from age 4;0. At the time of the recordings, their daily language exposure to German was slightly higher than to English (50:40% on weekdays and 55:35% at weekends). Other language exposure included contacts with English-speaking and bilingual adults and playmates. They were exposed to more English than German media (3-4:1).

Johannes and Jacob developed normally without any indication of delayed language development. Both are talkative in familiar settings but rather shy with strangers. The environment supports their bilingual development and the parents are happy with it but also see diverse problems concerning the bilingualism of their children.

Language Development

Johannes' first words were in German at about twelve months. While his parents spoke German to him, he has also had close contact with English speakers from birth on and thus started using English words very soon. His dominant language before and until the end of

the recordings at age 5;3 was German, though. Although he used some English words from early on, he did not speak full sentences until about age 3;6. According to his parents, he had no problems adapting to an English setting but he did not accept the recording setting as English although the interviewer spoke English. He knew that she also understood German and thus only used English for a few role-plays. Consequently, it was difficult to assess his language competence in English.

The recordings started too late for Johannes' MLU and IPSyn scores to be representative. They still indicate a clear German dominance (at least during the recordings, cf. Figure IV). Whereas the IPSyn scores appear to be within the normal range, the English MLU scores are very low, presumably because he hardly used any English during the recordings. The German scores indicate, though, that he was at a cognitive stage comparable to other children his age. As stated by his parents, Johannes has always mixed his languages but not a lot. In the recordings, his mixing rates ranked between 2% and 10%. He usually inserted English words into German. He did not use enough full English sentences in order to show insertion of German words into English. He sometimes self-corrected mixes or hesitated before inserting words. The mother always insisted that the children speak German at home, which was getting harder from about age 5;6 when Johannes started school.

Jacob's first words were in German but very soon after, he also started using English words. Although he was exposed to both languages more or less from birth, German input was certainly higher. As Jacob adapted well to either setting, it is difficult to identify his dominant language. Relying on MLU scores only, it was definitely German (cf. Figure II). But his German MLU scores are also rather high because most of the recordings were taken in a predominantly German setting. Some of his spontaneous language choices and some interactional code-switching may also be indicative of English as his dominant language. He should therefore be considered as a balanced bilingual. Jacob's IPSyn scores are almost all above average as are half of his German MLU scores. Most of the other scores are within the normal range. Jacob thus seemed to be rather advanced in his language development. He also showed early awareness for the use of different languages. According to his parents, though, he has always mixed his languages. His mixing rates during the recordings ranked from 2% to 10%. They increased towards the end of the recordings, which can be explained by the fact that his English slowly became stronger and he thus inserted more English words into German.

At the completion of this book, Johannes (age 6;9) and Jacob (age 5;3) are active bilinguals. They both prefer English due to the intense input from school and kindergarten. The family language remains German, though, and the family usually spends about four weeks in Germany every summer.

Recordings

Johannes and Jacob were recorded six times over a period of 15 months. Their mother provided additional information about their language development and use. The first recordings of Johannes were made at age 4;1 and continued until he was 5;3. Jacob was first recorded at age 2;7 and recordings continued until he was 3;9. Johannes, Jacob, their mother and the interviewer were all present for the first three recordings. The following recordings were taken by Johannes' and Jacob's parents. It was easy for the interviewer to establish a good relationship to the children. Whereas Jacob enjoyed playing with the interviewer, his older brother was a bit more hesitant, especially when his mother was not in the same room. Johannes' data includes about 1900 utterances in about 400 minutes and Jacob's data about 1700 utterances in about 400 minutes.

recording	age	setting	utterances	remarks
Johannes 1	4;1	mixed (M = German, I = English)	ca. 420	
Jacob 1	2;7		ca. 345	
Johannes 2	4;4	German	ca. 220	just back from four weeks in Germany
Jacob 2	2;10		ca. 270	
Johannes 3	4;5	German	ca. 460	
Jacob 3	2;11		ca. 340	
Johannes 4	4;7	German	ca. 160	
Jacob 4	3;1		ca. 100	
Johannes 5	5;1	German, children speak English when alone	ca. 350	
Jacob 5	3;7		ca. 435	
Johannes 6	5;3	German	ca. 290	
Jacob 6	3;9		ca. 210	

Table 3.9 – Overview of recordings of Johannes and Jacob

Johannes/Jacob 1: The first recording is taken by the interviewer, who speaks English. The children's mother speaks mainly German. Johannes and Jacob are generally able to adapt to the setting but prefer German.

At the very beginning of the recording, Johannes mixes a lot. His preferred choice at home is clearly German but he tries to adapt to the English setting. He realised, though, after a few minutes that the interviewer understands German. He thus does not always adapt to the English setting but uses some German even when alone with the interviewer and asks his mother and the interviewer to speak German. Johannes switches several times with no apparent reason, probably trying to find a balance between an adjustment to the

setting and his preferred language choice. Although there is no obvious structure in his language choice, it could be activity-related: he uses mainly German for showing the house, while he chooses English for playing with his trains or playing lotto. Surprisingly, although German is his preferred language at this point, his English MLU score is higher than the German one (4.58 to 4.3).

Jacob easily switches between both languages although his preferred choice at this time is also German. His spontaneous utterances are in German and he usually addresses his mother in German despite the English setting.

In the three months between the first and the second recording, Johannes and Jacob began speaking more and more English. Their parents always asked them to speak German at home but more effective concerning their German input was the 4-week stay in Germany and the Netherlands just before the second recording.

Johannes/Jacob 2: The second recording is taken by the interviewer just two days after the family returned to the U.S. after a journey to Europe. The children clearly prefer German at this time and the interviewer decided to speak German in order to tie a closer relationship to the children. The general setting is thus German but the interviewer switches to English when alone with one of the children. They react differently to this language switch: whereas Jacob immediately switches to English, Johannes continues in German.

(193) I: how old are you?_ four?

Johannes (4;4): *nein, vier_ vier bin ich*

In Johannes' data, there is only one code-switch in the second recording from German to Dutch. When his mother asks him if he can speak Dutch and says that it is a pity that he does not, he inserts a 3-word sentence in Dutch, presumably mainly to show off.

While Jacob, according to the setting, uses German for the most part, he also inserts several short utterances in English, such as 'oh boy' or 'oh man'. He further repeats his mother's switch to Dutch. Jacob generally seems more eager to make use of his different languages than his older brother.

Johannes/Jacob 3: The third recording is also taken by the interviewer. Johannes, Jacob and their mother are present. The setting is German since the children are now used to speaking German to the interviewer. Both children use German but for occasional insertions of single words, names or translations in English. Johannes sometimes hesitates before inserting English words in the German setting and partly self-corrects his insertion:

(194) Johannes (4;5): *ja, du bi-du nimmst dieses zwei ei- ein ei- ein ein rabbit dreaming of carrots und ein ca- und und und noch ein Hase mit dreaming of carrots*

Jacob only uses English for fixed expressions like 'I'm not cheating'.

Johannes/Jacob 4: The fourth recording is a tape recording taken by Johannes' and Jacob's parents. For the first half, Johannes, Jacob and their mother are present; their father joins for the second half. Although the mother explains that she tapes the children for the interviewer, the recording then continues unnoticed by the children. The general setting is German since this is still the family language.

Johannes speaks German but for a few exceptions. His English input is slowly getting more important and he thus occasionally inserts English words into German:

(195) Johannes (4;7): *aber was was means das denn?*

His play language is also slowly changing to English and he thus switches to English with no apparent reason during a game with his brother. They continue in English and only once Johannes directly addresses his parents again, he switches back to German.

Jacob is more consistent in his language choice. He only uses English for several single word insertions and in response to his brother after he switched to English.

Johannes/Jacob 5: The fifth recording is also taken by Johannes' and Jacob's parents. Johannes and Jacob play with their friend Kai (see below), who is also English-German bilingual. The setting is German but English is obviously becoming more and more dominant as play language, especially for Jacob. He switches several times to English and Johannes reacts to his switches. But as soon as their mother is present, at least Johannes switches back to German. There are thus several setting and consequently language changes depending on the participant constellation, e.g. whether the mother is present or not.

Johannes is generally able to adapt to either setting. He usually separates his languages well but inserts a few short, spontaneous comments in English into the German contexts. These occur without further motivation and can be seen either as a demonstration of dominance in a particular domain or of language play:

(196) Johannes (5;1): oh, it's ok, *weil weil ich hab ich hab zwei*

(197) Johannes (5;1): *Mama?*

M: *ja*

Johannes: *Wenn ich esse, Mama, kannst du bitte mir'n Gefallen tun? [...]*

M: *wenn ich hiermit fertig bin*

Johannes: ok, I'll go with that

First lexical interferences occur when Johannes literally translates English into German:

(198) Johannes (5;1): *der Kai weiß auch nicht das Spiel*

Jacob is more flexible in his language choice, switches more often and plays more with his languages. Although the general setting is German, Jacob switches to English several times when addressing his older brother and also for mode shifts between monologues and addressing his mother or in role-plays. He inserts single words at several

points or expressions like ‘it’s okay’. He also switches to English for a song. When his mother asks him to speak German, he tells her that he does not want to:

- (199) M: *sprich doch mal deutsch!*
Jacob (3;7): *nein*
M: *warum denn nicht?*
Jacob: *weil ich will Englisch sprechen*

Jacob continues in German for a few sentences but soon goes back to playing in English. He only answers in German when his mother directly asks him a question:

- (200) Jacob (3;7) [role-play with himself]: do you wanna play with me? – yes_yes [...]
M: *was macht'n der Bauer da?_hm?*
Jacob: *der will der will schlafen [...]*
M: *der Bauer schläft im Heu?*
Jacob: *ja, die Bauer schläft hier drin [...]*

Johannes/Jacob 6: The sixth recording is another tape recording taken by Johannes’ and Jacob’s father. He is in the car, driving to a lake with Johannes, Jacob and their friend Jan (see below). The general setting is German.

The following example of interference in Johannes’ data is a further piece of evidence for the fact that his English is still becoming more dominant:

- (201) Johannes (5;3) [pretending to get sick in a roundabout]: [...] *ohoh, ich bin ganz schlecht!*

But Johannes is more consistent in his language choice than his friends and seems to pay attention to a clear language separation. He generally does not copy Jacob’s and Jan’s English insertions into German, but rather uses the German translations.

Jacob uses English for a few single word insertions (‘jumping castle’, ‘racecar’, ‘motorcycle’, etc.) and for repetitions of what others said.

Code-switching Johannes

Johannes is able to adapt his language choice to setting and participants from the first recording on. Participant-related code-switching is irrelevant in some recordings as all participants speak German. Johannes usually addresses his mother in German but in the first recording, in particular, the setting seems to have greater influence on his language choice and he also addresses her in English. Although I did not have the chance to observe Johannes in a monolingual English setting, his mother confirms that he is able to adapt his language to English settings and participants. In the following example, he decides in mid-sentence to adapt his language choice to the setting:

- (202) M: *Willst du Esther zeigen, was da in der Tasche ist?*
Johannes (4;1): *nein, Spielzeuge [...]* *nein [...]* *nein, ich wi-_ toy, just*

Most examples of code-switching can be found in the first recording because the setting was mixed. There are one or two initiated repairs and a few self-corrections, as for example:

(203) Johannes (4;1): mummy - mummy, I can I go outside *Fußballspielen*?
M: *wat*?
Johannes: *kann ich Fußballspielen*?

(204) Johannes (4;5): *aber aber guck mal mein hoher tower_ guck mal, guck mal, der Turm*

Johannes also switches for clarification. In one case, he clarifies a mix of another participant but on two other occasions, he clarifies his own utterance:

(205) M: How old are you?
I: Four years old?
Johannes (4;1): No, I'm four, I'm *vier*

(206) Johannes (4;6): *ja, hier wills' du mal die Nummer_ X is number four_ Nummer vier*

We further find one affect-loaded switch in his spontaneous expression of joy in the following example:

(207) [German setting] M: *jetzt kann ich jetzt nur den Kai rausschmeißen*
Johannes (5;1): yes!

Several switches for fixed expressions and songs form the last category related to skill-related code-switching. These are rather common in Johannes' data:

(208) [German setting: Johannes just showed his new shoes around]
Johannes (4;1): *von X hat Papa das mitgebracht [...] knock, knock who's there?*

(209) Johannes (5;1): *tschüss Mama, I see you later*

(210) Johannes (5;3) [to his father at a red light]: *du musst so machen: gimme green!*

Stylistic code-switching is extremely rare in Johannes' data. There is one example of attention attraction:

(211) Johannes (4;1): lo' lo' look, look_ *guck ma', guck ma' hier*

We can further identify a few examples of code-switching for emphasis:

(212) Johannes (4;1): mummy, mummy! [...] I <?> to school_ *ich geh' zur Schule*

(213) [German setting] I: *Jacob schummelt, ne?*
Johannes (4;5): *nein, der he's cheating!*

This last example is less obvious since Johannes may just prefer this particular expression in English. As mentioned above, Johannes once switches to Dutch, presumably for showing off. Only in the first recording, we further find two switches that shall be considered as topic shifts, one of them being a metalinguistic comment:

(214) [mixed setting but Johannes has just used more English]: M: *und von welcher Uni kommst du?*
I: eh, well, I I study in Freiburg, so-
Johannes (4;1): *sprech, sprech mal deutsch*

On one occasion, Johannes seems to switch just for fun:

(215) I: And you're four. Wow!
Johannes (4;1): No, I'm I *'ch bin eins*

To sum up, it can be said that Johannes regularly uses situational code-switching. Skill-related switching is also rather common, especially for fixed expressions but also in the form of self-corrections or clarification. It usually occurs in mainly mixed settings. Stylistic code-switching is extremely rare with, on the average, less than one switch per

recording. There are also two topic shifts. Although Johannes is able to use both his languages actively, he does not switch a lot. He is German dominant and clearly prefers German.

Code-switching Jacob

Jacob adapts his language to the setting from the first recording on. As in the case of his older brother, the setting generally seems to have greater influence on his choice than the participants: he addresses his mother, his brother or the interviewer in German or English depending on the setting.

Next to switches to English for songs or fixed expressions (like ‘I did it’ or ‘it’s okay’) in several recordings, Jacob self-corrects some of his mixed utterances. We find examples of code-switching for self-correction from the first to the last recording:

(216) [playing memory – Jacob points out that he has just turned over a certain card] I: where?
Jacob (2;7): eh *da!* there the plate!

(217) Jacob (3;9) [telling his father a story that had happened some time before]: [...] *ich hab so lange geweint dass du dass du so lange bei X warst dann ha- hat da hat da der Taxi dich nach Hause gebrought_ gebringt*

In one instance, Jacob switches languages possibly in order to avoid a lexical gap:

(218) Jacob (3;7): *jetzt_ wir brauchen_* we need to <?> now [...] – we need to try this

As for stylistic code-switching, the first example already occurs in the very first recording, at a time when Jacob is only 2;7. He uses both his languages alternately either for attention attraction or for emphasis:

(219) [Jacob (2;7) angry at his brother, M and I, who keep on playing a game without him]: it’s no stupid, it’s no stupid, it’s no stupid, no no <*blöde*-> <no> stupid, ok? *des* is stupid! *des* is this is no stupid stustustupid st- *blödeblödeblöder* stustustupid, ok? [...] *so, nee, ich nich spiele mehr mit Lotto*, it’s not fu-, it’s no stupid

There are further examples of switching for emphasis in the same and a later recording:

(220) Jacob (2;7): *nein, nicht nicht nicht Turnschuhe_* no no *Schuhe*

(221) M: *Bist du am am am Pfuschen, Schummeln?*
Jacob (2;11): *nein* [...] *ich hab nur zwei* <cheating> *gemacht*, [...] *das hab ich gemacht_* I’m not cheating

Another stylistic function of code-switching that can be found in Jacob’s data is elaboration, of which we find at least two examples:

(222) I: Have you tried with this one?

Jacob (2;10): Yea, try with this one, *da kann ich steh’n*, yes, *da kann ich steh’n*

(223) Jacob (3;7): *Johannes, Kai Kai kommt nachher, Kai kommt nachher* Kai wanted that

In one recording, Jacob also switches for several mode-shifts. In some cases, he switches between his monologues in his play language English and the dialogues with his mother, and in other cases, he engages in a role-play, as in the following example:

(224) Jacob (3;7): *das schläft in den Bauernhof_ jetzt ist er aufgewacht_* I need to go in there

To sum up, Jacob uses situational code-switching frequently from early on. We also find a few examples of skill-related code-switching in almost every recording. Stylistic code-switching does occur from early on but is rare; there is usually only one example per recording. Mode-shifts occur in only one recording. Jacob seems rather confident in both his languages, uses both actively and also likes to experiment with English and German. Some of his spontaneous insertions could even be a sign of playing with his languages.

3.4.7 Lena and Kai

Background

Lena and Kai were both born in Germany. Their family moved to the U.S. when Lena was 2;4 and Kai 0;5. Their younger brother was born in the U.S. Lena and Kai's mother is German and speaks only German to the children, although her English is very good. Their father is American and speaks only English (he has only a very basic knowledge of German). The parents speak English among themselves and claim to be very consistent in their language choice and to never mix languages. The mother did not even read any English books to the children until the beginning of the recordings. There is no clear family language. When everybody is present, both languages are spoken depending on who the main addressee is. The children also speak both languages among themselves; more German at the beginning of the recordings.

During the time of the recordings, the children's language exposure included English and German-speaking adults and playmates as well as some English and German media. Lena got additional English input through pre-school which she started at age 3;9 but only for six hours a week. Generally, their daily language exposure to German was higher than to English (70:30%). This first changed when Lena started school (at age 5;8) and Kai pre-school (at age 3;9). A year later, just after the end of the recordings, the family moved and their German-speaking friends lived far away. Their mother remained the only German native speaker in their environment until the parents decided to take the children to a German school once a week. Lena and Kai, aged 7;11 and 6;0 at the time of the completion of this book, are still active bilinguals although they both prefer English.

Lena and Kai developed normally without any indication of delayed language development. They are both very talkative and outgoing. The environment supports their bilingual development but their parents also see some problems arising out of their bilingualism.

Language Development

Lena's first words at about 13 months were in German although she had been exposed to German and English regularly from birth. Her English-speaking father, though, spent less time with her due to his demanding job, which rendered the English input much less significant. She started speaking English a few months later than German around age 1;6-2;0. German seemed to have been her dominant language at the beginning of her bilingual language development. As she grew older, the English input from outside the family also grew steadily. When the recordings started, Lena's languages seemed to be balanced but she was still acquiring more new words in English contexts. Her exposure to German lessened bit by bit until English became her dominant language.

Lena was too old at the beginning of the recordings to have representative MLU and IPSyn scores. She proved awareness of her different languages through metalinguistic comments and a very clear language separation, even phonologically. From the very first recording, Lena had no difficulties switching between her two languages. She apparently never mixed the languages until she started pre-school and acquired terms in an English setting, which made her mix when speaking German, as in the following example '*er hat ein checkered shirt*'. She often made German words sound English when inserted into English sentences or the other way round: '*das wickelt*' {it wiggles}. Her mixing rates during the recordings were extremely low between 0% and 2%. Lena's mother was rather strict about language separation and corrected any mixed utterance.

Kai's first words were in German although he had been exposed to German and English regularly from birth. But as in the case of his older sister Lena, Kai spent only very little time with his English-speaking father and thus started speaking English a lot later than German, around age 2;6. Until the beginning of the recordings, his dominant language was German but this slowly changed then due to increasing English input. Kai's MLU and IPSyn scores are not easy to interpret. Whereas his MLU scores are usually within the normal range, half of his IPSyn scores are rather low (cf. Figures V and XIV). Although this is partly due to the circumstances of the recordings (as for example recordings of bad quality or very short duration), Kai also seems to use less complex constructions. Since IPSyn scores are better at identifying linguistic complexity, Kai's low scores may be indicative of a slightly delayed language development. According to his mother, Kai was much slower in his language development than his sister Lena and also more stubborn about mixing. He did not mix until age 2;6 but started as his English vocabulary increased. He mixed mainly German nouns into English sentences, as in '*we're going into the Wüste*'.

Kai still showed awareness for his different languages through metalinguistic comments and rather clear language separation. Kai's mixing rates were very low between 0% and 3%.

Recordings

Lena was recorded six times and Kai seven times over a period of 15 months. Their mother provided additional information about their bilingual language development. The first recordings of Lena were made at age 5;3 and continued until she was 6;5. Recordings of Kai started at age 3;4 and continued until he was 4;6. The first three recordings were taken by the interviewer, the following three by Lena's parents. The extra recording of Kai was taken by the parents of Kai's friend Jacob (see above). It was easy to create a good relationship to the children and they enjoyed playing with the interviewer. Lena's data includes about 1420 utterances in about 350 minutes and Kai's data includes about 1215 utterances in about 400 minutes.

recording	age	setting	utterances	remarks
Lena 1	5;3	mixed	ca. 415	
Kai 1	3;4		ca. 205	
Lena 2	5;6	first German, then English	ca. 285	
Kai 2	3;7		ca. 200	
Lena 3	5;7	German	ca. 315	
Kai 3	3;8		ca. 350	
Lena 4	5;9	mainly German	ca. 40	very short recording
Kai 4	3;10		ca. 45	
Lena 5	5;10	mixed	ca. 175	bad recording quality
Kai 5	3;11		ca. 185	
Kai 6	4;4	mainly German	ca. 70	shy at friend's house
Lena 6	6;5	German	ca. 190	
Kai 7	4;6		ca. 160	

Table 3.10 – Overview of recordings of Lena and Kai

Lena/Kai 1: The first recording is an audio recording taken by the interviewer. She speaks German at the beginning but switches to English when Lena asks to speak English with her. The children's English-speaking grandmother is also present and thus makes the setting English dominant but Lena's and Kai's mother only addresses her children in German.

Lena uses both languages appropriately and can easily switch between English and German. She also translates animal names on her grandmother's request without any problems.

Kai also uses both languages in the appropriate situation but does not yet use the metalinguistic terms English and German correctly. Although Kai adapts well to the

settings, his preferred and dominant language at this point is German and some of his spontaneous utterances are in German. As mentioned above, he can be very stubborn about mixes. He thus insists on the use of some insertions and disagrees about translations, as in the following dialogue with his sister about Bambi characters:

- (225) Kai (3;4): *das hi- hier is-*
Lena (5;3): *da is' Flower*
Kai: *nein, das hier is' Blumen*
Lena: *und da is Flower [...]*
Kai: *das is' Blumen [...]*
I: *wie heißt der?*
Lena: *Flower*
Kai: *nein, Blumen*

Rather striking are Kai's difficulties with German articles. Many nouns are feminine, like *eine Hahn* or *eine Holzboot*, and the combination of cases and articles leads to further problems, as in *das Freundin von der Monster*.¹¹⁰

Lena/Kai 2: The second recording is again taken by the interviewer. Lena, Kai and their mother are present. The interviewer speaks German at the beginning but the mother soon initiates a switch to English and the recording continues in English. The children easily adapt to both settings but usually address their mother only in German. They also prefer German among themselves.

Lena/Kai 3: The third recording is also taken by the interviewer. She speaks German most of the time and only switches to English for a role-play. At the very end of the recording, Lena's and Kai's father enters and the setting switches to English. The children easily adapt to both settings.

Lena speaks only German with the interviewer but for one occasion when she wants to demonstrate that she can spell her name. Rather striking are two instances in which Lena has German vocabulary problems. In the following example, she is looking for a word but cannot remember it correctly:

- (226) Lena (5;7): *jetzt is' der tot, weil der hat sich eh eh vertrunken*

In another instance, when the interviewer suggests building a prison for the animals, Lena asks for the meaning of *Gefängnis* {prison}. Most monolingual German children presumably know the words *Gefängnis* and *ertrinken* {to drown} at Lena's age but because her German input is limited to input from her mother and to some German books, we cannot assume the vocabulary in her non-dominant language to be at the same level as that

¹¹⁰ Although Mills (1985:172ff.) suggests that a typical error in the acquisition of German is the overgeneralisation of the feminine form, she only provides examples of children up to the age 2;8. But Kai is already 3;4 and does not only overgeneralise the feminine form but also has difficulties with other articles. This may be referred to his small German input.

of monolingual German children her age. We also find some instances of interference in her data:

(227) Lena (5;7): [...] *ich mag Tiere besser*

(228) Lena (5;7): [...] *der hat zu- zu ihnen gewinkt*

Kai also adapts to either language setting and reacts to the role-play initiated by the interviewer without hesitation. Since most of the recording is in German, Kai's difficulties concerning noun phrase morphology become very noticeable. His data is full of examples like the following: *hier kommt die Zug, (m)ein Lok, ich brauch' diesen Ente, die arme Huhn, der is' da drin der Frau, ich will das See haben_ das is' meine See*, etc. His mother often corrects him, which leads to situations like the following:

(229) Kai (3;7): [...] *Mama, i' will die Frosch*

M: *Kai, es ist DER Frosch*

Kai: *will de- will der Frosch*

Lena/Kai 4: The fourth recording is a tape recording taken by Lena's and Kai's parents during and after a family dinner. Since the father is not in the room most of the time, the children speak German. Only when addressing him directly, the children switch to English.

Lena/Kai 5: The fifth recording is also taken by Lena's and Kai's parents during and after a family dinner. The children speak German to each other but for a switch to English for a role-play and a few insertions like 'happy birthday'. They address their mother in German and their father in English and thus switch languages several times.

Kai continues to have difficulties with noun phrase morphology in German, which can be seen in examples like the following:

(230) Kai (3;11): *der hat dies_ diesen_ diese_ dieser Coca-Cola um-*

Kai 6: The sixth recording is taken by the mother of Kai's friends Johannes and Jacob (see above) at their house. The setting is German but Kai's friend Jacob prefers English and switches languages as soon as his mother leaves the room. Kai is very shy and tired. He does not say much and answers only in very short sentences. When Jacob switches to English, Kai follows the switch and also answers in English.

Lena 6/Kai 7: The last recording is taken by Lena's and Kai's mother. At the beginning, the children are playing with each other in German. Some of Kai's spontaneous utterances are in English. He still uses many wrong articles. The children later read an English book with their mother but the dialogue remains German. Through this immediate language contact, Lena inserts single words quoted from the text into her questions about it.

Code-Switching Lena

Lena uses both her languages actively and switches setting- and participant-related from the first recording on. Situational code-switching is especially frequent in the recordings

where both her parents, i.e. an English and a German native speaker, are present. Code-switching for other purposes is extremely rare.

In the first recording, the children are asked to translate words and we therefore find several switches for clarification. But Lena also clarifies a situation through her second language without being asked to:

(231) Lena (5;3): *und da is' Thumper – auf deutsche heißt der Klopfer*

(232) Lena (5;3): *aber da hat der ein Spritze gekriegt [...]*

M: *eine Spritze?*

Lena: *ja, wa-weiß nich' _ shot*

M: *wie heißt das denn auf Englisch, Lena?*

Lena: *mh, shot*

M: *ja, gunshot*

On one occasion, Lena self-corrects a false start and immediately switches to the appropriate language.

With regard to stylistic code-switching, we only find one example of demonstration of power or authority: whereas Lena usually speaks German with her brother, she suddenly addresses him with 'shut up' in a German setting. Lena also switches languages for mode shifts. In her data, there are examples of switches for book titles or between the dialogue with the interviewer and quotes from her favourite stories. Further mode-shifts occur in later recordings in the form of role-plays. One topic shift can be identified in Lena's data: after having asked whether she could also speak English with the interviewer, she presents one of her favourite books in English.

Although Lena is competent in both English and German, she uses almost only situational code-switching. Skill-related switching occurs only in one recording. In most instances, it is triggered. Stylistic code-switching occurs only once, plus some mode-and one topic shifts. The majority of Lena's code-switches are triggered by the situation or other participants.

Code-Switching Kai

From the first recording on, Kai switches setting- and participant-related. The setting has priority in his language choice with bilingual speakers (his mother, sister and the interviewer), whereas his father and his monolingual English-speaking grandparents are only addressed in English.

Apart from situational switches, code-switching is rather rare in Kai's data. In the first recording, we find a few switches for clarification, which presumably only occur because he is asked to translate words:

(233) Lena (5;3): *what is it called? [...]*

Grandmother: *it's a_ maquai?*

Kai (3;4): *a monkey*

Lena: *Makak!*
Kai: no, a monkey_ a monkey
M: *Makake*
I: *Makake?*
M: *Makake*
Kai: *nein, ein ein Affe*

We further find one self-correction in which Kai repairs his language choice after a false start:

(234) Kai (3;4): *das is' eine* [...] here is here is-

A third function of code-switching directly determined by language is the insertion of fixed expressions. We find different examples in two of Kai's recordings:

(235) Kai (3;8): *schau mal, ready steady, go!* [...]

As for stylistic code-switching, there is only a single example in the data - a code-switch for emphasis:

(236) Lena (5;6): *Kai, Kai, ich brauch das*
Kai (3;7): *nein, ich brauch das hier_* I want have that!

The only other function of code-switching in Kai's data is switching for role-plays. In one recording, it is initiated by Kai's sister. Whether or not he initiates it in another recording, is not clear:

(237) [Kai, his sister and the interviewer have been playing trains in German] I: *hi_ hi!*
Kai (3;8): *hi, you wanna go in this train?* [the dialogue continues in English]

The interviewer clearly indicated a role-play by taking a playmobil figure in her hand and changing her voice but she did not necessarily want to initiate a switch to English. Kai immediately took the rather neutral 'hi' as switch to English and joined in the role-play.

To summarise, Kai is able to use both his languages actively and to switch between English and German. He mainly makes use of code-switching for situational changes. Whereas skill-related switching is so far rare with only a few switches for clarification, one self-correction and the occasional insertion of a fixed expression, there is only one example of stylistic code-switching and a few mode-shifts through role-plays. Kai generally seems to prefer to keep his languages separate.

3.4.8 Jan

Background

Jan was born in Germany as the only child of his German parents. The family moved to Syria when Jan was 0;2 and lived there for 21 months (except for two stays in Germany for about a month). They returned to Germany when Jan was 1;11 and 15 months later, when Jan was 3;3, the family moved to the U.S. Jan's parents usually speak German to him. Jan's father occasionally uses some English, whereas Jan's mother is more consistent in

her language choice. The parents' English is good. They both admit to sometimes mixing words from both languages.

Jan started pre-school two months after their arrival in the U.S. and went there three mornings a week (ca. 20 hours per week). At age 5;8, Jan started school and from there on, he became more and more confident speaking English. During the time of the recordings, Jan's daily language exposure to German and English was about the same on weekdays but at weekends almost only German (90:10%). Other language exposure included contacts with English-speaking adults and playmates and bilingual playmates for about three hours a week. Jan was exposed to English and German media for about the same amount of time.

Jan is talkative in familiar settings but rather shy with strangers and needs some time to warm up with people he does not know. Most people in his environment think positively about the bilingual education of Jan and his parents think it is good and advantageous but also causes some problems.

Language Development

Jan's first words were in German. He started speaking rather late at about 17 months. His mother was worried about his late and slow speech development and went to see a speech therapist who confirmed that Jan was still within the normal range. From birth, he was primarily exposed to German through his parents. Although he heard some Arabic through neighbours and a maid and some English through friends of his parents and a play-group, he never used neither any Arabic nor any English words until the family moved back to Germany (age 1;11). English input started again at age 3;3 but Jan only began using English words around age 3;11. Until the end of the recordings, Jan's dominant language was German. We find indications, though, that English was slowly becoming more and more significant as Jan's play language. Since his German input was basically limited to that from his parents, he picked up many new words in English contexts and inserted them into German. According to his parents, Jan did not mix the languages until his English vocabulary grew faster than the German one, around age 4;5. His mixing rates during the recordings were usually still below 2% but for two exceptions at 4% and 8%. He usually did not seem to notice mixes but was corrected by his parents. At age 4;9, he noticed for the first time that he inserted an English word into a German sentence, hesitated and asked for the correct German word. This also shows his awareness of his different languages. Although Jan was too old when the recordings started in order to use his MLU and IPSyn scores as indicators of his developmental stage, they still indicate his German dominance: his English MLU is always below the German MLU (cf. Figure III).

At the completion of this book, Jan (age 6;11) is an active bilingual although he prefers English.

Recordings

Jan was recorded seven times over a period of 15 months. His mother provided additional material on his language development. The recordings started at age 4;3 and continued until age 5;5. The first three recordings were taken by the interviewer. She and Jan's mother were present most of the time. Two other recordings were taken by Jan's parents and two more by the parents of friends of Jan's. It took some time for the interviewer to establish a good relationship to Jan but he then enjoyed playing with her. He was very focussed on his mother and thus spoke a lot of German. His data includes about 2145 utterances in about 465 minutes.

recording	age	setting	utterances	remarks
Jan 1	4;3	English (M = German)	ca. 250	
Jan 2	4;6	English (M = German), German for last 15 minutes	ca. 375	
Jan 3	4;7	German	ca. 530	
Jan 4	4;8	German	ca. 460	
Jan 5	4;10	German, English among children	ca. 110	rec. only ca. 30 min.
Jan 6	5;0	German	ca. 330	
Jan 7	5;5	German	ca. 90	rec. ca. 50 min.

Table 3.11 – Overview of recordings of Jan

Jan 1: The first recording of Jan is taken by the interviewer. He is very shy at the beginning and mostly addresses only his mother in German. After some time, he also switches to English for utterances directed to the interviewer and even sometimes to his mother, presumably because he interprets the setting as English (since the mother and the interviewer also speak English to each other). Whereas he inserts several English words into German contexts, Jan's spontaneous reactions are usually in German. There is also some interference from German syntax in his English:

(238) Jan (4;3) [talking about a car]: look, this is too fast {fast too}

Jan 2: The second recording is made with the interviewer and Jan's mother. Jan is extremely shy and quiet for almost an hour. He mainly addresses his mother in German and only provides short answers in reply to the interviewer in English. This reticence in English cannot be referred to lacking competence, though. Jan inserts English words into German contexts and even reacts spontaneously in English:

(239) Jan (4;6) [just having repaired something]: got it!_ *Eva!*

M: *ja*

Jan: *ich hab's ganz neu 'rübergezieht*

After some time into the recording, Jan becomes more open and talkative and speaks mainly English, adapting to the setting. He is clearly getting more comfortable speaking English and already translates English expressions literally into German:

(240) Jan (4;5): *sollen wir einen walk nehmen?* [example provided by his mother]

He does not mix when speaking English. At the very end of the recording, the interviewer switches to German. Jan accepts the switch and continues in German.

Jan 3: The third recording is also taken by the interviewer but this time, she speaks German. The amount of Jan's utterances in this recording shows that he is much more eager to talk in German. The relationship to the interviewer is also better established but the language choice appears to play a bigger role. Jan adapts well to the setting but also inserts several English words. He accepts a role-play initiated by the interviewer and switches to English without hesitation. Several instances of interference indicate that English is slowly becoming stronger:

(241) Jan (4;7): *hier kann man also spielen hier_ weil da is' mehr Raum*

(242) Jan (4;8): *ich will den ice-cream truck nicht vermissen* [example provided by his mother]

Jan 4: The fourth recording is taken by Jan's parents. Jan is mainly playing with his grandmother but occasionally also addresses his mother or father. The setting is German and only very few English words are inserted. There is also hardly any interference. His German input during the time preceding this recording was presumably very intense because of the grandmother's visit from Germany for four weeks and the summer break of his English pre-school.

Jan 5: The fifth recording is taken by Paula's mother (see above) while Jan and Paula are playing with each other. Paula's parents, her sister and Jan's mother are also present but hardly interact. Jan and Paula's dialogue is permanently switching between German and English. Their play language (at least Paula's) is English by this time but Paula's mother asks them to speak German for the recording. The beginning is thus German but Paula soon switches to English. Jan corrects her several times, pointing out that they are supposed to speak German:

(243) Jan (4;10): *du hast Englisch geredet, <weißt du> wir müssen Deutsch reden*

(244) Jan (4;10): *wir müssen deutsch sprechen, weißt du's noch?* [cf. example 178]

Paula continues in German for one or two utterances before she switches back to her preferred language. Jan does not always react in English but also switches back to German, which also makes Paula switch for her immediate reaction. The constant language negotiation leads to Jan's rather high mixing rate of 8% in this recording.

Jan 6: The sixth recording of Jan is taken by his parents. The recording is in German but for very few English insertions by Jan. He is still used to speak German at home with his parents and adapts his language. His mixing rate is below 1%.

Jan 7: The seventh recording is taken by Johannes' and Jacob's father. He is driving to a lake with Johannes, Jacob and Jan. The setting is German with several insertions from English by one of the children. Jan is most consistent in his language choice with hardly any mixing and only a few spontaneous exclamations in English.

Code-Switching

Although Jan's clearly dominant language is German and he generally prefers speaking German, he switches to English if the setting or the participants require the switch. He is thus able to adapt his language from the first recording on. In several recordings, all participants speak German, which makes participant-related switching unnecessary. In the first two recordings, Jan switches twice to English in order to include all participants present - his mother and the interviewer:

(245) Jan (4;3): ok_ *gib mal der Ball*, ok_ and one for you and one for you

(246) Jan (4;6): *ich mach' den Hut von Dipsy_ ich mache* this one

Apart from situational switches, code-switching is rather rare in Jan's data. We find one example of avoiding a mix, one initiated repair and three examples of code-switching for self-correction, one of which being the following:

(247) Jan (4;6) [to interviewer]: *schau!* look at that!

In other cases, this could also be interpreted as attention attraction but the translation is given so rapidly that self-correction seems more likely. Two other examples can be classified as code-switching for clarification but in one case, Jan clarifies the mix of another participant and in the second case, the clarification occurs on the dialect level from Swabian to Standard German and not between English and German. We further find occasional insertions of a fixed expression in Jan's data. Some of these are similar to the insertion of a song and in one case, it could almost be an affect-loaded switch:

(248) [German setting; Jan has only spoken German - after a long drive] X: [...] *wir sind da!*

Jan (5;5): yes!

In the third recording, the interviewer initiates a role-play that continues for about 30 minutes in which Jan switches a number of times between the dialogue with the interviewer and the various roles in the role-play:

(249) Jan (4;7): <*des is' der*> fighting one *jetzt* [...] never you can get me!

In another recording, Jan switches for metalinguistic comments (see above: Jan 5). These switches can be interpreted as topic shifts.

To sum up, it can be noted that Jan uses situational code-switching when it is required. Skill-related switching occurs one to two times in every recording, whereas there are no examples of stylistic code-switching other than the mentioned mode- and topic shifts. Unfortunately, I did not have the chance to record Jan in an English setting at a time when his English was advanced enough to enable him to easily switch between his languages. The predominantly German settings may not have provided enough opportunities for a more varied use of code-switching.

3.4.9 Anna

Anna is an exception among the informants in so far as it is impossible to show any development in her code-switching behaviour because of lacking data. Anna was recorded only one time and the data will be used more as a means of comparison than to derive a pattern for the development of code-switching.

Background

Anna, an only child, was born and has always lived in the U.S. Her mother is German but also speaks very good English and her father is American but also speaks some German. Both parents usually address Anna in their respective mother tongue but use different languages depending on the situation. They speak mostly English but also some German among each other.

From age 0;10, Anna spent seven to eight hours a day in an English-speaking day-care centre. Her language input through media and playmates was predominantly English but for the German input from her mother.

Anna developed normally without any indication of delayed language development and is very talkative and outgoing. The environment supports the bilingual upbringing of Anna.

Language Development

From birth, Anna heard German and English. Her first words were in English and her dominant language has so far always been English. Although she understood both German and English at the time of the recording, the great majority of her utterances were in English. Anna used only single German words introduced by her mother until she acquired the English equivalent. She usually did not use German words with English speakers, which shows Anna's awareness for different settings and her two languages. Her MLU and IPSyn scores are within the normal range.

Recordings

The first and only recording of Anna was taken at age 3;0. Her data thus includes only about 335 utterances in 75 minutes. During the recording, her parents and the interviewer were present. It was easy to establish a good relationship to Anna although she was rather shy towards the interviewer.

recording	age	setting	utterances	remarks
Anna 1	3;0	German, father uses some English	ca. 335	

Table 3.12 – Overview of recordings of Anna

The setting is mainly German but Anna's father also uses English. Presumably due to the prevalent use of her non-dominant language German, Anna's mixing rate is rather high at about 13% (counted among understandable utterances). She uses her dominant language English in spontaneous utterances and for several interactional code-switches. German is used only for single word insertions into English or for repetitions of something that was said in German before: she inserts some nouns (*Fingerabdrücke*, *Blut*), very few verbs (*willst*), some function words like *aber*, *mit*, *die*, *ein(e)*, *das*, *der*, *du* or words like *da* or *dann*. Often, she just repeats German words from her mother or the interviewer: *Sonne*, *Turm*, *Medizin*, *bitte*, etc. Rather surprising is the phonological interference from German in the words 'wait' and 'away', in which Anna applies the German pronunciation [v] for /w/. At least in the second case, the pronunciation is simply triggered by the insertion of the German word *Fingerabdrücke* before 'away' (→ consequential triggering, see chapter 1.2.4.3).

Code-switching

The code-switches that can be found in Anna's data are closely related to her language dominance as, for example, a number of interactional code-switches. Her switching always occurs in the direction from German to English but may adopt different forms. We find one example of switching because of a language gap (although this may also just be a switch back to her preferred language):

(250) F: [...] *oder ist das ein Del-Delphin?*
Anna (3;0): *ein_* no a dolphin

On another occasion, Anna first inserts a single word but immediately self-corrects her mix:

(251) Anna (3;0): we got *ein Turm_* we got one

This example as well as the following one show that a correct and coherent language sound seems more important for Anna than an exact translation or repetition of the meaning in

the other language. Anna feels more comfortable speaking English and therefore switches to the more familiar sound, even though the German and English utterances do not necessarily correspond:

(252) Anna (3;0): *wer is' die Mann, Mami, wer is die Mann_* where is he?

Through further information on Anna's language behaviour, we know that she is able to adapt to English settings and to English-speaking participants. She is unable, though, to adapt her language choice to a German setting and German participants likewise, due to her poor active language competence in her non-dominant language German.

Since there is no more data on Anna available, it is impossible to make out a sequence for the development of her code-switching behaviour. It can only be noted that she uses situational code-switching to a limited degree (in her dominant language) and makes occasional use of skill-related code-switching. Stylistic code-switching cannot be identified in her data.

3.4.10 Lara

Background

Lara was born in the U.S. as a first child of her German parents. The family moved back to Germany when Lara was 3;5. Her younger sister was born back in Germany. The parents speak mainly German to Lara but are both also fluent in English. Although they admit to using different languages depending on the situation – and used more English during their stay in the U.S. than in Germany - they claim to never mix their languages.

Lara went to a day-care centre from age 1;2 to 3;5 for two days a week for eight hours a day. In Germany, she started going daily to an English-speaking kindergarten from age 3;8. At the beginning, she had some problems to get used to English again but soon adapted well. When the recordings started during the family's stay in the U.S., Lara was exposed to German only through her parents and their friends and to English mainly through day-care. Other contacts were rather insignificant but for exposure of about three hours a day to English media. Generally, Lara's daily language exposure to German was higher than to English, especially at weekends. Back in Germany, Lara is exposed to English only in the morning. The rest of the day on weekdays and all day at weekends, she is exposed to German. At the completion of this book, Lara (age 5;2) is an active bilingual child.

Lara developed normally without any indication of delayed language development and is very talkative and outgoing. The environment supports the bilingual development of Lara and her parents are very happy with it.

Language Development

Lara's first words were in German at about 15 months. Whereas she was exposed to German regularly from birth, regular English input only began with day-care, at age 1;2. She started using English words soon after her first words in German. German remained dominant, though, and German input also remained more important than English input. Lara's MLU and IPSyn scores are within the normal range (cf. Figures VI and XV). According to her parents, she has mixed her languages from very early on and mixing increased with growing English vocabulary. Lara did not seem to notice her mixes and usually did not correct them even when corrected by her parents. Her mixing rates were between 1% and 15%, decreasing significantly with age. For the first three recordings, it is difficult for the most part to determine the direction of the mixes since there was no clear matrix language. Many utterances are also hard to understand. Lara was still rather young and used long sentences that are not always comprehensible, though.

Recordings

Lara was recorded three times over a period of six months. The recordings in the U.S. first started at age 2;5 and continued until she was 2;10. The interviewer met her on two other occasions in Germany: on one occasion, she could only take notes but another recording was taken when Lara was 4;7. Lara's parents also provided additional information about her language development. It was very easy to establish a good relationship to Lara and she enjoyed playing with the interviewer. Her data includes about 1505 utterances in about 325 minutes.

recording	age	setting	utterances	remarks
Lara 1	2;5	mixed (M = German, I = English)	ca. 340	
Lara 2	2;8	English	ca. 305	just back after one month in Germany
Lara 3	2;10	mixed	ca. 515	
Lara 4	4;1	German	ca. 50	no recording! notes
Lara 5	4;7	mixed	ca. 295	

Table 3.13 – Overview of recordings of Lara

Lara 1: The first recording is taken with Lara's mother and the interviewer. Lara's mother speaks German and the interviewer English. Lara uses more German at this point and is not yet able to clearly switch between her languages. She talks a lot and very fast but does not seem to mind mixing. It is difficult, though, to detect a particular system in her language choice. Addressing the interviewer, she inserts many fixed expressions like 'I got you', 'sit down here', 'right here' and 'no way' into her German in order to adapt. She also starts off

sentences in English with common words like ‘that’s’, ‘it’s’ or just ‘I’ but then continues them in German. Utterances directed to her mother seem to be more consistently in German but Lara still occasionally inserts English words. Many utterances are thus mixed with German being the matrix language.

Lara 2: The second recording is also taken by the interviewer. Lara’s general language behaviour has not changed but she mixes even more in this recording, often starting off a sentence in English but then continuing in German: look at *mein Löffel*, we wanna do *Ball spielen*, *I komm gleich*. Her higher mixing rate may be related to the fact that she just spent four weeks in Germany without any exposure to English. But she is still trying hard to adapt to the English setting introduced by the interviewer.

In some German words, there is interference from English pronunciation. Lara pronounces the German word *weit* as [wart] and uses rhotic [r] in the word *Frosch*.

Lara 3: The third recording is again taken by the interviewer. She speaks both, English and German this time, though not mixing the languages. When alone with Lara, she mainly speaks English but since other German speakers are present, she also switches to German in the general setting. Although Lara’s mixing rate is lower now, she still inserts many English expressions into her German, even in monolingual German settings. She thus praises her father with the words: ‘good job, *Papa!*’ or comes running into the room, shouting: ‘everybody ok?’ although all adults present are German-speaking.

Lara 4: This time, Lara is not recorded but only observed by the interviewer at a meeting with several other German- and English-speaking people. Lara’s family has been back in Germany for seven months but Lara goes to an English-speaking kindergarten.

Since her contact to the English speakers present is rather limited, Lara speaks mainly German. Most of the time, she is playing with a younger friend of hers who speaks German. Although she usually addresses her parents only in German, she inserts rather common words from English into her German, as in ‘*ich will zum car des Laterne tragen*’. Frequent insertions are terms that she uses regularly in kindergarten: ‘*des is broken*’ or ‘*wo is der potty?*’.

Lara 5: The fifth recording is taken at the interviewer’s house with German- and English-speaking guests. Lara speaks mostly German, although the setting is mixed. After being back in Germany for over one year, she is no longer accustomed to hearing English-speaking adults outside of her school setting. She now clearly switches participant-related with a mixing rate dramatically decreased to only 1%. After a first rather shy reaction to

the English-speaking partner, Lara eagerly switches between English and German, addressing different participants in the appropriate language.

Code-Switching

Despite all mixing, Lara tries to adapt to setting and participants from the first recording on. By the last recording, she manages extremely well to separate her languages and to address each participant in the appropriate language.

Other examples of code-switching are extremely rare in Lara's data. Her high mixing rates in the first recordings make it even more difficult to decide whether she switches on purpose or whether it is simply mixing. There are thus a few examples of possible self-corrections, one of which being the following:

(253) [the interviewer and Lara's mother continue talking while Lara tries to get the interviewer's attention]
Lara (2;5): come on – bye, *Mama – komm mit* come on

Lara repeats her request to the interviewer in both languages. In this case, it will be interpreted as self-correction because of the extremely short break before the switch back to English. Although it could also be a switch for attention attraction, Lara does not yet seem to use switching for this purpose. As Lara likes to sing, she also switches to English several times for a song or a fixed expression. A clear switch to only English occurs on two other occasions in a role-play. Lara plays, for example, that she answers the phone; her only words on the phone are: 'ok, see you!'

Next to situational code-switching, only switching for songs and two instances of role-play can be identified for certain in Lara's data. In the first three recordings, she is often difficult to understand and in the fourth recording, the setting does not provide many opportunities for code-switching. However, there are no more examples even in the last recording in which the setting is mixed and Lara rather advanced in both her languages.

3.4.11 Lou

Background

Lou was born in Germany as the only child of her German parents. The family moved to the U.S. when Lou was five weeks old. They lived there for four years and moved back to Germany when Lou was 4;1. Her parents both speak good English. They address their daughter mainly in German but use English when English speakers are present. Lou's parents admit to sometimes mixing English and German - also when talking to Lou - and to switching languages within a conversation.

Lou was looked after by a Portuguese speaker for about ten hours a week from age 1;0 until she joined a day-care centre at age 2;0, where she spent 25 hours a week. She stayed

there until age 4;0 and started going to kindergarten in Germany at age 4;4. Language exposure in the U.S. included bilingual and English-speaking adults and playmates as well as English and some German media. Generally, Lou's daily language exposure to English was higher than to German, although exposure to German was higher at weekends. Her parents spoke more English to Lou once they decided to move to Germany (around age 3;11). Back in Germany, Lou's mother spoke English with Lou in the evenings for almost one year, until the parents thought that she needed more German input. She was still exposed to some English media but language exposure to German was generally much higher than to English.

Lou developed normally without any indication of delayed language development and is very talkative and outgoing. The environment supports the bilingual development of Lou and the parents are very happy with it.

Language Development

Lou was exposed to German from birth and her first words were in German. She became exposed to English within the first weeks in the U.S. but not on a regular basis. She began speaking English only after she had started day-care at age 2;0 but English then soon became her dominant language. From there on, Lou spoke only English for as long as the family lived in the U.S., even when addressed in German, in the presence of exclusively German-speaking people or on vacation in Germany. Her dominant language remained English until around age 4;6 when, after a few weeks in her German kindergarten, German became dominant. Lou's IPSyn scores are within the normal range. Whereas her early German MLU scores are below average, her English MLU scores are clearly above average, which further reveals her dominance in English (cf. Figure VIII). During the language shift from English to German as her dominant language, her scores decreased significantly; the MLU scores for the very last recording further emphasise the change of her dominant language. Lou showed awareness of her two languages through metalinguistic comments but her mixing rates were extremely high between 6% and 27%. According to her parents, she has always mixed her languages. The recordings indicated, though, that Lou only started using more German words in English after two stays in Germany within a short period at age 3;9 to 3;10. She usually did not seem to notice the mixes.

On the day the family moved back to Germany, Lou started making an effort to speak German. At the beginning, she did so just with the insertion of all known German words into English syntax and morphology. Even when her German became more and more

dominant, her syntax was still strongly influenced by English syntax. She also made more grammatical mistakes in German than most children her age. These mainly concerned gender and congruence. Whereas Lou had sometimes seemed very disappointed or even angry when her parents had corrected a German insertion into her English when they still lived in the U.S., she now willingly repeated her parents' corrections, eager to quickly improve her German.

Lou went back to the U.S. for two stays at age 4;11 to 5;0 and at age 5;7 to 5;8. She had no difficulties picking up English again, although it took her a bit longer the second time. Back in Germany, she quickly adapted to German but her syntax suffered each time from the English input. At age 6;4, about two years after the family's return to Germany, Lou still gets English input through video tapes and audio books as well as through her parents when they read English books to her. She also actively shows interest in English: when she hears people speak English, she often switches to English in order to show that she can also speak English and she tries to make contact with English-speaking children when she meets them.

Recordings

Over a period of twelve months, Lou was recorded eight times with a total of about 2300 utterances in about 500 minutes. The first recordings of Lou were made at age 3;9 and continued in the U.S. until she was 4;0. They were taken up again after her return to Germany and continued until age 4;8. It was easy to establish a good relationship to Lou and she enjoyed playing with the interviewer.

recording	age	setting	utterances	remarks
Lou 1	3;9	German	ca. 355	just back from Germ.
Lou 2	3;11	German	ca. 170	
Lou 3	4;0	mixed (I = only German)	ca. 160	
Lou 4	4;4	first German, then English	ca. 570	back in Germany
Lou 5	4;4	mixed	ca. 390	
Lou 6	4;5	German	ca. 70	bad recording quality (faulty microphone)
Lou 7	4;6	first German, then English	ca. 225	
Lou 8	4;8	English	ca. 360	

Table 3.14 – Overview of recordings of Lou

Lou 1: The first recording is an audio recording with Lou's parents, some friends and the interviewer. The setting is entirely German. Lou has no problems understanding German but answers almost always in English. She inserts quite a few German words (mainly nouns (45%) and particles or pronouns (40%)) but does not seem to notice the mixes. Some of the insertions are due to Lou repeating her parents or the interviewer. We find

phonological interference from English in her German insertions: she uses rhotic [r] in words like *Raupe*, *Tiere*, *Erdbeeren*, uses [w] in *Wasser* and pronounces the consonant cluster –ch as [x] in words like *Pech* or *nicht*.

Lou 2: The second recording is an audio recording with Lou's father and the interviewer, who speak only German with Lou. Lou's answers are still only English with several German insertions (37.5% nouns and 43% particles or pronouns). Interference occurs with plural morpheme –s transferred from English to German words (*Bilders*, *Kinders*). Another interesting aspect to Lou's language use is that almost all German nouns are feminine, as for example, *meine Papa*.¹¹¹

Lou 3: The third recording of Lou is made with her parents and the interviewer. The parents speak both German and English to her but the interviewer speaks only German. Lou uses only English but for German *nein* and repetitions of German words. She insists on the fact that she cannot speak German:

(254) M: *hast du auch schon dankeschön gesagt [...]*?
Lou (4;0): thank you
M: *ok, auf deutsch?*
Lou: eh, I can't do it, mum

Lou 4: The fourth recording is made four months after the last. The family has left the U.S., spent several weeks in another English-speaking environment and moved to Germany. Lou has been speaking mainly English - even with her parents - until about a month before the recording. It is made on her second day in a German kindergarten. Her mother, who works during the day, speaks English with Lou when she comes home.

The recording is taken by the interviewer, who speaks German. Lou plays with her most of the time, trying hard to adapt to the German setting. She mixes a lot and inserts particular clusters from English into German, like 'I have', 'what?', 'this is', 'let's see', 'I wanna', 'I was' or 'all by myself'. She inserts only three English nouns but several articles, pronouns and conjunctions. When replying in English to a German question, she also inserts many German words. She further points out that she speaks German now (which reminds us of her expressing that she could not speak German a few months before):

(255) Lou (4;4): *hier nochmal eins_ und rote_ I can deutsch Worte: rote*

We find morphological and phonological interference as mentioned before (e.g. *Tellers*, rhotic [r], bilabial approximant [w], etc.) and some syntactical interference. Lou also still

¹¹¹ As described above, Mills (1985:172ff.) suggests that the overgeneralisation of the feminine form is a typical error in the acquisition of German. Although Lou is older than most children overgeneralising this form, she is still at the beginning of her German language acquisition. Using the feminine form seems to be her strategy of neutrality for avoiding errors: she knows that many words have an ending but cannot yet use the correct endings for gender, case and number of her newly acquired words.

uses many German nouns with feminine article or pronoun: *meine groß Zimmer* (singular), *eine Cinderella Buch, von meine Geburtstag, eine Nikolaus, meine Papa*, etc.

Lou is still able to clearly adapt to English. She uses English in a role-play with the interviewer and in conversation with her mother. When exchanges take place in English, her mixing rates drop dramatically.

Lou 5: This recording is taken only two weeks after the last one. The setting is bilingual: the interviewer and Lou's father speak German, Lou's mother English. Two friends of the family speak both English and German with Lou. Lou replies mainly in German but does not yet have enough German vocabulary to fit her needs. She thus fills gaps by inserting English words or words that sound similar to what she knows:

(256) Lou (4;4): *und_ this is eine Boxe <?> und eine Schenke von ein 'burtstag [...] und eine Koffer {eine Kiste und ein Geburtstagsgeschenk}*

The afore-mentioned phonological interference and her strategy of neutrality for German gender are still noticeable.

When speaking English, Lou only inserts very few German words and sometimes adjusts words morphologically (e.g. *du getst* this). Her English is still more complex and English words easier to retrieve. Spontaneous utterances are thus usually in English.

Lou 6: The sixth recording is an audio recording with the interviewer who speaks only German. Lou answers and speaks German but for very few English insertions and some phonological interference. Unfortunately, the microphone was malfunctioning during this recording and many utterances are thus incomprehensible.

Lou 7: The seventh recording is taken by with the interviewer, who speaks German first and later involves Lou in a role-play in English. Lou switches relatively clearly between English and German and adjusts to the role-play. There are a few mixed utterances, mainly through German insertions (pronouns) into English. Lou has some problems with the pronunciation of a few German words, mainly through her pronunciation of rhotic [r] in consonant clusters, as in *Freund, drei*, etc.

Lou 8: In the last recording, Lou is spoken to in English by her parents and the interviewer. She speaks mainly English in reply, with a few German insertions (14% nouns, 36% verbs, 14% adjectives and 36% pronouns). German is also used for fixed expressions, to introduce a new topic, when she talks about her kindergarten and when she quotes her father.

Code-switching

Lou's data is particularly interesting because she was observed during the language shift from English to German as her dominant language. In the first three recordings, Lou does

not adjust her language to German settings and participants but always uses her preferred and dominant language English. From the fourth recording on, she is able to adapt her language to setting and participants, presumably mainly because her active language competence in German has by then reached a level that enables her to actively switch to German. Lou is an experimenter and switches and mixes a lot between her languages. Language separation does not seem very important to her, which makes the identification of obvious code-switching even more difficult.

There are quite a few examples of skill-related switches from the first to the last recording. Most obvious in the first recording is code-switching for songs and rhymes. Lou usually inserts German songs into her English or fully English settings. But we also find one initiated repair and examples of code-switching for self-correction and clarification from early on. Despite Lou's high mixing rates, some of the examples are rather obvious although we cannot know for certain whether she self-corrects her utterances on purpose or by chance:

(257) Lou (3;9): look_ these are [blemən] are *Blumen*_ oh, you you wanna see it everybody, the flower?

(258) Lou (4;4): [...] there's *zwei* purple *eh zwei rotes* and *zwei blau*, ok?

Whereas some of the examples of Lou's switching for clarification resemble lexical duplication in the speech of very young bilinguals, others are somehow more elaborated:

(259) Lou (4;6) [addressing I and X at the breakfast table]: *traurig ihr beide*

I: *nee, ich bin nicht traurig, nur ein bisschen müde*

Lou: *aber X traurig!* [...]

X: *nee*

Lou: *aber bisschen grumpy!* [note taken by interviewer]

Stylistic code-switching is a lot rarer in Lou's data. We find a few examples of elaboration and one switch for attention attraction. The switches for elaboration first occur when Lou's German is still limited and she reverts to English for the elaboration of her utterances:

(260) I: *ah, noch 'n bisschen Salz und Pfeffer*

Lou (4;4): *nein, keine Pfeffer*, she don't like pepper

The following is an example of code-switching for attention attraction. Lou first uses this function rather late in comparison to other children.

(261) [adults talking in German] Lou (4;8): *du weißt nich' wieviel ich habe in' Kindergarten gegessen_ du weißt nich' wieviel Süßigkeiten ich hab'_ ich hab' nur ein-*

F [getting impatient because she is interrupting]: Lou!

Lou: I I said you don't know what [wi:] very many candy I eat

Lou might have taken her father's reprimand as a request to speak English but she also wants to attract attention by repeating her utterance several times. Another significant function for Lou's code-switching behaviour are mode-shifts. They first occur in role-plays

in the fourth recording at the time when she is able to use German actively. She also uses mode-shifts for quoting somebody else and for switches between playing by herself and contributing to the setting. In the following example, Lou code-switches in order to reach a certain aim:

(262) Lou (4;4): *ich esse alle meine Teller*, can I have a candy? [note taken by the interviewer]

She points out in German that she deserves a reward for having eaten up but makes her request for a candy in English. She may feel that she can better express herself in English, which is still her dominant language, and in this case, it could even be an affect-loaded switch.

To sum up, it is important to note that Lou only actively starts code-switching once she is able to use both her languages actively. Situational code-switching then occurs frequently. We find some skill-related switching even before situational switching but it still occurs frequently up to the last recording. Stylistic code-switching is rather rare and can sometimes still be referred to language dominance. The mode-shifts, especially in the form of role-plays, finally show that Lou is able to use and separate both her languages.

3.5 Summary

The previous chapter has introduced the present case-study. The data collection and analysis as well as limitations to this analysis have been discussed. The central focus, though, was set on the 18 individual informants, their background, their language development and the recordings that were taken in order to provide a data corpus for this case-study.

We are now faced with a large amount of data and information. I shall try in the following chapter to put the results together and to provide a better overview. We have seen in this chapter that most informants mixed their languages to some degree. Although mixing will briefly be discussed, I want to concentrate on the informants' code-switching behaviour.

4. MIXING AND CODE-SWITCHING

Having analysed the data of each informant in detail in the previous chapter, the central results will now be summarised. In the first part of this last chapter, the results with regard to mixing and code-switching behaviour in the present data will be presented and discussed. I will then compare the results of the present case-study with the models for the acquisition of code-switching provided in the relevant literature (see chapter 2.2). To conclude, I shall try to propose a model for the use of different code-switching functions in the speech of simultaneous and successive bilingual children, based on the data provided in the literature and the results of my own case-study.

4.1 Discussion of Results

In this chapter, I want to put forward the results of the present case-study. First, we will look at the informants' mixing behaviour. Their data is analysed in relation to various aspects, such as the manner of their L2 acquisition, their age, specific settings, the input conditions or their degree of bilingualism. The same aspects will be analysed in detail with respect to the informants' code-switching behaviour in the second part of this chapter. The original intention in the analysis of the present data was to find out whether informants exposed to a second language at different stages in their language development differed in their code-switching behaviour. This will be discussed in the last part of this chapter, where I want to compare the switching behaviour of simultaneous and successive bilingual speakers.

4.1.1 Mixing in Bilingual Children

4.1.1.1 Discussion

Code-mixing has been characterised above as one among several language contact phenomena. It was defined as the use of morphemes from more than one language within a single utterance without a clear change from one to the other language. For the analysis of the present study, the percentage of mixed utterances used by an informant was calculated for each recording. It needs to be pointed out again that, contrary to the original definition provided above, the mixing percentage includes utterances with single word insertions from the other language (but no borrowings). Single word insertions seem to be rather common among many bilingual speakers, adults as well as children. Even language samples of bilingual adults who are well able to separate their languages may contain

mixed utterances because the regular use of more than one language often triggers some kind of language contact, in this case mixing. Consequently, a mixing rate between 1% and 5% will be regarded as rather normal for a bilingual speaker who regularly uses at least two languages. A child with a data sample with a mixing percentage between 1% and 5% is thus also considered as well able to separate their languages since such low mixing rates are usually caused by single word insertions and not by indiscriminate mixing. A further factor that needs to be pointed out is that most mixing rates calculated for this study can be no more than indicative and certainly not more accurate than $\pm 1-2\%$. This is first because most mixing rates are based on samples of only 100 utterances, second because it is not always obvious what exactly constitutes an utterance and third because some utterances may be misinterpreted through phonologically close words or words belonging to both languages. Differences smaller than 1% are therefore considered as insignificant.

Before turning to a more detailed analysis of the informants' mixing behaviour, some basic results shall be pointed out: the mixing percentage for all recordings varied between 0% and 29%, the average being 7%. Out of the 18 informants, eight demonstrated an average mixing percentage of below 5%. The mixing rates of seven informants ranked between 5% and 10% and only three informants, Anna, Lou and Hannes, had a mixing percentage above 10%. The recording of Anna was taken in a mixed setting, which certainly encouraged mixing. The same applies to several of Lou's recordings. In addition, she experienced a language shift from English to German as her dominant language, which led to higher mixing rates during the transition. Hannes' mixing rates were extremely high for several reasons: although the setting of the recordings was predominantly English, he addressed his brother in German and was thus always faced with two participants speaking different languages. Also, his excessive mixing was generally accepted in his English-speaking environment, these being his kindergarten and his caretaker.

A general tendency in terms of a decrease or an increase of mixing could not be identified. Whereas the mixing rates of five children clearly decreased during the time of the recordings, the rates of three other children seemed to increase. The decrease can be explained in most cases with growing language differentiation or growing competence in the second language. The increase of mixing, usually in the non-dominant language, was presumably due to growing vocabulary in the dominant language or to a loss of vocabulary in the non-dominant language.

I now want to compare the mixing behaviour of the 18 informants of this study with respect to the following factors: the time and manner of their L2 acquisition, their age, the

setting, the input conditions, the informants' degree of bilingualism and their gender and sibling constellation. Regrettably, the description of mixing behaviour dependent on language competence in terms of MLU and IPSyn scores did not provide well-founded results. Whereas determining the scores certainly helped compare the informants' language competence and verify their developmental stage in comparison to other children, the age range of the informants of this study was too large in order to compare the scores of the whole group. Only the MLU and IPSyn scores of the younger informants could have been used. For some informants, only IPSyn scores were valid. For the older informants, neither MLU nor IPSyn scores provided valid results. The relation between mixing rates and growing language competence will thus not be further discussed in this chapter.

- *Mixing and Time of L2 Acquisition*

It is often difficult to clearly define a starting point for the acquisition of the second language. 14 out of 18 informants were somehow exposed to both languages from birth but to most varying degrees. Four children were exposed to the second language later but still to some degree within the first year. The overall average mixing rates differ quite obviously between these two groups: 5% for the children exposed to L2 from birth and 10% for those exposed to L2 later.

	regular exposure to L1 + L2 from birth	exposure from birth but L2 below ~10%	exposure to L2 from birth (total)	later exposure to L2
average mixing rate	4%	5%	5%	10%

Table 4.1 – Average mixing rates in % in relation to time of L2 exposure

However, further analysis reveals that three of the four children exposed to L2 later than birth happened to mix more because of other reasons, such as input conditions and major changes in their environment, i.e. external factors. And as mentioned above, language exposure alone does not make a child a simultaneous or successive bilingual in my view. If the definition of simultaneous and successive bilinguals as introduced above (cf. chapter 1.1.3.2) is now applied, the difference between the mixing rates loses its significance: the simultaneous bilinguals, active bilinguals at age 2;0, mix 7% of their utterances whereas the successive bilinguals, non-active bilinguals at age 2;0, mix 6% of their utterances. This cannot be considered as significant anymore.

It can therefore be assumed that other factors have to be considered for a full understanding of the informants' mixing behaviour.

- *Mixing and Manner of L2 Acquisition*

Noteworthy seems the difference in mixing rates between the children growing up in mixed marriages, i.e. each parent addresses the child in their respective mother tongue, and

those growing up as immigrants, i.e. they have a family language that is different from the language of the environment. The two cases in the present study in which both partners in a mixed marriage addressed the children in the language different from the language from the environment were regarded as immigrant families in this context.

	children from mixed marriages	children in immigrant families	élite bilinguals
average mixing rate	2%	7%	11%

Table 4.2 – Average mixing rates in % in relation to manner of L2 acquisition

The seven children growing up in mixed marriages only mixed about 2% of their utterances on average. The nine children growing up in an immigrant-like situation mixed 7% of their utterances. A third category had to be added: the situation in which both parents speak the language of the environment and the children receive input of a second language from another source, in this case their kindergarten and/or caretaker. These children mixed about 11% of their utterances on average.¹¹²

Looking for an explanation for the different mixing percentages we find that it seems particularly common among children growing up in an immigrant-like situation to experience a shift from one to the other language as their dominant language. This shift is often accompanied by a more intense phase of mixing. Children growing up in mixed marriages with regular input from both languages at home may also experience a shift in their dominant language, for example, if the language input from the parent who speaks the non-dominant language was more intense until the child joined kindergarten or school. However, these children seem to have fewer vocabulary problems as they may have built a larger vocabulary in both languages due to the more regular input.

Accordingly, only four out of the 18 informants were dominant in one language from early on until the completion of the present book. The other 14 children changed their dominant language at some point between age three and six, though this change did not in all cases occur during the recorded period. Five informants also moved to a different linguistic environment. We will come back to this important observation just below in relation to mixing in dominant and non-dominant language settings.

- *Mixing and Age (in dominant and non-dominant language settings)*

Many studies suggest that very young bilinguals mix their languages to a higher degree than older bilinguals (see above, chapter 1.1.3.3). Lacking language differentiation as well as lexical restrictions have been identified as most likely reasons for higher mixing rates at

¹¹² In the present study, this applies to Hannes and Peter but also for the last recording of Lara. Nevertheless, all three of them have previously lived in an English-speaking environment.

an early stage of a child's bilingual development. At first sight, the present data does not confirm this general tendency, probably because most of the recordings are taken at a later stage of the informants' language development (only nine recordings (8%) are taken up to the age of 2;6, 23 recordings (21%) up to age 3;0). Even a more differentiated analysis of the mixing percentage for certain ages does not provide clearer findings:

age	average mixing rate
1;8 – 3;0	6%
3;1 – 4;0	7%
4;1 – 5;0	6%
5;1 – 7;4	7%

Table 4.3 – The relation of average mixing rates and age

The differences are considered as non-significant. But the following figure still seems to show a decrease in mixing rates:

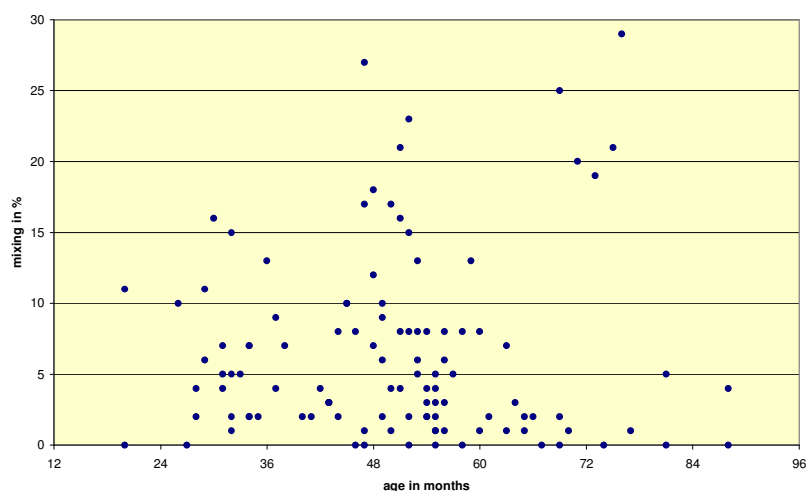


Figure 4.1 – Mixing rates in relation to age

Figure 4.1 illustrates the mixing rates of all recordings in relation to the informants' ages of between 20 months (age 1;8) and 88 months (age 7;4). We find that there is no obvious relation between age and decreasing mixing rates. However, further analysis reveals that at age 4;0, eight out of twelve children mixed more than 5% of their utterances on average. Only six months later, ten out of thirteen children mixed less than 5% on average.¹¹³ Mixing rates thus seemed to decrease between age 4;0 and 4;6 for most children. But the fact that some still mixed after that age leads to the assumption that mixing rates also depend on other factors than age.

¹¹³ The totals of twelve and thirteen had to be used because I did not have data from all informants at the particular ages.

Overall, only three children had mixing rates above 20% in one or the other recording. Another three children scored above 15% in only one recording. The children who mixed most are first-borns in immigrant-like family situations whereas the children who mixed less are all younger siblings. It has been pointed out above that high mixing rates in older bilinguals seem to arise from language preference and salience and because input conditions permit it. With regard to language preference and salience, it is important to ask whether a child is recorded in his or her dominant or non-dominant language setting. The insertion of words due to a speaker's language preference will most likely occur in a non-dominant language setting. This has already been noted in previous studies (cf. Genesee, Nicoladis and Paradis, 1995) and the following figure underlines the assumption:

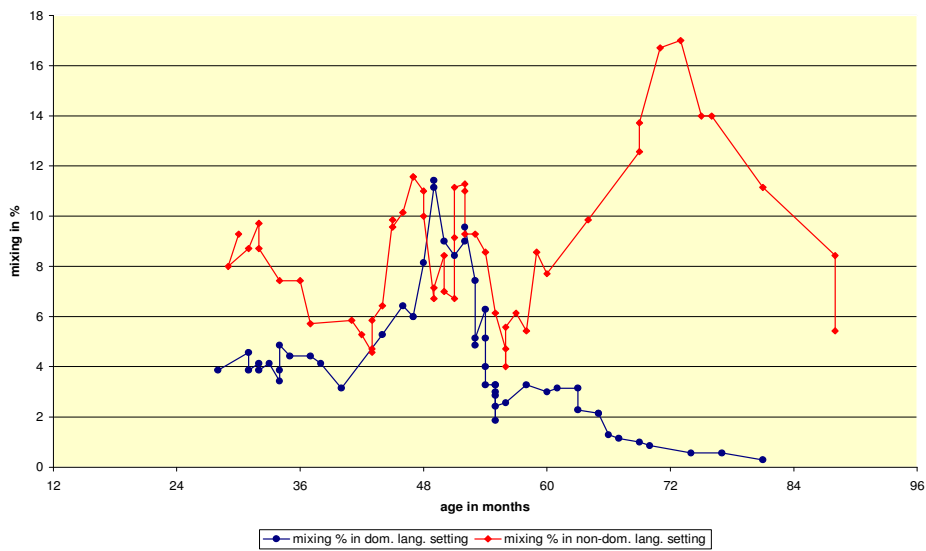


Figure 4.2 – Mixing rates in relation to age in dominant and non-dominant language settings¹¹⁴

Figure 4.2 shows that mixing percentages in dominant language settings clearly decreased with age and that they were usually below the mixing rates in non-dominant language settings. The rates measured in non-dominant settings were usually higher and mounted to another peak before also decreasing. The following table further supports these findings:

age	average mixing rate	average mixing rates in dominant settings	average mixing rates in non-dominant settings
1;8 – 3;0	6%	4%	9%
3;1 – 4;0	7%	5%	8%
4;1 – 5;0	6%	5%	7%
5;1 – 7;4	7%	2%	14%

Table 4.4 - The relation of average mixing rates and age in dominant and non-dominant language settings

¹¹⁴ The mixing percentages do not correspond to the absolute numbers in figure 4.1 as they are sliding averages over the mixing rates of five recordings.

The first peak in the dominant language setting, which can also be seen in the table between age 3;1-5;0, may have several reasons. One seems to be, as mentioned above, that some of the informants experienced a major language shift at that age, accompanied by a period of higher mixing rates. Especially those children growing up in an immigrant-like situation were originally dominant in their family language but once they started kindergarten and school or joined play groups, the increased input of the language of the environment gradually led to a shift in their dominant language: the language of the environment usually became their preferred and dominant play language. The informants started kindergarten a few months before their third birthday on average. It seems likely that it took them a few months before they actively used more words from their new language, which is why we only see an increase in the mixing rates after age 3;1. The child is then still able to use the formerly dominant language but more and more words from the new dominant language are stored, soon become more easily accessible and are then inserted into their other language. At some point, the mixing rates drop dramatically. This happens presumably because the children are then able to better separate their languages or because they do not use both languages actively anymore.

The second peak in non-dominant language settings is mainly due to two informants with a clearly dominant language who inserted many words in order to fill vocabulary gaps.

Overall, only four children mixed more than 5% (and only up to 10%) on average in the dominant language setting. In the non-dominant language setting, eight children mixed less than 5%, six between 5% and 10% and four children between 10% and 20%.

For most recordings, it was unproblematic to define whether they were taken in a dominant or non-dominant language setting. Some had to be considered as mixed settings, though, usually when the interviewer used a different language than the child's mother or sibling and all were actively involved in the recorded activities. The mixing rates in mixed settings did not differ significantly from those in the non-dominant settings. Therefore, only dominant and non-dominant settings were differentiated and most mixed settings considered as non-dominant since the informant had to at least partly use his or her non-dominant language. Some children did not show a plain preference for one or the other language. For these children, able to use both languages to a comparable degree, either setting was usually considered as dominant. However, it was not always possible to clearly decide on a dominant or non-dominant language setting.

- *Mixing and Input*

It has been shown above (cf. chapter 1.1.3.3) that language awareness can assist a child in reducing mixing rates. Input conditions certainly influence language awareness and are therefore another reason for different mixing behaviour in children. Although they were not analysed in great detail, general tendencies can be identified. The main issue is whether the children generally receive well-separated or mixed input and in how far their parents and their general environment insist on language separation. Insisting strategies can take on various forms, such as translations or correction of the child's utterance, further inquiries about what has been said or faking non-understanding. It has been confirmed in various studies that most insisting strategies show some effect¹¹⁵, though it is important to note that different insistence types work best for different speakers.

Table 4.5 indicates the mixing rates in relation to varying input conditions for the informants of the present study:

	mixed input	separated input (total)	separated input + insisting strategies	usually separated input
average mixing rate	9%	5%	3%	7%

Table 4.5 - Average mixing rates in relation to input conditions

The children who received mixed input mixed about 9% of their utterances.¹¹⁶ In all cases, the input was not uncontrollably mixed in every sentence. But some parents admitted mixing their languages and sometimes inserting words from the other language. They also did not necessarily correct their child's mixes. The children who received separated input only mixed 5% of their utterances. If insisting strategies are additionally taken into account, the children with separated input and parents insisting on clear language separation only mixed about 3% of their utterances. This was most often the case for children from mixed marriages. It seems likely that the family situation in combination with input conditions influences the result of a child's mixing behaviour.

- *Mixing and Language Dominance*

Another factor that may influence mixing behaviour is a child's degree of bilingualism, i.e. in this case whether he or she is able to use both languages to a comparable degree. Language dominance of bilingual speakers may change within a rather short period and it was therefore not possible to generally group the informants of the present study in

¹¹⁵ See, for example, Döpke (1988). Lanvers (2001:455) shows that the strategies work from early on (at least age 1;9 and 1;10 in her case) but their success seems to highly depend on the informant's degree of dominance.

¹¹⁶ Next to the mixing rates of the four children who were regularly exposed to mixed input, the mixing rates of four other recordings in which the setting was mixed is included in this percentage.

balanced and non-balanced bilinguals. More than half of them changed from balanced to non-balanced bilinguals or vice versa during the time of the recordings. The mixing percentage in relation to language balance or dominance could thus only be determined for every single recording but not for an informant in general.

The mixing rates of children at a rather balanced stage of their language development ranged slightly below 5%. The mixing rates of children able to use both languages but clearly preferring one language were somewhat higher at about 7%. But even those children who were clearly non-balanced, only used their preferred language and did not even adapt to the setting for some recordings, only demonstrated slightly higher mixing rates of about 8%.

The differences do not seem important enough to make any further claims about mixing behaviour of balanced and non-balanced bilinguals. There appear to be two main reasons for this: first, the errors concerning the categorisation of balanced or non-balanced informants may be rather high since no additional tests were made (and the question of how to achieve reliable results is in any case still highly controversial). And second, balanced and non-balanced speakers both have reasons to mix or not to mix their languages: balanced bilinguals may not mix because they can access the words they need in either language or they may mix because they are comfortable using both their languages. Non-balanced children may mix a lot in order to fill vocabulary gaps in their non-dominant language but they may also not mix at all because they do not actively use one of their languages. The question of whether and in how far language dominance influences mixing behaviour is thus too complex in order to be resolved at this point.

- *Mixing and Gender*

The mixing percentage of the female and the male informants did not differ significantly. The average mixing rate from the 66 recordings of the female informants was 7% whereas the average mixing rate from the 43 recordings of male participants was 6%.

- *Mixing and Sibling Constellation*

Differences in mixing rates were more substantial between single children, children with younger and children with older siblings:

	average mixing rate
single child	9%
older sibling	8%
younger sibling	4%

Table 4.6 – Average mixing rates in relation to sibling constellations

The highest mixing rates with an average of 9% were found in the four informants with no siblings: Anna, Lara, Lou and Jan. Another reason for their higher mixing rates may also have been that all four of them were clearly dominant in one language during most of the recordings. Additionally, Anna and Lara were rather young at the beginning and still mixed a lot. Lou further experienced a significant change in her linguistic environment and language input during the time of the recordings.

More obvious is the different mixing percentage of the seven older and their younger siblings. The older siblings had an average mixing rate of 8% whereas their younger siblings, with a mixing rate of 4% on average, only mixed half this much. Although the difference may not look particularly interesting, it is all the more surprising for at least two reasons: first, one could expect a younger sibling to be influenced by the language behaviour of their older brother or sister¹¹⁷ and second, younger children are usually expected to mix more as it is assumed that they are less able to differentiate their languages. The younger siblings were recorded between age 1;8 and 4;9 at an average age of 3;4, whereas their older siblings were recorded between age 1;8 and 7;4 at an average age of 5;1. This phenomenon can thus only be explained on different grounds. It seems that the younger siblings amongst the informants were on average better able to adapt to different language settings.¹¹⁸ They also seemed to have fewer problems in coping with two languages. In some cases, the younger child profited from a more balanced input from early on, for example in an immigrant-like situation, if he or she was exposed earlier to the language of the environment through the input from their older sibling who had already started adapting to the language of the environment. The younger siblings thus often began speaking the second language earlier.

4.1.1.2 Summary

It has been noted above that whether, to what degree, and until what age language mixing occurs seem to depend on the bilingual individual. The results of the present study show that every informant used mixed utterances to some degree but that the amount and frequency varied greatly. For a better overview, the major findings shall be listed below:

- the time of L2 acquisition does not seem to influence mixing behaviour
- the manner of L2 acquisition seems to influence mixing behaviour in the following way: children from mixed marriages mixed less (2%), children growing up in

¹¹⁷ This has, for example, been noted by McClure (1981:75).

¹¹⁸ Shin and Milroy (2000:362f.) made a similar observation and point out that second and third siblings better adapted to the setting.

immigrant-like situations mixed about 7% and those who receive L2 input as elite bilinguals mixed most (11%)

- there was no obvious relationship between mixing rates and age; however, with age, mixing rates in *dominant* language settings clearly decreased
- input conditions seem to be important: children regularly exposed to mixed input mixed 9% of their utterances whereas children with separated input and parents insisting on language separation only mixed 3% of their utterances
- whereas gender does not seem to make a difference in mixing behaviour, sibling constellation does: younger siblings mixed only 4% of their utterances while their older siblings mixed 8%

In view of the results of the present study, an ideal setting for low mixing rates is for a child to grow up as a younger sibling with the parents speaking different languages and paying attention to clear language separation through appropriate insisting strategies. For the present study, the mixing rate of this group was 1.7% on average. It has often been pointed out in the literature that the *one person - one language strategy* is most successful for the bilingual education of children. I want to point out, however, that although the mixing rates of children growing up in almost contrary conditions, say an older sibling exposed to mixed input, were a lot higher at 12% on average, even these children were active bilinguals able to communicate in two languages. Also, their mixing rates further decreased with age (see above).

Mixing to some degree and of some kind seems to be part of the speech of bilingual children. But the average mixing rates show that even children with higher mixing rates will most likely not encounter major communication problems even in conversation with monolingual speakers.

4.1.2 Code-Switching in Bilingual Children

In the following chapter, I will first present the functions of code-switching that could be identified in the data of the present case-study. Subsequently, I will indicate the first occurrence of various code-switching functions in the informants' data. The frequency in which they occurred will then be looked at in relation to similar aspects as for the analysis of mixing behaviour. As for the frequency of different switching functions, the exact number of a certain function cannot always clearly be determined since some switches can fulfil several functions and switches can be interpreted differently. The different functions will therefore be grouped within the three categories of situational, skill-related and stylistic code-switching. Following this discussion, I will analyse the data with respect to differences between the switching behaviour of simultaneous and successive speakers.

Different acquisition sequences shall be indicated as well as differences in the frequency of their use of code-switching.

4.1.2.1 Code-Switching Functions

Overall, it can be said that the informants used a variety of code-switching functions. In chapter 3.2.3, I indicated the relevant functions for the present analysis. They were grouped into situational, skill-related and stylistic code-switches, which will now be looked at individually:

Situational Code-Switching

Setting- and participant-related code-switches form the two major types of situational code-switching. Situational code-switches occurred regularly from early on in almost every single recording. One reason for their prominence is that we can usually determine for every single setting whether a child adapts to the language of the setting or not. And since the interviewer usually chose to speak the informant's non-dominant language during the recordings and the mother usually spoke the child's dominant language, it was also easily observable whether the informant adjusted to the participants or not.

A third type of code-switches that we consider as situational are those in which children explicitly include somebody in the conversation. Although this kind of switching can sometimes also be stylistic, it is usually rather difficult to differentiate from participant-related code-switching. We only encountered a few instances in the data where it was clear that the informant explicitly made the decision to repeat an utterance in the second language in order to include a participant. This function only occurred with 4-year-olds and older informants but this may be due to the fact that earlier instances are mistaken as participant-related switching. Code-switching in order to include somebody in the conversation occurred with four different children. There was no clear pattern of who used it and who did not, probably because this category is rather vague. As expected, it only occurred in settings in which the informant had to deal with two participants speaking different languages.

It can be noted for situational code-switching that all children adjusted their language to the setting and the participants in the great majority of cases. We will see below that if the bilingual's language proficiency permitted it, pragmatic sensitivity to the setting was shown from as early as age 1;8.

Skill-Related Code-Switching

As defined above, skill-related code-switching includes code-switches for clarification, affect-loaded code-switching, switching in order to avoid language gaps, self-correction, initiated repair and also code-switching for songs (comprising songs, nursery rhymes and fixed expressions). For the first three types, children usually switch to their dominant language: in the case of clarification in order to clarify their utterance and make sure it is understood correctly, in the case of affect-loaded switching because they feel more comfortable there, and for avoiding language gaps because they have more gaps in their non-dominant language. Initiated repairs and self-corrections usually involve a switch to the non-dominant language. The child is more likely to have used the dominant language and is either corrected by the parents or the interviewer insisting on correct language choice (or on language separation) or self-corrects the switch. Code-switching for songs can take place in either direction depending on the language in which the child knows a particular song.

We find all six types of skill-related code-switching in the present data, though their frequency differs significantly (see below). Every child used one or the other type of skill-related switching. It occurred in every age group, starting as early as age 1;8 with code-switching for a nursery rhyme.

Stylistic Code-Switching

As for stylistic code-switching, I mainly included code-switching for emphasis, for attention attraction, for elaboration and code-switching as demonstration of power or authority. These functions appeared to form a group in that they involve the most often conscious decision to make use of the second language for a specific stylistic purpose. Not all informants used these four stylistic functions of code-switching: whereas twelve informants used it, six did not.

Mode- and topic shifts were also considered part of stylistic code-switching, although they should be characterised in a slightly different way. Rather than changing the language for purely stylistic reasons, the main purpose of both types is to structure the conversation. In this sense, the child also makes a stylistic decision. Mode-shifts can be split into two major types: one is a shift of the language for role-plays and the other a shift between a child's monologue and his or her contribution to the ongoing dialogue. Two thirds of the informants used mode-shifts, sometimes initiated by the interviewer through role-plays.

Topic shifts were a lot rarer and usually occurred when the child wanted to change the actual topic. Not even half the informants used topic shifts.

As a last type, code-switching for fun or for playing with language was included in the category of stylistic code-switching. Through code-switching for fun, a child may express a dual identity and that they feel comfortable using both languages. Only five children used code-switches for language play. It seems to be a rather individual use of code-switching, depending very much on how bilingualism is valued in the child's environment. More than half of the switches of this type were made by children who were rather advanced in their language development, scoring above average in MLU and IPSyn scores.

We find all types of stylistic code-switching in the present data but for the above-mentioned conversational function "framing". All but two informants made use of some kind of stylistic code-switching, though again differing a lot in frequency (see below). First examples can be found from age 2;3.

4.1.2.2 First Occurrence of Code-Switching Functions

In this chapter, I want to indicate the first occurrences of individual code-switching functions. They will again be grouped within the three categories of situational, skill-related and stylistic code-switching. I will always take into account the first three occurrences that will then be described as the average age at which a certain function first occurred. A single first occurrence appeared to be too random in order to provide appropriate results. In this part, I will not yet differentiate between simultaneous and successive speakers but this will be done below.

Situational Code-Switching

As noted above, the informants showed pragmatic sensitivity to the setting from age 1;8 if their language proficiency permitted it. Leaving out some settings for which it was difficult to determine whether the informants adapted or not, the average age at which adjustment to the setting was rather clearly observable was 2;2.

The first examples of unambiguous participant-related code-switching only occurred around age 2;4 in the present data. Switching in order to include a participant first occurred at age 4;3. The average age for the first occurrence of this function was only 4;5 as it was not used often.

Skill-Related Code-Switching

Code-switching for songs was the first skill-related function of code-switching that could be observed in the present data: at age 1;8, Tessa used nursery rhymes in order to show

pragmatic sensitivity to the setting. The next function was code-switching for self-correction, which occurred from age 2;5. It is surprising that it did not occur after the first initiated repair as self-correction can be seen as a further step in the language separation of a bilingual's language development. This was probably due to the overall low occurrence of initiated repairs and the usually bilingual participants who did not make excessive use of insisting strategies. Code-switching for clarification was first used by 2;7-year-olds, on average somewhat later. Around the same time, initiated repairs occurred in the data, followed by switching in order to avoid language mixing, at around age 3;0. As pointed out in other studies, affect-loaded code-switching first occurred rather late, at age 5;1. It is important to note, though, that there are also only very few examples of this function of code-switching.

CS function	first occurrence	average first occurrence
CS for songs	1;8	1;8
CS for self-correction	2;5	2;6
CS for clarification	2;7	2;9
Initiated repair	2;7	3;1
avoid mixing	3;0	3;1
affect-loaded CS	5;1	5;3

Table 4.7 – First occurrence of skill-related functions of code-switching

Stylistic Code-Switching

Code-switching for stylistic reasons occurred from age 2;3 in the present data. Attention attraction was analysed as the first stylistic function of code-switching used by the informants. Only the very first example, though, occurred this early; the average age for the first occurrence was only 2;6. At this age, mode-shifts in the form of role-plays could also be identified in the data. They occurred regularly from age 2;6 on. Code-switching for emphasis was the third function that was found before the child's third birthday, at age 2;7. The first example of code-switching for elaboration occurred at age 2;10 and then more examples only many months later. At any rate, code-switching for elaboration was among the rather infrequently used functions. Code-switching for fun or for playing with language, a function used by only some children, occurred from age 3;6. Even later, around age 4;0, the data provides the first obvious examples of topic shifts. As the last stylistic function in the present data, we find code-switching for power, which only occurred around age 4;4 and was also not used frequently.

CS function	first occurrence	average first occurrence
CS for attention attraction	2;3	2;6
mode-shifts	2;6	2;6
CS for emphasis	2;7	2;8
CS for elaboration	2;10	3;5
CS for fun/language play	3;6	3;6
topic shifts	4;0	4;1
CS for power/authority	4;4	4;6

Table 4.8 – First occurrence of stylistic functions of code-switching

I have just indicated the first occurrences of each individual function of code-switching. Some of the functions are rather similar and occur at a similar time. Figure 4.3 also indicates the first occurrence of different code-switching functions.

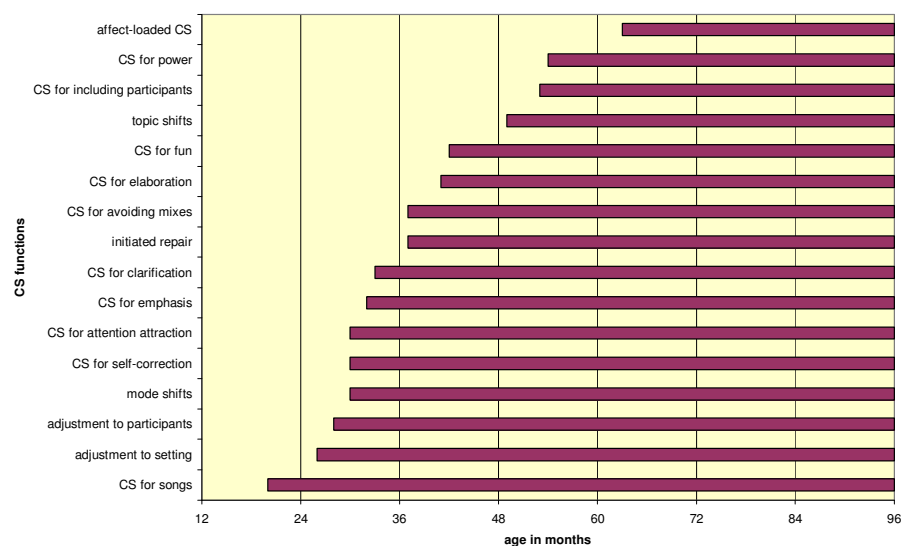


Figure 4.3 – Code-switching functions and their usage range, starting at average first occurrence

Categorising the various occurring functions not on a monthly basis but on a slightly larger time span, we arrive at the following sequence for the acquisition of code-switching functions:

1. Code-switching for songs is among the first functions of code-switching. It is similar to the above-mentioned tag-switching (see chapter 1.2.3.3) and can be used by bilinguals with low language competence in one of their languages. It is also easy to identify.
2. Situational code-switching in the form of adjustment to the setting can occur just as early. The average of the first occurrence was later, though, as some informants were not proficient enough in order to actively use both their languages at this stage.
3. Adjustment to participants only occurred as the third function. Other studies note that their informants adjusted even earlier to the participants. A possible reason for the rather late occurrence in the present data is that none of the very young informants grew up in mixed marriages where they would be used to addressing their parents in different languages.

Following these situational functions of code-switching, there were several other functions that first occurred within a rather short period between around age 2;6 and 2;9. Several informants then seemed proficient enough in order to make use of code-switching for the following purposes:

4. Mode-shifts, mainly in the form of role-plays, and code-switching for attention attraction and emphasis - two rather similar functions that are sometimes difficult to differentiate. We also find code-switching for self-correction and for clarification, both showing a speaker's awareness of different languages. All these functions occurred within a child's first three years of life.
5. Within the subsequent year, initiated repairs, switching in order to avoid mixing, switching for elaboration and switching for fun were used for the first time. In the case of initiated repairs, it seems likely that this function can occur much earlier under different circumstances. Switching in order to avoid mixing was not used by balanced children but mainly by informants with one clearly dominant language. The age at which this function occurs may thus greatly vary depending on particular data sets. As mentioned above, code-switching for fun or playing with language was only used by very few children who particularly seemed to enjoy their ability to use two languages.
6. Further functions of code-switching only occurred after a child's fourth birthday: topic shifts, switches in order to include (or exclude) participants, code-switching for power and affect-loaded switching. All of these functions occurred less than twelve times in the entire data set. It is thus questionable in how far the indicated ages can be considered as statistically justified.

In this part, only a general order for the acquisition of code-switching functions was indicated. I have not yet distinguished between simultaneous and successive speakers, which will be done in chapter 4.1.2.4. But before, we will examine the frequency of different code-switching functions in more detail.

4.1.2.3 Frequency of Code-Switching

In the following chapter, we will look at the frequency of code-switching in relation to various factors. Overall, it can be stated that situational code-switching occurred frequently. Also, there were more than 220 instances of skill-related code-switching in the data. Stylistic code-switching in the form of emphasis, attention attraction, elaboration and power did not occur as often (about 65 instances). But topic and mode-shifts alone occurred about 125 times.

Situational Code-Switching

The exact frequency of *situational* code-switches in the present data was not determined for two reasons. First, our main focus lies on stylistic code-switching. And second, situational switching is highly dependent on a specific setting. In mixed settings, say with one participant speaking English and one German, informants may switch

languages from utterance to utterance, resulting in an extremely high frequency of situational switching. Other settings and participant constellations simply do not require situational switching. For the present study, spontaneous data in natural settings was collected and since these settings changed from one recording to the other, it is hard to compare them. Only in order to still be able to compare the switching behaviour statistically, an index value was specified for each recording: general adjustment to the setting was given a point (1.0) as well as general adjustment to the participants (1.0), resulting in a maximum index value of 2.0. A lower index indicates lacking adjustment to setting and participants. It could thus be determined whether the informants used situational code-switching when necessary, though it was not counted in individual instances. It is important to note that the index value for situational code-switching does in no way compare with the switching percentages that will be indicated for skill-related and stylistic code-switching.

In 86% of the recordings, the informants adjusted their language to the setting. The remaining 14% in which the children did not adapt to the setting can be grouped into two kinds. The first are very young children (age 1;8-2;5), some of whom were still in the 1-word stage, mixed a lot and thus made it difficult to decide whether they adapted or not. The other group consists of children who went through a phase in their language development in which they were unable to show pragmatic sensitivity because of their unequal proficiency in their two languages, i.e. they were so dominant in one language that they could not adapt to a non-dominant language setting. This concerned children between the ages of 2;8 to 4;3; one child for all but one recording (Peter), two informants for the first recordings as they caught up in their second language later (Lou and Neeve) and one for the last recordings as she was on her way to monolingualism (Lucy). However, we should take into account that although there was no clear adaptation to the setting as the children were limited in their language choice, they still seemed to try to show awareness of the setting through single word insertions from the appropriate language: they had higher mixing rates in these recordings than they usually had in dominant language settings.

Only very few recordings remain in which the children did not respect the setting. In these cases, the informant was used to the wide acceptance of his or her language choice in bilingual settings. It is important to point out that all settings could be interpreted by the child as bilingual since most participants were bilingual, including the interviewer, who did not conceal the fact that she understood both languages.

In 84% of the recordings, the informants generally adjusted their language to the participants. Some at least made an effort to adjust, which was noticeable through higher mixing rates. In the case of participant-related switching, these efforts were counted as adjustment if a difference in how the informant addressed different participants could be identified. For further 11% of the recordings, it could not be determined whether the children adapted or not either because the setting was monolingual and there were no changes in the participant constellation or because they mixed too much (in the case of Lucy's first recordings). Only in the remaining 5% of the recordings, the children did not adapt their language to the participants. This happened either when they saw no need to adjust their language because their own language choice was widely accepted (in the case of Lou), or because of their limited language proficiency in one language (in the case of Anna, age 3;0, and the first recording of Tessa, age 1;8).

Skill-Related Code-Switching and Stylistic Code-Switching

Skill-related switching was used in 64% of all recordings. As noted above, every child used one or the other type of skill-related code-switching, ranging from three to about 30 occurrences, i.e. between 0.1 to 2.2% of their utterances. Most often with 45% of all skill-related switches was code-switching for songs. Code-switching for self-correction and for clarification were also common with 21% and 22% of all skill-related switches. A lot rarer were initiated repairs (6%), presumably because only three couples of parents used insisting strategies with their children. 4% of the skill-related switches were switches in order to avoid mixing and only 2% affect-loaded switches.

Stylistic code-switching was used in 47% of all recordings. As noted above, almost every child used one or the other type of stylistic code-switching, ranging from two to about 46 occurrences, i.e. between 0.1 to 2.6% of their utterances. Mode-shifts occurred most often, representing 60% of all stylistic switches. The core functions of stylistic code-switching, i.e. emphasis (10%), attention attraction (6%), elaboration (10%) and switching for power (4%), together take up only 30% of all stylistic switches. 6% of the switches were topic shifts and 4% code-switching for language play.

The distribution for all skill-related and stylistic code-switches is as follows: 53% are skill-related switches and 47% stylistic switches (cf. figure 4.4). We can see from figures 4.4 and 4.5 that although some more skill-related code-switching was used, there was no major quantitative difference between skill-related and stylistic code-switching.

As mentioned before, code-switching for mode-shifts and for songs occurred most often. Both types are easy to identify and can easily be triggered by parents or an

interviewer. Almost all informants used switches for songs; twelve also used mode-shifts. These two types were followed in frequency of occurrence by code-switching for self-correction and for clarification, used by thirteen and eleven informants respectively. The stylistic functions of code-switching for emphasis and for elaboration each only constituted 5% of all switches. Eight of the informants made use of one or both of these functions. Code-switching in order to avoid mixing, initiated repairs, code-switching for attention attraction, for power and for fun as well as topic shifts were rare. Initiated repairs (used by nine informants) depend very much on the specific input conditions for an informant. In this case, all recordings took place with mostly bilingual speakers who rarely insisted on a particular language choice during the recordings and consequently did not trigger repairs.

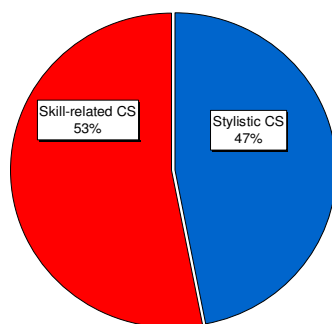


Figure 4.4 - Distribution of skill-related and stylistic code-switching functions

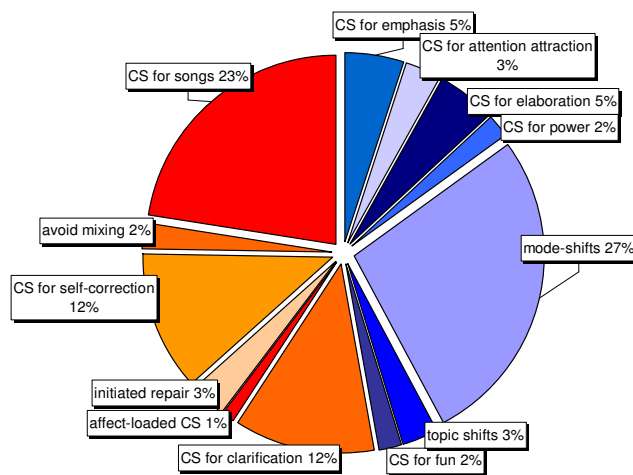


Figure 4.5 – Distribution of individual skill-related and stylistic code-switching functions

Topic shifts seem more important for older speakers. The recordings for the present study, though, were taken in a play context that the informants were usually able to lead. Eight of the informants used topic shifts, the youngest being 4;0. As for the other four mentioned types (avoid mixing, attention attraction, power and fun), they seem to depend

very much on the informant's character, language behaviour and preferences. Switching for attention attraction and in order to avoid mixing was used by eight informants, switching for power and for fun by five different informants. There was no obvious pattern of who used these functions and who did not. Affect-loaded code-switching was extremely rare and used by only four informants. It can be a rather personal reaction and will therefore probably mainly occur among friends but less in the presence of an interviewer.

Excluding situational switches, there are on average four switched utterances per recording, i.e. about 1.7% of all utterances contain code-switching. Exact counting of individual instances of code-switching is problematical, though, as it can be rather subjective: not every switch is an obvious code-switch and for some switches, the function cannot be determined for certain. It thus seems useful to include a margin of error of one to two utterances per recording, i.e. 0.7%. On the other hand, due to the rather low occurrence and percentage of code-switches, the inclusion of a margin of error of two utterances per recording on a total of only four switched utterances per recording may make a difference of 50%. Nevertheless, I thought it important to include a margin, which will therefore rather arbitrarily be set at 0.5%. Consequently, differences in skill-related and stylistic code-switching behaviour of less than 0.5% will be considered as insignificant and not be discussed any further.

I will now discuss the frequency of code-switching in relation to the informants' manner of L2 acquisition, their age, their specific input conditions, their language dominance, their gender and sibling constellation. We will see in how far these factors influence code-switching behaviour. Code-switching in relation to the time of L2 acquisition will be discussed separately below. The analysis of a possible relation of code-switching behaviour to MLU and IPSyn scores did not provide any results. Code-switching occurred in any stages of the informants' language development. The frequency of occurrence rather seemed to depend on other factors than on language competence.

- *Code-switching and Manner of L2 Acquisition*

For the analysis of the relationship between code-switching and manner of L2 acquisition, the informants are again split into three groups: seven informants growing up in mixed marriages with their parents following the *one person - one language strategy*, nine children growing up in immigrant-like situations and two children as *élite bilinguals*.

	index situational CS	skill-related CS	stylistic CS
children from mixed marriages	1.81	1.1%	0.8%
children from immigrant families	1.82	1.1%	0.8%
élite bilinguals	1.70	0.2%	0.1%

Table 4.9 – Code-switching behaviour in relation to manner of L2 acquisition

As indicated in table 4.9, children from mixed marriages and immigrant children hardly differed in their code-switching behaviour. Only the children growing up as élite bilinguals switched a lot less. They also adapted less well to setting and participants.

- *Code-switching and Age*

Code-switches occurred in every age group. Table 4.10 indicates the numbers in relation to the informants' age:

age	index situational CS	skill-related CS	stylistic CS
1;8 – 3;0	1.48	1.5%	0.8%
3;1 – 4;0	1.55	2.4%	1.3%
4;1 – 5;0	1.94	2.0%	2.5%
5;1 – 6;0	2.00	2.7%	1.5%
6;1 – 7;4	2.00	1.7%	1.8%

Table 4.10 - The relation of average code-switching percentages and age

With regard to situational code-switching, the index values indicate that the informants adapted better to setting and participants as they aged. The maximum index value of 2.0 has been reached by age 5;1.

The numbers for skill-related and stylistic code-switching are less telling. Whereas the younger bilinguals switched less in both categories, there was no steady increase after the age of three. For skill-related switching, it looks as if there was a phase in which the informants made active use of the various functions but used it less again after age 6;0. As indicated earlier, 14 out of the 18 informants changed their dominant language at some point between the ages of three and six, which may be a possible reason for an increase in skill-related code-switching. As for stylistic code-switching, it was used most between age 4;1-5;0, probably a phase in which the children are most likely to experiment with their languages: at this point, most of the informants were advanced enough in both languages in order to use them both but some children did not yet have a clearly dominant language that might hinder the use of the second language (see below).

- *Code-switching and Input*

Another factor that might influence code-switching behaviour are different input conditions. Four informants often received rather mixed input. Eight informants were exposed to separated input for the most part but four of them occasionally received mixed

input, depending on the specific setting (for the present analysis, four single recordings had to be included in the index values and percentages for mixed input). Six children received clearly separated input and their parents insisted on language separation.

	index situational CS	skill-related CS	stylistic CS
mixed input	1.44	0.8%	0.4%
usually separated input	1.73	1.3%	0.4%
separated input + insisting strategies	1.98	0.9%	1.1%

Table 4.11 – Code-switching behaviour in relation to input conditions

With regard to situational code-switching, it is obvious from table 4.11 that separated input and insisting strategies enhance adjustment to setting and participants. Only one child did not clearly adapt to the setting in only one recording, thus reducing the index value from the maximum of 2.0 to 1.98. The informants exposed to mixed input adapted least well.

Although the children receiving mostly separated input seemed to use a bit more skill-related code-switching than the other informants, the differences are insignificant. It should be pointed out, though, that they used a lot more skill-related than stylistic code-switching. The children exposed to clearly separated input enforced by insisting strategies switched most, especially by means of stylistic switches.

- *Code-switching and Language Dominance*

Relating to code-switching and language dominance, it was again not possible to separate the informants into three different fixed groups. Instead, language dominance was determined for every individual recording: it was asked whether the informant was at a rather balanced stage of his or her language development, whether he or she was preferring one or the other language but still able to use both or whether he or she was clearly dominant in one language, understanding the second language but hardly speaking it. The numbers for the three groups are indicated in table 4.12:

	index situational CS	skill-related CS	stylistic CS
balanced	1.96	1.3%	1.4%
preferring one language	1.96	1.0%	0.8%
clearly dominant in one language	1.27	1.4%	0.1%

Table 4.12 – Code-switching behaviour in relation to language dominance

With regard to situational code-switching, it is rather obvious that all informants able to use both their languages adapted a lot better to setting and participants than the children who were clearly dominant in one of their languages. Whereas there are only two children among the clearly dominant ones who generally adapted to setting and participants, there are only two children in the other two groups who did *not* always clearly adapt.

Table 4.12 also indicates that balanced children used a lot more code-switching, especially stylistic switching. The children preferring one but speaking both languages still used more stylistic switching than those in the third group: among the children who hardly used their second language, there was only one child who switched for stylistic reasons. However, these children used slightly more skill-related switching.

Next to the child's general language balance or dominance of one language, another aspect in relation to code-switching and dominance may be important, namely the question of whether the informant was observed in a dominant or non-dominant language setting. Both aspects are closely related. Any setting was considered dominant for the balanced children as they did not show any preference. More interesting, though, is the question of how children clearly dominant in one language behave in a non-dominant language setting. The following table indicates the results:

	index situational CS	skill-related CS	stylistic CS
dominant language setting	1.96	1.4%	0.8%
non-dominant language setting	1.80	0.9%	0.8%

Table 4.13 – Code-switching behaviour in dominant and non-dominant language settings

Overall, the numbers are rather surprising as there are no major differences between the informants' code-switching behaviour in dominant and non-dominant language settings. They generally tried to adapt to setting and participants, which they naturally managed better in the dominant language setting. The only two children who did not clearly adapt in dominant language settings were very young and still mixed a lot, which made it difficult to decide in how far they adjusted. But even in the non-dominant setting, most informants seemed to adapt rather well to setting and participants.

Some of the results concerning skill-related and stylistic code-switching are also unexpected. First, there was no difference in the use of stylistic code-switching between both settings. And second, the informants seemed to use more skill-related switching in dominant language settings. Although the difference is not substantial, we could typically expect higher rates of self-correction, clarification or initiated repairs in non-dominant language settings. The children might have felt more comfortable, though, in their dominant language setting and thus used both their languages to a higher degree.

- *Code-switching and Gender*

Cheshire and Gardner-Chloros (1998), who examined code-switching behaviour in relation to gender, found no consistent differences between code-switching behaviour of men and

women. However, the results of the present study show that the girls switched more on average than the boys.

	index situational CS	skill-related CS	stylistic CS
girls	1.75	1.3%	0.8%
boys	1.83	0.6%	0.6%

Table 4.14 – Code-switching behaviour depending on gender

The boys slightly better adapted to setting and participants: a possible reason for this might be that the boys were a few months older on average, namely 4;7, whereas the girls were only 4;0 on average. Most noticeable is the difference in skill-related code-switching, which the girls seemed to make more use of than the boys.

- *Code-switching and Sibling Constellation*

A last aspect we want to consider is the informants' code-switching behaviour dependent on whether they have younger, older or no siblings.

	index situational CS	skill-related CS	stylistic CS
no siblings	1.56	0.7%	0.4%
older sibling (first-borns)	1.96	1.1%	0.9%
younger sibling	1.72	1.1%	0.7%

Table 4.15 – Code-switching behaviour depending on sibling constellations

The older siblings were best at adapting to setting and participants whereas the children with no siblings adapted least well.

There were no great differences in skill-related and stylistic code-switching behaviour. Overall, the informants with siblings switched more than those without any siblings. Older siblings switch most.

Summary

To sum up the quantitative use of code-switching in the present study, I want to point out the following major results:

- all informants used one or the other kind of code-switching to varying degrees: all informants used situational code-switching; most adapted well to setting and participants from early on; all informants used skill-related code-switching; all but two used some kind of stylistic code-switching
- there was no major difference in code-switching behaviour depending on manner of L2 acquisition; only the children growing up as elite bilinguals switched a lot less and adapted less well to setting and participants
- informants adapted better to setting and participants as they aged; informants under the age of 3;0 used fewer skill-related and stylistic switches than older children; switching decreased again after age 5;0 to 6;0
- separated input enhanced adjustment to setting and participants; children with clearly separated input enforced by insisting strategies switched most, children with mixed input least

- children who were clearly dominant in one of their languages adapted a lot less well to setting and participants; they hardly ever switched for stylistic reasons; balanced children used most code-switching
- there was no major difference between switching behaviour in dominant and non-dominant language settings
- there were no major differences in code-switching behaviour depending on gender although girls used slightly more switching, especially skill-related switching
- older siblings were best at adapting to setting and participants; single children adapted least well; children with siblings switched more than single children

Although code-switching seems to form part of the basic language skills of every bilingual, the speakers used it to most varying degrees. The evaluation of the above-mentioned relationships of switching behaviour to various factors did not seem to provide definite results or fixed patterns. Although I was able to show minor differences in code-switching behaviour, most do not seem important. We find that balanced, older siblings exposed to clearly separated input best adapted to setting and participants. Skill-related and stylistic switching was mostly used by balanced children (especially girls) with siblings, exposed to separated input and between the ages of 3;1 to 5;0. Elite bilinguals switched less.

It is important to point out that all numbers and tables comprise the switching behaviour of a heterogeneous group of children who are usually compared on the basis of only one common parameter. Many factors may influence code-switching behaviour, including factors that are difficult or impossible to measure. I therefore believe that the frequency of code-switching depends very much on the bilingual individual and his or her particular language behaviour.

4.1.2.4 Simultaneous and Successive Bilinguals

As defined above, the informants of the present study were split into simultaneous and successive bilingual speakers according to their language output at age 2;0. Coincidentally, the following numbers render the comparison of various scores of simultaneous and successive learners even more reliable: there are nine informants in each group; 55% of the recordings were taken of simultaneous learners, thus providing 53% of all utterances, and 45% of successive learners, providing 47% of all utterances. On average, simultaneous learners used 226 utterances per recording whereas successive learners used 240 utterances per recording, the numbers being close enough in order to be comparable. It was again not possible, though, to compare the two groups with respect to their general language competence. The average MLU score for the simultaneous learners was 4.65 and for the

successive speakers 5.34. Both scores were thus outside the reliable range for MLU scores. As for IPSyn scores, the simultaneous speakers scored 79 points on average and the successive speakers 86. We can still not conclude that successive speakers were more advanced in their language development as they were eight months older on average than the simultaneous learners (4;7 and 3;11).

Before we look at the acquisition sequences and the frequency of different code-switching functions among simultaneous and successive language learners, I want to briefly discuss language balance and behaviour in dominant and non-dominant language settings. As for the speakers' language balance, it is important to note that the simultaneous speakers were more or less balanced in 84% of the recordings. The successive learners, on the other hand, were balanced in only 34% of the recordings. We should keep this major difference in mind for the later analysis: in the majority of recordings, the simultaneous learners were balanced whereas the successive learners were unbalanced.

Table 4.16 indicates the scores for simultaneous and successive learners in dominant and non-dominant language settings. The index values for situational switching in dominant settings are very close. Only in the non-dominant settings, the successive learners adapted better to setting and participants. The percentages for skill-related and stylistic code-switching in different settings do not differ significantly but for one fact: successive speakers in dominant language settings used more switches than simultaneous learners, especially skill-related switching.

	index situational CS	skill-related CS	stylistic CS
simultaneous learners in dominant settings	1.97	1.0%	0.6%
successive learners in dominant settings	1.95	1.9%	1.0%
simultaneous learners in non-dominant settings	1.75	0.8%	1.0%
successive learners in non-dominant settings	1.85	1.1%	0.6%

Table 4.16 – Code-switching of simultaneous and successive learners in dominant and non-dominant language settings

4.1.2.4.1 Acquisition Sequences for Simultaneous and Successive Bilinguals

Above, I discussed the first occurrence of code-switching functions for the informants of the present data. The results were as follows:

1. code-switching for songs
2. situational code-switching in the form of setting-related code-switching
3. participant-related code-switching
4. mode-shifts, code-switching for attention attraction and emphasis, self-correction and clarification

5. initiated repairs and switching to avoid mixing, code-switching for elaboration and for fun
6. topic shifts, code-switching for power and in order to include or exclude participants, affect-loaded code-switching

We now want to look at the first occurrence of each code-switching function depending on the time of the informants' L2 acquisition.

Situational Code-Switching

Among simultaneous and successive speakers, situational code-switching was regularly used. Simultaneous speakers started using setting- and participant-related code-switching at the beginning of their third year. It has to be pointed out, though, that the average age of the informants of the present study was too high in order to provide reliable numbers. It seems likely (and is supported by some studies in the relevant literature) that simultaneous learners are able to use situational switching even earlier. We must note, on the other hand, that while some simultaneous learners were able to show pragmatic sensitivity to the setting even before their second birthday, this did, by definition, not occur with the successive learners as the latter did not use their second language actively at this age.

As for participant-related code-switching, some speakers of both groups started rather early to adjust their language according to different participants. It may be interesting to consider that successive learners first adapted to participants before they showed adjustment to the setting. Switching in order to include or exclude participants was too rare overall in order to provide reliable results. It mainly occurred with successive speakers.

CS function	first occurrence simultaneous learners	first occurrence successive learners
setting-related CS	(1;8) 2;2	(3;0) 3;4
participant-related CS	(2;5) 2;5	(2;4) 2;8
CS to include participants	(4;7) 4;7	(4;3) 4;5

Table 4.17 – Average first occurrence of situational code-switching functions for simultaneous and successive speakers¹¹⁹

Skill-related Code-Switching

With regard to skill-related code-switching, we can note that all functions occurred earlier among simultaneous speakers. Only successive speakers switched affect-loaded, which can therefore not be compared with the simultaneous speakers.

The simultaneous learners first switched for songs, although this may be coincidental, as it can occur with any bilingual speaker with a minimal competence in the second language. Switching for songs occurred much later, though, among successive speakers. Switching for self-correction, for clarification and many months later in order to avoid

¹¹⁹ Indicated in brackets is the very first occurrence of the particular code-switching function.

mixing was used by successive learners about six months later than by simultaneous learners. This age difference is less meaningful as the successive learners were older on average. Initiated repairs, on the other hand, were used a lot earlier by simultaneous speakers than by successive speakers. This may again have reasons unrelated to the age of L2 acquisition: more simultaneous learners come from mixed marriages with parents using insisting strategies.

CS function	first occurrence simultaneous learners	first occurrence successive learners
CS for songs	(1;8) 1;8	(3;1) 3;7
CS for self-correction	(2;5) 2;6	(3;0) 3;0
CS for clarification	(2;7) 2;9	(3;1) 3;1
initiated repair	(2;7) 3;1	(4;1) 4;1
avoid mixing	(2;9) 3;7	(3;0) 4;0
affect-loaded CS	-	(5;1) 5;3

Table 4.18 – Average first occurrence of skill-related code-switching functions for simultaneous and successive speakers

All skill-related functions of code-switching (but for affect-loaded switching) occurred earlier with simultaneous speakers. The age differences are in most cases not significant, though, especially considering the fact that successive speakers start using their second language later.

Stylistic Code-Switching

With regard to stylistic code-switching, it is again noticeable that simultaneous learners used all but two rare functions of code-switching earlier than the successive learners.

CS function	first occurrence simultaneous learners	first occurrence successive learners
CS for attention attraction	(2;3) 2;6	(4;1) 4;6
mode-shifts	(2;6) 2;6	(3;8) 3;8
CS for emphasis	(2;7) 2;8	(4;1) 4;1
CS for elaboration	(2;10) 3;6	(4;0) 4;1
CS for fun/language play	(3;6) 3;6	(3;11) 4;0
topic shifts	(4;8) 5;5	(4;0) 4;1
CS for power/authority	(4;9) 5;3	(4;4) 4;6

Table 4.19 – Average first occurrence of stylistic code-switching functions for simultaneous and successive speakers

The first function among simultaneous speakers was switching for attention attraction. This was used only much later by successive speakers, presumably because they first need to acquire sufficient competence in both languages before they learn to switch for stylistic purposes. Mode shifts and code-switching for emphasis were also used a lot earlier by simultaneous speakers. The age difference is much less significant regarding the use of code-switching for elaboration and for fun by simultaneous and successive speakers. Surprisingly, topic shifts as well as switching for power was used earlier by successive learners. Concerning topic shifts, the successive speakers are more likely to have a

preferred language for specific topics as many of them acquire their languages in different contexts.

Most stylistic functions of code-switching occurred much earlier among simultaneous speakers. The age differences are less obvious for functions that are used among more advanced speakers. Some functions are even used earlier by successive speakers.

To sum up, table 4.20 indicates the average first occurrences of various code-switching functions used by simultaneous and successive speakers of the present study:

age	acquisition sequence used by simultaneous learners:	acquisition sequence used by successive learners:
up to ~2;0	CS for songs	no switching per definition
up to ~2;6	setting-related CS participant-related CS CS for self-correction CS for attention attraction mode-shifts	no switching
up to ~3;0	CS for emphasis CS for clarification initiated repairs	participant-related CS CS for self-correction CS for clarification
up to ~4;0	CS for elaboration CS for fun CS to avoid mixing	setting-related CS CS for songs mode-shifts CS to avoid mixing CS for fun CS for elaboration topic shifts CS for emphasis initiated repair
up to ~5;0	CS to include participants	CS to include participants CS for attention attraction CS for power
after 5;1	CS for power topic shifts	affect-loaded CS

Table 4.20 – Comparison of code-switching acquisition sequences of simultaneous and successive learners

Functions occurring within a few months were grouped together as it seems unlikely that the present data can indicate the first occurrence of a certain function more precisely. The most noticeable facts concerning the sequences for the acquisition of code-switching functions of simultaneous and successive speakers are the following:

- both groups used situational switching from early on, though it was naturally used earlier by simultaneous speakers; setting-related switching seems more relevant to simultaneous speakers than to successive speakers; successive speakers first switched participant-related
- simultaneous speakers started using a variety of skill-related and stylistic code-switching functions as soon as their language competence in both languages allowed this (ca. between age 2;0-3;0)

- except for the use of mode shifts, successive learners mainly used situational and skill-related code-switching functions up to their fourth birthday; around age 4;0, various functions of stylistic switching were used
- code-switching in order to include or exclude participants, affect-loaded code-switching as well as code-switching for power were functions rarely used by both groups and not earlier than at age 4;3

In the following chapter, I will compare my results concerning the switching behaviour of simultaneous and successive children with acquisition sequences proposed in the relevant literature. Before I turn to this comparison, though, I want to display the frequency of code-switching functions used by simultaneous and successive speakers.

4.1.2.4.2 Frequency Differences in Simultaneous and Successive Bilinguals

I will now discuss the frequency of code-switching depending on the time of L2 acquisition. The differences in code-switching behaviour between the children who were exposed to their second language from birth and those who were exposed later are insignificant, as can be seen in table 4.21.

	index situational CS	skill-related CS	stylistic CS
regular exposure to L1 and L2 from birth	1.71	0.8%	1.0%
exposure to L1 and L2 from birth but to one below 10%	1.80	1.2%	0.4%
later exposure to L2	1.81	0.8%	1.0%

Table 4.21 – Code-switching in relation to first exposure to L2

The children somehow exposed to both languages from birth but to one language only below 10% used more skill-related switching and less stylistic switching than the other informants but the differences are not big. Only the fact that they actually used three times more skill-related switching than stylistic switching may be of interest. Out of the nine children in this group, only three were active bilinguals around age 2;0, i.e. simultaneous learners. It can thus be presumed that due to lacking language competence, they switched less for stylistic reasons.

However, as mentioned above, it seemed more appropriate to distinguish simultaneous and successive learners depending on their actual language output at age 2;0. The following table looks at the different percentages of code-switching use for simultaneous and successive speakers:

	index situational CS	skill-related CS	stylistic CS
simultaneous	1.85	0.9%	0.8%
successive	1.71	1.1%	0.6%

Table 4.22 – Code-switching behaviour in simultaneous and successive bilinguals

Situational Code-Switching

The simultaneous learners better adapted to setting and participants. Six had no difficulties at all, whereas three informants (Lucy, Lou and Tessa) adapted less well in some recordings. Tessa (in her first recording, age 1;8) and Lou (in her first three recordings, age 3;9-4;0) were unable to adapt because they did not actively speak the second language at the time of the mentioned recordings. Lucy was too young when her recordings started in order to determine whether she adapted or not – she used mainly 1- to 2-word sentences and mixed a lot. Four of the nine successive learners also adapted well to setting and participants. The other five had various reasons not to adapt: they were either clearly dominant in one language and not easily able to actively use their second language or they did not *want* to use their second language for preference reasons. Leah was also very young in her first recording (age 1;8) and used mainly single German and English words.

Skill-Related Code-Switching

The differences in skill-related switching behaviour between simultaneous and successive bilingual children seem insignificant at first sight. Successive learners, though, used almost twice as much skill-related as stylistic code-switching.

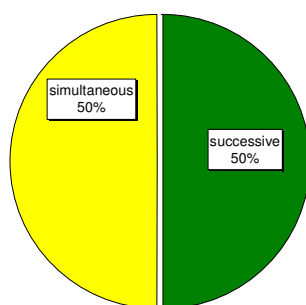


Figure 4.6 – Distribution of skill-related code-switching functions among simultaneous and successive speakers

Figure 4.6 indicates that exactly 50% of all skill-related switches were made by simultaneous learners and the other 50% by successive learners. We therefore need to examine the individual categories.

CS function	simultaneous	successive
CS for clarification	54%	46%
affect-loaded CS	0%	100%
initiated repairs	29%	71%
self-correction	62%	38%
avoid mixing	33%	67%
CS for songs	48%	52%

Table 4.23 – Percentages of individual skill-related code-switching functions for simultaneous and successive language learners

There should not be a great difference in code-switching behaviour for songs. As pointed out above, these can occur with any speaker independent of language dominance or preference. Switching for songs rather depends on a particular setting and on the informant's background, for example, on the question of whether the informant is regularly exposed to music and songs and in how far this is encouraged by the parents or other caretakers. Consequently, most of the informants of the present study used songs to some degree.¹²⁰ 48% of all songs were used by simultaneous learners and 52% by successive learners, the difference thus not being important.

Almost as close and therefore insignificant are the percentages for code-switching for clarification. 54% of all switches for clarification were made by simultaneous learners and 46% by successive learners. Both groups predominantly clarified their utterances through the translation of single words. Some older children also used full sentences.

Initiated repairs and self-corrections are two rather similar switching types. In both cases, the informants usually used their dominant language first before they are either expected to correct their choice (or their language mix) through a participant's initiation or they self-correct it. On the whole, initiated repairs were a lot rarer and mostly used by successive learners: out of nine informants who used initiated repairs, six were successive. Only 29% of all initiated repairs occurred with simultaneous learners. It is tempting to believe that parents of successive learners think it more important to insist on language separation in order to reduce mixing and help the child to quickly adjust to the new language. However, only the parents of two of the successive speakers insisted on language separation. In most cases, the children rather corrected their utterances at the interviewer's request. As for self-corrections, 62% were done by simultaneous learners. While most informants used self-corrections (but for two simultaneous and three successive learners), the simultaneous bilinguals used more self-corrections on average. The frequency differences are still not strikingly high.

The numbers are similar for another type of skill-related code-switching: switching in order to avoid mixing. However, the generally low occurrence of this type of code-switching makes it difficult to draw any valid conclusions. Among the simultaneous learners, we find a single example of this function in the data of only three speakers. Successive speakers made 67% of the switches in order to avoid mixing. We could have presumed that successive speakers are more tempted to mix and thus also have more

¹²⁰ It may be interesting to note that most children picked in the New Haven area knew each other from a music class.

opportunities of avoiding these mixes but as seen above, the mixing behaviour between simultaneous and successive learners did not differ significantly.

Affect-loaded switching occurred even less often with only four examples in the entire data set. None of the switches were made by simultaneous learners, leaving 100% for the successive learners. The only possible explanation could be that the simultaneous learners were usually more balanced than the successive learners and thus more able to use any language in affect-loaded situations.

Summarising the use of skill-related code-switching, we can assume that simultaneous and successive language learners do not differ significantly in their skill-related code-switching behaviour.

Stylistic Code-Switching

Concerning stylistic code-switching, the overall difference between code-switching behaviour of simultaneous and successive bilingual children does not seem striking: 49% of all stylistic switches were made by simultaneous learners, 51% by successive learners.

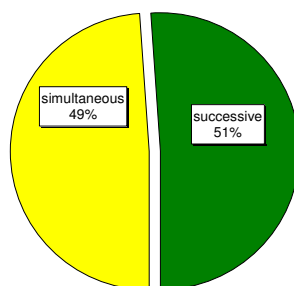


Figure 4.7 - Distribution of stylistic code-switching functions among simultaneous and successive speakers

Even if we limit our focus to the core functions of stylistic switching, namely emphasis, attention attraction, elaboration and switching for power, the distribution does not differ significantly: 55% of the switches were done by simultaneous learners and 45% by successive learners. I want to point out, though, that six informants did not use any of the four functions of code-switching. Five of these six informants were successive learners. The other four successive learners thus used a lot more stylistic code-switching.

Again, we need to examine the individual categories of code-switching functions, this time stylistic, in detail. 60% of the switches for emphasis and 55% for attention attraction were made by simultaneous learners. These two functions can sometimes be confused as they are rather similar. The differences in comparison with the percentages of the successive learners are not big enough in order to be significant.

CS function	simultaneous	successive
CS for emphasis	60%	40%
CS for attention attraction	55%	45%
CS for elaboration	63%	37%
CS for power/authority	25%	75%
mode-shifts	47%	53%
topic shifts	27%	73%
CS for fun/language play	63%	37%

Table 4.24 – Percentages of individual stylistic code-switching functions for simultaneous and successive language learners

Just slightly higher at 63% was the use of code-switching for elaboration among simultaneous learners. As mentioned above, they were more balanced and thus certainly more at ease in both their languages to facilitate the use of code-switching for elaboration. Only two of the successive learners made use of this function.

Code-switching for power was used extremely rarely. 25% (two examples) were used by simultaneous learners and 75% by successive learners. Well-founded conclusions are, however, again impossible to draw because of the overall low number of occurrences. The same holds for the category of switching for fun or language play. Simultaneous speakers provided 63% of these switches but they seemed to be a rather individual occurrence: half of the switches were used by only one informant (Tessa), who particularly enjoyed playing with language and happens to be a simultaneous speaker.

With regard to conversational code-switching functions in the form of topic- and mode-shifts, we find slightly more switches among the successive learners. Whereas the numbers do not differ much for mode shifts, successive learners used more topic shifts. Although we can assume that the successive learners are more likely to want to change the language of the setting to their preferred language, the total number of topic shifts is again too low in order to draw any persuasive conclusions. The total number of mode shifts is rather high because when they were used, there were several occurrences in one recording.

Overall, it can be pointed out with regard to stylistic code-switching, that there was again no major difference in code-switching behaviour between successive and simultaneous bilinguals.

Summary

Summing up the results of the quantitative comparison of code-switching functions used by simultaneous and successive bilingual speakers of the present study, only two major points need to be highlighted:

- simultaneous learners better adapted to setting and participants
- simultaneous and successive language learners did not differ significantly in their skill-related and stylistic code-switching behaviour

4.1.3 Summary

In the previous chapter, I discussed the results on mixing and switching behaviour of the informants of the present study. We have seen that all participants mixed their languages to some degree. We also found that all participants made use of code-switching for various purposes. It has been shown that many factors may influence mixing and switching behaviour but only one aspect, namely the question of when a speaker was regularly exposed to a second language and started speaking this language, was discussed in detail.

It is difficult to compare the results of the present study with the existing literature. Not many studies deal with the topic of code-switching and even fewer with frequency of switching and acquisition sequences. With regard to frequency of code-switching in children's data, we only find a comment by Vihman (1998), stating that 10% of all turns in her data were affected by code-switching. As for different acquisition sequences, these will be discussed in the following chapter.

4.2 Evaluation of Different Code-Switching Acquisition Sequences

I have just presented the results on the mixing and switching behaviour of the 18 bilingual informants of the present study. An acquisition sequence of code-switching functions among simultaneous and successive bilingual children was provided at the end of chapter 4.1.2.4.1. Above (see chapter 2.2), acquisition sequences proposed in the relevant literature were demonstrated. I now want to compare and evaluate the different sequences.

Code-switching in the literature

McClure and Wentz (1975) propose the following sequence for the acquisition of code-switching:

1. situational code-switching
2. metaphorical and stylistic code-switching
3. marked code choice / affect-loaded switching¹²¹

McClure (1977) indicates a more detailed breakdown of the second stage:

- 2a. code-switching for clarification and attention attraction
- 2b. mode shifts (5-year-olds)
- 2c. topic and addressee shifts (6-year-olds)
- 2d. code-switching for focus, elaboration and emphasis (7-year-olds)

Although they provide a revealing list of diverse switching functions, it has to be questioned whether their results concerning the age at the first occurrence of a particular code-switching function are representative. The analysis of various other studies dealing

¹²¹ Both terms are used in different publications of McClure and Wentz.

with bilingual children and their code-switching behaviour (see chapter 2.1) has shown that even much younger children use a number of code-switching functions. One of these studies is the DUFDE project, which provides first examples of code-switching from children around age 1;6. Despite the range of code-switching functions that occur in their data, Köppe and Meisel (1995) only point out very limited findings concerning the acquisition of code-switching functions: initiated repairs occur first, followed by role-plays and self-initiated switching. Marked code choice appears as a further step in the acquisition process. Köppe and Meisel's proposition for the acquisition of code-switching can easily be compared with McClure and Wentz's order. Initiated repairs, role-plays and self-initiated switching belong to the category of metaphorical and stylistic code-switching. The last category of marked code choice corresponds to McClure and Wentz's category of marked code choice.

It is somehow more difficult to compare Köppe and Meisel's sequence with the data of the present study since I distinguished between the categories of skill-related and stylistic code-switching. The present data did therefore not generally confirm Köppe and Meisel's sequence: although some initiated repairs also occurred rather early, other functions were found even earlier in the present data. As for role-plays, the analysis of the present study did not distinguish between situations in which the child initiated the role-play or the interviewer did. Some role-plays in the present data are thus self-initiated and consequently include two of Köppe and Meisel's functions. Based on the present data, I believe that through the initiation of a role-play a child may at the same time opt for the marked code. In this case, even three steps of Köppe and Meisel's sequence occur at once: role-play, self-initiated switching and marked code choice. In order to formulate a more detailed acquisition sequence, they could have included more data and more categories.

Simultaneous Learners

In my own analysis, I was able to show that code-switching for various purposes may start much earlier than indicated by McClure and Wentz. I now want to compare the acquisition sequences for the acquisition of code-switching among simultaneous children. Table 4.25 shows that there are no major differences between the two acquisition sequences. Situational code-switching, switching for songs and switching for attention attraction occur first. In my own data, I then found switching for various purposes, such as self-correction, mode-shifts, code-switching for emphasis, for clarification and initiated repairs. Most other studies indicate the occurrence of the skill-related functions initiated repair and switching

for self-correction first but then also note functions like mode-shifts, code-switching for emphasis, clarification and even elaboration.

age	acquisition sequence extracted from studies in chapter 2.1.1:	acquisition sequence based on the data of the present study:
up to ~2;0	CS for attention attraction situational CS CS for songs	CS for songs
up to ~2;6	initiated repair	situational CS (setting-related CS, participant-related CS) CS for self-correction CS for attention attraction mode-shifts
up to ~3;0	CS for self-correction CS to include participants mode shifts CS for emphasis CS for clarification CS for elaboration	CS for emphasis CS for clarification initiated repair
up to ~4;0	CS for fun CS to avoid mixing	CS for elaboration CS for fun CS to avoid mixing
up to ~5;0	affect-loaded CS	CS to include participants
after 5;1	CS for power CS to exclude participants topic shifts	CS for power topic shifts

Table 4.25 – Comparison of code-switching acquisition sequences of simultaneous learners

The only major differences between the two sequences up to the age of about 3;0 are that code-switching for elaboration and in order to include participants are mentioned in studies in the literature but not in the data of the present study. Code-switching for elaboration actually occurred in the present study at the same age but only with one informant. Switching in order to include participants depends, as mentioned before, very much on the actual setting. The fact that it did not occur in the data earlier does not mean that the informants were unable to make use of this particular function.

The only differences between the two sequences after age 3;1 are that affect-loaded switching and switching in order to exclude participants are mentioned in the literature but there were no examples recorded in the present data. Affect-loaded switching is, as mentioned before, very rare and a researcher may just be fortunate to be able to record an affect-loaded switch. Switching in order to exclude participants did presumably not occur because of the nature of the settings which did not encourage this function. It is mostly used in the presence of monolinguals. In most settings, however, only bilingual speakers were present. It was noted by the parents of one child in the present study, also after age 5;1, but was not recorded.

The early occurrence of situational switching and switching for attention attraction and clarification corresponds with what McClure and Wentz (1975) indicate. However,

whereas McClure and Wentz then provide examples of other switching functions from much older children (5- to 7-year-olds), other studies and the present study found examples of switching for similar functions from 2- to 3-year-olds. Only the age for the occurrence of topic shifts seems to correspond. It was mentioned above that although McClure and Wentz do not indicate the exact time and manner of the L2 acquisition of their informants, it is likely that most of them are successive learners. We could therefore ask whether the age differences of the various acquisition sequences are the result of different times of L2 acquisition. In order to answer this question, we need to further look at the acquisition sequences for successive learners.

Successive Learners

Studies on successive learners that indicate code-switching functions and their first occurrence are too rare in order to formulate a general order of acquisition of code-switching functions. The following table indicates certain tendencies, though:

age	acquisition sequence extracted from studies in chapter 2.1.2:	acquisition sequence based on the data of the present study:
up to ~2;6	no switching	no switching
up to ~3;0	(setting- and) participant-related CS (CS for self-correction) (CS for emphasis)	participant-related CS CS for self-correction CS for clarification
up to ~4;0	CS for clarification (mode-shifts)	setting-related CS CS for songs mode-shifts CS to avoid mixing CS for fun CS for elaboration topic shifts CS for emphasis initiated repair
up to ~5;0		CS to include participants CS for attention attraction CS for power
after 5;1	(CS for songs) (CS for fun) (CS to include and exclude participants) (initiated repair)	affect-loaded CS

Table 4.26 – Comparison of code-switching acquisition sequences of successive learners – Functions that are mentioned only once in only one study are indicated in brackets

Comparing the acquisition of code-switching functions as indicated in various other studies with the results of the present study, we find that successive learners start switching only towards the end of the third year.¹²² Participant-related code-switching occurs as first function of code-switching. Code-switching for clarification is also used rather early and

¹²² This depends, of course, on the age at which children are regularly exposed to the second language. Most successive children of the present study, who did not speak their second language actively at age 2;0, were either exposed to the second language before that age but only to a very limited degree or exposure started around this age.

one of the most often used functions by successive learners. Code-switching for self-correction also occurred early: it was frequently used in the data of the present study but is only mentioned once in other studies. With regard to various other functions, such as code-switching for emphasis, for songs, for fun, in order to include and exclude participants, mode-shifts and initiated repairs, it is difficult to make any claims about their first use because they are only mentioned in one study in the literature without any indication of the stage of a child's L2 acquisition. All of these functions were used to varying degrees by the informants of the present study. Most functions first occurred between age 3;0 and 4;0. At this point, the children became more confident in their second language and were able to switch between their languages. The active use of two languages thus seems to be an important pre-requisite for code-switching. Among the functions occurring somehow later are code-switching in order to include or exclude participants and code-switching for power. For these functions, the child does not only need the linguistic ability to switch languages but further needs to have learned rules concerning social behaviour. In these cases, the child consciously marks the language choice for a certain social effect. Affect-loaded switching also occurred later but too infrequently in order to make claims about its occurrence.

If we now compare these results with the sequence proposed by McClure and Wentz, we find that their basic claims can be confirmed: situational switching occurs first, followed by various stylistic functions and marked code choice or affect-loaded switching. Many studies confirm the use of code-switching for songs even before situational switching but McClure and Wentz did not include switching for songs in their analysis. As for their category of metaphorical and stylistic functions of code-switching, the present data as well as other studies confirm the early use of code-switching for clarification. The early occurrence of code-switching for attention attraction, on the other hand, is not confirmed by other studies. Mode-shifts did occur but earlier than described by McClure and Wentz. Code-switching for elaboration and for emphasis occurred around the same time and not much later than in McClure and Wentz's data. Their categories of code-switching for focus and for addressee shifts were not included in the analysis of other studies, including the present one, since their definition seemed too vague for a general comparison.

Most problematic, though, is McClure and Wentz's last category and their definition of marked code choice or affect-loaded switching. Some studies on simultaneous learners confirm that affect-loaded switching occurs later than stylistic code-switching. Some

children, though, use affect-loaded switching earlier than several functions of stylistic switching. Unfortunately, affect-loaded switching is not mentioned at all in studies on successive bilingual children. Whereas the definition of affect-loaded switching is rather vague, the notion of marked code choice may also be interpreted in different ways: it may simply mean that children make conscious use of their second language for a specific purpose that demands some degree of social knowledge. In this case, marked code choice corresponds with several of the stylistic functions, as for example switches for power, in order to exclude people from a conversation, but also code-switching for emphasis or for fun. Since all these functions were considered stylistic in the present analysis, it cannot be confirmed by the present data that stylistic code-switching occurs before marked code choice.

Summary

The present study can, of course, not provide enough material for a universally valid model. It was tried, though, to evaluate existing models with further data provided in the relevant literature and to include new data in order to have a broad data base. The results can be summarised as follows:

- Summarising various studies in the literature and comparing the results with those of the present study, we find that the acquisition sequences for simultaneous bilingual children are highly similar.
- Data on successive bilingual children in the relevant literature is so scarce that it is difficult to propose an acquisition sequence. The trend, however, seems to indicate similar functions at similar stages in the development as found in the data of the present study.
- It seems useful to introduce the categories of stylistic and skill-related functions as these are different in nature.
- Two key aspects of McClure and Wentz's model for the acquisition of code-switching functions can basically be confirmed: situational switching occurs first followed by various functions of metaphorical and stylistic code-switching. Marked code choice, though, does not necessarily occur as the third step but may develop at the same time as other stylistic functions. Most functions of code-switching mentioned in McClure and Wentz's data occurred earlier in the present data. Attention attraction was not the most frequently used function of code-switching – even code-switching for emphasis, which was described as very rare in McClure and Wentz's data, occurred more frequently.

Although it seems as if different data sets always lead to different results for a sequence for the acquisition of code-switching, some general tendencies can be detected. These shall be summarised in the following chapter.

4.3 The Acquisition of Code-Switching

In the previous chapters, we have looked at various propositions for the acquisition of code-switching functions. Based on the results of McClure and Wentz (1975) and Köppe and Meisel (1995), the data provided in various other studies in the literature and the present study, the following facts can be pointed out:

1. Even before situational code-switching, many studies on simultaneous bilingualism confirm the use of **code-switching for songs**, rhymes or culturally-based fixed expressions. The use of this type of switching demands the lowest competence in a second language. It can thus occur among very young simultaneous bilinguals as well as among successive bilinguals at a very early stage of their bilingualism. However, in none of the studies on successive bilingualism, this function occurs remarkably early.
2. **Situational code-switching** in the form of setting- and participant-related code-switching is used from early on among bilingual speakers. This finding is confirmed by studies on simultaneous as well as successive children. Participant-related code-switching is the first function used by successive speakers. It seems important, though, to point out that situational code-switching is also the most straightforward form of code-switching, which can easily be triggered and controlled.
3. As next step in the acquisition of code-switching, many studies confirm the use of different **skill-related functions of code-switching**: code-switching for self-correction and for clarification among both groups, initiated repairs in studies on simultaneous bilingualism. The stylistic functions of code-switching for attention attraction and for emphasis are also mentioned early in several studies, usually describing single word repetitions in both languages. However, these occurrences cannot always clearly be interpreted as code-switches as it is often not obvious whether a child switches for a reason, let alone a stylistic reason. For these two functions in particular, different interpretations may result in major differences concerning the age at which the functions first occur.¹²³
4. **Mode-shifts**, usually in the form of role-plays or switches between monologues and participation in ongoing conversations, occur next or at about the same time as

¹²³ McClure and Wentz, for example, point out that they found first examples of attention attraction among very young children but first switches for emphasis only among 7-year-olds. Their examples are very similar, though.

the previously mentioned skill-related functions. Mode-shifts, just as situational switches, are easy to identify and can be triggered by the interviewing person.

The so far described functions of code-switching can occur before the third birthday in the case of simultaneous bilingual children and before the fourth birthday in case of successive bilingual children who received increased input of a second language from about their second birthday.

5. Within the following year, the children acquire **various other skill-related and stylistic functions of code-switching**, such as switching in order to include participants or to avoid mixing, switching for elaboration or just for fun. Even affect-loaded switching, one of the rarest functions, may occur around this time. It is difficult, though, to define a common order for the acquisition of these functions. It seems likely that once the children have enough competence in both their languages, they start using various functions of code-switching. These are then rather dependent on the specific setting and the child's environment and character.
6. Several functions of code-switching, however, seem to occur rather late: **topic shifts, switching for power or in order to exclude participants**. Simultaneous bilingual children, in particular, seem less dependent on a specific language in order to talk about specific topics. This may be why most of them do not switch for topic shifts before they start school and get more and more input from the language of the environment. Switching for power and in order to exclude participants is a clearly marked code choice: the speakers take advantage of the fact that they know a second language and make use of it in order to either demonstrate power or authority or to purposely exclude somebody from their conversation. For both purposes, speakers need to have developed enough social competence in order to understand what they are doing. It is therefore unlikely that very young children make use of these functions.

5. CONCLUSION

The present book described and analysed the use of different code-switching functions in the speech of bilingual children. The special focus was put on code-switching behaviour of *children* because many questions remain open within this research area. I concentrated on the differences in switching behaviour between children with regular input from at least two languages from early on, resulting in active bilingualism by age 2;0 (simultaneous learners), and children with low or no input at all of a second language before their second birthday (successive learners). This is only one aspect in the vast field of code-switching that has not been examined to the fullest extent so far.

For several reasons, a single case-study can only indicate tendencies. First, there were not enough informants for my study to be representative. Informants do not only have different backgrounds but they also differ in character. These factors influence their language output. A second reason is that empirical data is always limited to the range of language usage employed by the chosen informants. And third, we are only concerned with the language pair of German and English, two rather close languages. Results may be very different for other language pairs. Nonetheless, the present case-study is based on natural data and describes the language behaviour of active bilingual speakers. It can be considered as a starting point for further research within the area of code-switching use of simultaneous and successive bilingual children.

In the first part, I introduced the theoretical background to the study of bilingual children. Basic ideas about bilingualism from different disciplines were briefly presented, including definitions, types, different degrees, and factors influencing bilingualism. Another aspect was the question of how to become and stay bilingual. Numerous studies have dealt with the topic of bilingualism in the last 40 years; large areas have been researched and answers to various questions been proposed. Nevertheless, research can hardly be conclusive due to the facts that language behaviour depends on the individual speaker, that it is not static but susceptible to change and that there is a large number of language combinations that may lead to bi- or multilingualism.

The introduction to the study of bilingualism was followed by the presentation of different models concerning bilingual language acquisition. This chapter was particularly important as background for the analysis as the participants of the present case-study acquired their second languages under different circumstances: some acquired both languages simultaneously from birth and others experienced successive language

acquisition. Although McLaughlin's terms of simultaneous and successive language acquisition were used, they were interpreted with regard only to a child's language *output*. Two other aspects within the field of bilingual language acquisition were discussed, namely the role of input as well as the question of whether bilinguals have one or two language systems. Whereas researchers basically agree nowadays that language differentiation happens very early, the role of language input and its effect on language output have been discussed in only very few studies.

The main part of the theoretical background presented various approaches to the study of code-switching. They were put in order according to their relevance to the present analysis. A brief overview of the history of the study of code-switching introduced us to the subject. Code-switching was then identified as one out of several language contact phenomena. It was distinguished as the juxtaposition of two languages within the same utterance or same conversation, usually fulfilling a specific function. It was regarded as a linguistic skill of bilingual speakers. The introduction to the grammatical approach helped understand the formal properties of code-switching, i.e. the rules for the production of code-switching. The neuro- and psycholinguistic approach offered findings on storage, the production and perception, as well as the interaction of the languages in the brain of a bilingual speaker. Both approaches were presented in order to provide the reader with some basic concepts relevant to the present analysis. However, they cannot account for the underlying motivations for code choice and code-switching, this being a central purpose of the present book. Only the sociolinguistic approach could provide explanations for a speaker's code choice. Sociolinguists first concentrated on switching strategies within bilingual communities. A local interpretation of a speaker's individual and spontaneous code choice, however, was only taken into account within the pragmatic approach, which is rooted in the sociolinguistic approach and concerned with communicative functions of code-switching in bilingual conversations. The pragmatic approach provided the tools necessary for the present analysis: it helps to identify communicative functions of code-switches and a speaker's intent of individual switches in conversations.

Although the approaches have all made significant contributions to the study of code-switching, not all were relevant in the same way to the present analysis. However, the introduction to the entire field of code-switching was useful in order to place the present study within the frame of code-switching research and to understand various points of view. Research continues in all areas and some researchers try to combine different approaches, which has so far only provided locally valid results. Since code-switching is a

most complex phenomenon, findings from different research areas must be considered for a multifaceted and interdisciplinary analysis.

The second part of the present book was dedicated to an overview of various former case-studies on bilingual children. Most studies deal with aspects like language mixing and language separation, interference or vocabulary growth. Only very few studies touch on the subject of code-switching. I therefore chose studies that provide speech samples of code-switched utterances that could be further analysed for the purpose of the present study.

The former case-studies were grouped into studies on simultaneous language learners, successive language learners and learners growing up in bilingual communities. Based on the speech samples provided in each study, the use and the development of code-switching functions among children were characterised. While it was easy to detect general tendencies in the code-switching behaviour of simultaneous learners, the data on successive learners is very scarce. Only very few studies provide speech samples and the variety of code-switching functions that could be found in these studies is extremely limited, which made a comparison with the findings from the studies on simultaneous learners difficult. The case-studies done in bilingual environments provided many more examples as they were naturally more concerned with the phenomenon of code-switching. One of these studies consequently provided the data for one out of two existing models on the acquisition of code-switching functions. The presentation of these models, McClure and Wentz's being the most influential, concluded the second part.

The fact that the acquisition sequence proposed by McClure and Wentz had not been verified so far in other studies and for different language pairs led to the present case-study. In the third and central part of this book, I presented my own case-study on eighteen English-German bilingual children. Following an introduction to the data collection and analysis, I discussed each informant individually with respect to their personal background and their individual language development. The recordings taken for this case-study were then analysed in detail with special focus on the child's mixing and switching behaviour. I also looked at their individual use of code-switching, taking frequency and order of occurrence of various switching functions into account.

The results on mixing and code-switching behaviour of the informants varied significantly. In the fourth chapter of the present book, I discussed and summarised the main findings. The informants' language behaviour was analysed in relation to various aspects, such as the time and manner of the informants' second language acquisition, their age, specific settings, the input conditions, their degree of bilingualism, their gender and

their sibling constellation. The special focus was put on differences between simultaneous and successive language learners.

With regard to mixing, the most important finding is that all informants used mixed utterances. The mixing percentage varied between 0% and 29% for individual recordings. The average mixing rate was 7%. The manner of L2 acquisition, the input conditions and the setting (i.e. dominant or non-dominant language setting) seemed to have the biggest influence on mixing behaviour. Children from mixed marriages with parents paying attention to clear language separation mixed less than children growing up in immigrant-like situations, elite bilinguals or children exposed to mixed input. In dominant language settings, mixing generally decreased with age. Younger siblings mixed less than their older siblings. Neither time of L2 acquisition nor gender seemed to influence mixing behaviour significantly.

It has been pointed out that all children, even those with higher mixing rates, were active bilinguals able to communicate in both their languages. Since mixing rates seem highly sensitive to input and language dominance, they can change within a short period of time, depending on changes in the informant's environment.

Code-switching occurrences were split into three categories for the analysis: situational, skill-related and stylistic code-switching. Situational code-switching is very common and occurred frequently in the data of every single informant. The informants adjusted their language to the setting and the participants from early on in the great majority of cases. Skill-related code-switching also occurred with every informant. Some used specific skill-related functions from early on. Stylistic switching occurred less often than situational and skill-related switching but was still used by all but two informants. It usually occurred once the child was proficient enough in both languages in order to switch for stylistic purposes and thus, later than most situational or skill-related code-switching.

Language balance, age, sibling constellation and input conditions also seemed to influence code-switching behaviour. Adjustment to setting and participants was best with balanced older siblings, exposed to separated input. These children also used most skill-related and stylistic code-switching, especially between the ages of 3;1 and 5;0. Children with one clearly dominant language, single children, children exposed to mixed input and elite bilinguals adapted least well and used less skill-related and stylistic code-switching. The manner of L2 acquisition, the setting and the gender did not seem to influence code-switching behaviour significantly.

The analysis did not bring about major differences between simultaneous and successive language learners with regard to acquisition sequences. Both groups started by using situational code-switching. Participant-related switching seemed more important for successive learners, whereas simultaneous learners better adapted to the setting. It took both groups about two years of language exposure before they used stylistic functions of code-switching, the difference being, though, that simultaneous learners do not produce any language output within the first year. As for the differences concerning the frequency of code-switching, it was shown that simultaneous learners better adapted to setting and participants than successive learners. Both groups did not differ significantly with regard to skill-related and stylistic code-switching.

In the last part of the fourth chapter, I compared the results on acquisition sequences of code-switching functions by bilingual children of my own case-study with those presented in the literature. It could be shown that the sequences for the simultaneous as well as for the successive learners resembled those proposed in the relevant literature. In comparison to the model of McClure and Wentz, though, a major difference could be shown with regard to the ages at which specific code-switching functions occurred as well as with regard to the frequency of occurrence of specific functions. I want to point out, however, that different acquisition sequences may also arise from different interpretations of code-switches. There is still no agreement among researchers of when exactly code-switching starts, i.e. at what age children are able to code-switch for pragmatic reasons. Consequently, some authors find very early examples of code-switching in their data, which may be condemned by other authors for not being meaningful code-switches.

The analysis and discussion of the present data ended with the proposition of a sequence for the acquisition of different code-switching functions, integrating former models as well as the present case-study. Children start by using code-switching for songs. This is followed by situational code-switching and various skill-related functions of code-switching. Mode-shifts occur before more skill-related and other stylistic functions. Several stylistic functions are very rare and occur as last step in the acquisition process.

Future Research

Former studies have concentrated on analysing aspects like interference or vocabulary growth in bilingual children. The analysis of code-switching among children therefore seemed to offer new and promising results. But the present data could also have been analysed with regard to many more aspects than just code-switching.

A most interesting aspect would have been the question of how bilingual children acquire different phonologies. At several points in this study, it could be seen that most informants were aware of phonological differences between their languages. Many showed awareness through requests for translations or through phonological and/or morphological adjustment of words in another linguistic context. The phonological adjustment of an inserted word from another language into the matrix language may help hide vocabulary gaps. There are several examples of this phenomenon in the present data:

- (263) Daniel (7;4): and now he's in a fall {*Falle*} [...]
- (264) Jan (4;6) I can make I can make it glad {*glatt*} we can make another one_ ok? [...]
 Jan: Look there!
 E: he's broken! oh! take him to the hospital
 Jan: no, you brake_ you make him glad {you flatten it}
- (265) Paula (4;6): *die Lucy hat das weggegraben von mir* {Lucy grabbed it from me} [note taken by the interviewer]
- (266) Paula (4;7): now my funny faces are all {*alle* = I can't make more funny faces} [example provided by her mother]
- (267) M: what do you call that on a car?
 Faye (4;9): rads {*Räder* = wheels}
 M: what are they called?
 Faye: rad

We also find examples of phonological adjustments in the DUFDE data:

- (268) Annika (2;11): *deckel*
 F: *quoi? qu'est-ce que tu cherches?*
 Annika: (un) *deck* (Veh, 1990:appendix p. 29)
- (269) Ivar (3;10): *c'est une [farn]* {*Fahne*} (Veh, 1990:app. p. 24)

Other studies report similar occurrences. Valette (1964:94), for example, points out that her informant replaced unknown vocabulary items by English words with a French accent. It seems obvious that the “melody” or the “right sound” is important for a bilingual child. Studies have shown that a language’s melody is also the first feature infants acquire with regard to their mother tongue.¹²⁴ Goodz (1994:63f.) suggests that infants hear languages as different prosodic melodies.

Consequently, we might ask whether bilingual speakers do not rather distinguish their languages by the melody, i.e. the sound, than by the vocabulary. No child is reported to have asked ‘what language is this or that word?’ but they rather ask ‘what is this or that word in English/German?’. I agree with Doyle et al. (1978:18) who claim that “it is more realistic to assume that the child utilises phonological differences to distinguish French and English utterances at an early age”. Further research in this area is needed in order to find out how bilingual children learn to distinguish their phonologies.

¹²⁴ See, for example, Crystal (1970).

In chapter 3.3, limitations to the present analysis were indicated. With regard to the informants, it would certainly have been beneficial to have a larger group of informants. Therefore, the results of the present study need to be confirmed by other studies in order to arrive at a more complete picture of code-switching behaviour among young bilingual children. Also, it has to be pointed out again that the children of the present study all came from a comparable social background and all grew up in an environment supporting their bilingualism. Results might be very different for speakers in a situation of subtractive bilingualism. Obviously, findings might also be different for language pairs other than English-German and for groups of informants who are exposed to their languages under different circumstances (e.g. in multilingual communities or in situations of artificial bilingualism or even trilingualism). Many questions remain open within the area of code-switching research among children and there is a great need for more studies on this subject.

Before concluding, this book, I want to point out an important aspect related to code-switching of children. The interpretation of code-switching by an adult speaker is already a difficult task as language use is highly individual and a speaker's intent has to be taken into account. The interpretation of code-switching among *children* is all the more difficult as their switches may easily be misinterpreted. Since especially young children cannot be asked about the intent of their switches, it is important to carefully evaluate the context of the specific setting. Bauer et al. (2002:72) point out that “[f]or a full understanding of bilinguals' unique skills and abilities, then their language use needs to be evaluated in multiple contexts under multiple conditions”.

The fact that bilingual speakers switch languages not only according to rules but because of personal motivations, demonstrates that language and language use may be too individual to be put into explicative or even predicting models. Therefore, the present analysis was limited to the *description* of the use of different functions of code-switching among bilingual children. It was demonstrated that code-switching is a common phenomenon of language use among bilingual speakers and even among very young bilingual children. Many different functions of code-switching are frequently used. Their use by the individual bilingual speaker is influenced by numerous factors and susceptible to changes in the speaker's environment. It could be shown that code-switching is a displayed feature of everyday bilingual behaviour.

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APPENDICES

A. CHARTS

MLU and IPSyn

The following charts show the MLU and/or IPSyn scores reached by the children in each recording. The MLU scores of some children could not be used for the analysis because the child was either too old (=linguistically too far developed) or the recording was unsuitable for valid MLU scores (e.g. if the child was asked too many questions and thus led to reply only in very short answers). In those cases, the IPSyn is a better indicator of the child's linguistic performance. If the recordings started after a child's fifth birthday, even IPSyn scores are unsuitable for statistics.

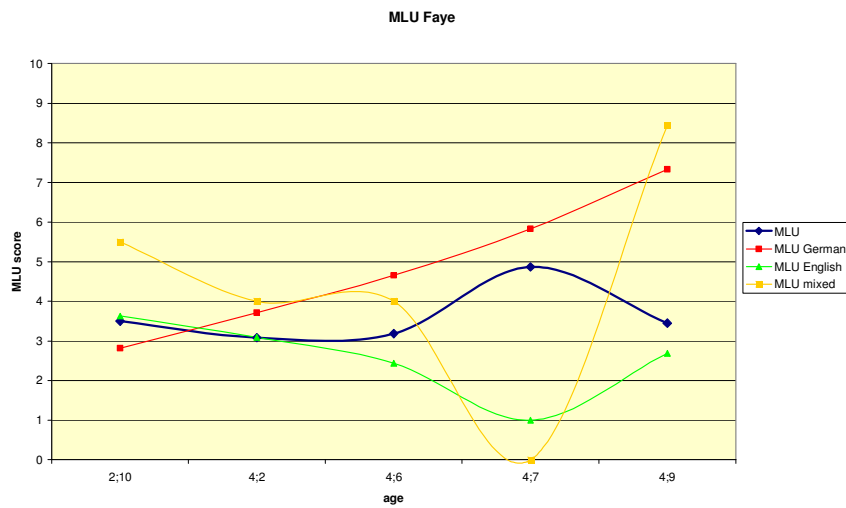


Figure I – MLU Faye

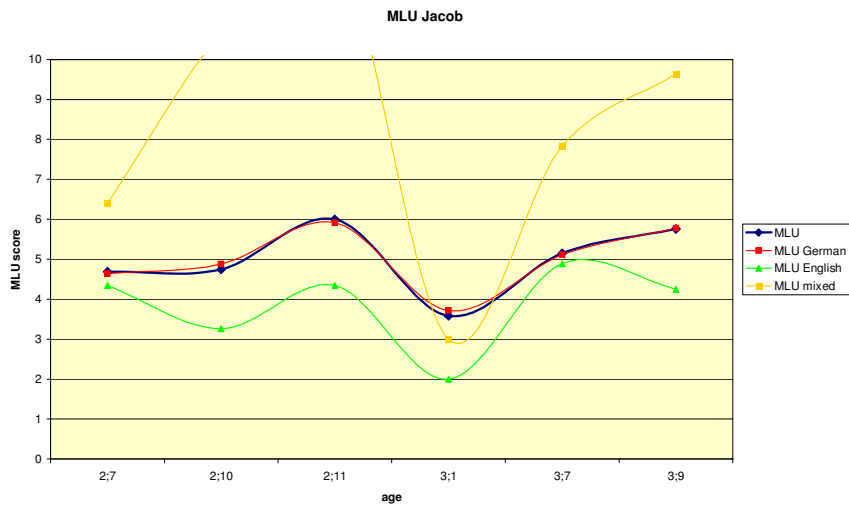


Figure II – MLU Jacob

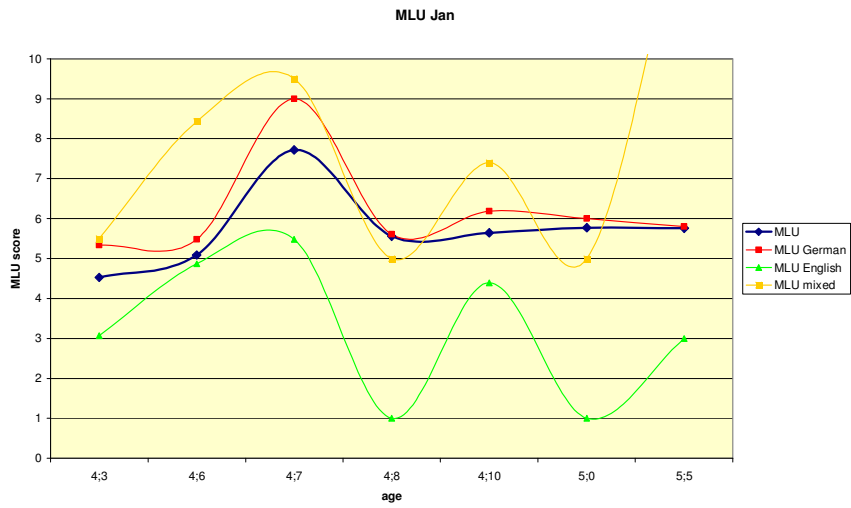


Figure III – MLU Jan

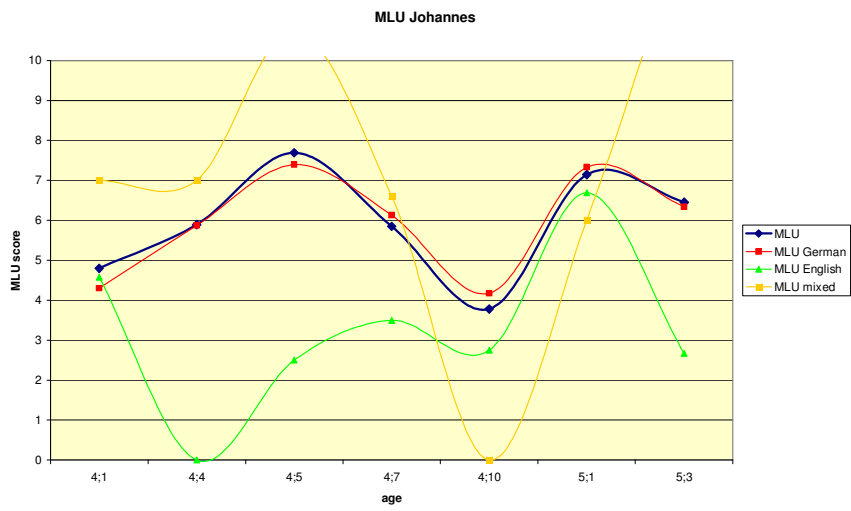


Figure IV – MLU Johannes

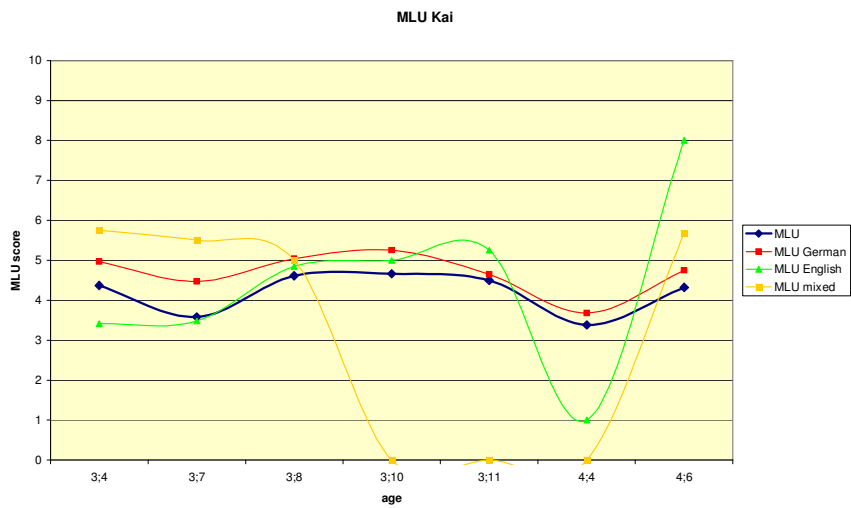


Figure V – MLU Kai

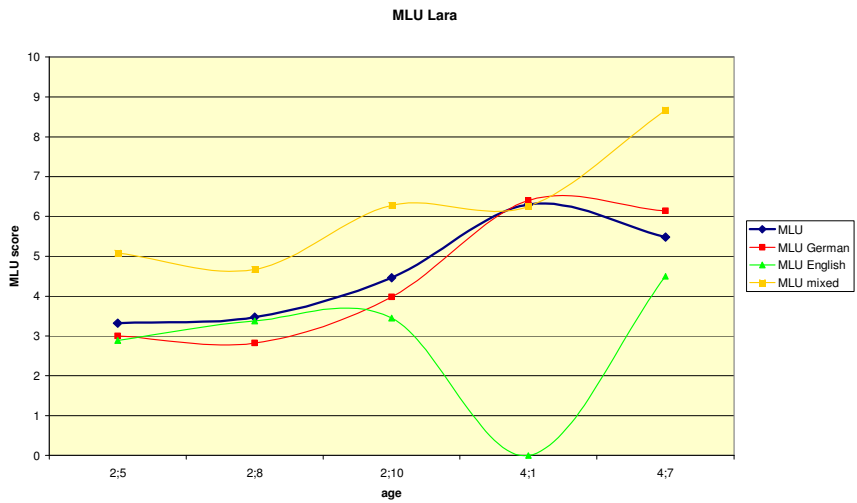


Figure VI – MLU Lara

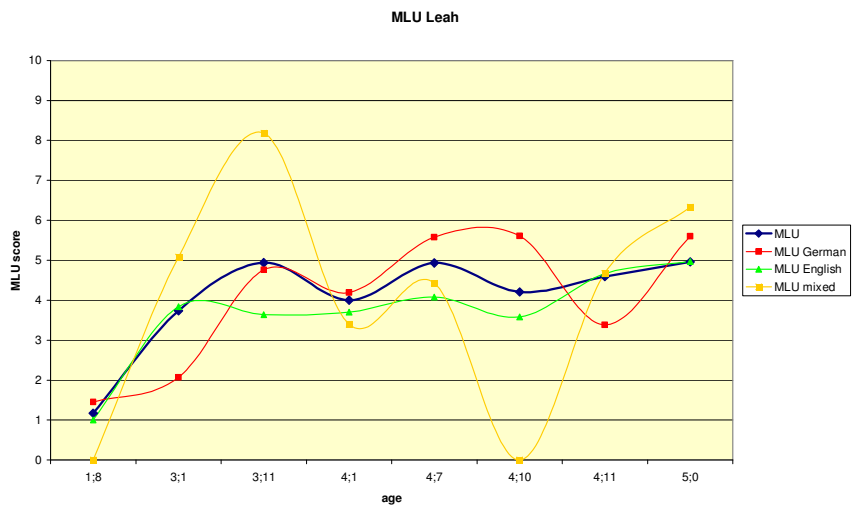


Figure VII – MLU Leah

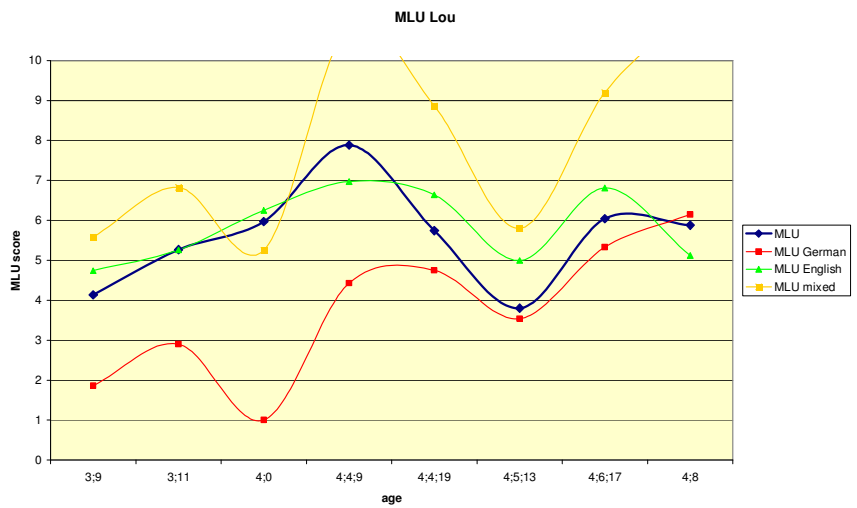


Figure VIII – MLU Lou

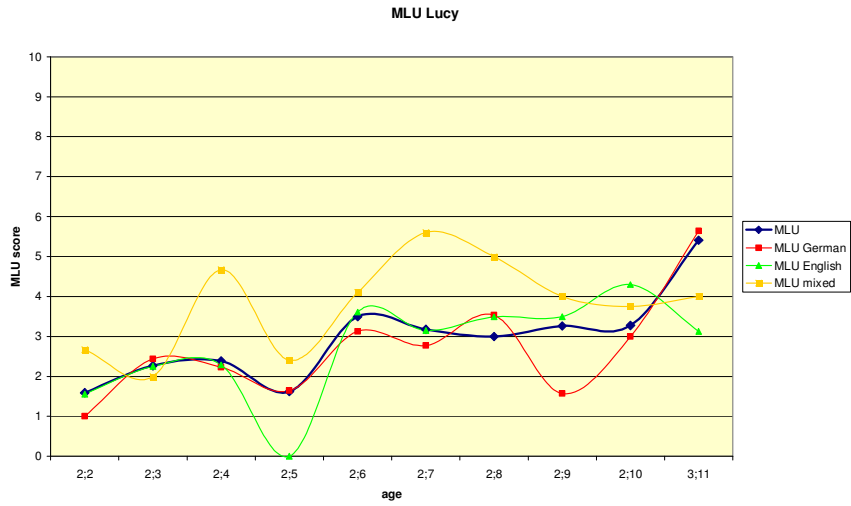


Figure IX – MLU Lucy

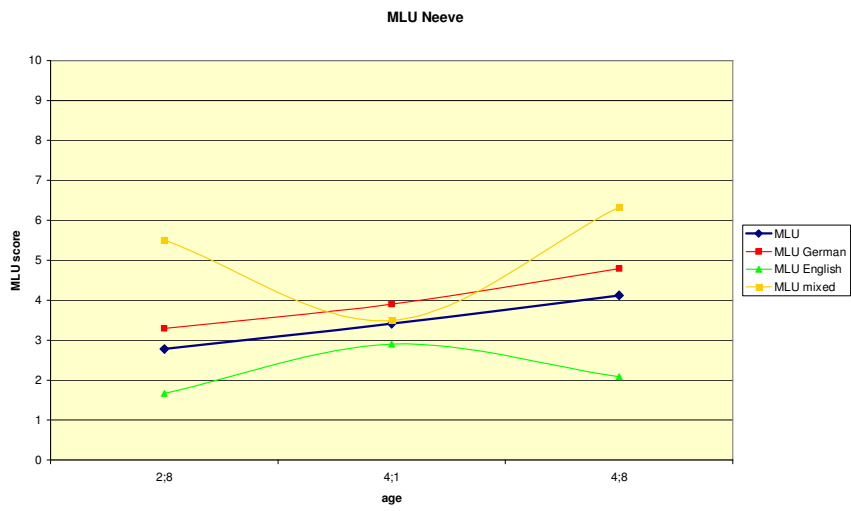


Figure X – MLU Neeve

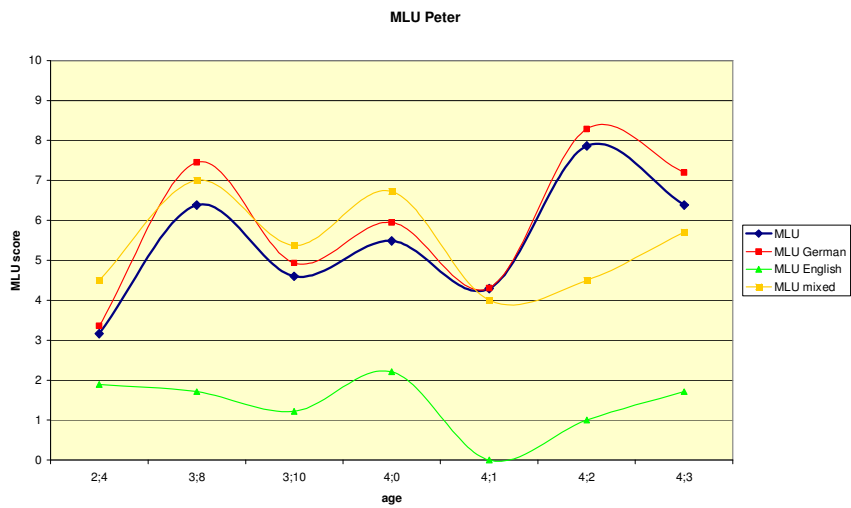


Figure XI – MLU Peter

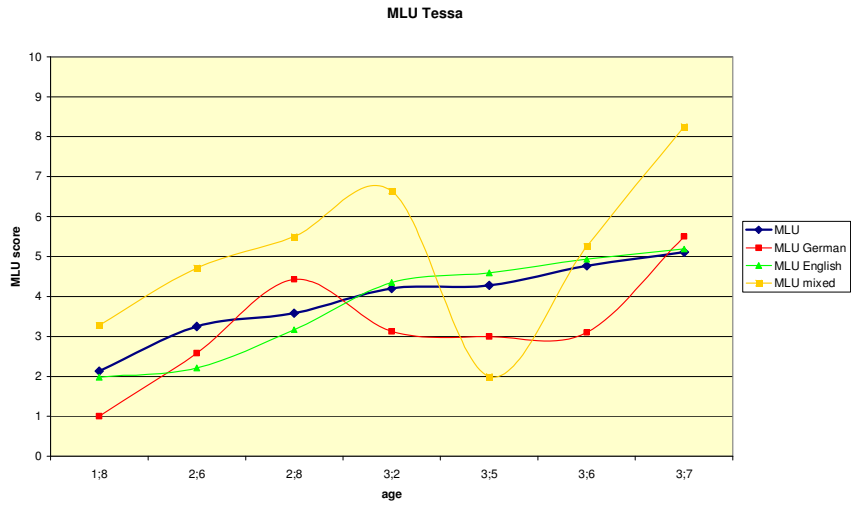


Figure XII – MLU Tessa

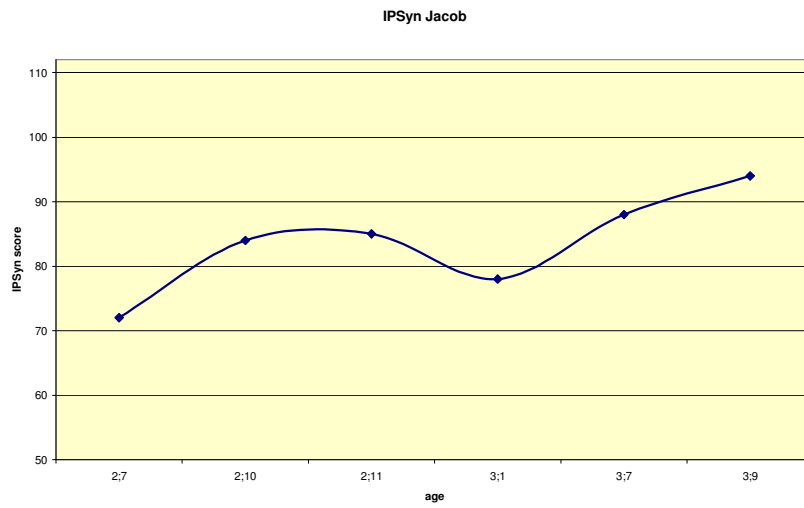


Figure XIII – IPSyn Jacob

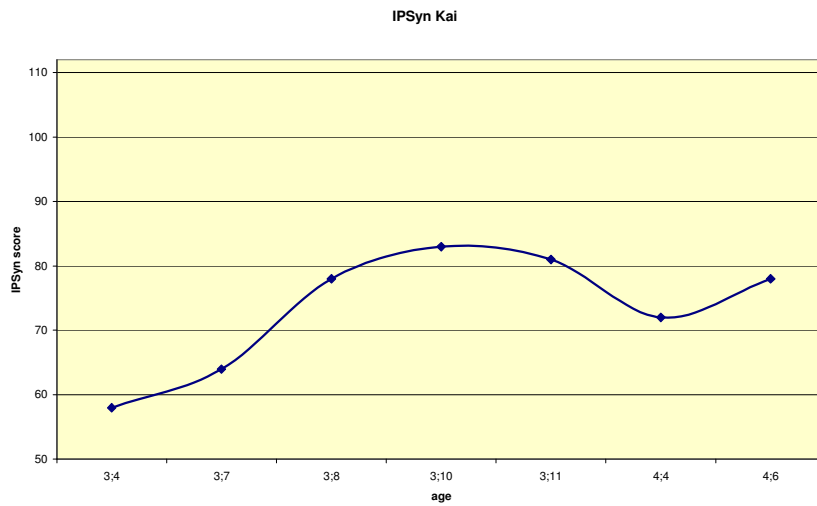


Figure XIV – IPSyn Kai

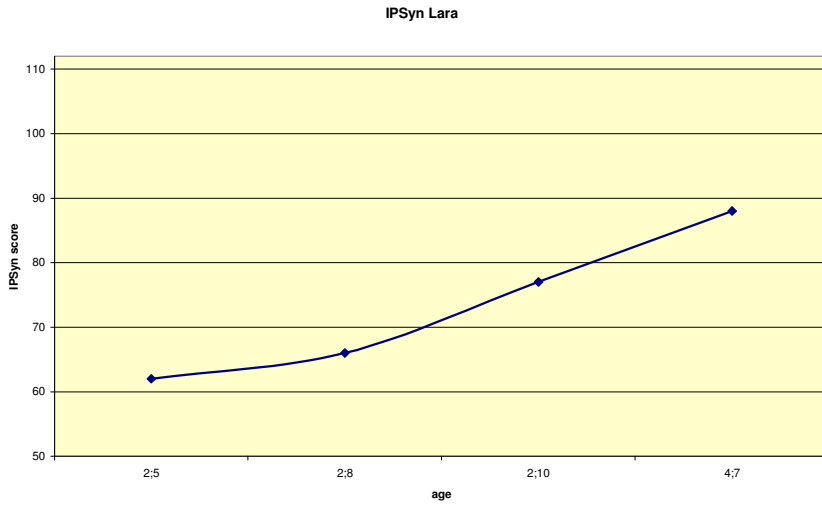


Figure XV – IPSyn Lara

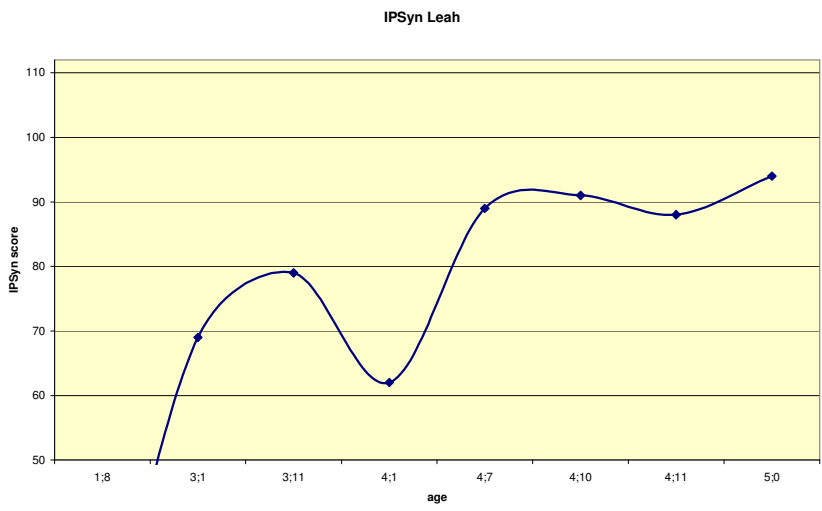


Figure XVI – IPSyn Leah

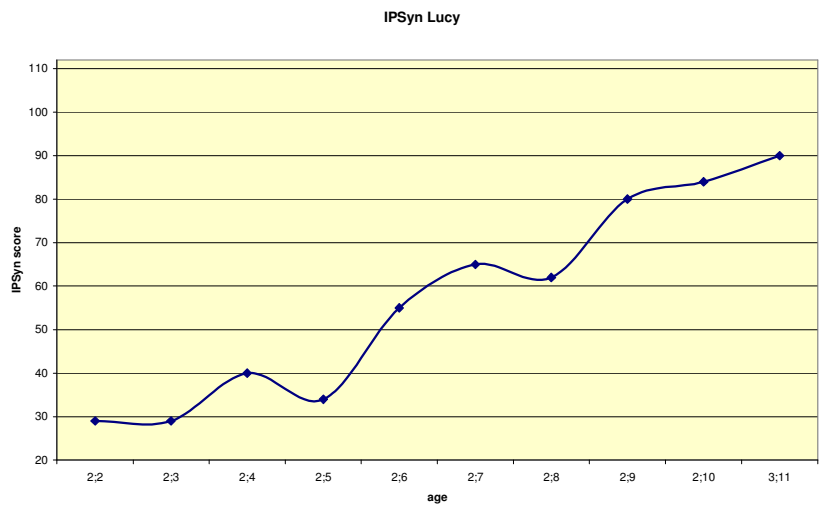


Figure XVII – IPSyn Lucy

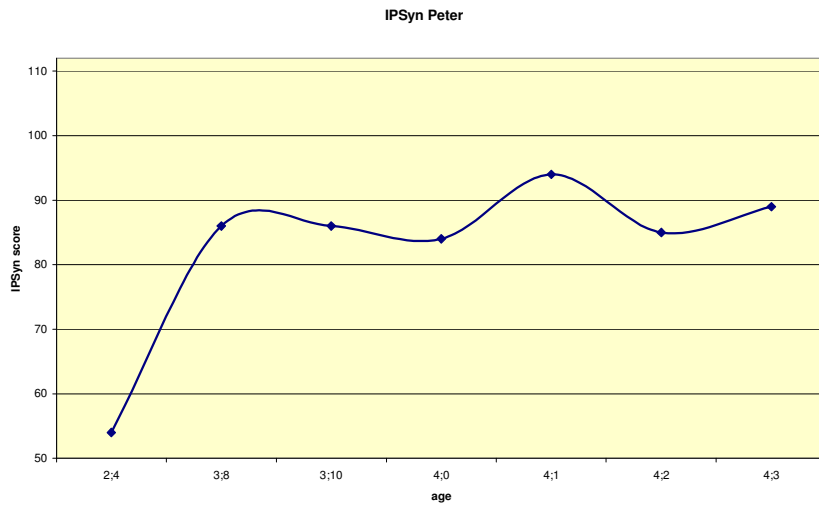


Figure XVIII – IPSyn Peter

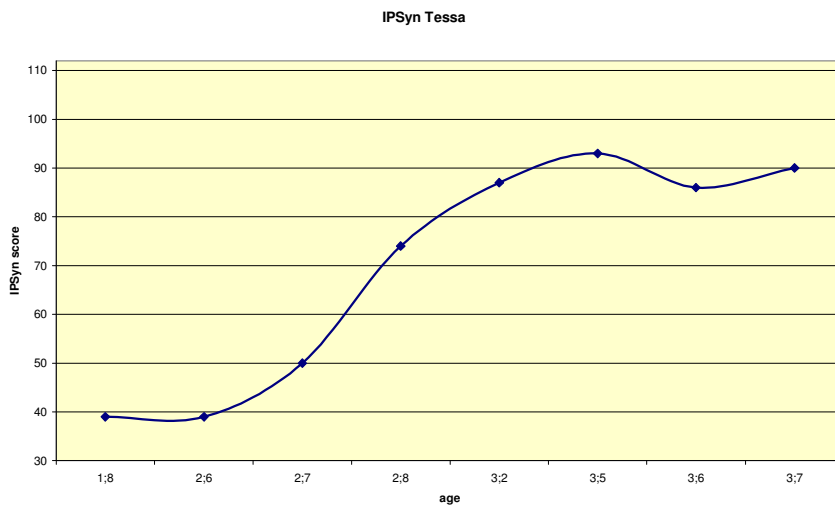


Figure XIX - IPSyn Tessa

B. TABLES

Table I – Overview Children’s Background

child	siblings ¹²⁵	bilingual through ¹²⁶	L1/L2 ¹²⁷	schooling and major changes in child’s language input
Anna	0	MM	E sim	day-care (from 0;10)
Daniel	1-	MM	E, G (2;9)	pre-school (2;9), kindergarten (4;0), school (6;9)
Faye	1+	MM	sim	kindergarten (3;2), school (6;2)
Fiona	1-	MM	G sim	German nurse (0;4), kindergarten (3;9), school (6;9)
Hannes	1-	IM, au-pair	sim	move to U.S. (0;10), day-care (0;10), move to Germany (3;10), pre-school (4;0), kindergarten (6;1), school (6;9)
Jacob	1+, 1-	IM (MM)	sim	pre-school (3;0)
Jan	0	IM	G, E (3;5)	move to Syria (0;2), to Germany (1;11), to U.S. (3;3), pre-school (3;5), school (5;8)
Johannes	2-	IM (MM)	G, E (2;6)	pre-school (2;6), school (5;6)
Kai	1+, 1-	MM	sim	move to U.S. (0;5), pre-school (3;9)
Lara	1-	IM	sim	day-care (1;2), move to Germany (3;5), pre-school (3;8)
Leah	1-	IM (MM)	E, G (3;5)	kindergarten (3;5), school (6;5)
Lena	2-	MM	sim	move to U.S. (2;4), pre-school (3;9), school (5;8)
Lou	0	IM	sim	move to Germany (0;2), day-care (2;0), move to Germany (4;0), kindergarten (4;4), school (6;1)
Lucy	1-	IM	sim	pre-school (2;7), move to Germany (2;11), kindergarten (3;4)
Neeve	1+	MM	G sim	kindergarten (3;1), school (6;1)
Paula	1-	IM	G, E (2;5)	move to the U.S. (0;10), pre-school (2;5), move to Germany (4;9), kindergarten (5;2), school (6;5)
Peter	1+	IM, au-pair	G, E (2;7)	move to Germany (1;9), pre-school (2;7), kindergarten (4;0)
Tessa	1+	IM (MM)	sim	kindergarten (2;5)

¹²⁵ + = child has older sibling; - = child has younger sibling

¹²⁶ MM = mixed marriage: parents speak different languages; IM = immigration: family language differs from language of the environment; IM (MM) = mixed marriage but both parents speak the language that differs from the language of the environment

¹²⁷ sim = input from both languages from early on resulting in active bilingualism by age 2;0; E sim / G sim = input from both languages from birth but E (E sim) or G (G sim) input is clearly dominant and the child not actively bilingual by age 2;0; E = English is L1 / G = German is L1, start of acquisition of L2 indicated in brackets

Table II – Overview Recordings

name	child's age during recording period¹²⁸	recorded time (total)	number of child's utterances	number of recordings
Anna	3;0	75 minutes	ca. 335	1
Daniel	5;5, 6;9-7;4	275 minutes	ca. 1300	4
Faye	2;10, 4;2-4;9	305 minutes	ca. 900	5
Fiona	5;4, 6;9-7;4	200 minutes	ca. 520	3
Hannes	4;5, 5;9-6;4	585 minutes	ca. 2500	7
Jacob	2;7-3;9	400 minutes	ca. 1700	6
Jan	4;3-5;5	465 minutes	ca. 2145	7
Johannes	4;1-5;3	400 minutes	ca. 1900	6
Kai	3;4-4;6	400 minutes	ca. 1215	7
Lara	2;5-2;10, 4;1-4;7	325 minutes	ca. 1505	5
Leah	1;8, 3;1-5;0	550 minutes	ca. 1470	8
Lena	5;3-6;5	350 minutes	ca. 1420	6
Lou	3;9-4;8	500 minutes	ca. 2300	8
Lucy	2;2-2;10, 3;11	580 minutes	ca. 1200	11
Neeve	2;8, 4;1-4;8	180 minutes	ca. 195	3
Paula	4;0-4;8, 5;9	600 minutes	ca. 2000	11
Peter	2;4, 3;8-4;3	585 minutes	ca. 2140	7
Tessa	1;8-3;7	500 minutes	ca. 1050	7

¹²⁸ In case there was a break of more than twelve months between two recordings, separate age spans are indicated.

**Table III –
Mode of recordings**

recording	recording mode
Anna 1	audio – MD ¹²⁹
Daniel 1	audio – MD
Daniel 2	audio – MD
Daniel 3	audio – MD
Daniel 4	audio – MD
Faye 1	audio – MD
Faye 2	audio – MD
Faye 3	audio – MD
Faye 4	audio – MD
Faye 5	audio – MD
Fiona 1	audio – MD
Fiona 2	audio – MD
Fiona 3	audio – MD
Hannes 1	audio – MD
Hannes 2	audio – MD
Hannes 3	audio – MD
Hannes 4	audio – MD
Hannes 5	audio – MD
Hannes 6	audio – MD
Hannes 7	audio – MD
Jacob 1	audio – MD
Jacob 2	audio – MD
Jacob 3	audio – MD
Jacob 4	audio tape ¹³⁰
Jacob 5	audio tape
Jacob 6	audio tape
Jan 1	audio – MD
Jan 2	audio – MD
Jan 3	audio – MD
Jan 4	audio tape
Jan 5	audio tape
Jan 6	audio tape
Jan 7	audio tape

¹²⁹ All mini discs (TDK, Sony and Memorex – 74 or 80 minutes) recorded with Sony Portable Minidisc Recorder (MZ-R55) and Sony Microphone (ECM-TS 125).

¹³⁰ All tapes recorded with Sony Cassette-Corder (TCM-20DV).

Johannes 1	audio – MD
Johannes 2	audio – MD
Johannes 3	audio – MD
Johannes 4	audio tape
Johannes 5	audio tape
Johannes 6	audio tape
Kai 1	audio – MD
Kai 2	audio – MD
Kai 3	audio – MD
Kai 4	audio tape
Kai 5	audio tape
Kai 6	audio tape
Kai 7	audio tape
Lara 1	audio – MD
Lara 2	audio – MD
Lara 3	audio – MD
Lara 4	notes
Lara 5	audio – MD
Leah 1	video tape
Leah 2	audio – MD
Leah 3	video tape
Leah 4	video tape
Leah 5	audio – MD
Leah 6	audio – MD
Leah 7	audio – MD
Leah 8	audio – MD
Lena 1	audio – MD
Lena 2	audio – MD
Lena 3	audio – MD
Lena 4	audio tape
Lena 5	audio tape
Lena 6	audio tape
Lou 1	audio – MD
Lou 2	audio – MD
Lou 3	audio – MD
Lou 4	audio – MD
Lou 5	audio – MD
Lou 6	audio – MD
Lou 7	audio – MD
Lou 8	audio – MD
Lucy 1	audio – MD
Lucy 2	audio tape
Lucy 3	audio tape
Lucy 4	audio – MD
Lucy 5	audio – MD
Lucy 6	audio tape
Lucy 7	audio tape
(Lucy 8)	audio tape
Lucy 9	audio tape

Lucy 10	audio tape
Lucy 11	audio – MD
Neeve 1	audio – MD
Neeve 2	audio – MD
Neeve 3	audio – MD
Paula 1	audio – MD
Paula 2	audio tape
Paula 3	audio tape
Paula 4	audio – MD
Paula 5	audio – MD
Paula 6	audio tape
Paula 7	audio tape
Paula 8	audio tape
Paula 9	audio tape
Paula 10	audio tape
Paula 11	audio – MD
Peter 1	audio – MD
Peter 2	audio – MD
Peter 3	audio – MD
Peter 4	audio – MD
Peter 5	audio – MD
Peter 6	audio – MD
Peter 7	audio – MD
Tessa 1	audio – MD
Tessa 2	video tape
Tessa 3	video tape
Tessa 4	audio – MD
Tessa 5	audio – MD
Tessa 6	audio – MD
Tessa 7	audio – MD

C. GENERAL NOTES FOR THE TRANSCRIPTIONS

All speech samples are numbered consecutively from the first to the last example. Speech samples (001) and (004) to (103) are taken from the literature (as indicated in brackets). The speech samples from the present data corpus that are mentioned in this book can be found on the attached CD-ROM ((002) to (003) and (104) to (267)) with the exception of those that were not recorded. The quality differs significantly depending on whether the recordings are digital or analogue.

- the context of the recordings is provided in square brackets []
- German utterances are given in italics; other languages are underlined unless they are in combination with German
- utterances are only transcribed phonetically if necessary (IPA)
- translations and explanations of what is meant by a word or an utterance are given in curly brackets{ }
- pauses longer than two seconds are indicated by a dash (-), shorter breaks are indicated by an underscore (_)
- omissions are marked by [...]
- unintelligible utterances or parts of an utterance are marked by <?>, attempted interpretations of utterances hard to understand are marked by <...>
- irrelevant utterances by bystanders are left out in order to clarify the utterances relevant to the dialogue
- interruptions by other participants are shown by indentation
- the following speakers are indicated by initials:

I = interviewer
M = mother
F = father
X = other participants¹³¹

¹³¹ In the studies presented in the literature, X may also stand for a parent or the interviewer if the author of the relevant study has not further identified the speaker.

D. ABBREVIATIONS

app.	→	appendix
appr.	→	approximately
BL	→	bilingualism
ca.	→	circa
cf.	→	compare
cs	→	code-switching
e.g.	→	for example
esp.	→	especially
et al.	→	and others
etc.	→	et cetera
ex.	→	example
f./ff.	→	and following [page(s)]
Germ.	→	German
ibid.	→	ibidem
i.e.	→	that is
IPA	→	International Phonetic Alphabet
L1	→	first language
L2	→	second language
lang.	→	language
min.	→	minutes
p./pp.	→	page/pages
rec./recs.	→	recording/recordings
sibl.	→	sibling(s)
U.S.	→	United States of America
utt./utts.	→	utterance/utterances
vs.	→	versus

E. BACKGROUND INFORMATION

1) Child's Background

a) child's name, initial or alias: _____

b) birthday: (please circle month and year):

1 2 3 4 5 6 7 8 9 10 11 12
 1995 1996 1997 1998 1999

c) birthplace:

- Germany
- USA
- _____

d) countries of residence (please indicate any stay longer than four weeks):
country, time (years;months)

e) health background

1.) Has there ever been anything in your child's life, which may lead you to believe that his/her language development may be somehow different from other children?

- pre-mature birth
- major accidents/operations
- significantly late speech development
- _____

2.) Do you consider your child to be of normal intelligence?

- Yes
 - No,
- _____

3.) How would you describe your child's temperament?

- very talkative and open-minded
- talkative in familiar settings but shy with strangers
- shy
- _____

2) Language Development

a) When did your child start to speak? _____ months

b) What language were the first words in? _____

c) When did your child regularly become exposed to the second language?

- at birth
- within the first month after birth
- at age _____ (please indicate years;months)

d) When did he/she start speaking the 2nd language? At _____ years _____ months.

e) How well does your child separate the languages?

- mixes a lot (does not seem to have two different systems)
- mixes sometimes (mainly nouns; verbs; prepositions; _____)
- mixes only (mainly) when speaking English German
- mixes rarely and uses both languages in appropriate situations

f) Can you describe different phases in the mixing process (if applicable)?

- our child never used to mix but started at age _____
- our child mixed until age _____ but now separates very well
- our child always mixed a lot and still does
- _____

g) When he/she mixes, he/she

- sometimes corrects himself/herself
- corrects himself/herself when being asked to
- sometimes hesitates before an insertion in the “wrong” language
- sometimes makes a German word sound English if inserted into an otherwise English sentence (or an English word sound German if in German sentence)
- does not seem to notice the mix
- _____

h) What language does your child use when playing by himself/herself?

	<i>in general</i>	<i>playing with pets</i>	<i>role-plays</i>
English	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
German	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
English or German	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mixed (English+German)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other _____			

i) Is there anything you find interesting or strange about your child’s language development?

3) Language Exposure:

(please check appropriate choices)

- Day-Care/Pre-School (English) since _____ (month/year) for _____ hours/week
- Kindergarten (German) since _____ (month/year) for _____ hours/week
- German-speaking adults (ca. _____ hours/week)
- English-speaking adults (ca. _____ hours/week)
- Bilingual (English/German) adults (ca. _____ hours/week)
- German-speaking playmates (ca. _____ hours/week)
- English-speaking playmates (ca. _____ hours/week)
- Bilingual (English/German) playmates (ca. _____ hours/week)
- German media (ca. _____ hours/day)
including: books TV video radio/cassettes _____
- English media (ca. _____ hours/day)
including: books TV video radio/cassettes _____
- _____

Estimated daily language exposure:	<i>on weekdays</i>	<i>at weekends</i>
Exposure to English	_____ %	_____ %
Exposure to German	_____ %	_____ %
Exposure to other languages	_____ %	_____ %

4) Parents

a) Parents' knowledge of languages:

	<i>mother</i>	<i>father</i>	<i>(caretaker)</i>
English:			
-mother tongue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-very good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-good (but some vocabulary difficulties or a strong foreign accent)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-basic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-no	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
German:			
-mother tongue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-very good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-good (but some vocabulary difficulties or a strong foreign accent)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-basic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-no	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other languages (please indicate proficiency level - mother tongue (if different from English or German) or very good knowledge):

If applicable:

Partner's knowledge of mother tongue (if different from English or German):

- very good
- good
- basic
- no

b) Parent's education:

	<i>mother</i>	<i>father</i>
Higher University Degree	<input type="radio"/>	<input type="radio"/>
University/College Degree	<input type="radio"/>	<input type="radio"/>
Abitur/High School Degree	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>

c) How much time do you actively spend with your child?

	<i>mother</i>	<i>father</i>
on weekdays	_____ hours	_____ hours
on weekends	_____ hours	_____ hours

5) Language use

a) In which language do you talk to the child?

	<i>mother</i>	<i>father</i>	<i>caretaker</i>
English	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
German	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
English or German	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mixed (English+German)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

b) How consistent are you in your language choice towards the child?

	<i>mother</i>	<i>father</i>
I always use the same language	<input type="radio"/>	<input type="radio"/>
I use different languages depending on the situation	<input type="radio"/>	<input type="radio"/>
I often switch languages within a conversation	<input type="radio"/>	<input type="radio"/>

c) How consistent are you in your language choice in general?

	<i>mother</i>	<i>father</i>
I never mix languages	<input type="radio"/>	<input type="radio"/>
I sometimes mix words from both languages	<input type="radio"/>	<input type="radio"/>
I often mix languages	<input type="radio"/>	<input type="radio"/>

d) How do you reply to your child's mixing or switching?

	<i>mother</i>	<i>father</i>
I pretend to not understand	<input type="radio"/>	<input type="radio"/>
I repeat my child's utterance without mixing (correcting the mix)	<input type="radio"/>	<input type="radio"/>
I react in the appropriate language (the one I usually use) and continue the conversation without comment	<input type="radio"/>	<input type="radio"/>
I switch myself	<input type="radio"/>	<input type="radio"/>
_____	<input type="radio"/>	<input type="radio"/>

e) What language do you and your partner use with each other?

English: _____ %
German: _____ %
Mixed: _____ %
Other: _____ %

f) What language is used in your family when everybody is present?

English: _____ %
German: _____ %
Mixed: _____ %
Other: _____ %

g) If you have more than one child, what language do the children use among themselves?

English: _____ %
German: _____ %
Mixed: _____ %
Other: _____ %

6) Attitudes towards bilingualism

a) Are you happy that your child is growing up with two languages?

- Yes, we are extremely happy
- We think it is good and advantageous but it also causes some problems
- We would prefer if we did not have to put him/her through this

b) What kind of attitudes toward bilingualism do you find in your environment?
(family, relatives, school, neighbourhood, etc.)

- everybody supports the bilingual education of our child
- most people have a positive attitude
- we experience both positive and negative attitudes
- many criticise the bilingual education of our child
- _____

THANKS FOR YOUR HELP AND COOPERATION!

F. CONSENT FORM

We agree and permit our child to participate in a study of bilingual language development, conducted by Esther Liebner (Ph.D. Candidate in Linguistics from Freiburg University, Germany; advisor: Dr. B. Halford) with the understanding that:

- (1) The purpose of the study is to observe and describe how young bilingual children learn and use their languages under ordinary circumstances.
- (2) Our child will be audio-taped by E. Liebner in our home several times for about an hour. These tapes will record the child's speech and activities as she/he interacts routinely with family members (and/or friends).
- (3) All tapes will be listened to and analysed by E. Liebner for educational and scientific research purposes. At all times our identity will be kept confidential.
- (4) Neither we nor any member of our family shall be identified by our actual names in any use made of the tapes unless we agree otherwise.
- (5) We shall have the right to listen to all audio tapes and to erase any part of them.
- (6) At the end of the project, E. Liebner is allowed to keep these tapes for future educational and scientific research purposes.

Signature of parents:

Signature of investigator: