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Aspects of First Language Attrition: A Case Study of German Immigrants in East Tennessee

Raluca Mihaela Negrisanu
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To the Graduate Council:

I am submitting herewith a dissertation written by Raluca Mihaela Negrisanu entitled "Aspects of First Language Attrition: A Case Study of German Immigrants in East Tennessee." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Modern Foreign Languages.

Chauncey J. Mellor, Major Professor

We have read this dissertation and recommend its acceptance:

Ilona Leki, Dolly Juanita Young, Nike Arnold

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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ASPECTS OF FIRST LANGUAGE ATTRITION: A CASE STUDY
OF GERMAN IMMIGRANTS IN EAST TENNESSEE

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Raluca Mihaela Negrisanu
May 2008

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DEDICATION

This dissertation is dedicated to my parents Mihail N. Negrisanu and Gabriela D. Negrisanu, great role models and supporting friends, to my brother Razvan Negrisanu and to my multilingual husband Catalin Manolache and bilingual daughter Alexandra Manolache, for always loving me, believing in me, inspiring me, bearing the hard times while writing my dissertation, and encouraging me to reach higher in order to achieve my goals.

Kuliko jezikou človīg znâ,
Taliko človīg vaļâ.

*However many languages a person knows,
That's how much a person is worth.*

(Old Croatian saying in Thomason, 2000)

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Growing up in Timisoara in the Banat region of Romania, I was well aware of a local saying; “a real *Bănăţean* has to know at least three languages,” out of the four languages spoken in the region: Romanian, German, Hungarian and Serbian.

Probably, this is why my “monolingual Romanian” parents decided that I will need to know at least a second language. My first encounter with German at the age of four was in the German kindergarten and since then German became my second language. I would like to thank my parents Mihai and Gabriela Negrisanu for their smart decision, even if I did not quite understand then, why I had to learn another language.

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ABSTRACT

This dissertation examines aspects of first language attrition (L1= German) in a second language (L2= English) environment. It sheds light on language contact and attrition research and focuses on first generation German immigrants to East Tennessee who were administered a series of tests to ascertain their language attrition to establish extralinguistic factors promoting or inhibiting it.

The Study Group consisted of 22 German immigrants to the U.S., both men and women, aged between 27 and 68, who emigrated as late teens or adults and have been here for more than three years. The Control Group consisted of 12 German native speakers in Germany similar to the American informants in education level, age and gender. The informants from both groups were interviewed, given a questionnaire and asked to describe pictures into an audio recorder. They were also given a cloze/fill-in text targeting lexical items and the correct usage of specific L1 grammatical structures such as gender articles, formation of plurals and cases.

The quantitative and qualitative analysis of the data from the Study Group revealed that L1 attrition is not severe, although extralinguistic variables such as age, time since immigration, level of education and amount of L1 contact, affect lexical retrieval and gender assignment, and case and plural marking. Statistical analysis of the cloze test data, picture description and interview indicated significant differences at the $p < .05$ level both in the lexical and morphological domains between subgroups (organized by variable) in the Study Group versus parallel ones in the Control Group. The qualitative data analysis showed that mostly social domains, such as shopping,

daily routine, working settings or leisure activities, were affected by L2 transfer, borrowings or loan shifts. The lexical density test performed on the data revealed group differences between the Study and the Control groups. All the informants spontaneously used English words, phrases and loan translations in their German speech and all are aware of their code-switching, but only 17% view it negatively, while 40% have a neutral attitude towards this practice. The Study Group still highly values German language and culture.

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1. INTRODUCTION

Migration is a wide spread phenomenon affecting almost all parts of the world. People migrate for different reasons: political, economical, social, religious or familial. Immigration is a complex human phenomenon which has a great impact on the immigrant person at all levels, even if some are not noticeable from the beginning. The present study examines a linguistic phenomenon which appears as a result of immigration: language attrition. The linguistic challenges to which freshly arrived immigrants are exposed in the new environment are soon reflected in their language. In 1938 Haugen writes in an essay about the linguistic difficulties of immigrants (reprinted 1972, p. 2):

From his first day in the new land a tug of war between his old and his new self was going on in the immigrant and nowhere was the struggle more vividly reflected than in his successive linguistic adaptations. It is by slow, incessant attrition that each foreigner has been turned into an American, idea by idea, and word for word. Every language spoken by the American immigrant bears the mark of his conflict and only by recording and analyzing this evidence can we fully understand the process of immigration.

The U.S. society of the twenty-first century still reflects this portrait of an immigrant, even if decades of advances in technology have made it possible to bring faraway cultures and languages closer through television, telephone, internet and cheaper travel. Even so, the cultural and linguistic shock is still experienced to different degrees by immigrants to U.S.

At the present moment German is the fourth most commonly spoken language in US according to the 2000 U.S. census data. German is still the most frequently reported ancestry in census data with about 43 million U.S. residents, one in six, identifying their ancestry as German (Ancestry, 2000). By region, German ancestry has been reported at 27 % of the population in the Midwest, and three states Wisconsin, South Dakota and North Dakota report more than 40% of the population to be of German heritage. German speakers are widely dispersed in the U.S., concentrated not only in large numbers in large cities like Chicago, New York, Los Angeles, and Philadelphia, but also in smaller cities and even rural settings throughout the country. Their socio-economic situations differ as do their linguistic competences. Some live in large communities, but others are isolated with few contacts to German speakers. There are Germans immigrants who have daily contact with other Germans but also some who have not spoken or met Germans in years. Thus the language changes they manifest are of different degrees and are caused by different factors as unique as the speakers themselves.

I will focus in this study only on German-Americans and German citizens living in the eastern region of the state of Tennessee. The language under investigation is German, referred to as L1 or “first language,” and the contact language is English or L2 or the “second language.”

As Seliger & Vago (1991) suggest, it is very important that language acquisition theories take language attrition into consideration, especially in the case of multilingualism, in order to better understand the development of individual language systems. The theoretical framework of the Dynamic Model of Multilingualism

reinforces the views that the processes of language acquisition and language attrition can not be treated in isolation (Jessner, 2003). L2 and L1 are systems which are interdependent and in a continuous process of adaptation and competition. Bilinguals are individuals with language “multi-competence,” as Cook (1991, p. 32) terms those individuals with the “knowledge of two or more languages in one mind.” He further argues that individuals who know more than one language have a different metalinguistic awareness and different cognitive processes than individuals who know only one language (Cook, 1992). Thomas Roeper (1999, p. 2) argues that a narrow kind of bilingualism, represented by “mini-grammars for different domains” exists in every speaker of every language, and Sue Wright (2004, p. 7) suggests that in this ever changing world of globalization we are heading toward a “worldwide shift to a lingua franca.”

Research in language attrition helps our understanding of how multilinguals process language in general and in particular what language systems are affected by these complex processes. It improves our understanding of language acquisition by revealing a possible order and pattern in which items are lost, as well as factors that may contribute to these changes in the language system. Quantitative and qualitative studies of language loss can generate or reject hypotheses regarding the complex mental processes bilinguals use to acquire and process language, as well as the ways in which they lose certain morphological and lexical items but retain others.

In sociolinguistic terms, such studies show how and why immigration and acculturation initiate change or loss of one’s native language. This knowledge may help promote language diversity, support minority language maintenance and

preserve endangered languages and their associated cultures. This study may contribute to a better awareness of the need of a language planning policy in USA and encourage language and culture preservation programs. Several countries in Europe, Australia, Asia and Canada have developed such programs to support language diversity and preservation of a multitude of minority languages, while the U.S. has such programs only for the Native American endangered languages.

The phenomenon that I am investigating in this study is considered a by-product of immigration and is known as language attrition, a gradual diminishing of language abilities in the first language due to contact with a second language. The immigrant population and the linguistic particularities that I am presenting in this study are particular to German immigrants who settled in East Tennessee between 1940 and 2000. The language under investigation is German as the first language (L1) which is gradually lost in contact with English (L2), as the second language. My study is concentrated only on healthy individuals without any pathological conditions like aphasia or dementia.

The outline of the dissertation is the following: Chapter 2 addresses the theoretical framework of the present study, the underlying research basis of the study, the sociolinguistic factors responsible for aspects of language attrition and discusses in detail the lexical and morphological changes in L1 in the context of language contact and immigration. At the same time, factors like cultural and social attitudes and values, which were identified to play a role in language attrition, are discussed in this chapter. Chapter 2 concludes with the objectives of the study and the research questions, which lead to the design of the study. Chapter 3 contains the methods part

of the study, the design of the study, the quantitative data collection tools (i.e. a cloze test and a sociolinguistic questionnaire to test morphological and lexical performances and collect background information), qualitative data collection tools (i.e. picture description and interview tasks) and the quantitative and qualitative data analysis procedures. I collected a variety of data reflecting both receptive and productive language skills like understanding, speaking and reading. The tests used provided linguistic and extra linguistic data, which were then analyzed using a combination of statistical computation and qualitative analysis. This chapter also describes the small preliminary fieldwork and the results, which influenced the larger study.

Chapter 4 describes the study in detail, the participants in the Study Group and the Control Group and discusses their language usage while comparing the two groups. Chapter 5 presents the statistical quantitative results, aspects of first language attrition in the lexical and morphological system of the German immigrants and reveals the factors that were the best predictors for these changes. Chapter 6 contains the findings from a qualitative holistic analysis. The data were grouped thematically and analyzed for common or divergent language patterns and lexical density. Finally Chapter 7 presents the critical discussion of the main results and Chapter 8 contains the conclusions, limitations of the study and implications for further research.

2. THEORETICAL BACKGROUND: LANGUAGE ATTRITION RESEARCH

This chapter introduces the theoretical framework of the study and presents its position within the larger body of language attrition research. The subchapter 2.1 presents a brief historical overview of the beginnings of language attrition research, the main theoretical frameworks and important contributors to the field and sets the present study within a sociolinguistic perspective. Subchapter 2.2 introduces the terms and definitions used in language attrition research and discusses the ones pertinent to the present study.

In the third subchapter, 2.3, language attrition will be discussed through the language contact perspective, which is also the context for the present study. Subchapter 2.4 describes previous research findings related to aspects of linguistic attrition in language contact situations via a brief contrastive comparison of grammatical similarities and differences of the two languages in contact, English and German. The next subchapter, 2.5., presents what research suggests are the most important psycholinguistic and sociolinguistic factors contributing to language attrition. Subchapter 2.6 offers a research based overview of the main linguistic changes in language attrition. Chapter 2 concludes with the objectives and the research questions underlying this study.

2.1 Language attrition: General Observations

The linguistic phenomenon of language attrition was first noticed several decades ago, and linguists (e.g. Haugen, 1938; Weinreich, 1953) described it and tried to find the best fit for this phenomenon within linguistics. Only decades later, a new field of study emerged with the inaugural conference on Language Attrition in 1980 and the published proceedings *The Loss of Language Skills* (Lambert & Freed, 1982). This contribution to the field of language research is still relevant today both from a theoretical and methodological standpoint and can be considered a “benchmark publication” (Schmid & Köpke, 2004, p. 3). While the first contributions discussed mainly theoretical frameworks and methodological issues on how language loss research should be approached (Andersen, 1982; Clark, 1982), more recently numerous empirical studies have been published categorizing types and sources of language loss. A more precise delimitation of what language loss is, how it occurs, who is affected, when and why, was very much needed. This categorization would come four years later with Van Els’s taxonomy (Van Els, 1986).

A clear representation of how and in what contexts language loss occurs was first distinguished by Van Els (1986) in a theoretical article on language loss. He identified four types of non-pathological language loss, taking as points of reference the lost language and the environment in which it was lost:

- A) Loss of L1 in L1 environment, as seen in aging people losing their native language due to the natural process of aging, combined with forgetting or certain diseases; like aphasia or dementia.
- B) Loss of L1 in L2 environment; immigrants losing their first

language due to intense contact and usage of the second language and/or decreased usage of the first language.

- C) Loss of L2 in L1 environment; foreign language loss of learners of a second or third language.
- D) Loss of L2 in L2 environment; aging immigrants losing their second language.

Schmid (2004) mentions that this taxonomy is still valid at the present time and it best describes the different types of language loss. In this study I will refer to the second classification of language loss, that of immigrants losing their first language “L1” in an environment where their second language “L2” is the language of the majority. While the questions "How does language attrition occur?" and "What is language attrition?" have been somewhat discussed before, there is the need to look at when or in what situations language attrition does occur. The following section focuses on these two questions.

At this point it is important to mention that the term loss will not be used frequently in the present study. The term attrition is preferred and the definitions and limitations of the two terms, as well as other terms used in the study will be discussed further on.

Natural L1 attrition has been mostly observed in an immigrant environment. L1 attrition discussed in the context of an L2 environment implies that individuals who experience difficulties or alterations in their first language skills are at the same time users of a second language. The influence of the L2, in the present case English, plays an important role in the process of language attrition. While numerous studies

document the effects of L1 on second language acquisition, there are far fewer investigations on the effects of L2 on L1 skills (Altenberg, 1991; Isurin, 2000; Köpke, 1999; Pavlenko, 2003; Vago, 1991).

Language use, maintenance and loss are highly dependent on the context in which they occur. In some contexts the loss of certain language skills due to intense contact with a second or third language or due to colonialism became a negative phenomenon, leading ultimately to the complete loss of the first language. One example among so many is the case of East Sutherland Gaelic under the influence of English in England (Dorian, 1982). Most of the South American, African and Australian indigenous languages and dialects are disappearing at an alarming fast rate of one every two weeks, as the UNESCO Endangered Languages Program reports. At the present moment 50% of the approximately 6,000 languages spoken worldwide are in danger of becoming extinct in the next century (Endangered Languages. Unesco Culture Sector, 2003). At this point another question arises: Who exactly are the people experiencing language attrition?

Persons experiencing language attrition can be immigrants, a colonized population, multilinguals in general. Even monolinguals can undergo L1 attrition as seen in Van Els's taxonomy before. Initially, this phenomenon has been viewed as a negative aspect of language processing; however, seen from a different perspective, changes in first language skills can be viewed as a method to enrich the first language. If the interplay between two or more languages is not detrimental to one or another and they can coexist in the same context and serve multi purposely the communication among users, this can be a positive experience for multilinguals.

There are some views which see multilingual users as creators of new language. Vivian Cook, the editor of the volume *Effects of the Second Language on the First* (2003), introduces a new terminology in bilingual research. L1 attrition is called “L1 change” and L2 learner is called “L2 user”. In his perspective L2 is not an “intruder” on L1 and a pure monolingual is rather the exception than the norm (Cook, 2003). These new approaches reflect the new changes in modern society, where bi- and multilingual users are rapidly becoming a norm, exhibiting their own rights and characteristics of language use (Cook, 2003). This is why it is hard to find a “pure monolingual” person anymore, because even in very isolated places and communities, for example some of the languages of the Brazilian Amazon: Banawá, Pirahã, Suruwahá, Oro Win (Gordon, 2005); tribal people have had contact with foreign people at some point and even adopted some new words, as Cook (2003) mentions.

Much of the terminology in this field easily gives rise to value judgments. The terms language loss and language attrition, for example, may be taken to connote more than the absence of certain skills that earlier had been present and suggest some fault or failing in the speakers affected in this manner. Similarly, the adoption of L1 features into L2 or vice versa, when called contamination, implies a negative valuation. If, on the other hand, cross linguistic exchange is called enrichment, this implies a consistently positive evaluation. If such interchange is kept within limits that do not hamper communication, there is good reason to view this as language enrichment. In this study, I strive to keep the terminology neutral, well aware that, under different circumstances, different value judgments are justified. A discussion of the terms used in the study, as well as a series of definitions will be presented in detail

in the next subchapter.

I will conclude this subchapter with a general observation that new words from the technical, scientific, business or marketing domains daily enter the vocabulary of people all over the world and some become part of the vocabulary of the respective languages. In a world of rapid communication and advances in technology, speakers all over the world exhibit the same tendency in their speech, which is to borrow words and new expressions from other languages and to produce new words and assimilate foreign ones in order to better describe or approximate new concepts or objects. This general observation will later on tie in with some findings from the present study.

2.2 Language attrition: definitions and terms

Before I proceed with the discussion of the theoretical and methodological frameworks that underlie this study, there is the need to define the terms used in this dissertation and to give definitions for the concepts of language change, language attrition, language loss, language shift and language borrowing. It is important to establish the most pertinent terms for this study with a brief description of those that do not fit into the present study and why.

Some of the first broad definitions of language attrition perceived this phenomenon as the reversal of language acquisition, a gradual process following the regression hypothesis (Jakobson, 1941) that “what is learned last is lost first” (de Bot & Weltens, 1991, p. 5). This fairly straight forward definition, however, does not

account for many variables which play important roles in language loss: the context, language characteristics, the persons who lose their language skills, the degree of loss, etc. The need for more comprehensive definitions and views to capture and explain this phenomenon fueled a series of studies on this topic in the past three decades. In the following, I will give examples and cite studies that have investigated language attrition under different perspectives with more or less success in capturing the complexity of this phenomenon.

At the first conference on Language Attrition in 1980, Lambert and Freed used the following words to define language attrition: "...language attrition may refer to the loss of any language or any portion of a language by an individual or a speech community. It may refer to the declining use of mother tongue skills by those in bilingual situations or among ethnic minorities in (some) language contact situations where one language, for political or social reasons, comes to replace another" (Lambert & Freed, 1982, p. 1).

In this, one of the first definitions of language attrition, the term "loss of language" is used to describe this phenomenon. Later on, the term "attrition" was used more to account for the partial decreasing or deterioration of language skills (Andersen, 1982; Schmid, 1983), while the term "loss" was mainly used to describe a final stage, where most of the language skills are lost. De Bot (2001) suggested the term "loss" to be used as generic for any large negative changes observable in one language; the term "attrition" should be used in describing individual intragenerational language changes and the term "shift" to be used in relationship to intergenerational language changes. These two terms "loss" and "attrition" however,

have been used in studies sometimes interchangeably. In the present study I use language attrition to describe language forms or productions no longer correct or acceptable in standard L1 (German in this study).

The Lambert and Freed definition (1982) of language loss incorporates both the individual and the societal aspects of language loss, but it does treat the term attrition as a synonym of the word loss. However, these terms can not be equated for the following reasons. While attrition is a decrease and a partial and inconsistent deterioration of language skills, the term loss implies a final stage, where all or most L1 language skills have become inaccessible to the speaker.

Andersen at the same conference sees “individual language attrition as a result of lack of use” (1982, p. 85) and Olshtain advises that the study of language attrition should focus on “the effects resulting from an individual’s reduced use of the *attrited* language” (1989, p. 151). Later on this definition would be dismissed based on studies (De Bot & Clyne, 1994; Jaspaert & Kroon, 1989; Schmid, 2002) which indicate that, even after prolonged periods of lack of use of L1, informants still had a very good command of their first language. This is why the phenomenon of L1 loss has been categorized as a selective process and not all immigrants or speakers acquiring a second language will exhibit first language loss, or their loss will have different degrees of severity.

These first definitions of language attrition seem overly simplistic, but these definitions stem from research at a time when this field was just starting out. In the introduction to the volume *First Language Attrition*, the editors Herbert Seliger and Robert Vago define first language attrition from a contact situation as “the

disintegration or attrition of the structure of a first language (L1) in contact situations with a second language (L2)... Attrition phenomena develop in bilingual individuals as well as bilingual societies, in both indigenous and immigrant communities” (Seliger & Vago, 1991, p. 3). Clyne (1986, 2001) sees language attrition as the gradual replacement of one language with the use of another one. Later on Yagmur defines language attrition “as the gradual loss of competence in a given language” (2004, p. 136), but this definition still does not account for the degree of loss or in what specific language contexts this loss is more evident.

While these definitions describe the end result of the language proficiency of bilinguals and contrast the two languages in proximity, they do not explain the different social, economical, religious or cultural contexts in which the replacement takes place or what contributed to the gradual loss. Thus a lot of important sociolinguistic factors are left out of the definitions and give an incomplete picture of the language loss phenomenon. Some definitions have tried to address this important sociolinguistic component: “Language attrition is a natural phenomenon, prevalent in language contact situations where one language is not maintained by its speakers” (Waas, 1996, p. 29-30). Further on in this chapter, the importance of the sociolinguistic factors in language attrition will be discussed.

Over the years researchers argued for one term or another and the debate is still open today whether language attrition should be associated with an intra-generational modification of language skills or language loss as a result of inter-generational linguistic changes. From a linguistic and sociolinguistic perspective “language loss is defined as an inter-generational lack of transfer of the L1, while

psycholinguistic approaches focus more on individual and group loss over a life span” (Dallas, 1996, p. 13). I adopt the definition that language *loss* is a result of restricted or even lack of transfer between the first, second and consecutive generations and that it can manifest itself also on an individual level. In the present study, the term language loss does not best describe the language abilities of the first generation immigrants under study here, so I will use this term only occasionally in the discussions. The term language attrition, however, best describes the phenomenon as it refers to gradual and selective alterations in L1 performance.

Another term frequently used in language attrition studies is shift. This term is also a reason for continuing debate, especially after Kees de Bot (2001) proposed that the term language loss is generic and that attrition and shift are individual, as opposed to societal aspects of loss. Language shift was perceived as a “move away from L1 structures or values to approximate L2 structures or values” (Pavlenko, 2002, p. 47). While this definition holds validity, it is hard to determine the degree of shift or to quantify the shift in individuals and or in groups. Some individuals within groups exhibit a few instances of shift, but others show many more, which would lead to the conclusion that there is in fact language attrition. Also the difficulty in measuring the degree of shift from L1 to L2 in a given community comes from the lack of longitudinal studies and data. Only a few studies have undertaken the time consuming endeavor to observe and collect data from communities over a period of time (De Bot & Clyne, 1994; Jaspaert, Kroon & van Hout, 1986; Lambert, 1989).

Language shift is mostly visible between the first and following generations, where the presence of children, schooling, occupational demands outside the house

and high educational level precede language shift, as reported in a small case study on six German families in Australia (Harres, 1989). The variability associated with the term shift makes it hard to be defined unambiguously, which is why I will use this term very cautiously in my study and only to signify that speakers prefer the second language over the first one in most situations of their daily life, especially when they have undergone cultural assimilation.

Language changes have been reported in immigrant population, but also in bilinguals. On the basis of individual variation in L1 performance evidenced in her study, Barbara Köpke claims that “L1 attrition in late bilinguals is not only the consequence of lack of L1 use, among other factors, contact with other immigrants - as is the case in immigrant communities – as well as intense L2 contact might generate changes in linguistic competence” (2001, p.355). This definition fits well in the theoretical framework of language contact, which is also the main theoretical line for this study. Based on the findings from several studies, language change in a contact situation was described as being *language internal* (Schmid & Köpke, 2004, p.17) and mostly applied to morphology (Bettoni, 1991 in Schmid & Köpke, 2004, p.17).

The results of the study will show that changes in the language performance are not mostly noticeable as an inter-generational change (Bettoni, 1991; Hulsen, 2000), but rather at the individual level as an intra-generational change.

The term language change will be sometimes be used in this study to account for lexical and morphological deviations from the standard language. Since language change was not tested per se with pre tests and post tests, which would have measured

the language performance of the informants over a period of time before the study and after the study, inferences about changes are made based only on the Control Group and on the statistical findings within the Study Group.

Another term frequently used in language attrition research and also in the present study is language transfer. This process refers especially to the lexicon, where terms are transferred from L2 into L1. Transfer occurs on the semantic level (de Bot & Clyne, 1994, p. 20) and consists of the extension of a meaning of a word from L2 over into L1, as evidenced by an example from the present study: *drei Platz laufen*, which would be a loan translation of the English *three blocks down*. In German this expression is not possible.

Language borrowing is the last term discussed in this section because of its pertinence to the present study. As a general definition, language borrowing occurs in a contact setting between two or more languages and consists of lexical borrowings from L2 into L1 (Pavlenko, 2000). This process, however, can be viewed as a sign of attrition only if the equivalent term exists in L1 but it has been replaced by the L2 term through borrowing. If there are no conceptually and semantically identical items in the two languages, for example *downtown*, which does not exist as a concept in Russian, the borrowing is only evidence of the expansion of the L2 users' lexical and conceptual repertoire (Pavlenko, 2000). On the basis of the findings in Pavlenko's research, language borrowing is a process analyzed and discussed in this study.

In the present study I will use the term language attrition in the context of language contact, with some discussions on language change and language borrowing. Language attrition in the perspective of this study is a gradual and not

systematic individual process, characterized by difficulty in lexical retrieval and linguistic performance under the contact situation with English in an immigrant context. The aspects of first language attrition observed were determined by several extra linguistic variables and social contexts.

2.3 Language contact and lexical change: Theoretical background

Several theoretical and empirical studies have contributed to the field of language attrition over the last three decades, but there is still the need for more rigorous research within the theoretical models established so far as well as better explanatory models that are not language specific and that can lead to generalizations across languages.

Four theoretical models have predominantly been employed to study language attrition (Schmid & De Bot, 2004). Some of them gave less satisfactory results and engendered considerable debate like Jakobson's regression hypothesis (Håkansson, 1995; Jordens et al., 1986), which envisions language attrition as the opposite of language acquisition, meaning that features are lost from the perspective: "last in, first out". Other models such as Universal Grammar and the parameter settings framework in language attrition studies suggest that marked features will be first lost and an overuse of unmarked features, especially in grammar, will be preferred (Sharwood, 1989).

A third theoretical framework coming from psycholinguistics has succeeded in explaining in more detail the problems of accessibility in the process of language loss by taking into consideration variables such as age, time since immigration,

attitudes or amount of L1 contact (Hulsen, 2000; Köpke, 1999; Montrul, 2002). A fourth approach from the perspective of language contact analyzes lexical, morphologic, syntactic or semantic changes in the linguistic systems of one language due to intense contact with a second or third language (Bolonyai, 1999; Gross, 2000; Thomason, 1997; Vago, 1991).

My study is based on the theoretical framework established by the term language contact that deals with linguistic modifications of one language due to intense contact with another language. As Thomason (2001) states in the outline of typologies of language contact, the list of categories is too complex to be comprised in one “neatly” organized framework. For this reason, I will select and present only the few typologies pertinent to the present study, and I will start with the social context in which language attrition occurs and what factors determine modifications of language performance in a given setting.

The social factors predicting degrees of changes in languages in close contact are (1) intensity of contact between L1 and L2, (2) speakers` attitude towards the usage of L1 and L2 and (3) the degree to which L2 features are integrated into the linguistic system of L1, given that L1 and L2 are closely related languages. The fourth and last language contact typology analyzed in this study is the loss of lexical and morphological features and the addition or replacement of features, as they have been described in previous studies (Thomason, 2001, p.60). Following these tendencies in language contact situations I will discuss in more detail what the most common replacements of features or modifications are and on what linguistic and metalinguistic levels these occur.

It has been observed that in language contact situations, due to several accommodating processes, the two or more languages become similar in certain domains like the phonological one (Major, 1992; Vago, 1991). An example of phonetical change is the German *ist* (third person of the verb *to be*) and *war* (past tense of the verb *to be*), which can converge on the English *is* and *was* because of the phonetic proximity and lexical identity. The results of a very recent study (Levy et al., 2007) focusing on phonological retrieval difficulties in first language English suggests, that in case of second language acquisition, Spanish in the study, words with a higher frequency in L1 have been inhibited in picture naming tasks and L2 phonological equivalents were generated. The study concluded that, if second language acquisition parallels first language attrition, phonological inhibitions develop in L1 especially in early stages of L2 acquisition. Not frequent words and words without L2 equivalents remained unchanged in L1 (Levy et al., 2007).

Instances of feature replacements or sharing are described by Thomason in her research on three *Sprachbünde*¹, the Balkans, the Pacific Northwest of the USA and the Sepik River Basin in New Guinea (2000, 2001). Thomason's extensive research on the Native American Montana Salish documented borrowings on the lexical level due to contact with English, but also shared phonological, morphological and syntactic features among the three core languages in this Pacific Northwest Sprachbund; Salishan, Wakashan and Chimakuan. Trudgill (1986) predicts that the features that will converge are those salient in face to face interaction, like in the case of bilinguals, who use frequently more than one language. An example is Queen's

study (2001) on Turkish-German language convergence in bilingual children. These bilinguals have two different patterns of phrase final intonation in Turkish and in German, which are semantically different. German or Turkish monolingual children each have a single phrase final intonation for the same function. The salient features prone to changes are those which have a greater frequency but are linguistically distant, as in the case of morphological items and those phonetic items which produce communication difficulties.

However not all changes in L1 can be explained by the contact situation alone. Distinctions have been made between *internally* and *externally* induced linguistic changes (Seliger & Vago, 1991). Depending on the frequency of their occurrence and contexts these can be of different types.

Internally induced linguistic changes or intralanguage changes are individual, isolated mistakes which can be the result of limited first language usage, less proficiency in the native language or just “slips of the tongue” due to fatigue or lack of attention. These mistakes should not be considered at their first occurrence as aspects of first language attrition.

Externally induced linguistic changes or interlanguage changes can be determined by comparing the linguistic features of the two languages in contact. It has been suggested that the two languages will compete and features in cognate areas will be retained, but those features in L1 without equivalents in L2 will most likely be replaced by L2 features. The tendency toward simplification of grammatical constructions was also observed in language contact situations among bilinguals:

¹ Language unions

“less complex and widely distributed linguistic features or rules will replace the more complex and narrowly distributed features or rules” (Seliger, 1989, p. 173). Examples of this kind of feature replacements were noted in a study on Germans immigrants in USA, where the German complex sentence structure suffered modifications, especially in the verb usage (Altenberg, 1991).

As seen above, it is important to determine what types of externally and internally induced language modifications appear in language attrition. In order to do this, specific language situations have to be isolated to see if changes appear in some more than in others. This is why the second research question was formulated, with the objective of searching for specific lexical domains, where transfers, borrowings and loan shifts from L2 to L1 can be best detected in the Study Group. These aspects of possible first language attrition will be analyzed both on the group and the individual level and compared and contrasted with the findings from the Control Group.

As mentioned before, linguistic changes in the first language develop in bilinguals both at the individual level and that of a group or society, as in the case of immigration to an L2 setting, like Dutch and Germans to Australia (Clyne & De Bot, 1994; Guardado, 2002; Waas, 1993) or an indigenous shift to L2, as in the case of Hungarian speakers in Austria (Gall, 1979).

In extreme cases attrition leads to massive language loss or death, as has occurred on all continents where at least two languages came into close contact and one became the dominant one: Dyirbal in Australia (Schmitt, 1985), Kudu-Camo in Nigeria (Bross, 1990), Ona, Baure or Pacahuare in South America (Adelaar, 2000),

Arvanitika in Greece (Sasse, 1991) and most of the Native American languages in the U.S. (Krauss, 1995; Thomason 1997, 2001). The list of dying languages is long, containing about 516 languages, which are nearly extinct at the present time, some with less than 20 speakers (Gordon, 2005).

When two different languages come in contact, one usually plays the superstrate role, that of a socio-economically dominant language. Studies investigating the superstrate role of English upon other languages have mentioned lexical and structural influences: Prince Edward Island French, Pennsylvania German (Anderson & Martin, 1976; Keiser, 2001), L.A. Spanish (Silva-Corvalan, 1994) or NYC Spanish (Zentella, 1997). For example, in Silva-Corvalan's study, losses were explained by less frequent exposure to native or native-like Spanish verb tense structures. Transfer from L2 English also played a role, since the pressure of communication made the bilinguals use the forms available to them at that moment. The researcher hypothesized further that cognitive and sociolinguistic considerations - the perceived lower prestige of Spanish, as well as the speakers' level of education, jobs and living habits - may have influenced these changes. Older studies, like that of Boyd (1986) on first and second generation immigrants in Sweden, show a rapid shift to the majority language especially of the second generation. Among the most important factors in this language contact situation was age, where younger immigrants and children of first generation immigrants spoke Swedish with their age peers and their home language with their parents. The results of the study showed a low degree of active bilingualism (Boyd, 1986) among the second generation. Another study about Dutch immigrants in France, de Bot, Gommans and Rossing

(1991) focused on two factors: (1) amount of contact with L1 and (2) time elapsed since emigration. They also looked at the maintenance or loss of metalinguistic skills, like language monitoring and morphological and syntactical awareness, which were hypothesized to be lost first in an attrition process. An editing test, the Foreign Service Interview (FSI), and a grammaticality judgment test were administered to two groups of Dutch immigrants, one group having many contacts with Dutch speakers and the second group few contacts. The results of this study suggested that there was hardly any attrition of metalinguistic skills, the informants being aware of the sentence construction and the morphological parts of it, whereas linguistic skills expressed by lower FSI scores were significantly negatively affected by the two variables “amount of contact to L1” and “time since emigration” considered together in analysis. However, if the two above mentioned variables were measured independently the results did not indicate attrition.

In the same line of thought Köpke (2002) discusses the differences between immigrant settings, that of individual or “isolated” migrants, with limited contact with L1 in the L2 environment and limited travel to the country of origin and that of an L1 community with stronger ties in an L2 environment. The question of quality of L1 input versus quantity of L1 input arises and in her opinion; the quality of input is more important in determining what type and at what extension L1 attrition will occur.

Further discussions on the relationship between the different independent variables such as the ones mentioned previously: contact to L1, time since immigration, speakers’ attitude towards the usage of L1 and L2, and lexical and

morphological changes will be presented in the following subchapters.

Lexical changes in a language contact situation

The majority of changes which have been observed in studies of first language attrition rest in the lexical domain because lexical features are more susceptible to change and seem to be less well integrated in the structural system of the language (Hutz, 2004). Changes in L1 have been reported in studies as both a decline in retrieval abilities of declarative linguistic knowledge in L1 and an increase of competition by L2 knowledge (Köpke, 2002; Olshtain & Barzilay, 1991). Frequency of L2 words usage and similarity between L1 and L2 words have been suggested as influencing the maintenance or loss of certain features, as high frequency and cognate words would be retained better in L1 speech (Andersen 1982 in De Bot & Weltens 1991, p. 44). Numerous studies have focused on these structures and on identifying the different causes promoting these changes in the lexical domain (Jaspaert and Kroon, 1992; Köpke, 1999, 2002; Pavlenko, 2000; Waas, 1993).

At the same time this type of investigation requires caution, due to the fact that proficient bilinguals experience code-switching in their discourse on different scales from one word items to word chunks and whole sentences and for a variety of reasons, e.g. pragmatic or semantic (Romaine, 1989). More extensive discussion of the studies which give evidence on both lexical attrition and code-switching, as well as other lexical manifestations in bilinguals will be presented in the following part.

Several research studies have mentioned lexical changes in L1 as one of the first processes noticed in language contact situation, where borrowings and transfers

from L2 become more frequent and more noticeable in the first language (Brons-Albert, 1994; Clyne, 1980; De Bot & Clyne, 1992). In a study of long term American EFL teachers in Spain, code mixing, calques² and appending Spanish past tense suffixes to English verbs were only some of the errors Graeme Porte (2002) found. The 52 EFL teachers in Spain revealed “incipient attrition” (Porte, 2002, p. 106) as perceived by the informants themselves. They mentioned verbal and occasional written code-manipulation, grammar errors and using calques in communication with family and with colleagues

Lexical retrieval difficulties and diminished verbal fluency have been reported in different studies, for different languages, but especially in older informants (Hulsen, 2000; Jarvis, 2003; Kaufman, 1998; Olshtain & Barzilay, 1991; Waas, 1997; Yağmur, 1997). Migrant speakers may choose non conventional solutions, like verbs or expressions which would not be accepted in L1 in a given context. These creative or non conventional solutions were more often encountered in the speech of immigrants, both in their expression of declarative content, but also in their organization of linguistic structure, as a recent study on native speakers of Serbian or Croatian in their (L2) Norwegian shows (Skaaden, 2005). In some contexts these lexical innovations were a necessity for speakers to convey their meaning.

Another more recent study on American-Finnish speakers identifies changes mainly in lexical innovations and code-switching Finnish and American English, but not in the morphosyntactic patterns (Halmari, 2005). There are some studies which

² Loan translations- compound, derivative, or phrase that is introduced into a language through translation of the constituents of a term in another language (Merriam Webster dictionary, 11th ed., 2003).

focus on losses at the pragmatic and semantic level, like semantic transfer from English to German (Clyne, 1980, 1992; Odlin, 1989; Waas, 1993) or loss of the German discourse markers in spoken language: *so, also, doch, mal* and their replacement with some English ones: *well, you know, I see* (Goss and Salmons, 2000).

While most of the lexical changes appear over a period of time, most of the studies have investigated language attrition cross-linguistically due to time or budget constraints, and only a few have looked at language attrition longitudinally (De Bot & Clyne, 1994; Hutz, 2004; Jaspaert et al., 1986). De Bot & Clyne's (1994) 16 year longitudinal study revealed lexical, morphological and syntactical attrition in the Dutch language of 200 Dutch immigrants to Australia. The researchers hypothesized that the frequency distribution of words would change if speakers had no contact with Dutch and that these changes would be noticeable over decades. The subjects tested first in 1971 and again in 1987 showed an increase of English-like structures in their sentences, like the subject-verb-object (SVO) order and the adverbial placement in their Dutch. However, their lexical skills did not degrade dramatically over 16 years of immigration.

While more longitudinal studies in language attrition would confirm if this phenomenon indeed establishes itself in the first decade after immigration, such study designs are very complicated and impeded especially by factors like mortality among the informants, researchers' time constraints to complete the study, relocation of the informants or lack of monetary resources to complete the study.

As seen from the above, the body of research on lexical change in language

attrition situations is large, but it does not specifically address in what domains of the informants' life these lexical changes are more prominent. The lexical data for most of the studies mentioned above came from open-ended interviews (Schmid 2002; Gross, 2000; Waas, 1993), personal letters (Hutz, 2004), literary texts (Goss & Salmons, 2000), picture-retell stories (Olshtain & Barzilay, 1991) and picture naming tasks (Hulsen, 2000; Waas, 1993). While these data collection tools proved to be relatively satisfactory in gathering a large body of lexical structures, they were not specific enough, either too broad or too narrow, to identify a variety of social domains and topics from the daily life of the informants.

This is why the present study tries to fill the gap in this research area, in finding the domains where these changes are more noticeable and in determining if lexical items in certain domains like family life, shopping, food or work situation are more resistant to change or not. In this way, the second research question emerged out of the existing body of research:

2) If lexical transfers from L2 to L1 can be identified, what items or expressions have been transferred from English to German? If informants are provided with topics to discuss, what are the lexical domains where transfer or loss is more visible: home related words, childhood, daily life, job, leisure activities, service, small talk or shopping?

Because lexical changes in the L1 proficiency cannot alone account for language attrition, I will also investigate possible morphological changes in the L1 of the German immigrants to East Tennessee. The discussions on the importance of these changes, how, why and when they occur will be presented in the following.

2.4 Linguistic changes in first language attrition and a brief German-English contrastive grammar overview

Studies in language attrition or language change suggest that certain aspects of the linguistic system are more susceptible to attrition in prolonged language contact situations, as in the case of immigration (Schmid, 2002; Waas, 1993; Yağmur, 1997). Previous research has suggested that less frequent and less regular items in the L1 linguistic system are more prone to changes and even loss (Köpke & Nespoulous, 2001). In a language contact situation, “the Indo-European language systems tend to collapse and simplify their inflectional system over time” (Slobin, 1977, p.191) and the more marked L1 features are the ones which tend to be first lost in L1 attrition in a language contact situation, usually because of the lack of equivalents in L2 (Clyne, 1992).

The following studies investigated morphological changes in German as L1 in contact with English as L2 and determined different degrees of loss of the different morphological items. To test gender and plural markings in a couple of long-term German immigrants, Altenberg (1991) presented the informants with lists of high and low frequency words and asked them to supply each noun’s gender and plural endings. Instances of gender and plural errors were found for low frequency words and for nouns with irregular plural. The results showed less attrition in the gender markings than expected. Similarly, de Bot & Jordens (1994), who focused on attrition in German case markings, found that the nominative and the accusative case are easier to identify: the difficulty lies with the dative and genitive. The researchers investigated whether language loss is the reverse process of language acquisition

related to case markings, and if so to what extent. They concluded that for case markings, German immigrants relied on their cognitive system and the context to compensate for unsure formations in the morphological system. The study concluded that, in language attrition, cognitive distinctions are not lost. De Bot & Jorden's study and results have influenced the methodology chosen in the present study, but while the relationship between cognitive and linguistic abilities is a fascinating one, the present study did not investigate this relationship. A future reevaluation of the data from this perspective is considered. The linguistic abilities of the informants have been tested through different tasks and self-perceived language competence.

Similarly to the de Bot and Jorden's study, Clyne (1992) found some deviation in gender markings of German nouns, 12% shift to neuter, 11% shift to masculine and 7% to feminine. Other studies that investigated changes in marked features in German L1 attrition have found simplification tendencies (Gross, 2000; Huffines, 1991; Schmid, 2002) in case marking and prepositions, (Seliger & Vago, 1991) articles, gender and plural endings (de Bot & Clyne, 1994; Schmid, 2002) and adjectival declination (Waas, 1993).

While there are several studies that have investigated these morphological items in the context of language attrition, most of the studies before 1990 have revealed these changes in immigrant populations with limited contact to L1 speakers and the L1 community, less frequent usage of L1 and increased L2 cultural and social assimilation.

The need for recent data from immigrant groups and informants that experience L1 attrition in the twenty first century and who reflect the present world of

instant communication, cheap phone communication and travel, made me design a study where a variety of investigation methods will account for these changes explicitly and implicitly.

Brief contrastive English –German grammar overview

Since the theoretical framework of this dissertation is based on language contact, there is the need for a brief overview of the main grammatical similarities and differences between the two languages under investigation: German and English. Cross-linguistic influence in the case of two language systems in close contact has been investigated and there is evidence of effects on L1 (Altenberg, 1991; Pavlenko, 2000; Seliger, 1991) in all language domains. The discussion on grammar differences or similarities will be brief and focused on the domains addressed in the study: case and gender marking, plural ending, prepositions and conjunctions.

German has a highly inflectional morphology compared to English and there are numerous distinctions regarding marked features. The German four cases are marked by distinct inflections of the pronoun, noun or noun phrase, as well as of the articles, whereas English has no marked distinction between Nominative, Accusative and Dative in the usage of articles (Durrell, 1996; Hawkins, 1986). Case plays an important role in showing the structure of a German sentence, especially regarding word order and verb conjugation (Durrell, 1996). The German definite article system (also known as *determiners*) has six distinct forms depending on case, gender and number of the following noun (*der, die, das, des, dem, den*), the same holds for the indefinite article (*ein, eine, einen, einem, einer, eines*). In comparison, the English

article system has one definite (*the*) and two indefinite articles (*a, an*) (Hawkins, 1986). While in most of the cases, where German uses a definite article, the English uses also the definite article, there are frequent situations where German uses definite article and English not:

e.g. Er liebte **die** Demokratie (Mann)

He loved democracy. (Durrell, 1996, p.63)

As a result of these differences, the very strict gender marking in German can suffer alteration in a contact situation with a simplified gender marking (Håkansson, 1995; Hirvonen, 1995). This situation becomes more evident in the borrowing of words especially from English as a characteristic of modern German, which comes however with the dilemma of assigning gender to these nouns. Most of them will be assigned the gender closest to the German equivalents or synonyms (Durrell, 1996). Examples of English words in present German, with German articles are: *der* Job (German synonym: der Beruf), *die* High School (German Synonym: die Oberschule or die Sekundarschule) or *die* fireplace (German synonym: die Feuerstelle or die Feuerstätte).

The present study addresses specifically the issue of gender assignment and marking by analyzing the usage of gender articles in fixed and open task contexts and the English borrowings in German speech. This analysis is necessary to bring evidence of defective or correct use of gender markings in order to confirm or disprove the first research question, already mentioned in subchapter 2.2, regarding possible evidence of language attrition in L1 morphology of German immigrants to East Tennessee.

Similarly to gender marking, German has at least six distinct plural ending types in nouns from the basic vocabulary and foreign words (*no ending, -e, -en/-n, ;, -er, -s*) and several irregular plurals (Buscha, 1980) while English has three regular plural endings (*-s, -es, -ies*) and relatively few irregular plurals. Since there are no absolute rules in German on how a particular noun will form its plural, except for certain gender clues, the German plural endings, like the gender markings have to be memorized. Deficiencies in plural markings can arise over time, in the case of immigration and less contact to German speakers and innovations occur, like using borrowed English nouns and using German plural markings (Anderson, 2001; Schmid, 2000). The first research question of the present study addresses the issue of plural endings and gender markings in the language of German immigrants, as stated before in subchapter 2.2.

The usage of prepositions and conjunctions is similarly difficult in both languages, but in German certain prepositions govern one case only, dative or accusative, whereas others govern dative in certain circumstances and accusative under other conditions³. The prepositions in German are as rich and complex as in English and their meaning and usage depend on the prepositional phrase, case and number of the connected part of speech (noun, verb or adjective). They can be bound in a prepositional phrase or free and denote temporal, local, causal and modal relationships (Duden, 1998).

In a situation of language contact, these fixed prepositional phrases are prone

³ German has prepositions used exclusively with the accusative (*bis, durch, für, ohne, um, gegen, wider*) and dative (*mit, zu, bei, aus, von, nach, seit*), but also two – way prepositions (*an, auf, entlang, hinter, in, neben, über*), which are used with both cases (Buscha 1980)

to alterations, as a study on second generation Dutch immigrants in Australia reveals (Folmer, 1992). The conjunctions in German, as in English, are subordinating and coordinating, with the difference that in German subordinating conjunctions require different syntax and force the finite verb to appear at the end of the clause, whereas clauses joined by coordinating conjunctions do not shift the position of the verb.

Considering only these few particularities of the two grammar systems, it has been assumed that in an intense language contact situation changes occur in L1 usage that are induced by L2 constructions. These grammatical features have been investigated in second language acquisition and in studies which contrast grammars. This study will investigate these shifts, because of the limited data existent at the present time in this category. I have not been able to identify any studies that have in detail investigated shifts in the usage of prepositions and conjunctions in German in a language contact situation with English through the perspective of language attrition. Seliger and Vago have briefly described, based on a very limited number of data, the rule generalization strategy of applying an L2 (English) rule of prepositional postposing, which is not allowed in the L1(German) syntax:

Incorrect: *Alle andere Leute hast du keine Zeit für* (Germ.);

Correct- *Für alle anderen Leute hast du keine Zeit*⁴. (Seliger & Vago, 1991, p.5-6)

Based on this theoretical background, the present study will attempt to track possible attrition in morphological items (case endings, plural endings, usage of definite, indefinite and negative articles, prepositions and conjunctions) as well as in lexical items (loan translations, borrowings, retrieval difficulties and new

constructions). The nature of the collected data for this study attempts to identify if changes are consistent in both a controlled task such as a cloze test fill-in text and in a less controlled task such as an interview. Previous studies have not specifically addressed all of the above changes in free spoken data and test data, in the same research study, and corroborated them with important sociolinguistic factors.

As seen from the examples from the different studies and discussions in this subchapter, linguistic changes are visible at different stages in language attrition. However most of these changes can not be examined only from a linguistic perspective and for this reason, the consideration of external factors is very important in a study of language attrition. The next subchapter 2.6 presents the independent variables or also called factors in the study, which play an important role in language change as well as formulates the research question regarding the importance of these factors in language change.

2.5 Psycholinguistic and sociolinguistic factors in language change

As Thomason (2001) mentions, in the typology of language change in a contact situation, the factors affecting language can be linguistic and social. The linguistic factors have been discussed in the preceding subchapter. A more in-depth discussion of the extralinguistic factors that affect language attrition follows. The factors or independent variables to be mentioned in what follows are not the only ones which affect language change, but are believed to be relevant to the present study.

⁴ You have no time for all other people.

One of the most important factors that has been investigated in relation to language attrition is age. Taking age as one of the determinant language change factors, studies are divided into three main categories: language studies in children, in adults and in the elderly. In addition these categories mark the three main language development stages. Language attrition in children is considered the most severe one (Köpke and Schmid, 2004). Children exposed to a second language that becomes dominant in the school and social environment will exhibit the fastest pace in losing the first language skills (Bolonyai, 1999; Harres, 1989; Kaufmann, 2001; Seliger & Vago, 1991). Though interesting, the investigation of first language attrition among children is still problematic because of the differences in language processing between children and adults. In the present study, I will not discuss first language attrition in children, because all of the informants emigrated past puberty.

Many studies have investigated language attrition studies on adults and little overall attrition has been found in the age group 20-60 (de Bot, Gommans and Rossing 1991; Köpke, 1999; MacKay, Connor, Albert and Obler, 2002; Waas, 1993). The elderly group, 65 and over, however shows diminished language abilities, especially in lexical retrieval⁵. This group also corresponds more often to the group which has the longest time since immigration, which is also one important factor in language change (De Bot & Clyne, 1994; Olshtain & Barzilay, 1991; Waas, 1993). Other studies, however, have found that some lexical items are more stable across age groups and some are more prone to change (MacKay et al., 2001).

⁵ This is true even in monolinguals, so it is important but at the same time difficult to distinguish between language attrition attributable to L2 exposure and language attrition as a consequence of the aging process. (Goral, 2004)

Age at the time of immigration has been found to play a significant role in maintenance or loss of language skills. The older the immigrants, the better chances they have to maintain their native language compared to very young immigrants who adopt the second language as the language of primary communication, most of the time when they come under peer and school pressure to better integrate in the majority society (Corvalan, 1991; Harres, 1989; Kaufmann, 1992). The importance of age has been considered in the present study and the results of the investigations indicated that in the elderly age group, there were the greatest number of observed aspects of first language decline, but all age subgroups showed some variation on both the lexical and morphological level.

Another important sociolinguistic factor is attitude towards the first and second language. In many cases the second language had the higher prestige and the move towards the second language was considered important in order to succeed on an economic and social level, as is the case of Mexican immigrants to US or German immigrants to Australia (Corvalan 1991; Harres 1989, Waas 1993). Some studies focused on groups' vitality and on several generations of immigrants in order to unveil attitudes towards L1 and L2 and to investigate the effects of these attitudes on maintenance or loss of language skills. Hulsen (2000) observed, among other factors the perceived effects of the in- or out-group status of three generations Dutch immigrants. While the first generation still relates to their Dutch descent and perceives itself as an out- group compared to the British-New Zealand majority, the following generations, born and raised in New Zealand, adhere more to the British-New Zealand group and perceive themselves as an in-group. Yağmur (1997) explores

similar group dynamics and attitude changes in Turkish immigrants to Australia. These two studies investigated language attrition and retention from the Ethnolinguistic Vitality Theory (EVT) perspective, which tries to identify groups' strength, behavior, identity and collective attitude in inter-group situations (Giles et al., 1977 as cited in Schmid 2004). In case of persecution, the negative attitudes towards one language can lead to intentional abandonment and avoidance of the persecutors' language, as with the case of German Jews who immigrated to Anglophone countries (Schmid, 2002).

Given the importance of the attitudes toward language maintenance or loss, as exemplified by previous research, I formulated the third research question, in order to identify if attitude plays an important role in language attrition in the Study group:

3) Due to the continuous changes in technology and globalization, attitudes and values towards language identity might undergo also changes. Will the East Tennessee group reflect changes in attitudes or values toward their L1 if contrasted with the Control Group in Germany?

In order to best address this question, the present study was designed to address the insufficient evidence of language change in the context of a new technological era, where contact to L1 speakers is more frequent through internet communication, more affordable travel costs to Germany and cheaper phone communication. The sociolinguistic questionnaire used in this study asked the informants questions relating to their attitudes towards both the German and English languages, as well as possible alterations of their language skills.

A third factor influencing language attrition is the amount of L1 contact, as

evidenced by travel to Germany, reading, writing or conversations and meetings with friends and family. The amount of contact with L1 has been investigated, but there have been difficulties in quantifying it based on the subjects' self-reported contact with other L1 speakers in the L2 environment or L1 environment (de Bot et al., 1991; Köpke, 1999). Moreover studies have reported no significant language loss in situations where the informants confirmed rare contact with the L1 culture and community (Jaspaert & Kroon, 1989).

Amount of contact is corroborated with frequency of L1 usage and there is the need for these two factors to be treated together. The methodology on how to measure these two factors raises some challenges for researchers due to the variety of possible contact situations. To address the question of the quality and quantity of language use, as well as the perceived prestige of the two languages among the subjects, I tried in my study to analyze these two factors together and give a good account on how the German informants describe frequency of L1 use and contact to L1 community.

A fourth factor affecting L1 attrition in an L2 environment is the educational level of the L1 informants. Level of Education has probably been the least investigated factor in language attrition. Some of the few studies (Jaspaert & Kroon, 1989; Waas, 1996; Yağmur, 1997) that have analyzed language changes with respect to this factor started with the hypothesis that a higher level of education would inhibit first language loss. There are several measuring difficulties in this case. Jaspaert and Kroon (1989) found in a study on Italian immigrants in the Netherlands, that the level of education played an important role on text editing and vocabulary tests. Waas (1996) reported strong correlations between the level of education and performance

on a verbal fluency task on her German immigrants in Australia. In Yağmur's study (1997) on Turkish immigrants in Australia, level of education again influenced verbal fluency. As stated before, studies investigating the influence of education on language attrition are not so numerous that the findings can be generalized. This is why more attention and research is needed in this area. In trying to address the need to complement the research data in this area, I analyzed this variable in relation to morphological and lexical data from the present study in order to see if there are significant differences between informants with different education levels.

One last variable deemed important in language attrition studies is time since immigration. While language attrition does not become evident, in most cases, in the first few years after immigration, after a lengthy time of residence in an L2 environment, L1 will exhibit changes, especially in access to certain lexical structures, like idiomatic phrases and proverbs in the daily conversation or onomatopoeia in fairy tales (Waas, 1993). Some studies show that a certain minimal level of L1 proficiency is retained after which no more attrition develops, even after many decades since immigration (Schmid, 2002; Gürel, 2002).

It has been suggested (de Bot & Clyne, 1994) that if attrition establishes itself in immigrants, it happens more frequently in the range of 5-10 years since immigration (in Schmid, 2002). However this factor is also difficult to isolate because of its strong dependency on age. It is more likely that older informants also experience attrition a long time after immigration. This factor will be analyzed in the present study for different immigration subgroups, to track its effects in relationship to morphological and lexical findings.

2.5 Objectives of the study and research questions

The theoretical framework of this dissertation is mainly sociolinguistic, with consideration of psycholinguistic aspects, such as age, language processing difficulties and frequency of L1 usage. The study investigates the language attrition phenomenon occurring naturally in an immigrant group in a language contact situation with the consideration of different social variables such as, level of education, frequency of communication in L1, cultural norms and attitudes towards language usage. The language under investigation is German, also termed L1 throughout this dissertation, in the U.S. context where English is designated as L2.

The main objective is to investigate and assess the influence of extralinguistic variables such as age, time since immigration, amount of contact to L1, attitudes toward maintenance of L1, on certain intralinguistic determinants such as amount of lexical borrowings and innovation, or defective plural endings, case markings or prepositions and conjunctions in the language use of German immigrants in East Tennessee. This study is a first attempt to investigate whether the usage of prepositions and conjunctions in German has suffered any changes. It also investigates the lexical features not only on a holistic level, as in numerous previous studies, but based on themes taken from the daily life of the informants.

While several studies have discussed and assessed the importance of age in the language attrition context (Altenberg, 1991; Köpke, 1991; Schmid, 2002; Seliger, 1991) level of education remained a debatable factor in need of further investigation. A few studies have included education level as an independent variable (Jaspaert & Kroon, 1989; Köpke, 1999). The present study investigates the correlation of the

variable level of education and lexical and morphological performance and discusses its importance among other findings.

Lexical borrowings, like *downtown* in Russian (Pavlenko, 2003), semantic transfers, like **ein Photo nehmen* (German), mirrored after the English “to take a picture,” instead of *ein Photo machen* (de Bot & Clyne, 1994, p. 20), calques⁶, like *nachschauen* (German) after the English “look after” in the sense of “take care of” (Porte, 2002; Pavlenko, 2003), as well as retrieval difficulties for specific content words (Goral, 2004; Olshtain & Barzilay, 1991; Vago, 1991) were identified in these studies as major manifestations of language attrition. Lexical borrowing and lexical transfer in general are language specific and more studies to investigate these phenomena in as many language combinations as possible are required in order to achieve a sufficient amount of data to lead to generalizable conclusions across languages.

Moreover, most of the studies have been done in the European setting or in Australia, fewer in the US, so that studies in a U.S. setting will contribute to the assemblage of generalizable insights. L2 borrowings, transfer and L1 innovations have been accounted for in the present study, and the findings contribute to the completion of the data pool for German L1 in an English L2, in the U.S. context.

The present study was designed with the shortcomings, but also the successes of previous methodologies in mind and strives to make an important contribution to the field of language attrition, especially in the data elicitation techniques and data

⁶ Loan translations- compound, derivative, or phrase that is introduced into a language through translation of the constituents of a term in another language (Merriam Webster dictionary, 11th ed., 2003)

analysis procedures. At the same time, the importance of statistical analysis, together with qualitative analysis, have been accounted for and performed on the data. While quantitative studies have dominated the field, there is the need for more qualitative studies. Only a few qualitative studies are present in the body of language attrition research (Kouritzin, 1991; Schmid, 2002).

Sandra Kouritzins' (1999) qualitative study used the theoretical framework of life history to describe the nature and psycho-affective results of language loss. The author interviewed five informants in depth asking them to discuss their life experiences related to language loss and to evaluate how language loss had affected them in their personal and social lives. She does not analyze the data quantitatively, but investigates the different socio-and psycholinguistics variables which influenced L1 changes. The findings are presented in form of narratives organized around themes like family, social network, education or religion. The changes were of different degrees, from severe rejection of the L1 usage (almost entire loss of L1) to active usage of L1 on different occasions.

Another example of qualitative investigation is Monika Schmid's (2002) study based on narrative autobiographical interviews of 54 German Jews from Germany who immigrated to Anglophone countries before and during World War II. This study also analyzes morphological and syntactical changes in German, such as gender, case markings and plural markings and verb placement mistakes.

The most significant factors influencing language attrition were affective factors: cultural identity and attitude towards L1. Most of the subjects were horrified and traumatized by the Holocaust, and so they questioned their identification with the

German language and culture and embraced the new adoptive culture, in this case English as a form of escape from the past. The attitudes toward German language varied from being proud of the heritage to hate and total refusal to communicate or even think in German.

Other qualitative studies using the elicited narrative method have collected free speech or moderately controlled speech (Ben-Rafali, 2001; Montrul, 2002; Pavlenko, 2003), which is the closest to naturally occurring speech. Following Shah and Corley (2006), the divide between quantitative and qualitative data needs to be understood for building better theory, and a combination of quantitative and qualitative data elicitation methods in a research contributes to a better understanding of the phenomenon under investigation.

Given the goal set by Shah and Corley, another objective of the present study was to incorporate both quantitative data collection methods in the form of a sociolinguistic questionnaire with language self-assessment scales and a cloze text, which elicited lexical and morphological data and qualitative collection techniques in the form of a picture description task and a semi-structured interview. Language manifestations need to be observed in their natural settings and not in controlled laboratory situations, which is why these techniques were designed to collect data as close as possible to natural speech, mimicking daily life situations or natural conversations.

Few studies have gathered data from a monolingual control group as a means to compare and contrast the language performance of the two groups (Gross, 2000; Montrul, 2004; Waas, 1993; Yağmur, 1997). Some have considered monolinguals or

simultaneous bilinguals from the L2 environment as their control group for the studies (Montrul, 2004; Waas, 1993). Some studies included monolingual raters as a mean of an objective rating besides the researcher (Schmid, 2002). If the participants from the control group, however, live in the same environment as the study group, there is the danger of biased data and interculturally contaminated data (Gross, 2004). To eliminate the possibility of data contamination, a control group of German monolingual speakers in Germany, matching the study group in extralinguistic factors such as age, level of education and gender, was selected.

Research questions

Some of the research questions have already been mentioned throughout this chapter. In the following section the five research questions, which lie at the base of the present study will be recapitulated. The following three research questions refer to morphological and lexical changes in German informants, as well as about independent variables, which would determine these changes. These questions reflect the quantitative data gathered.

1. Will the German immigrants to East Tennessee show variation, alteration or attrition in morphology such as: defective article usage, wrong case markings and plural endings, even after a relatively short time since immigration?

2. If lexical transfers from L2 to L1 can be identified, what items or expressions have been transferred from English to German? Given a range of topics such as home related words, childhood, daily life, job, leisure activities, service, small talk or shopping, which of these topics are more prone to transfer or loss?

3. To what extent, if any, do the extralinguistic factors age, time since immigration and level of education play a role in language attrition?

Since language is a multi-faceted phenomenon, language changes can not be investigated only from a quantitative point of view and in isolation from other extralinguistic factors. This is why I formulated two research questions which deal with attitudes and values towards language change in general, and more specifically about the informants' personal feelings toward language mixing.

4. Due to the continuous changes in technology and globalization, attitudes toward and values related to language identity might also undergo changes. Will the East Tennessee group reflect changes in attitudes toward their L1 or values associated with their L1 if contrasted with the Control Group in Germany?

5. How do the informants from the East Tennessee group perceive their language mixing/attrition?

3. METHODOLOGY

In the previous chapter I have presented the overall theoretical framework and research questions underlying the present study. As the review of the main research lines and studies in language attrition shows, there is still the need for an integrated research design (Schmid, 2004). Many studies (de Bot et al., 1991; Gürel, 2002; Jaspaert & Kroon, 1989; Köpke, 1999) have found contradictory results, or inconclusive findings testing the same independent factors (age, level of education, amount of contact, time since immigration) with similar dependent linguistic variables, and virtually all studies employ more than one method of data collection and data analysis. Given the complexity of the language attrition phenomenon, only the employment of a variety of data eliciting techniques can give a good account of the phenomenon, as Schmid and Köpke (2004) pointed out.

A combination of data elicited through self assessment, formal tests and spontaneous free speech will offer a comprehensive view of language production. In light of these prescriptions and based on the shortcomings and successes of previous research I designed the following study using all three types of data collection mentioned above. The present methodology chapter discusses in subchapter 3.1 the preliminary fieldwork (pilot study), in terms of its findings and implications for the present study. The following subchapter, 3.2 is used to set forth the different methods of data collection, and the quantitative and qualitative data analysis procedures are provided in the last subchapter, 3.3.

3.1 Design of the case study

In fall 2003, a pilot study was conducted with six first generation German immigrants to the U.S. using four data collection instruments in order to test the tasks and what kind of language features appear to be non-native like in the speech of German immigrants. The pilot study was designed within the language contact framework and with consideration of the grammatical differences between German and English especially in the case and gender markings, definite and indefinite article usage and plural endings.

Informed by the results of the pilot study conducted in 2003 and the different readings in the area of language change and attrition, I designed the final study in the summer of 2005. The study was intended to gather language data from first generation German immigrants to East Tennessee and contrast it with similar data gathered from a group of native speakers in Germany. The group of 22 German immigrants in the U.S. will be called the Study Group and the group of 12 informants in Germany will be called the Control Group.

Much research exists on large communities with a homogenous culture and language whose members live in relatively close relationship to each other (Huffiness, 1980; Ramos-Pellicia, 2004; Waas, 1993). These previous studies on close-knit communities, such as the Pennsylvania Germans in U.S., Lorain Puerto Ricans in the U.S. or Germans in Australia, however, account for community and group characteristics regarding language usage and practices. Similar patterns in use of L1 slang or certain vocabulary items or idiomatic expressions have been accounted for in these communities. Very few studies concentrate on smaller immigrant groups

or just individuals who live in places, cities or regions with limited immigration rates, such as for example East Tennessee in the present study.

According to the MLA language map based on the 2000 census data, German is spoken by 0.38% of the population in the state of Tennessee (MLA Language Map, 2006). The same census reported between 1,000 and 5,000 German speakers in Knox County and fewer than 1,000 in the surrounding counties. The East Tennessee region does not have a large established German community, but small groups, rather closed to newcomers, exist.

Based on the small number of possible German immigrants and on Milroy's & Gordon's (2003) discussion that sampling size in linguistic research tend to be smaller, because of the data handling issues, I decided that 20 to 25 participants represented a good sample of a small community. The following criteria were considered when selecting the informants: (1) age range between 25-65, (2) born and raised in Germany, Austria or Switzerland and (3) at least 16 years or older age at time of immigration. The age range considered for the study best described informants well integrated in the L2 environment and actively on the professional level. Only first generation German speakers who emigrated and presently reside in the USA were eligible for this study. This is why informants only from the three mentioned countries were considered. This criterion was crucial for the study to avoid intergenerational shift. Of importance also was their competency in their mother tongue at the time of immigration, which is why the age of 16 was set as the cut off age. It was assumed informants would have had a good command of German between the late teenage years and young adult ages. There was only one exception to the

study, an informant that emigrated at the age of 13. Because of his continued close contact to German speakers, both here in the U.S. and in Germany, and his active usage of German in reading media and writing emails and letters in German, his data was accepted in the study. A balanced number of females and males was selected, as well as a diverse array of education level and jobs.

As mentioned above, Germans do not form a compact social network in East Tennessee, and this created difficulties in finding informants. I posted flyers around the University of Tennessee, Knoxville campus, as well as at some local gourmet stores, and handed others to friends and acquaintances. These friends and acquaintances referred me to possible informants and those again to others. Potential informants were contacted by email or phone. After the informants agreed to participate, the meetings between the researcher and the informants took place either in the informants' home or in a quiet café. The data from the 22 informants were collected over a year's period from fall 2005 until summer 2006.

Different from the preliminary fieldwork, I used a Control Group of native speakers in Germany as a standard for comparing and contrasting the language use of the two groups. Due to time constraints, a longitudinal study was not attempted since it would have required pre- and post tests that would have taken years of research. The use of a Control Group also called "static group comparison" (Jaspert et al., 1983, p.38), was considered appropriate for the present research design in the absence of pre- and post tests (Yağmur, 2004). The Control Group was given the same tasks as the Study Group, but with some modifications required by the different context. For example, the questions regarding immigration were eliminated from the

questionnaire designed for the Control Group. The data collection procedures included tasks which collected both quantitative and qualitative data and tested three of the language skills: understanding, reading and speaking. These elicitation methods were selected because they best represent aspects of language usage in a rather “naturalistic” occurrence and collect both controlled and free speech data (Schmid, 2004). The four data elicitation methods are discussed below.

3.2 Data Collection Methods

For the data collection, I used the same four instruments as for the pilot study, but with certain modifications, regarding length of the tasks and complexity. The four tasks were a sociolinguistic background questionnaire, a cloze/ fill-in text, a verbal picture description task and a semi-structured open-ended interview. After reading and signing the IRB consent form, each participant received a handout with the questionnaire and the cloze test. The researcher was present while the informants completed the forms in order to clarify any questions or instructions.

The order of the tasks was kept identical to the pilot study because it proved to be relaxing for the informants to move from more rigid and closed-ended tasks to the more open tasks, involving free speech. The order was intended to slowly warm up the informants and let them get used to the tasks and to speaking only German. The data collection methods were administered in this order to all informants: (1) a 37-item sociolinguistic questionnaire, (2) a cloze/ fill-in test, (3) a verbal picture description task and (4) a semi-structured five question interview.

After completion of the questionnaire and cloze test, the researcher showed the informants the pictures and allowed the informants some time to look at the pictures first and then talk about them. After this task was completed, five interview questions concluded the meeting. There was no set time limit to complete the tasks. Both the Study and the Control Groups were given the same tasks, in the same order.

For the Control Group, however, some modifications to the questionnaire and interview questions were required. The questionnaire designed for the Control Group in Germany had fewer questions, a total of 26. It consisted of the same three parts, but the questions relating to immigration were omitted. One question from the interview was omitted, the one asking about things liked and disliked in the U.S., and the remaining four interview questions for the Control Group were modified to reflect the German context. Copies of all tasks and pictures for the description are to be found in Appendices A to H.

The data collection for the Study Group in the U.S. started in the fall of 2005 and ended in the summer of 2006. The data collection for the Control Group in Germany was done in the winter of 2005.

These four instruments, tested before on the preliminary study, were selected again because they could best collect both quantitative and qualitative data, as close to naturalistic data as possible, without making the informants feel that they were being tested per se. These instruments both controlled for formal and spontaneous language use or formal and informal data. Two of the basic language skills: reading and speaking were tested by using these tools. The writing skills were tested minimally in filling out the questionnaire and the cloze test, thus they will not be

discussed in the present study. In the following the detailed description of the four data collection tools is presented.

Sociolinguistic Questionnaire

The sociolinguistic questionnaire is a valuable tool because it can gather a large amount of data in a short time. It was intended to gather both linguistic and extralinguistic information, such as age, occupation, level of education, civil status, immigration status, language usage and frequency. The extra linguistic factors were important in order to group the informants by age and/or time since immigration groups and computing them in statistical analyses with the different dependent variables, such as morphological and lexical items. In addition, the questionnaire would provide some of the necessary data to answer the last two research questions:

4. Do the immigrants exhibit changes in attitudes or values toward their L1 as contrasted with the non-immigrants? and

5. How do the immigrants perceive their language mixing or attrition?

The questionnaire design was adapted from Hulsen (2000) and Waas (1993). Questions regarding socio-biographic information were stated similarly as in Waas (1993), with elimination of numerous questions concerning the second generation. I added new questions and reformulated some of the questions from the pilot study questionnaire which were not explicit enough or were found not to address certain language use situations. The final version of the questionnaire had 40 questions. Most of the questions were in multiple choice format and the informants had to circle the appropriate answer; the rest were open-ended questions. The questionnaire was

bilingual, English and German, and the questions were symmetrically ordered in columns (See Appendix C). The informants were encouraged to fill out either the English or the German side of the questionnaire, giving them the opportunity of choosing to answer some questions in English and some in German, depending on the level of comfort and familiarity with the language involved in the question. Giving them the option of answering in the language of their choice was also designed to elicit information on what questions were preferred for answers in English and which ones for German.

Different from the pilot study, the questionnaire in the actual study had the following organization and it consisted of three sections: questions on demographic background, questions on language use and informants' attitudes and perceptions toward L1 and L2. For the socio-biographic background information part, different questions regarding the following variables were formulated: gender, age, occupation, industry, marital status, number of children, birth country, immigration status, time of arrival in U.S. and reason for immigration. A total of 13 questions dealt with socio-demographic background information.

For the language use part, the questions included self-assessment scales of English and German language knowledge at the time of immigration and at the present time, other known languages, frequency of German vs. English language use, naming specific situations when one or the other language is used and difficulties in using German. Some of the questions on the questionnaire asked for self-evaluation of language competence or attitudes towards certain language practices and were designed based on an Osgood semantic differential scale, where informants had to

mark what applies to their situation on a scale from “poorly” to “very good.” This scale was considered more suitable than the Likert scale because it better measures the connotative meaning of concepts. The informants were asked to choose where they would position themselves on a scale between a range of words across a bipolar position (for example, ‘Excellent’, ‘Good’, ‘Adequate’, ‘Poor’, ‘Inadequate’). (Osgood et al., 1957). This part consisted of 22 questions. Some questions were formatted according to the Osgood semantic differential scale, some were multiple choice questions and some were open ended statements.

<p>18. How would you rate your knowledge of German now?</p> <p>very well⁷ well moderately well adequately well poorly</p>	<p>18. Wie würden Sie ihre Deutschkenntnisse jetzt bewerten?</p> <p>sehr gut gut mäßig gut ausreichend schlecht</p>
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The last section of the questionnaire had only five questions asking the informants what spontaneous associations they would make with regard to German or American culture, what values they associate with the German or English language and what attitudes they have toward mixing English words in German conversations.

Language assessment tests: Cloze test

The cloze test was a procedure initially developed by Taylor (1953) to measure readability of texts for native speakers. The procedure originally was very

⁷ The wording in the questions was kept similar for consistency across the questionnaire and this is why “very well” was used instead of the correct “very good.”

simple: every 5th or 7th word was eliminated in a text and the readers' task was to supply the missing word. This technique was based on "the human tendency to complete unfinished phrases or to see the broken patterns and mentally close the gaps" (Taylor, 1953, p. 415). Following Taylor's original work, this procedure has been used in ESL and foreign language testing, not only for reading comprehension but also as a form of testing vocabulary and grammar (Brown, 1988, 1993, 2001; Hinofotis, 1987).

In my study, I adapted the cloze test following Abraham and Chapelle (1992), Kobayashi (2002) and Montrul (2002) by using selective deletion of both lexical and morphological items, both content words and function words. This type of cloze test is also called the "rational" cloze test, where the researcher decides which words are to be deleted (Kobayashi, 2002, p.582). The cloze test was chosen because it gives the informants a context unlike other grammatical judgment tests. This type of test shows the relationship between the particular cloze item characteristic and its difficulty.

While in the pilot study I used a short article dealing with a political issue, the German text for the cloze test was adapted from a *Spiegel Online* article, which dealt with a short narrative by a German columnist, describing his health situation. The text was intended to be suitable for a larger public, without overly specialized or formal vocabulary. I selected the text for its German slang content as well as for the presence of a certain number of English loan words (see Appendix E1-2).

Since there were native speakers of German in both test groups, I decided not to give them a word bank with the missing words, as is usually done in this type of test. Instead I encouraged them to fill in the blanks, with words they believe would fit

in order to reconstruct the meaning of the sentence. As long as the sense of the sentence was reconstructed, the informants were told they should not be concerned about the exact missing word. They were instructed that each blank required an item and that there are no “trick” blanks to confuse them. However, depending on their word choice, some blanks would remain blank and they were instructed to mark them with a dash. The expectation was that native speakers would supply a variety of answers, both perfect synonyms or contextually accepted lexical or morphological items. There were 43 missing items; 28 were morphological items, such as definite and indefinite articles, prepositions, plural endings and conjunctions. Most of the morphological items were in obligatory context, so they had to be supplied in the blanks. The remaining 15 items were lexical: one noun, adjectives, verbs and adverbs as parts of phrases or idiomatic expressions. Since lexical items bear the meaning of sentences, the most difficult items to eliminate without gravely affecting the context beyond possible reconstruction, were the nouns and verbs. This is why it proved impossible to eliminate more than one noun and four verbs. The number of eliminated words was higher than in standard cloze tests in order to have enough data in all categories to perform statistical analysis.

Several answers turned out to be acceptable in certain contexts. Consequently, scoring the test items became problematic. In certain cases three or more synonyms close in meaning were accepted. However, the highest score of five for lexical and three for grammatical was assigned only to the exact items or items which would have not changed the meaning of the text. Accepted items were those which were grammatically correct but semantically changed the text to some degree. These were

assigned four points for lexical items and two for grammatical ones. Incorrect items were assigned one point, in order to credit the fact that the informants believed that a certain item should have been supplied there. The scoring was separated according to the grammatical or lexical nature of the omitted word. The scoring options are the following (Table 1).

The difference in scoring the lexical items with the numeric values of 0, 1, 4 and 5 compared to 0, 1, 2 and 3 for the morphological items had solely the purpose of easily identifying the items in analysis as being lexical or morphological. No higher weight was assigned to the lexical items. In the analysis, the sums of individual grammar items have been considered and the statistics were based on means and percentages.

All the items from each informant were introduced into Microsoft 2002 Excel files. The grammatical and lexical items were analyzed separately and means were used to compare the findings of the two groups. The lexical and morphological findings, also called dependent variables in the study, were investigated in relationship to the extralinguistic or independent variables: age, time since

Table 1. Criteria for Scoring the Cloze Test Items by Points

Scoring options	Missing item points	Incorrect item points	Accepted item points	Exact or very close item points
Grammatical items	0	1	2	3
Lexical items	0	1	4	5

immigration and level of education. These analyses addressed the first and the third research questions:

- 1. Will the immigrants show variation, alteration or attrition in morphology such as: defective gender usage, wrong case markings and plural endings? and*
- 3. How much do the extralinguistic variables age, time since immigration and level of education influence language attrition?*

Verbal Picture Description Task

The verbal picture description task was selected for this study because it has been proven a valuable tool in measuring lexical retrieval, in addition to other grammatical features in spoken language. This type of task can test active and passive lexical retrieval⁸ (Hulsen, 2000).

The picture-naming task and picture description has been used with success in language attrition studies (Ammerlaan, 1996; Köpke, 1999; Hulsen, 2000; Yağmur, 1997), but most of the studies have used a picture-naming task, where pictures of objects and actions were presented without any context. Even if this method has often been used to show memory and cognitive processing (Snodgrass & Vanderwart, 1980), it is a formal test that tends to collect rather artificially stimulated data, out of context.

Instead of using uncontextualized, individual pictures of things or actions, I selected authentic pictures which depicted real situations, embedded in a larger context. This type of task was intended to collect more naturalistic, free speech data,

without the constraint of artificially constructed tests that provide only one or a few possible answers.

This task gave the informants more control than the cloze test on what to answer and how to answer. Since the task called for spontaneous speech data, the informants had fewer constraints on what to describe and, based on the post hoc observations and the informants' own comments, they felt more relaxed on this task than on the cloze test task. A certain monitoring of language use was expected on the part of the participants, as well as some other strategies to compensate for possible lexical retrieval problems.

The pictures selected for this task were influenced by the findings from the pilot study. The findings from the picture description showed that the vocabulary related to home, family and food indicated smaller or fewer changes, than the ones related to the L2 environment and work situations. Different from the pilot study where only two pictures were showed, the actual study had nine pairs of pictures.

The 18 pictures represented diverse everyday life aspects and activities: housing, dining, work, sports, shopping situation, traffic jam on the interstate or standing in line at a cash register in a store. The pictures were taken from internet sites and were not subject to copyright. Some of the pictures were modified: faces of people, brand names or store names were blurred so that they were unrecognizable. The nine pairs of pictures were presented to the informant side by side, one from the American context and one from the German context, so that each situation was

⁸ Active lexical retrieval refers to retrieval from memory when presented with pictures; passive lexical retrieval occurs when the informant is given a stimulation, like matching a picture with a word.(De Bot and Stoessel, 2000, p. 335-336).

depicted in two pictures. (See pictures in Appendix F)

The pictures were shown one pair at a time and the informant had to briefly look at the two pictures named A and B and then say which one represented an American scene and which a German one. The informants had to describe the pictures in German and name certain characteristic items if any, or just say why one or the other picture was typically German or typically American. The purpose of this task was not to score right from wrong picture recognition. Instead, it was designed to collect a larger amount of language in order to identify and analyze aspects of language attrition or retrieval difficulties, if any. The data produced were qualitatively and quantitatively analyzed for lexical richness and density, English borrowings, transfers, calques and new lexical constructions, as well as ungrammatical forms, wrong case markings, defective usage of conjunctions, prepositions, articles or plural endings. This task, together with the interview, was designed to answer the second research question: *What lexical transfers from L2 to L1 can be identified, if any? What lexical domains are involved?*

This task was recorded on an Olympus digital recorder and later transcribed into a Microsoft Word 2002 document. All the informants received a code name formed by the initial of their first name, M or F for male and female and the order in which they were analyzed.

Interview

Similarly to the pilot study, the last task for both the Study and the Control Group, was a semi-structured, open-ended interview, consisting of five questions

asked in the same order for every informant. The interview as an elicitation task is considered very important in language attrition research (Schmid, 2002), as well as in code switching and bilingualism research (Paradis, 1981). Open-ended questions, semi-structured or even structured interviews can collect all types of free speech: selected, active and dormant (Green, 1986). Selected speech appears when more precision is needed to describe a scene, when the informants monitor their language and when they practice avoidance strategies. Active speech is automatic, spontaneous, ongoing speech with less monitoring. Dormant speech is language that is less commonly used and can be activated by long-term memory; it relies on external activation and it is inactive in ongoing speech and requires stimulation.

The five questions selected for the semi-structured interview intended to reveal all types of speech mentioned above. It was designed to account for the most observable type of speech affected by language attrition. Interview design and techniques, were drawn from *The Interaction and the Standardized Survey Interview: The Living Questionnaire* (Hanneke Hautkoop, 2000). Among the techniques used were the brief introductions to the questions, varying the questions from particular to general and using some speech fillers or encouragement phrases during informants' long pauses. Special caution was used in not leading the questions in any way and the informants were given the freedom even to divagate from the topic in order to have as much natural data as possible. The informants were required to speak German in the interview and their output was also digitally recorded.

The first question asked informants to recount a remarkable moment from their childhood, maybe a turning point, in short, something they could recall without

too much effort. This question was selected because informants will tend to recollect important moments and turning points from the past that capture the vividness of that moment (Labov, 1976, 1981). In doing so, they would project themselves back to the time of the event and try to recreate the moment and use a speech adequate to describe the memory, without too much monitoring. In selecting this type of question, I intended to activate possible dormant vocabulary in the informants' speech.

The second question asked informants to describe their daily routine: in the U.S. for the German–American group, and, similarly, in Germany, for the German Control Group. This question was intended to activate both the selective and the active speech items, since the informants would be talking about activities and situations they experienced on a daily basis.

The third question dealt with things or people the German immigrants missed most from Germany. It was formulated in a very open manner in order not to restrict or guide in any way the possible answers. This question was included to activate specific items from the dormant vocabulary, particularly items which would be specific for the German context.

The fourth question asked about things they liked most in the U.S. Similar to the third question, also this one was formulated in a very open manner. This question was included to activate both selective and active speech, items which would be specific for the U.S. context.

The fifth and last question gave informants an opportunity to comment on social and cultural differences between German and American society. This question was intended to reveal mainly active and selected speech, with the possibility that

some dormant vocabulary would be activated as well (see Appendix G).

No specific time constraint was imposed on the informants, and they were encouraged to elaborate on their answers. The interviews lasted an average of 10 minutes, some informants being very brief, while some talked up to 20 minutes on the above topics.

Evaluation Task

The Control Group in Germany had to perform an extra task in addition to the tasks described previously. The extra task was an evaluation and rating of the “native-like” speech or “not native –like” speech of the Germans from the Study Group. The evaluators from the Control Group had also to listen for possible morphological or lexical mistakes made by informants in the Study Group. This type of evaluation has not been sufficiently explored in studies on language attrition even if it offers an important objective view on the data analysis (Köpke, 1999; Yağmur, 1997). Schmid (2002) used 13 native speakers of German to rate excerpts of a one minute speech by 35 German Jews and judge them for accent, fluency, vocabulary and sentence construction.

I designed a similar evaluation task for the Control Group. The German informants in Germany listened to two-minute long excerpts of interviews from the Study Group and filled out a short evaluation questionnaire. The two-minute excerpts were selected to contain some non-native like language, either some language innovations, loan translations or some morphological or syntactical mistakes. The questionnaire contained both open-ended questions and multiple-choice answers

asking the Germans from the Control Group to judge the speakers on native-like performance, more specifically, to rate or comment on accent or morphological, lexical, syntactical or semantical mistakes. Since the Control Group was smaller, consisting of only 12 informants, and the data collection in Germany was done before all the data from the Study Group in the USA had been collected, this made it necessary to have the four U.S. informants⁹ evaluated as follows: two informants were selected to be evaluated each by two German informants and two by four German informants. This decision was made to maximize interrater reliability and see if the evaluators would be consistent.

3.4 Analysis Procedures

Given voluminous data from both the Study and the Control Group, an efficient way to structure the data in manageable parts became a necessity. This subchapter describes the methods and statistical procedures applied in analyzing the data. Both the quantitative and qualitative data analyses will be presented.

Quantitative Data Analysis

The data from the two groups and from all tasks were introduced into Microsoft 2002 Excel spreadsheets. No informants' names were used in the transcription. All the informants received a code name composed by the initial letter of their first name, the letter M or F for male or Female and the number corresponding

⁹ At the time of the study in Germany, only four informants from the Study Group had been interviewed in U.S.

to the order in which they were interviewed. For example FM01, was the first male informant interviewed, with a first name starting with F, and MF07 was a female informant, whose name starts with M and was the seventh informant interviewed. All the informants' answers were copied exactly in the same form as they had answered them.

The qualitatively collected data were transformed into quantitative data to be statistically analyzed. As a result some answers from the sociolinguistic questionnaire were converted into numerical values in a separate column in order to prepare them for quantitative analysis. The self assessment scales from the sociolinguistic questionnaire, ranging from “poorly” to “very good” were converted to numerical values, where 0 corresponds to “not at all,” one corresponds to “poorly,” two to “adequately well,” three to “moderately well,” four to “good” and five to “very good.”

The numerical values which resulted from this transformation were related to age, time since immigration, age at which English was learned, English and German proficiency at time of immigration and in the present, educational level, frequency of language use and of travel to the native country.

These spreadsheets were then imported into SPSS version 15.0, 2006 for Windows and then analyzed. The statistical procedures employed for the analysis of the quantitative results are mainly those of descriptive statistics, where minimum, maximum, mean and standard deviation were calculated, presented and discussed. Where the results showed increased difference between the groups, inferential statistics (ANOVA) was performed in order to unveil possible significant differences between the linguistic performances of the different informants' groups. These tests

would indicate, if the findings are significantly different and not due to chance. The ANOVA test was used to ascertain the significance level (p value) and the Post Hoc Multiple Comparison test used to compare the means within and between all the groups. The data were considered highly significant at $p \leq .01$; significant at $p \leq .05$ and not significant at $p > .05$. The quantitative results are presented in Chapter 5.

The answers from the cloze test, both from the Study Group and the Control Group, were also introduced into Excel spreadsheets and assigned numerical values. The values ranged from zero for missing values to five, the highest value for a lexical item supplied exactly or very close to the original text. The cloze test had a total of 43 items omitted in the cloze passage, of which 28 were morphological items and fifteen were lexical items.

The morphological categories were definite articles, indefinite articles, negative indefinite articles, negations, plural endings, conjunctions and prepositions. The lexical items included one noun and several verbs, adverbs, particles and adjectives. The most difficult content words to be left as blanks were the nouns, because they constructed the meaning of the passage. Thus only one noun qualified to be omitted from the text, being possible to be reconstructed by the informants from the context alone. The adverbs and particles were analyzed in the lexical category because they were part of collocations or stock phrases and they could not be isolated from other words in their original context, like *na* in *na ja*, *los* in *es geht gut los*. The different grammatical items were taken separately or in pairs with similar functions like, prepositions and conjunctions, and the sum, mean, maximum, minimum and standard deviation were calculated. The ANOVA test and Post Hoc Multiple

comparisons test were performed, as well to show the significance level between the independent variables age, time since immigration, level of education and lexical and morphological items. The results are presented in Chapter 5 as well.

The digitally recorded picture descriptions and interviews from the total of 34 informants resulted in a total of 11.3 hours of audio with an average picture description and interview length of 20 minutes. After downloading the audio files in WAV format into the computer, I used the F4 version 2.1 (2004-2005) of free transcription software to aid me in the transcriptions. The software opened two windows, one for the sound file and one for the text editor, with easily accessible buttons to stop, play or rewind in increments as small as one second at a time if needed. For increasing the speed of transcribing, the text in German is almost entirely in lowercase or *Kleinschreibung*, the pausal units were transcribed as (...) and the pause duration was indicated in seconds. All filled pauses with: hmm, ahh, eh, etc. were transcribed as such and hehehe, haha, etc. were transcribed as (laughs).

After all the audio files were transcribed, the Word documents were imported into WordStat version 5.1 (2000). I used WordStat because it is: “specifically designed to study textual information such as responses to open-ended questions, interviews, public speeches, etc. WordStat can apply existing categorization dictionaries to a new text corpus.

It helps uncover differences in word usage between groups of individuals and it includes numerous exploratory data analysis and graphical tools that may be used to explore the relationship between the content of documents and information stored in categorical or numeric variables, such as the gender or the age of the respondent.”

(Introduction to WordStat 5.1, Help file, 2000)

In order to identify, compare and contrast the problematic lexical items from the U.S. Study Group, English borrowings, loan translations and new word formations from both the Study and the Control Group were isolated from the transcriptions and introduced into Excel spreadsheets. I computed frequency lists, based on total number of words and especially English word occurrences and coded all the transcriptions into themes. The data from the picture description task and the interview consisted of 5,255 unique words. By eliminating from analysis also the English borrowings found in the Control Group data, a total of 248 words were selected for analysis. These words represent a large number of English borrowings, words and phrases, as well as new and unusual constructions both in English and German. Two spreadsheets were created, one for the picture description and one for the interview.

The English items which appeared in both informant groups, such as *fast food*, *football*, *yards*, *truck*, *horror* and *computer* were eliminated from the Study Group since it did not seem reasonable to consider those words as resulting from language attrition. The remaining lexical items were transferred into new lists and each item, or token, was checked for occurrence in two editions of the *Duden Fremdwörterbuch*¹⁰, and on German Internet Sites. See Appendix I and J for the complete list of tokens.

The testing for occurrence in Internet Sites is new and experimental in this study. I have not been able to identify any studies that have investigated aspects of

¹⁰ 6th Edition, 1997 and 8th Edition, 2005

first language attrition by testing the L2 borrowings, innovations or loan translations on Internet sites written in L1. This is why the results of this analysis will be discussed in corroboration with the results from the testing of the data against the *Duden* dictionary and interpreted with caution, without venturing into generalizations beyond the present study.

Using the Preferences, Advanced features and Language Tools on the Google Browser that enables the filtering of sites based on selected language, domains and exact phrases, only German Internet sites were tested. The German sites used to test again, had to display the domain name **.de**. Only the sites representing the first three hits on the Google browser were taken to be tested. If the token was found on an identified German Internet site, in the same context and with the same spelling as in English, it was eliminated from consideration.

Similarly, while checking in the *Duden* dictionary, if the token was found in the two editions of the *Duden* dictionary, it was eliminated from consideration as a valid product of attrition. Proper names or product names were not considered valid, and were not counted as instances of English borrowings. The data collected from the picture description and interview were intended mainly for linguistic analysis, even if some social and cultural views or values were captured as well. These will be briefly discussed in Chapter 6. The results of the quantitative analyses will be presented in Chapter 5 and the qualitative data will be discussed in Chapter 6.

Qualitative analysis

Following Shah and Corley (2006) methodological suggestions of an effective

“bridging between quantitative and qualitative analysis” in order to “explain unexpected patterns in the data or to uncover the mechanism(s) that produced that data” (p.18-32), I purposely analyzed the qualitative data after the analysis of the quantitative data. The qualitative analysis was intended to describe recurrent patterns in the language use and to play a supportive role in understanding the language loss phenomenon (Stake, 2005). I follow Creswell’s (2005) definition of case study not as a methodology but as “an exploration of a bounded system” which can be represented by multiple cases sharing the same place and time (Creswell, 2005, p. 61). In the present study more than one individual is studied, thus it represents a collective case study .

The theoretical framework of the qualitative part of the study follows that of the instrumental collective case study where the case itself plays a secondary role, but facilitates the understanding of a certain issue within the case (Stake, 2005). In the present study, the informants represent the case but the issue investigated is language attrition. I employed the cross-case analysis, which applies to a collective case, in examining themes across the cases (Yin, 1989). The perspective is sociolinguistic in looking at language patterns and changes on the lexical and morphological level and setting these changes within the two contexts: American and German.

I will henceforth use the term collective case study, because it comprises 34 individual cases. All of my informants shared the same context: immigrants to USA and more specifically to East Tennessee. Most of them shared common patterns in their language use and all experienced some degree of language loss. Since all my informants were originally born and raised in Germany, it was assumed that they

share on a very general scale the same standard language, similar values and cultural backgrounds. My interest was not in the individual cases themselves, but in the data from all the individual cases which facilitate the understanding of the language attrition phenomenon for this group.

I employed the cross-case analysis, as described by Yin (1989), in examining the collective case and presenting descriptions, themes and interpretations related to the whole case. I attempted to carefully structure my findings in order to set up an initial step towards generalization and possible theory building. My approach to the qualitative data was to seek the particularities in the informants' free speech data and to categorize them based on lexical richness, expressivity, innovations and use or lack of figurative speech. At the same time, consideration was given also for the content commonalities found during the analysis.

I focused mostly on the retrieval problems of the special vocabulary items, with a consideration of the items which were retained, following the observations made by Schmid and Köpke (2002) that language attrition studies typically do not mention items which are retained, viewing loss mainly from a negative perspective. To address this gap, I followed their recommendations to include observations about retained vocabulary.

The collected data was transcribed in Word files and organized into the different domains: housing, dining, leisure, shopping situation, traffic, work situation, childhood memories, daily routine, missed things from Germany and social and cultural differences between the U.S. and Germany. The text documents were then imported into QDAMiner v 2.0 in order to be analyzed. Using this program the data

were coded according to themes, as formulated by the pictures in order to be analyzed for word frequency, occurrence and lexical density in WordStat 5.1. The translations from German to English were done using the help of the LEO Online German-English Dictionary and Webster's New World German/English Dictionary (1992). Other reference materials consulted in this chapter were *DUDEN Deutsches Universalwörterbuch A-Z* (1995), *DUDEN Fremdwörterbuch* (1994) and *DUDEN Redewendungen* (1994).

The lexical density test was performed on the data from the picture descriptions and interviews from both groups in order to assess the richness and variety of the unique content words over the total number of content words. The formula to express the Lexical Density = Number of different words / Total number of words and multiplied by 100, and it intends to measure the proportion of the content words over the total words (Stubbs, 1996; Halliday, 1999). This analysis will indicate if the Study Group had lower lexical density compared to the Control Group and if the results are significant. A lower lexical density as a result of repetitions of content words and a lower number of unique words can be an indication of language attrition. This type of data analysis, specifically in language attrition studies, is innovative and experimental in this study. I was not able to locate any studies that use this technique to measure lexical richness in research on first language attrition.

Previous research outcomes on different corpora reported a lower lexical density of the spoken texts, usually under 50%, but a higher communicative value compared to written text with a higher lexical density, which was more difficult to understand (Stubbs, 1996; Halliday, 1999). The present data were accurate

transcriptions of spoken text, thus the analysis of the lexical density will reveal less variety and richness of the content words, but possibly a higher communicative value.

I used the free online text analyzing site *Textalyser* to calculate the lexical density. The analysis procedure consisted of several steps: first the content words were isolated from the function words by indicating a minimal number of letters per word, which which were then designated as tokens. Secondly, the software performed a selection and included in the analysis only the words with the specified number of letters. Since the German language is characterized by content words with larger number of letters, only words with five or more letters were accepted in the analysis. This minimum was set to eliminate from analysis most of the function words, such as articles, prepositions or conjunctions. One of the limitations of the software was that it could not distinguish between function and content words and thus, by applying this cut off number, some few content words, such as *gut* (good), *hat* (He has) were eliminated as well, but also some function words with five and more letters were included in the analysis, such as *einen* (masc.article a) or *hinüber* (over there).

However, by applying the same procedure consistently to all the data, the results will be similar across the case study. After the software calculated the lexical density of the picture description and interview data from the Study Group, these were compared and contrasted by themes and informants groups with the results from the Control Group. Besides the lexical density percentage, both the total number of words and the total number of unique content words were indicated for comparing and contrasting between groups. An ANOVA test of comparing the means of the two groups was performed to see if the findings were significant at the level $p < .05$.

As mentioned before, the qualitative analysis was employed to add depth and context to the quantitative findings. The language data was treated mainly linguistically, but some brief cultural and social views expressed by the informants from both groups were also included for authenticity and for showing the natural occurrence of the captured language. The particularities in their language use, such as repetitions, filled pauses, interjections and use of idiomatic expressions or figurative speech, was briefly discussed as well. The qualitative findings are presented in detail in Chapter 6.

4. PARTICIPANTS AND THEIR LANGUAGE USE

4.1 The Study Group Participants

Of utmost importance for the study was having a representative group of informants in terms of age, level of education, employment, time since immigration and amount of contact to German language and community, because one of the main objectives of this dissertation was to show the role of extra linguistic factors, such as age, time since immigration, level of education or amount of L1 contact in language attrition. At the same time, a varied group of participants accounts for more aspects of language use and a wealth in descriptions, despite the fact that some themes, such as housing, shopping situation or restaurant setting, were given to be discussed by the informants.

East Tennessee is not a traditional immigration area for Germans. Rather, Germans in East Tennessee, particularly those from the present study, relocated from other U.S. states, came to study or work at the University of Tennessee or came as spouses of U.S. citizens or as contracted researchers at the National Laboratory in Oak Ridge or more recently at the Siemens Corporation. As already mentioned in the Methodology chapter, the 2000 US census showed that German was spoken by 0.38% of the population in Tennessee and Knox County registered between 1,000 and 5,000 speakers of German, while the surrounding counties had fewer than 500 speakers each (MLA language map, 2006).

The following criteria were established before searching for participants in the

study: age range between 25-67, born and raised in Germany, Austria or Switzerland, and sixteen years or older at time of immigration. A balanced number of females and males was expected, as well as diverse levels of education and jobs. Only first generation Germans who emigrated or presently reside in U.S. were eligible for this study. It was assumed that the first generation Germans still use German as their primarily language of communication. This criterion was crucial for consistency to avoid intergenerational shift. If two generations would have been investigated the data obtained would have shown possible shift to English. Of importance also was their competency in their mother tongue at the time of immigration and for this reason the age of sixteen was set as the cut off age, on the assumption that they would have gained a good command of German by the age of sixteen.

Another important aspect considered in the study, was that only individuals who showed “natural language attrition” were selected. Persons exhibiting any signs of “pathological” loss due to medical reasons would have been excluded from the study. This was not the case with any of the present informants.

From the initial number of 26 possible informants, four were excluded from the present study, because they did not meet all the required criteria. One informant exceeded the upper limit of age, two other informants were involved daily in teaching German for different age groups and their data would have contaminated the results. The fourth informant did not complete all four tests and his data was excluded. The final Study Group consisted of 22 informants, 12 females and 10 males, with ages between 28 and 67. All emigrated past the age of 16 with only one exception, an informant who emigrated at the age of 13, but, because of his still close contact to

German speakers and Germany and his still very good L1 proficiency, his data were accepted. Details of the informants socio-biographic background and language use is presented in the following subchapter.

Socio-Biographic Information

Most of the informants in the study live in or near Knoxville; some reside in Oak Ridge, Farragut, Maryville or Morristown. Some meet in small closed friendship groups and occasionally dine out monthly in larger groups, but some have less contact with Germans except through their families here or in Germany. Most of the informants are still active users of German at least on a weekly basis, but there are some who use German only occasionally.

The youngest informant is 28 years old and the oldest one is 67. The average age of the group is 48. Twelve or 54% are females and 10 or 46% are males. The shortest time since immigration is four years and the longest is 51 years, with an average time of 21 years since immigration. Nine are naturalized U.S. citizens, eight are permanent residents, and five have a working visa. Six immigrated after marrying a U.S. citizen, eight came to U.S. for work related reasons, five came to study and pursue a higher degree, one came to visit, one was looking for a better life and one to explore the U.S. Fourteen are married, three are divorced, two are single, two live with a partner and one is widowed. Eleven, or 50%, have or used to have a U.S. partner or spouse but four have German spouses. Other spouses or partners represent diverse nationalities: Estonian, Russian, Korean, Italian and British.

Sixteen, or 72%, are employed, four are retired, and two are stay-at-home

mothers. Their professions range from researchers to salesman/woman. Seventeen have one or more children. The educational level ranges from vocational school to Ph.D., where only three have less than a college education. The education level is however higher in the age range of 20-50 and lower in the age range of 50-70. (See Appendix Q)

As seen from the above demographic information, the Study Group is well distributed in gender, age, time since immigration, with a varied educational and professional background. These variables have proven to be of importance when quantitative and qualitative analyses were performed. As previous studies of language attrition revealed before (Hulsen, 2000; Köpke, 1999; Schmid, 2002; Waas, 1993), variables like age, time since immigration, education level or frequency of German language usage play a significant role in language change if analyzed in correlation to morphological or lexical performance. The results of the computation of the different extralinguistic factors with the data from the language tests will be presented in Chapter 5 and discussed under the perspective of language attrition.

Language Usage

The sociolinguistic questionnaire was designed to collect socio-demographic data, and data concerning language usage, frequency, situations in which German is used, attitudes toward language loss and values associated with German and English languages respectively. From the discussions between the researcher and the informants, before and after the actual data collection, the observations were that all of the informants were proficient speakers of English, some to the point that they

could be easily taken to be native speakers of English, though most of them still retained a German accent.

From the answers given in the questionnaire, German was for all of them their first language and English was first learned mostly in a formal institutionalized environment. The youngest age at which English learning began was nine for one of the informants. The oldest age was 20, with an average age of 11.9 when the learning of English began. Thirteen of the informants started to learn English between the ages of 10 and 11. The remaining seven informants learned English between the ages of 12 and 18. A large majority, seventeen of the informants learned French, as a third language in school, and eight also learned Latin besides French. Other known languages are Spanish, Italian and Lakota. Five do not have knowledge of a third language. These questions about language knowledge were asked to assess language dominance and possible interference in L1 from L2 or L3.

The answers to the question about perceived English proficiency at the time of immigration showed that the early age of learning English did not determine a high self-assessed language proficiency at the time of immigration. Only two out of 22 informants self-rated their overall English language knowledge as being “very good” (or 50 in numerical value) at the time of immigration and four evaluated it as “good” (or 40 in numerical value). One informant mentioned not having any English knowledge at the time of immigration and five considered it “poor” (or 10 in numerical value). On the multiple-choice question about how they would evaluate their English knowledge at the present moment, 11 evaluated their knowledge as being “very good” and nine as being “good” a considerable increase from the

perceived English knowledge at the time of immigration. Only two consider their English competence now as being only “moderately good” (or 30 in numerical value).

The numerical values corresponding to the Osgood semantic differential scale, ranging from “none” or 0 to “very good” or 50, indicated that there is a high increase in self-perceived knowledge of English at the present time compared to the English knowledge at the time of immigration; from an average of 26.30 at the time of immigration to 43.60 at the present time. This is an indication that the English self-perceived proficiency of this group increased dramatically over time.

If the group is divided into four age subgroups, however, the same subgroups show different tendencies depending on age. In the age subgroup 20 – 40 (with five informants), the average score for English knowledge at time of immigration is 36.00 and at the present time is 46.00. In the next age subgroup with seven informants having the age range from 40 to 50, the average score of English knowledge at time of immigration is lower than the previous group at 25.70 and also lower at the present moment at 41.40.

The age subgroup 3 with five informants with the age range of 50 to 60 does not show any particular variation between the self-rated English knowledge at the time of immigration and at the present time when compared with the previous groups. However the last age subgroup with five informants with ages between 60 and 70 shows more noticeable variation compared with the previous age groups. The self-rated perceived English knowledge at the time of immigration is much lower than the rest of the groups at an average of only 12, but the English at the present time scores 46, making it in effect equal to the first group. These questions were intended to

establish possible language dominance and see if some of the findings will indicate that language contact play an important role in language attrition.

Parallel to the question about their German knowledge at the present moment, only three feel that their language competence is between adequate and moderate, the majority of the informants evaluate it as being “good” (or 40 in numerical value) to “very good” (or 50 in numerical value). The numerical value for German proficiency at the present time shows that the average score of 44.50 for the entire group is slightly higher than the English proficiency at the present time. However, looking separately into age subgroups differences, we see different patterns.

The first age subgroup, with ages between 20 and 40 and the second one, with ages between 40 and 50 have close scores of German language self-perceived proficiency at the present time of 48 and 48.5, which are higher than the English proficiency. The last two groups however show different results. The age subgroup 3 with ages between 50 and 60 and the last age subgroup with ages between 60 and 70 have lower average scores of German language proficiency at the present time at 40 for both groups. This score is lower than the perceived English proficiency at the present time at 42 for age group 3 and 46 for the last group. The results from these two groups would suggest that German is no longer the dominant language and that the informants perceive that their proficiency in German has decreased.

These preliminary results are a sign that age plays an important role in language usage and that more variation in the usage of L1 occurs in the last two age subgroups than in the first two age subgroups. Additional responses in the questionnaire related to language preference, situations related to language use,

consideration of partners and language use, and finally frequency of language use may also be important factors influencing L1 attrition.

On the question about language preference, seven, or 32%, preferred to speak German, six, or 27%, preferred English, three, or 13.6%, had no preference, for two, or 9%, it depended on the situation and three, or 13.6%, left the question unanswered. Since half of the informants have or used to have American spouses or partners, English is the language spoken on a daily basis at home and in work situations. However nine of the informants with non German spouses mentioned that their spouses speak some German. German is mostly employed with German friends or family, in phone calls to Germany or when only Germans are present. Most informants with children mention that they speak mainly German to their children, but if the partner was not German they would speak mainly English at home. Four informants with children diverge from this practice by talking frequently with their children in German.

On the set of questions dealing with their perceived language attrition, all of the informants mentioned employing English words in their German speech. The informants reported that this occurred in the following situations when: when talking with friends or family about work related topics, politics, news, technical terms, business, jokes and expressions. Here are some examples of answers as the informants gave them: *to describe work related things, Schule der Kinder*¹², *amerikanische Tagespolitik*¹³, *Humor*¹⁴, *Arbeit*¹⁵, *Publikationen*¹⁶, *wenn Vokabular*

¹² Children's school

¹³ American current political affairs

¹⁴ Humor

*auf Englisch eindeutiger ist*¹⁷, or *Ausdrücke*¹⁸.

On the question which asked more specifically about recalled difficulties in German sentence construction, seven informants noted such difficulties and two wrote that it happened sometimes. On the multiple-choice question targeting specific grammatical difficulties, most of the informants did not note problems in producing the correct morphological and lexical items in German speech. More specifically, seven, or 32%, of informants reported having difficulties with finding the right expressions, two noted problems with cases and articles and three with verb conjugations. The informants self-rated language competence will be further compared against the actual performance on the different tests, which will indicate if there is a difference between their self-perceived perception of areas of difficulty and their actual performance.

To assess the frequency of German usage a multiple-choice question asked the informants to indicate the frequency of German language usage from least or “yearly” (expressed by 10 in numerical value) to high or “daily” (expressed by 50 in numerical value). The frequency of German usage is high for 50% of informants out of 22. They reported using German on a daily basis and eight communicate weekly in German.

Only two informants, or 9%, rarely spoke German and indicated that it occurred only every year or so. The frequency of German usage is also determined by lengthy travels to Germany with stay periods of two weeks to three months. All the

¹⁵ Work

¹⁶ Publications

¹⁷ If the vocabulary in English is more clear

informants still have strong ties to and contact with family and friends in Germany, and 59% of them travel to the land of their birth at least once a year, and 36 % of them reported doing this only every few years. The numerical values for travel corresponding to the Osgood semantic differential scale starting from 10, representing “hardly ever” 20 for “every few years” to 30 “every year” show some interesting tendencies.

Using the age factor to analyze frequency of German usage and amount of contact, the results indicate that in the first two age subgroups (20-40 and 40-50) the frequency of travel to Germany, as it was numerically transformed, has the average scores of 24 and 28.50 respectively. The last two age subgroups (50-60 and 60-70) show a lower frequency of travel to Germany with scores of 24 and 22. Similar results are to be noticed in the frequency of L1 usage. The first two age subgroups have a higher frequency of L1 usage represented by the averages 46 and 47 compared to 40 and 46 in the last two age subgroups. Again, it can be concluded that age plays a role in frequency of L1 usage and travel to Germany. This independent variable, however, can not be considered alone in drawing conclusions, and this is why further analyses will explore the relationship between the variables, age, amount of contact with L1, level of education, time since immigration and the morphological and lexical findings as they are presented in Chapter 5 and 6.

¹⁸ expressions

Qualitative Findings from the Sociolinguistic Questionnaire

The sociolinguistic questionnaire revealed, in addition to language preference, context of usage and self-rated competence, certain attitudes of the German informants toward language changes and the informants' self-perceived language performances both in English and in German. The last two questions from the questionnaire were designed with the research questions 4 and 5 in mind to elicit as much as possible attitudes towards and values related to L1 and L2 usage and status and more specifically attitudes towards L1 attrition. The findings from these questions are presented below.

Language Preference and Domains of Usage

The separation of the questions from the sociolinguistic questionnaire into two distinctive columns, one with the questions in English and one with the same questions in German, was intended to help track the language choice tendencies of the informants. This separation resulted from an assumption based on personal observation of the speech of German native speakers living in the USA that code switching of German speakers from first language to second language resulted when speaking about certain domains such as work, public institutions, politics, visa status, shopping or banking matters. Based on these informal observations, I assumed that certain questions referring to place of birth, family situation, attitudes or values toward the German language and culture would preferentially be answered in German and those relating to visa status, profession, conversational situations, attitudes and values toward the American-English language and culture would be predominantly in English.

After color coding the answers given in German and English the findings revealed the following: eight informants or 36% answered all the questions in German, four or 18% mostly in German, but on certain questions they switched to English, especially when indicating the level of education or their profession, seven or 31.8% only in English and three or 13.6% mostly in English, but on certain questions switched to German. The switch from German to English most often occurred where the topics were about profession and field of work.

The fact that the profession name and the field of work were more commonly answered in English can be explained both due to a possible lack of German equivalent or to frequency of usage. Almost half of the informants got their first job in the USA. Those who completed their education in Germany, and did not continue to study in USA, however, indicated their level of education in German. These language preferences can not be attributed necessarily to language attrition, but rather to a selective use of language based on domains. The informants used with prevalence English terms when describing work situations or family activities. This relationship between language use and daily life topics will be further investigated in Chapter 6.

Attitudes towards L1 and L2 and Values relating to L1 and L2

The last five questions in the questionnaire were used to collect qualitative data referring to values and attitudes toward the German and American language and culture as a method of determining speakers' attitudes towards the usage of L1 and L2. Being asked to name keywords associated with the German culture had an interesting effect on the informants. It was intended to collect spontaneous answers

but almost all informants found the question surprising and needed some time to think before completing it.

The answers describing the German culture were mostly rather stereotypical: food, beer and fast cars, but also music, literature, philosophers, family and social life. It was a clear indication of an enduringly high appreciation of the German culture. The most difficult question was the one which asked about associating values to the German language. The informants from the Study Group used phrases, nouns or adjectives to answer the question and most of them tried to create a portrait of what the German language means for them: their mother tongue, “Heimat”¹⁹ or roots, while others tried to describe it as being exact, direct, rich, descriptive or analytic. However five informants did not provide any answers for these questions, some mentioning they could not answer it and one wrote he did not associate any value with the language.

On the parallel question about the American culture, the answers were much more varied but mainly derived from daily life such as pop music, movies, fast-food, SUVs, clothing, mixed culture, superficiality or money. The answers denoted a certain under-appreciation of the American culture and a common question in response was: “*what culture?*” On the other hand, the English language received much more appreciation and respect from the informants as being a world language with tradition. Compared to German, it was described as clearer, sometimes more precise, and easier to learn.

The last question was directed towards attitudes on code switching, on using

English words in German speech. Nine of the informants had a relatively neutral attitude towards this phenomenon, ranging from “common,” “acceptable” or “it happens” to six stronger opinions on the negative side: *ich finde es nicht gut und versuche es zu vermeiden*²⁰, *eher Ablehnung auch wenn es mir selbst oft genug passiert*²¹, *I feel sad that the German language is getting diluted* or *Schade*²². Only three found it acceptable.

From these answers it is clear that the majority of the informants do not like English-German code switching and have a negative perception of using English words in their German speech, even if all agreed that it happened. Looking at the numerical values associated with the findings described above, the percentage of positive attitudes toward the mixing of English and German words stood at 13.6 %. The highest percentage, 40.9%, expressed a neutral attitude and 27.2% showed a negative attitude. Based on age, the more negative attitudes toward language mixing are in the 40-60 age group. Younger informants in the age group 20-40 and older informants over 60 had a more neutral to positive attitude towards this practice. The older informant group especially seemed to be accustomed to this situation and find it less negative: “*ok*”, “*alright*”, “*seltsam, aber up to date.*” These findings suggest that younger informants adopted a more positive attitude toward this practice, probably in order to better accommodate the frequent language switch they experience sometimes on a daily basis. The older informants have used this practice of codeswitching for a long time and they do not find it as disturbing or negative as initially assumed in the

¹⁹ “Homeland”

²⁰ I do not find it good and try to avoid it.

²¹ Rather rejection, even if it often happens to me.

study. Signs of language attrition can be detected in these practices where especially German discourse markers are substituted by English ones.

Even though, the majority of the informants continue to have frequent contact with German speakers and the German speaking world, the overall findings from the questionnaire revealed that some alterations in their language use or proficiency occurred and that all of the informants were aware of it. Living in the American context has determined a shift in language usage according to different situations, such as work, communicating with an American partner and American friends and raised their awareness of their personal difficulties in their native language. In the discussions in the following chapters it will be determined how these perceived linguistic changes on a general level are revealed in the rest of the tests, which were designed to capture specific changes on the lexical and morphological level.

4.2 The Control Group Participants

In the winter of 2005, I contacted friends and acquaintances in Germany and asked them to find potential informants for a sociolinguistic study. After establishing initial contact by phone and email with the possible informants, I flew to Germany to conduct the interviews and collect the data for the study. The data was collected over a two-week period in Germany.

Due to financial limitations, I traveled only to southern Germany, München, Augsburg, Mosbach and Donaueschingen, where my informants lived. Only six,

²² It's a pity.

however, were originally from the south of Germany. The informants in the Control Group were selected to be similar to the Study Group in terms of age, level of education, birth place, family status and gender. Any informants who did not meet these criteria were not considered for the study. Three informants were excluded, one was younger than the youngest informants from the U.S. Study Group, and two others were not born and raised in Germany, but had emigrated as teenagers with their families from other European countries. The final Control Group of the study consisted of 12 informants. Their socio-biographic data and language use are presented next.

Socio-Biographic Information

The Control Group consists of nine males and three females. Their age ranges from 27 to 68, the average age of the group being 40. Six are married, two live with a partner, two are single, one is divorced and one is widowed. All but one, have or used to have a German partner and eight have children. Two were born outside Germany, but to German families and were raised in Germany from early childhood. Some had not traveled out of the country but three had visited the U.S. and the majority had visited other European countries.

Four had completed college, three a vocational school, one high school, three the middle school and one the elementary school. All school education was completed in Germany. The average level of education score is 32.1 were 10 is the lowest (elementary school) and 60 is the highest (college level and above). The scores are somewhat lower than the average level of education of the Study Group, at 48.6.

This difference in education distribution might be explained by the fact that in the past two decades, higher educated individuals may have emigrated to U.S., as seen from the average of the first two immigration subgroups with an average score of education of 50, whereas the last two immigration subgroups of had a score of 45.

Language Usage

While German was the native language of all the informants from the Control Group, some mentioned knowing other languages. Using Vivian Cooks (2001) view that there are hardly any pure monolinguals in the 21st century world, I took special care in examining foreign language exposure of Germans in Germany. Eight informants knew English at a self-assessed level between adequately and moderately well, with one exception, who evaluated his English knowledge as being good. While three do not know any other foreign languages, five know or had exposure to a third language. The languages mentioned were French, Latin, Russian, Italian and Romanian.

The married informants spoke German on a daily basis with their partner, and those who had children also spoke German most of the time to them. There was only one exception where all the family members knew Romanian and sometimes spoke it inside the family or with other family members. Only this one family consisted of bilinguals. Thus, in terms of Cook's definition (2001) the remaining informants are not pure monolinguals, but in comparison to the Study Group, their knowledge of a second language is minimal, and not to the point that they could be considered bilinguals.

German is the main language of communication for these informants on their job, but some used English occasionally. Out of the 12 informants, 66% (8 informants) mentioned using or having used some English words in German conversation on different occasions. Situations when this occurred were work-related, including computer technical vocabulary, scientific vocabulary or slang. From the perspective of the Control Group, however, these occasions of code-switching are rather a language enrichment process, than language attrition, given also the low frequency of their occurrence. On the questions about possible problems on the syntactical, morphological or lexical level, only one informant identified some problems with occasional German sentence constructions.

Qualitative Findings from the Sociolinguistic Questionnaire

Parallel to the Study Group, the last two questions from the questionnaire for the Control Group were designed to elicit as much as possible attitudes and values towards L1. While the questions were designed to be parallel in content, the context of the two groups were different, thus their answers have different connotations. On the question about the values and attitudes related to the English language, the informants were instructed specifically to address American English. The Control Group was asked the same questions to produce spontaneous associations regarding German and American culture. The Control Group, however, was told they could answer questions regarding the American context by relating them to media, literature or other sources of information if first-hand experiences, such as visits to the U.S., were non-existent. The findings from these questions are presented below.

Attitudes towards German and American culture and Values relating to German and English language

On the question about German culture, the majority of the native Germans mentioned beer, food, two specifically indicated *Sauerkraut*, music, theater and literature. Others associated cars, precision, politics, World Wars I and II with the German culture. These answers, as with those in the Study Group, had a fair amount of stereotypes. The question about values associated with the German language gathered similar answers as from the Study Group. The three top answers were precision, mother tongue and complicated language. Tradition and richness of the vocabulary were also mentioned. All informants but one answered this question.

Since only three informants had visited the USA, the rest of them answered the question regarding the American culture by relating them either to stereotypes or media information, as instructed by the researcher. Since stereotypes were expected, this question had the role of verifying if the same stereotypes are mentioned in the two groups. Music and politics topped the answers regarding the question about spontaneous keywords associated with the American culture, which was similar to the Study Group, followed by a variety of answers such as stars, patriotism, naiveté, big country, impressive architecture, the land of unlimited possibilities but also of unlimited contrasts. The next question, about the value they associated with the English language, was answered by nine of the informants, and “world language” and “global means of communication” was almost the unanimous answer.

The last question regarding attitudes toward mixing English words in German speech had a similar outcome as for the Study Group. Four found it positive: „*gut*,

*weil enge Wörter lassen sich einfacher beschreiben,*²³ „*ich finde es super, die Sprachen zu kombinieren.*“²⁴ Four had a negative attitude towards these practices: „*störend, schlimm, negativ,*“²⁵ „*ich finde es bedauerlich...Verlust des Reichtums der deutschen Sprache.*“²⁶ Two of the informants did not provide any opinion on this question, and two had a more neutral attitude, like „*gehört mittlerweile dazu.*“²⁷

From these answers it seems that the German Control Group does not view the English-German codeswitching as negatively as the Study Group did, but the results can not be treated on a perfect parallel level, since the opinions expressed come from people living in two different contexts and the language choice has different connotations for the informants.

Judging by the last quoted informant, we may be observing in part an "ossification" of attitudes toward language mixing, where the Study Group has largely retained the attitudes prevalent at the time of their emigration, while the Control Group reflects a shift in attitudes towards language mixing in that society. Looking also at the numerical values associated with these answers, the percentage of positive attitudes toward the mixing of English and German words was much lower in the German Study Group at 13.6 % compared to 33.3 % in the Control Group. The highest percentage is in the neutral attitude 40.9% in the Study Group compared to 16.6% in the Control Group. But at the same time the percentage of the negative attitudes toward this phenomenon was higher in the Control Group with 33.3 %

²³ Good, because narrow meaning words can be better described.

²⁴ I find it super to combine the language

²⁵ Bothering, bad, negative.

²⁶ I find it unfortunate...the loss of the wealth of the German language

²⁷ Meanwhile, it is part of it ...

compared to the 27.2% in the Study Group.

In summary, the Control Group had a more balanced attitude toward language mixing: 33.3% positive, 33.3% negative, 16.6% neutral and 16.6% did not answer this question. The Study Group on the other hand was more neutral in terms of negative attitudes, with only 13.3% registering positive views. These percentages have, however, a more informative role for the study, and will not be treated as generalizable findings beyond the limits of this study, and, as mentioned before, the language choice serve for different purposes for the two groups.

The Germans in Germany using English on occasion is a sign of language enrichment, but for the Study Group, using English words in German speech is rather an everyday necessity for conveying of meaning.

The Control Group exhibited greater extremes of opinion, because they exhibited both the highest number of negative attitudes and the highest number of positive attitudes towards intermingling German and English words, whereas the informants from the Study Group were more likely to be neutral or negative in this regard. However these interpretations of the results have to be treated with caution, given the different contexts and the different perspectives on language mixing. In the German context, there is not a visible danger of drastic changes in the usage of German; on the contrary, efforts are made to preserve German vocabulary in an era of massive Anglicization of the media and other domains.

Another possible explanation for these results is that for the Control Group using English words in German speech could be considered a method of enriching the language or exhibiting foreign language knowledge, whereas for the Study Group,

this mixing can be considered a threat to their L1 and a practice which could lead to language attrition. The shift towards using English words and expressions, occurs mainly in work related situations or when specific issues are discussed. Thus the two approaches to language mixing are not similar for the two groups and carry also different levels of importance. Since there were only a few questions asking the informants to express their views on language usage and attitudes towards language mixing, the data has to be viewed more from an informative perspective and does not clearly represent aspects of first language attrition.

5. QUANTITATIVE RESULTS

The findings from the cloze tests, picture descriptions and interviews from both the Study and the Control Group are presented in this chapter. To ensure an accurate analysis and eliminate biased results, the different extralinguistic variables, also called independent variables throughout the chapter: age, level of education, time since immigration and amount of contact to German speaker, were analyzed individually in relationship to the lexical and morphological data, also called dependent variables, collected from the different tests. The purpose of the analysis was to determine which of the above mentioned extralinguistic variables have the most noticeable effect on language attrition, lexically and morphologically.

The data to be analyzed represent the sums of the individual lexical and morphological items supplied by the informants in the cloze test, like nouns, verbs, adjectives, adverbs, plural endings, definite and indefinite articles, conjunctions and prepositions. The same items were isolated also from the picture descriptions and the interview. In addition loan translations, English borrowings, lexical innovations or new word formation were taken into account in the analysis.

The statistical tests performed on the data and the variables were: descriptive statistics, where minimum, maximum, mean and standard deviations were calculated. The ANOVA tests were used to determine the main effects of the different independent variables on the dependent variables, and to determine if these effects were significant. The Post Hoc Multiple Comparison test was used to compare the means within and between all the informants' groups. The data were considered highly significant at $p \leq .01$; significant at $p \leq .05$ and not significant at $p > .05$

In order to establish age-balanced groups within the Study Group, I divided the 22 informants into four subgroups based on the independent variable age. The following distribution resulted:

Age Subgroup 1 (20-40 years old) - 5 informants

Age Subgroup 2 (40-50 years old) - 7 informants

Age Subgroup 3 (50-60 years old) - 5 informants

Age Subgroup 4 (60-70 years old) - 5 informants

This sub classification of the Study Group was important to determine if there are age related changes in language use. The data from the individual Age Subgroups was compared against each other using ANOVA and the Post Hoc Multiple Comparison Tests, which compares the means of the different groups for significance.

Another independent variable, level of education was tested against lexical and morphological scores, in order to see if different levels of education influence language attrition. The numerical value assigned to advanced degree (i.e., M.A. or Ph.D. degrees) was 60, college education (i.e., bachelor degree) = 50, high school = 40, vocational =30, secondary school = 20, elementary= 10. When computing all the numerical values assigned to the informants' education level, the average education level was 48.6. The majority of informants from the Study Group had a high level of education; thus only three distinct groups based on level of education were formed: Level of Education 1 (vocational school or lower) with three informants, Level of Education 2 (college education) with 15 informants, Level of Education 3 (advanced degree) with three informants.

The third sub classification of the informants in the Study Group was based on the independent variable time since immigration. This factor was deemed to be important and was analyzed together with the data from the different tests in relationship to the different immigration time ranges. The division of the informants into four subgroups according to time since immigration is the following:

Immigration Subgroup 1 (4-10 years) - 7 informants

Immigration Subgroup 2 (10- 20 years) - 6 informants

Immigration Subgroup 3 (20- 40 years) - 5 informants

Immigration Subgroup 4 (over 40 years) - 4 informants

The fourth independent variable investigated in direct relationship to lexical and morphological results was the amount of contact with L1. This variable was determined from the sociolinguistic questionnaire, and it represented the average sum between frequency of L1 usage and travel to Germany. This variable was coded amount of contact to L1 and was broadly classified in “less frequent,” “frequent” and “more frequent.” A “less frequent” contact to L1 was considered monthly to yearly interaction with German speakers and /or rarely travel to Germany, a “frequent” contact to L1 was weekly or every other week contact with L1 and/ or every few years travel to Germany and “more frequent” contact was daily interaction with L1 and/or yearly travel to Germany.

For the Control Group, I applied similar sub classifications, but used only the independent variable age and level of education as determining factors for the sub classifications. However, because of the reduced number of the informants in the Control Group (n=12), it was not possible to divide them in four balanced age groups,

similarly to the Study Group. Also for statistical analysis, a group had to contain more than one informant. Below is the division in two age groups.

Age Control Group 1 (25- 40 years old) - 7 informants

Age Control Group 2 (40- 68 years old) - 5 informants

For the level of education of the informants in the Control Group the sub classification was in Education Level 1 (defined as education beyond Secondary School) with scores between 40-50 and Education Level 2 (defined as education including Secondary School) with scores between 10 and 30. Ten was the minimum and 50 was the maximum. The average level of education for the Control Group was 32.5, which was lower than that of the Study Group. These sub classifications become important when the different lexical and morphological findings from the tests, which represent the dependent variables, were analyzed in relationship to the above mentioned independent variables.

This chapter presents the quantitative results from the two informants groups as follows: subchapter 5.1 contains the lexical findings in the three tasks, the cloze test, the picture description and the interview and discusses the most significant results of the statistical computation between these items and the different independent variables mentioned above. Subchapter 5.2 discusses the morphological aspects of language attrition in the Study Group as found in the three tasks and the direct effect of the same independent variables mentioned above. The next subchapter, 5.3, in parallel with the previous ones presents the findings from the Control Group as they were analyzed in the same manner as for the Study Group. Finally, subchapter 5.4 summarizes the most important lexical and morphological

findings from both groups and discusses the variables which are best associated with language changes and possibly language attrition in the Study Group.

5.1 Lexical Findings in the Study Group

To assess possible aspects of lexical attrition in the Study Group, the data from the cloze test, the picture description task and the interview were analyzed. The data from the cloze test consisted of 15 lexical items out of the 43 total items representing 34.8 % of the blanks to be filled in the test. For the cloze test the lexical items were divided into the following categories: (1) verbs and nouns, (2) adjectives and adverbs, (3) idioms or expressions. These categories were established based on the content word criteria. Similarly the morphological items, 28, representing 65% of the blanks in the cloze test, were grouped based on the function word criteria and similarity to the functions performed. Aspects of morphological attrition will be discussed in chapter 5.2.

Since the instructions for the cloze test did not ask informants to provide for the exact missing word, any synonyms were accepted as long as the sense of the sentence or phrase was not changed. The items were assigned the following values: 5 for the exact missing word or a perfect synonym, 4 for an acceptable synonym which would not affect the sense of the sentence, 1 for a wrong word and 0 for a missing item. After all the items were transformed into numerical values, the sums of the different lexical category for each informant were calculated.

5.1.1. Cloze Test Study Group: Lexical Findings

In this section, only the lexical findings from the cloze test will be evaluated. The morphological findings are analyzed in section 5.2. Under the lexical category only content words, such as nouns, verbs, adjectives and adverbs were accepted. Function words, such as articles, prepositions, conjunctions and plural forms were analyzed under the morphological category. In the adjectives-adverbs group, there were four items, two adverbs and two adjectives, in the noun-verbs group, there were ten items of which four were parts of the verb phrase, five verbs and one noun. To the total sum of the lexical items one particle was added, because it was part of an idiomatic expression. If this particle was not supplied or supplied incorrectly, the idiomatic expression would have been incomplete. The number of lexical items to be provided by the informants was 15.

The maximum possible score, indicating that all lexical items were supplied correctly as in the original text or contextually accepted, was 75. The range of accepted values was between 60 and 75. Every score below 60 meant that the informant had at least one missing or incorrect value. The total number of lexical items not supplied and left as blanks for all informants from the Study Group was nine, or 3.2%, the incorrectly supplied items were 79, or 28.8%, the accepted lexical items were 109, or 39.7% and the exact supplied items were 77, or 28%. The output data from the statistical analysis and the relationship between the dependent and independent variables is presented below.

The statistical analysis employed for this section was mainly that of descriptive statistics. Further on also ANOVA tests and Post Hoc Multiple

Comparison tests have been performed to indicate significant differences between the effects of the independent variables, such as age, time since immigration, amount of L1 contact and level of education on the dependent variables lexical items.

The Effect of Age on Lexical Errors

To initially describe the basic features of the data from the cloze test, descriptive statistics were employed. Subsequently on inferential statistics were used to identify possible significant differences between the four Age Subgroups and the lexical errors. For all four Age Subgroups, the sums of provided lexical categories in each group have been computed. The first table represents all informants (n=22) from the Study Group and the general sum of all provided lexical items by the factor age. For all age groups, the minimum sum of all correctly provided lexical items is 27, the maximum is 62 and the mean is 49.36, as seen in Table 2. The standard deviation of 10.3 indicates relatively high variation among the individual results, some answers being high above or low below the mean.

When analyzed by different Age Subgroups and individual lexical categories, the data provides some interesting results. For the Study Group, the data reveal

Table 2. Study Group: All Age Groups and Sum of Lexical Items

	N	Minimum	Maximum	Mean	Std. Deviation
Age	22	28	67	48.32	12.073
Sum all lex	22	27	62	49.36	10.367
Valid N (listwise)	22				

Sum all lex = sum of all lexical items

Valid N= valid number of informants

significant differences between Age Subgroup 4 (Age 60-70) and the remaining Subgroups. Persons in Age Subgroup 4 made significantly more errors, i.e, by supplying the incorrect lexical items or leaving blanks in the text, than informants in the other groups. The ANOVA tests for significance were performed to indicate which lexical categories provided significant differences within and between the groups. The Age Subgroup 4 had significant different results at the significance level $p < .05$ level in all lexical categories. This Age Subgroup had a mean of only 35 for all supplied lexical items compared to 57 from the Age Subgroup 1 (ages 20-40). The remaining two Age Subgroups have close values with means of 52 as seen from the following tables. The detailed results are presented below.

For Age Subgroup 1, with 5 informants, with ages between 20 and 40, the maximum sum of all provided lexical items is 61, the minimum sum is 51 and the mean is 57. The results per individual lexical categories show that the mean for the adjectives-adverb category is 16.4, which represents 82 % compared to the maximum possible of 20 (100%). For the verbs-noun category the mean is 37.2, which represents only 74.4% from the possible maximum of 50 (100%). These results indicate that the sum of provided answers is lower for the verb and nouns category than for the adjectives and adverbs category. The standard deviation is higher for the verbs-noun category, which indicates that the informants provided less homogenous answers, with answers below or above the mean. See Table 3 below.

In Age Subgroup 2 ($n = 7$), with ages between 40 and 50, the results show that the minimum sum of all provided lexical items has decreased to 38 compared to the previous group, but the maximum is still high at 61. The high standard deviation for

Table 3. Study Group: Age Subgroup 1(20-40) and Sum of Individual Lexical Items

	No.	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
Age	5	28	37		32.40	3.362
sum all lex	5	51	61	75	56.80	4.604
sum adj adv	5	11	19	20	16.40	3.130
sum verbs noun	5	31	45	50	37.20	5.215
lex part	5	1	5	5	3.40	2.191
Valid N (listwise)	5					

sum all lex = sum of all lexical items
sum adj adv =sum of adjectives and adverbs
sum vbs noun = sum of verbs and noun
lex part = lexical particle

the sum of lexical items indicates that the answers are not homogenous. The mean of the sum of supplied verbs and nouns is lower than the previous group at 35 compared with 37.2 from the previous group. The standard deviation for this category is high at 7.79, which indicates a larger variation in the answers, with three sums above the mean. The minimum per group for adverb-adjective categories is lower than the previous group at 13.7, which means that more informants in this Subgroup had difficulty in providing correct or acceptable answers. The detailed results are presented below in Table 4.

In the third Age Subgroup, with informants (n=5) between 50 and 60 the range of lexical sums is between the minimum of 28 and the maximum of 62, with a mean of 49.4 and a standard deviation of 12.7, which indicates that some sums are high above or low below the mean. The mean of all supplied lexical items is lower in this group than in the previous two groups. The minimum per group in the adjective–adverb categories is lower

Table 4. Study Group: Age Subgroup 2 (40-50) and Sum of Individual Lexical Items

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
Age	7	40	49		43.43	3.409
sum all lexical	7	38	61	75	50.86	7.798
sum adj. adv.	7	11	17	20	13.71	2.059
sum verbs noun	7	22	45	50	35.00	7.789
lex part	7	1	5	5	3.29	2.138
Valid N (listwise)	7					

sum all lexical = sum of all lexical items

sum adj adv =sum of adjectives and adverbs

sum vbs noun = sum of verbs and noun

lex part = lexical particle

at 10 than the previous groups. Lower scores were also observed for the verb and nouns category, the mean of 34.8 is lower than both previous groups. For the sum of all the lexical categories the standard deviation is high, which indicates again no homogenous answers.

See the detailed results in Table 5.

The last Age Subgroup with five informants corresponds to the age range of 61 to 67 with a mean age of 64. This group shows the most dramatic decrease of the minimum of all supplied lexical items at 27 with a maximum at 52 and the mean being 39.8.

The Age Subgroup 4 has low scores, with the lowest mean in the adjectives-adverbs category of only 9.60, but with a homogenous distribution of the data. In the verbs and noun category, the variation is high, which means the informants supplied answers below or above the mean. This variation is indicated by the high standard deviation of 8.00. Both lexical categories present lower scores as compared with the previous groups. See the detailed results in Table 6.

Table 5. Study Group: Age Subgroup 3 (50-60) and Sum of Individual Lexical Items

	N	Minimum per group	Maximum Per group	Maximum possible	Mean	Std. Deviation
Age	5	53	57		55.40	1.817
sum all lex	5	28	62	75	49.40	12.720
sum adj adv	5	10	19	20	13.00	3.464
sum verbs noun	5	28	38	50	34.80	4.087
lex part	5	1	5	5	4.20	1.789
Valid N (listwise)	5					

sum all lex = sum of all lexical items
sum adj adv =sum of adjectives and adverbs
sum vbs noun = sum of verbs and noun
lex part = lexical particle

Table 6. Study Group: Age Subgroup 4 (60-70) and Sum of Individual Lexical Items

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
Age	5	61	67		64.00	2.121
Sum all lex	5	27	52	75	39.80	10.134
Sum adj adv	5	7	12	20	9.60	2.510
Sum verbs noun	5	16	33	50	23.00	8.000
lex part	5	0	5	5	2.40	2.408
Valid N (listwise)	5					

sum all lex = sum of all lexical items
sum adj adv =sum of adjectives and adverbs
sum vbs noun = sum of verbs and noun
lex part = lexical particle

As seen from the findings, there were differences between the means of the sums of lexical items in the different Age Subgroups. In order to establish the significance level, two tests to compare the means were performed. The ANOVA test, which compares the means between and within groups, revealed significant differences between the means of the four age groups. Subsequently, the Multiple Comparisons test was performed because the ANOVA test indicated a significance level $p \leq .05$, one-tailed, as seen in Table 7.

The Multiple Comparisons test indicated that the most significant differences were observed between the Age Subgroup 4 and the other three Age Subgroups. In all categories, verbs-noun, adjectives-adverbs and lexical particle, the fourth Age Subgroup with ages between 60 and 70 scored lower than the other Age Subgroups. Table 7 above indicates that there are significant differences between the groups ($F(3, 18) = 9.011, p < .01$). Further next, Table 8 shows that the mean difference between Age Subgroup 4 (Ages 60 -70) and the remaining Age Subgroups for the sum of all lexical items is significant at the $p < .05$ level.

The ANOVA test and the Post Hoc Multiple Comparisons test for the individual lexical categories with the variable age revealed that in the noun-verb

Table 7. ANOVA test for Sum of all lexical items and Age Subgroups

	Sum of Squares	Df	Mean Square	F	Sig. (<i>p</i> value)
Between Groups	1354.924	3	451.641	9.011	.001
Within Groups	902.167	18	50.120		
Total	2257.091	21			

Table 8. Multiple Comparisons test for Sum of all lexical items and all Age Groups

(I) AgeGroup	(J) AgeGroup	Mean Difference (I-J)	Std. Error	Sig. (<i>p</i> - value)	95% Confidence Interval	
		Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound
Less than 40	40 to 50	-.833	4.087	.997	-12.39	10.72
	50 to 60	1.833	4.287	.973	-10.28	13.95
	more than 60	18.833(*)	4.287	.002	6.72	30.95
40 to 50	less than 40	.833	4.087	.997	-10.72	12.39
	50 to 60	2.667	4.287	.924	-9.45	14.78
	more than 60	19.667(*)	4.287	.001	7.55	31.78
50 to 60	less than 40	-1.833	4.287	.973	-13.95	10.28
	40 to 50	-2.667	4.287	.924	-14.78	9.45
	more than 60	17.000(*)	4.478	.007	4.35	29.65
more than 60	less than 40	-18.833(*)	4.287	.002	-30.95	-6.72
	40 to 50	-19.667(*)	4.287	.001	-31.78	-7.55
	50 to 60	-17.000(*)	4.478	.007	-29.65	-4.35

* The mean difference is significant at the .05 level, one-tailed.

(I)= the group, whose means are to be compared

(J)= the group to which the means are compared to

category there is significant difference at the .05 level between the Age Subgroup 4 and the remaining Age Subgroups. In the adjectives-adverbs category, there are significant differences ($F(3, 18) = 4.45, p < .05$) between the Age Subgroup below 40 and Age Subgroup above 60. In the verbs-noun category, there is significant difference ($F(3, 18) = 4.48, p < .05$) between the Age Subgroup above 60 and two other Age Subgroups, below 40 and between 40 and 50, as revealed by the Multiple Comparison tests. The detailed Multiple Comparisons tests involving the factor age and the individual lexical items are in Appendix K. These results suggest a strong effect for age in the content word category. Older informants had lower scores in

providing the correct content words than younger informants when a content word was required; they also provided several incorrect items and they just left more blanks. Further analyses below will reveal what other independent variables play an important role on language attrition in this cloze text task.

The Effect of Level of Education on Lexical Errors

The majority of informants, all but three, had a high level of education, meaning at least college level and beyond (M.A. or Ph.D. degree). The highest education level was 60 (e.g. M.A. or Ph.D. degree) the lowest 10 (elementary school) and the average was 48.6. None of the informants had a lower education than secondary school, meaning no scores of 20. Because the data were not well balanced with a homogenous distribution of education levels among the informants, the next statistical computation is relevant only for the present study. Results of an ANOVA and Post Hoc Multiple Comparison test indicated a significant difference between scores for individual lexical items and the variable level of education pertaining to the sum of all lexical items ($F(2,19)= 6.248, p < .01$), the sum of adjectives and adverbs ($F(2,19)= 3.929, p < .05$) and the sum of verbs and nouns ($F(2,19)=3.75, p < .05$). Tables 9 and 10 illustrate these differences.

The Multiple Comparisons test revealed between which Education Level groups and which dependent variables there were significant differences at the level $p < .05$. The dependent variables are the sum of all provided lexical items and the sums of the individual lexical items: adjectives and adverbs group and noun and verbs group. The independent variable was Level of Education. The findings indicate that

Table 9. ANOVA test for Level of Education by Dependent Variables: Lexical Items

		Sum of Squares	df	Mean Square	F	Sig. (p value)
sum adj adv	Between Groups	74.864	2	37.432	3.929	.037
	Within Groups	181.000	19	9.526		
	Total	255.864	21			
sum verbs noun	Between Groups	403.947	2	201.973	3.753	.042
	Within Groups	1022.417	19	53.811		
	Total	1426.364	21			
sum all lexical items	Between Groups	895.487	2	447.743	6.248	.008
	Within Groups	1361.604	19	71.663		
	Total	2257.091	21			

sum all lex = sum of all lexical items
 sum adj adv =sum of adjectives and adverbs
 sum vbs noun = sum of verbs and noun
 lex part = lexical particle

informants with lower level of education performed differently in supplying the correct lexical items. However, based on the small group of informants (n=22) and because of the unbalanced levels of education, with a majority of informants with Education Level of 50 and beyond, the results are only informative and restricted to the present study.

The Effect of Time since Immigration on Lexical Errors

The Time since Immigration factor for the informants ranged from minimum four years to maximum of 51 years, with an average of 21.14 years. By analyzing the independent variable Time since Immigration in relationship to the dependent variables lexical sums of all provided items, the descriptive statistics showed the following: the maximum lexical sum for all provided items for all 22 informants was

Table 10. Multiple Comparisons test between Education Level groups and Dependent Variables: Lexical Items

Dependent Variable	(I) Educ Level	(J) Educ Level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
sum adj adv	30	50	-5.250(*)	1.942	.036	-10.18	-.32
		60	-3.000	2.520	.473	-9.40	3.40
	50	30	5.250(*)	1.942	.036	.32	10.18
		60	2.250	1.942	.491	-2.68	7.18
	60	30	3.000	2.520	.473	-3.40	9.40
sum verbs noun	30	50	-12.125(*)	4.615	.042	-23.85	-.40
		60	-6.667	5.990	.518	-21.88	8.55
	50	30	12.125(*)	4.615	.042	.40	23.85
		60	5.458	4.615	.477	-6.27	17.18
	60	30	6.667	5.990	.518	-8.55	21.88
sum all lex	30	50	-18.729(*)	5.326	.006	-32.26	-5.20
		60	-17.667(*)	6.912	.048	-35.23	-.11
	50	30	18.729(*)	5.326	.006	5.20	32.26
		60	1.063	5.326	.978	-12.47	14.59
	60	30	17.667(*)	6.912	.048	.11	35.23
		50	-1.063	5.326	.978	-14.59	12.47

Tukey HSD

* The mean difference is significant at the .05 level.

(I)= the group, whose means are to be compared

(J)= the group to which the means are compared to

The (*) mark indicates a significance level of $p < .05$, between the education level group 30 and 50 for the adjectives-adverbs category, verbs and noun category and sum of all lexical items.

62, the minimum sum was 27 and the mean was 49.36. The standard deviation was relatively high at 10.36, which indicates that there was large variation among the sums of provided lexical items, with scores below or above the mean. As seen from the following descriptive statistics, Immigration Subgroup 4, with more than 40 years since immigration, exhibited the lowest sums both for the minimum and maximum of all provided lexical items, as well as if analyzed by individual lexical categories. The first immigration group had the highest mean and the remaining two groups were fairly stable in their means. Table 11 illustrates the effect of the independent variable time since immigration on all lexical errors from all groups.

The Immigration Subgroup 1 (4-10 years since immigration, Table 12), with a mean time since immigration of six years, consisted of seven informants (n=7). The results in the next table indicate that the minimum sum of all correctly provided lexical items is 38, the maximum is 61 and the mean is 53.86 compared to the maximum of 75 possible. There was some variation in the verbs-noun category, indicated by the higher standard deviation of 5.87, which means that the provided answers are not homogenous, with scores low below or high above the mean. The average sum of all provided lexical items is 39.14, compared to the maximum of 50 possible for this category.

The second Immigration Subgroup (10-20 years since immigration) consisted of six informants (n=6). The results showed lower sums compared with the previous group. The minimum sums of correctly provided verbs and nouns was 22 and the maximum sum for these items was 37. The mean was 31.17 for this category. The standard deviation for this category indicated some variation at 5.19. This group,

Table 11. Time since Immigration and Sum of Lexical Items

	N	Minimum	Maximum	Mean	Std. Deviation
Time imm	22	4	51	21.14	15.815
sum all lex	22	27	62	49.36	10.367
Valid N (listwise)	22				

Time imm= Time since Immigration

Sum all lex= sum of all lexical items

Table 12. Immigration Subgroup 1 (4-10 years since immigration) and Sum of Individual Lexical Items

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
sum all lex	7	38	61	75	53.86	7.946
sum adj adv	7	11	17	20	13.71	2.628
Sum verbs noun	7	28	45	50	39.14	5.872
lex part	7	1	5	5	3.29	2.138
Time since Imm.	7	4	9		6.00	2.000
Valid N (listwise)	7					

sum all lex = sum of all lexical items

sum adj adv =sum of adjectives and adverbs

sum vbs noun = sum of verbs and noun

lex part = lexical particle

time since imm= time since immigration

however, had a surprisingly high mean at 53.17 for the sum of all supplied lexical items and a higher mean 15.67 for the adjectives adverbs category as compared with the previous group. The detailed results of the descriptive statistics of the Immigration Subgroup 2 are presented in Table 13.

Further on Table 14 below provides descriptive results of the next Immigration Subgroup 3 (20-40 years since immigration) with the minimum, maximum and mean of the sum of all provided lexical items indicated. The scores for this subgroup were not as low as expected after so many years of residence in the U.S., with a minimum of 28 and a maximum of 62 of correctly provided lexical items and the mean of 48.61. The variation in the answers, however, is high, as indicated by the standard deviation of 12.4, with answers low below the mean and high above the mean. This group scored lower than the previous in providing the correct adjectives and adverbs, with a mean of the sum of only 12, but scored surprisingly higher than

Table 13. Immigration Subgroup 2 (10-20 years since immigration) and Sum of Individual Lexical Items

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
sum all lex	6	45	61	75	53.17	5.707
sum adj adv	6	12	19	20	15.67	2.805
sum verbs noun	6	22	37	50	31.17	5.193
lex part	6	1	5	5	3.00	2.191
Time since Imm	6	10	18		13.17	3.061
Valid N (listwise)	6					

sum all lex = sum of all lexical items
sum adj adv =sum of adjectives and adverbs
sum vbs noun = sum of verbs and noun
lex part = lexical particle

Table 14. Immigration Subgroup 3 (20- 40 years since immigration) and Sum of Individual Lexical Items

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
sum all lex	5	28	62	75	48.60	12.482
sum adj. adv.	5	7	19	20	12.00	4.416
sum verbs noun	5	33	38	50	35.40	2.074
lex part	5	5	5	5	5.00	.000
Time since Imm	5	26	38		31.80	4.324
Valid N (listwise)	5					

sum all lex = sum of all lexical items
sum adj adv =sum of adjectives and adverbs
sum vbs noun = sum of verbs and noun
lex part = lexical particle
time since imm= time since immigration

the previous group in supplying the correct nouns and verbs. For the nouns and verbs category, this group had a minimum of 33 and a maximum of 38 per group, and the mean was 35.5. The standard deviation for the score of this category was low, which indicated that the answers were homogenous among the informants.

Finally, the last Subgroup 4, presented in Table 15, with a mean immigration time of 46 years, had the following results. Both the minimum and the maximum of the sum of all supplied lexical items were significantly lower than the previous three groups with the minimum only of 27 and the maximum only of 45 and the mean of 36.7. The Standard deviation of 8.5 indicates a large variation in the results, with informants having scores low below and high above the mean. The means of the individual lexical categories were low for this group: 10.25 for adjectives and adverbs (out of 20 possible) and 20.50 for the verbs and noun category (out of 50 possible). The higher variation of the results was in the verbs-noun category. These results

indicate that almost half of the informants had difficulties in providing the correct items or even had several missing answers. This group had the lowest scores for all lexical items of all other Immigration Subgroups as seen in detail in Table 15. The results showing significant variation between the Immigration Subgroups, the ANOVA test and the Multiple Comparisons test were effectuated for the dependent variable sum of all lexical items, individual lexical categories and Immigration groups in order to establish between which Immigration groups there were significant differences in the means.

Table 16 presents the ANOVA test, which shows significance at the $p < .05$ level between the sum of all lexical items and Immigrations Subgroups ($F(3,18)=3.837, p < .05$), the sum of the adjectives and adverbs category and Immigration Subgroups ($F(3,18)=3.169, p = .05$) and the sum of the nouns verbs category and Immigration Subgroups ($F(3,18)=7.244, p < .05$).

Table 15. Immigration Subgroup 4 (>40 years since immigration) and Sum of Individual Lexical Items

	N	Minimum per Group	Maximum per Group	Maximum possible	Mean	Std. Deviation
sum all lex	4	27	45	75	36.75	8.655
sum adj. adv.	4	7	12	20	10.25	2.363
sum verbs- noun	4	16	30	50	20.50	6.608
lex part	4	0	5	5	1.75	2.217
Time since Imm	4	44	51		46.25	3.202
Valid N (listwise)	4					

sum all lex = sum of all lexical items
sum adj adv =sum of adjectives and adverbs
sum vbs noun = sum of verbs and noun
lex part = lexical particle
time since imm= time since immigration

Table 16. ANOVA test for Immigration Subgroups by Sum of all Lexical Items and Individual Lexical Categories

		Sum of Squares	Df	Mean Square	F	Sig. (<i>p</i> value)
sum all lex	Between Groups	880.466	3	293.489	3.837	.028
	Within Groups	1376.625	18	76.479		
	Total	2257.091	21			
sum adj adv	Between Groups	88.439	3	29.480	3.169	.050
	Within Groups	167.425	18	9.301		
	Total	255.864	21			
sum verbs noun	Between Groups	780.164	3	260.055	7.244	.002
	Within Groups	646.200	18	35.900		
	Total	1426.364	21			

Below Table 17 illustrates findings from the Multiple Comparison test, which is effectuated if the ANOVA test produces a significant value. The test shows the means of the different individual groups compared with each other.

The interpretation for these results confirms, that the informants from the last Immigration Subgroup (with over 40 years since immigration) produced the fewest correct lexical items. This includes not completing the required items in the cloze test or providing more contextually incorrect or inappropriate items than the informants with less time since immigration.

A further ANOVA test (Appendix M) and a Post Hoc Multiple Comparison test (Appendix M) were performed to reveal specifically between which variable categories, such as adjective-adverbs category or noun-verbs category and which

Table 17. Multiple Comparisons test for Sum of all lexical items and Immigration Subgroups

(I) ImmgrGroup	(J) ImmgrGroup	Mean Difference (I-J)	Std. Error	Sig. (<i>p</i> - value)	95% Confidence Interval	
					Lower Bound	Upper Bound
less than 10	10 to 20	1.275	3.937	.988	-9.85	12.40
	20 to 40	1.475	3.937	.981	-9.65	12.60
	more than 40	21.375(*)	4.229	.000	9.42	33.33
10 to 20	less than 10	-1.275	3.937	.988	-12.40	9.85
	20 to 40	.200	4.367	1.000	-12.14	12.54
	more than 40	20.100(*)	4.632	.002	7.01	33.19
20 to 40	less than 10	-1.475	3.937	.981	-12.60	9.65
	10 to 20	-.200	4.367	1.000	-12.54	12.14
	more than 40	19.900(*)	4.632	.002	6.81	32.99
more than 40	less than 10	-21.375(*)	4.229	.000	-33.33	-9.42
	10 to 20	-20.100(*)	4.632	.002	-33.19	-7.01
	20 to 40	-19.900(*)	4.632	.002	-32.99	-6.81

Tukey HSD

* The mean difference is significant at the .05 level between the sums of all provided lexical items of all Immigration Subgroups (ImmgrGroup less than 10 years, ImmgrGroup 10 to 20 years and ImmgrGroup 20 to 40 years) and the last Immigration Subgroup (with over 40 years since immigration)..

(I)= the group whose means are to be compared

(J)= the group to which the means are compared

Time since Immigration Subgroup, one can detect significant differences. The tests showed that significant differences at the $p < .05$ level were between Immigration Subgroup 2 (10-20 years since immigration) and Immigration Subgroup 4 (over 40 years since immigration) in both the adjective-adverb category and verbs-noun category. The sum of the verbs-noun category was significantly different at $p < .05$ between all Immigration Subgroups and the fourth Immigration Subgroup. The last Immigration Subgroup supplied a greater number of incorrect lexical items, items which did not fit semantically in the context or left blanks in the required context of the cloze test. See Appendix M for full statistical outputs and the detailed results.

The Effect of Amount of Contact to L1 on Lexical Errors

The last variable considered in the statistical analysis of the lexical errors was amount of contact to L1. The data regarding amount of contact were taken from the sociolinguistic questionnaire. This category was calculated for statistical purposes as the average sum between frequency of L1 contact or usage and travel to Germany. The averages were arranged into three groups: “less frequent contact to L1,” “frequent contact to L1” and “more frequent contact to L1,” as described in the introduction part of this chapter. The ANOVA test and the Post Hoc Multiple Comparisons test were performed for the dependent variable sum of all lexical items, adjectives–adverbs category, verbs and noun category and the independent variable amount of contact. The results, as detailed in Table 18 below, indicate significant differences ($F(2,19) = 4.961, p = .018$) between the amount of L1 contact and the sum of all provided verbs and noun, but no significant differences were found between

Table 18. ANOVA test for Amount of L1 Contact by individual lexical categories

Dependent Variables	Amount of Contact	Sum of Squares	Df	Mean Square	F	Sig. (p-value)
sum all lex	Between Groups	808.187	2	404.093	5.299	.015
	Within Groups	1448.904	19	76.258		
	Total	2257.091	21			
sum adj adv	Between Groups	16.066	2	8.033	.636	.540
	Within Groups	239.798	19	12.621		
	Total	255.864	21			
sum verbs noun	Between Groups	489.318	2	244.659	4.961	.018
	Within Groups	937.045	19	49.318		
	Total	1426.364	21			

amount of L1 contact and the sum of all supplied adjectives and adverbs ($F(2,19) = .636, p = .540$).

The Post Hoc Multiple Comparison test (See Appendix N) performed to see between which groups of contact were significant differences, indicated that there was a significant difference between the dependent variables noun and verbs and the independent variable amount of L1 contact in the “less frequent” group and “more frequent” group. The differences showed that the group with “less frequent” contact to L1 had the lowest scores in supplying the correct noun and verbs and the group with “more frequent” contact to L1 had the highest scores in this category.

The present cloze test scores suggest that “more frequent” L1 contact plays a positive role in maintaining content words, specifically nouns and verbs, but does not

affect the adjectives and adverbs category. On the other hand, “less frequent” L1 contact plays a negative role in maintaining the above-mentioned content words category and thus leads to potential language attrition.

Summary and Discussion of the Lexical Findings from the Cloze Test: Study Group

The findings from the statistical analysis of the lexical data from the cloze test revealed that no informant had a score above 70 (out of the possible of 75). The highest score for correctly provided lexical items, which included exact match words and accepted synonyms, was 62 and the lowest was 27. The statistical analysis of the sum of all supplied lexical items indicated wide variation, which means that the sums of the supplied lexical items by the twenty two informants were not close to the mean, but included many high and low scores.

By examining the results of the statistical analyses of the different independent variables mentioned before and the individual lexical categories, significant differences were found among the different age and immigration subgroups and level of education and amount of contact subgroups. These findings indicate that the independent variable age might play an important role in language attrition. The lowest scores for all lexical categories (adjectives-adverbs and verbs–noun) were observed in the Age Subgroup 4 with ages between 60 and 70. However, the limited number of informants in this age category, as well as, the general caution which needs to be taken, when the variable age is considered in analysis, does not allow a generalizable conclusion.

Performing the ANOVA test and the Post Hoc Multiple Comparisons test

between this Age Subgroup and the other three regarding all lexical items, the results indicated significant differences ($F(3,18)=9.011$, $p < .01$). Per individual lexical category, the highest variation was exhibited in the verbs-noun category across all Age Subgroups. The explanation for this is that the scores for the supplied verbs and the one noun ranged from very low scores to high scores, with many scores far from the mean. Wide variation of the answers was also observed in three Age Subgroups (2, 3 and 4) for the sum of all lexical items, except in the Age Subgroup 1 (with ages between 20 and 40) where the answers were homogenous.

The variable Level of Education as the independent variable computed with the individual lexical categories resulted in significant differences ($F(2,19)=3.75$, $p < .05$) among the subgroups with higher level of education and those with lower level of education, in the verbs-noun category. However, the data not being well balanced, with only three informants in the lower education level category, the results can not be generalized beyond the present study. Future larger scale research in this area, with informants with varied educational levels, would reveal if these results are conclusive.

The third independent variable examined in relationship to lexical changes was time since immigration. The four groups which were created based on the length of time since immigration presented different results. The lowest scores for all lexical items were found in the last Immigration Subgroup (more than 40 years since immigration) but with less variation, which indicated that the four informants in this group had similar scores, close to the mean in all lexical categories. Significant differences at the level $p \leq .05$ were found between the scores of this group for the

individual lexical categories and the other three Immigration Subgroups. The highest variation among the lexical scores was found in the Immigration Subgroup 3 (with informants between 30 and 40 years since immigration), but no significant differences between this group and the other three.

The last variable tested in relationship to the lexical scores from the cloze test was amount of L1 contact. The ANOVA test revealed significant differences ($F(2,19) = 4.961, p = .018$) in the “less frequent contact” group in relation to the noun-verbs category. The group with “less frequent “L1 contact had the lowest scores in supplying the correct noun and verbs as required by the cloze test.

From these results we could conclude that the noun-verbs categories were decreasing in accuracy in older informants, with longer time since immigration, those having a lower educational level and less frequent contact to L1. The adjectives and adverbs categories decreased in accuracy with an increase in age and time since immigration but were not affected by level of education and less contact to L1. In the following, similar analyses intend to reveal if there are consistent patterns of changes in the less controlled and more naturalistic tasks, like the picture description and interviews.

5.1.2 Picture Description and Interview Study Group: Lexical Findings

The picture description and the interview were somewhat open-ended tasks, where the informants had the flexibility to monitor their speech, avoid or reformulate difficult or uncertain phrases or items. This was the reason why the items which

posed difficulty in analysis were more varied and thus harder to classify. For these tasks the informants either substituted English content words for German ones during the picture description and interview or first used an English word or idiomatic expression and later recalled the German equivalent or used a loan translation. In this subchapter both descriptive and inferential analyses were performed, and also two experimental analyses of cross-checking words for their occurrences in dictionaries and internet sites.

The focus of the analyses in this subchapter, however, rests with the English borrowings and loan translations in German speech, their total occurrence and frequency. All English words were isolated from all transcriptions, but each occurrence was counted once, even if some informants used some words repeatedly. These occurrences were called unique words. The total number of unique English words for each informant was tallied and introduced into Excel files and later into the WordStat program for analysis. A list of all the English borrowings is in Appendices I and J.

Similarly to the analysis of the cloze test, the same four independent variables, Age, Time since Immigration, Level of Education and Amount of L1 Contact, were analyzed in relationship to the dependent variables, the total number of borrowed English words. The results of an ANOVA will indicate which Age and Time since Immigration Subgroup used the highest number of English lexical borrowings. Also it will indicate what Level of Education or how much Amount of L1 Contact affected changes in the number and frequency of L2 lexical borrowings.

Age Subgroups and English borrowings

The highest number of English borrowings was observed in the last Age Subgroup 4, with five informants over 60. In this Age Subgroup, the descriptive statistics revealed a minimum of 7 and a maximum of 30 borrowed words, with a mean of 15.8 and a high standard deviation of 9. The lowest number of borrowed words was observed in the third Age Subgroup with ages between 50 and 60. The minimum number of English borrowings was 4 and the maximum was 13 with a mean of 9.5. The first two Age Subgroups with younger informants between 20 and 40 and 40 and 50 had similar means of 10 for English borrowings. These results indicated that there was not a constant progressive deterioration in lexical retrieval abilities or lexical access with age. The most surprising results came from the Age Group 50-60, where there were fewer borrowings than in the remaining groups. Examples of borrowings will be discussed in detail in Chapter 6.

Immigration Subgroups and English borrowings

Computing the variable time since immigration and the sum of English borrowings in order to see if there was a higher number of borrowings corresponding to an extended time since immigration yielded results were similar to the ones from the Age Subgroups. The first Immigration Subgroup with 4 to 10 years since immigration used a minimum of 3 borrowed English words and expressions and a maximum of 20, with a mean of 10.57 words per group. A slight increase in borrowings was noticed in the second Immigration Subgroup with 6 informants, with an immigration period of 10 to 20 years. This group provided a minimum of 3

English borrowings and a maximum of 25 with a mean of 11.

The third Immigration Subgroup (20 to 40 years since immigration), however, produced different results from the first two groups with fewer English borrowings in their German speech. The maximum number of borrowings for this group was only 13 and the mean 7.6. The last group with informants who emigrated more than 40 years ago, performed differently from the other groups and had a higher number of English borrowings with a maximum of 30 and a high mean of 17.5. The standard deviation was high for the results of this group at 9.6, which indicated that the informants varied extensively in borrowings, from few borrowings to very many.

These findings indicate that in a less controlled task, there is not a constant progressive deterioration of lexical retrieval abilities or lexical access with time since immigration. Even if there were borrowings from English in all Immigration Subgroups, similarly to the Age Subgroups, the most surprising results came from the Immigration Subgroup 3 (20 to 40 years since immigration) with fewer borrowings than the previous two groups. The last Immigration Subgroup 4, however, had the most borrowings from English.

Level of Education, Amount of L1 Contact and English borrowings

Older age and longer time since immigration were factors which influenced the number of English borrowings as seen from the above results. In this section, we will discuss statistical relationships between the independent variables level of education and amount of L1 contact and the dependent variable English borrowings. In order to see if there are significant differences between the level of education

groups and amount of English borrowings, an ANOVA test was performed. The results indicate that there was no significant difference ($F(2,19)=.962, p=.4$) at the $p<.05$ level between the factor level of education and the number of English borrowings. This means that the factor level of education, based on these tasks, does not affect the number of English borrowings used to describe the pictures.

The next factor investigated revealed different results. The amount of L1 contact did influence the number of English borrowings. An ANOVA test revealed significant differences ($F(2,19)=4.150, p=.03$) between the different amount of L1 contact groups and the dependent variable English borrowings. The Post Hoc Multiple Comparison test indicated that there were significant differences at the level $p < .05$ between the group with “less frequent” L1 contact and the group with “more frequent” amount of L1 contact. The group with “less frequent” L1 contact had a higher number of English borrowings than the other two groups, with a minimum of 3 and a maximum of 30 items. These results indicate that amount of L1 contact can affect the number of English borrowings in German speech.

Lexical borrowings from all informants and their occurrence in *DUDEN*

***Fremdwörterbuch* and Internet sites**

In this section, problematic lexical items, collocations, colloquial expressions or loan translations, e.g. *Platzsetzer*²⁸ and *Feuerplatz*²⁹, are identified by cross-checking to see if they appear in German foreign words dictionaries or German dialectal or colloquial language. Words that appeared to be English borrowings into

²⁸ Calque for Engl. place mats

German were identified as such by cross-checking against two editions of the German Foreign Words Dictionary, *Duden Fremdwörterbuch*. Searching Internet sites was taken as an additional tool to check for occurrence. The reason for using the Internet came from the personal observation that we presently live in a digital era where the World Wide Web is a very timely reflection of the dynamic changes in the languages around the world.

I searched the Internet, more specifically using the Google search engine and introduced word tokens, after Porter (1980) who defined a token³⁰ *as a sequence of contiguous letters (p.133)*. All the English borrowings of the informants were searched for occurrence in the first three German relevant sites Google search returned. The details of this search have been described in Chapter 3: Methodology. This type of analysis has not been documented up to the present date in language attrition studies, and it is experimental in nature. The obtained results will be interpreted only based on the present study and in relationship to the picture description task and interview. No generalizations beyond the present study can be made.

Out of the total number of 43,424 words produced in all 22 picture descriptions and interviews, 5,255 or 12% of the total were unique tokens. In this section unique words or tokens represent individual word units, considered once, at their first occurrence. Of the 5,255 unique individual words, 248 or 4.7%, were identified for analysis as unique English words, collocations and phrases (compounds

²⁹ Calque for Engl. fire place or possible German regional variety.

of more than one word) at their first occurrence. Any variation of these words or phrases, e.g. plurals, was not considered. For example *house* was considered for analysis, but *houses* was not. Seventy-eight words were used more than one time, both in singular and plural. The word “*sports*” was repeated the most with a maximum of 38 times. Out of the 248 unique English words, collocations and phrases, the majority of 86% (213 items), were unique content words and phrases. Only 14 % (35 items) were unique morphological or function words. See Appendices I and J for the complete list of tested items.

As seen from the data below, the Internet could be considered a good illustrator of the global tendencies in the digitally written form of the language. Online sites in any language contain high numbers of English slang, technical terms and terms from various domains. The high number of English words found on the German Internet Sites indicates the constant and growing influence of English on German present day written language, but specific to the internet digital written form. I infer from this that the spoken language is similarly affected. While access to Internet compared to the print media is still limited for many people, especially elderly and low income persons, it can not be considered a very reliable tool in terms of authorship, place of publication and permanency. This is why the *Duden Fremdwörterbuch*, 6th Edition (1997) and 8th Edition (2005) were taken as a second verification tool.

Each item was considered once for analysis, even if some items occurred

³⁰ An Internet token is similar to the root concept in linguistics. Porter (1980) developed a stemming algorithm for the English language with applicability in Information retrieval systems, which enables any word, part of a word family to be considered one token and make the search more efficient.

more than once on different occasions for different informants. For the analysis only 79 words from the picture description and 84 from the interview out of the 213 English lexical words and expressions were considered. The eliminated words were those already used in present German colloquial language like: *cool*, *computer* or *show*. Also those English words used by the Control Group were not considered language changes: *fast food*, *hobby* or *fitness*. Out of the 79 valid tokens from the picture description 13 were collocations, phrases or colloquial speech, like *you know*, *I mean*, *shopping mall*, *eighteen wheeler*, *food court*, etc.

A total sum of 24 English borrowings, both content words and idiomatic phrases, were found in the *Duden Fremdwörterbuch* (1997) and 55 items were not found. In the 8th Edition of the *Duden Fremdwörterbuch* (2005) 33 English words out of 79 were found, which is an indication that over a period of eight years (between the two *Duden* editions), there was an increase in English borrowings in the German language. The same borrowings looked up in German sites retrieved in March and April 2007 indicated a high occurrence of 57 out of 79. The sum of English words found in dictionaries, the difference between found and not found items and the mean of the tokens from the picture descriptions are presented in Table 19. The difference represents the number of items not found in the *Duden* dictionaries and on the Internet sites. These items can be considered aspects of lexical attrition in spontaneous speech among German informants, where instead of German content words or idiomatic expressions English items were supplied.

In the analysis of the interview data, the same procedure used for the picture description was used. Only one occurrence of the English word or phrase was taken

as a valid token, even if some occurred more than one time. There were 84 unique tokens identified, which included both individual words, collocations and phrases, like: *community ministry, freedom of speech, headed for disaster, six pack, drivers license or big deal.*

As seen from Table 20, the number of tokens, found in the *Duden Fremdwörterbuch*, (1997) is much smaller at 26 and in *Duden Fremdwörterbuch* (2005) at 31, than the tokens found in recent internet sites (70) out of the total number of 84 tokens taken for analysis. The difference of tokens not found in the reference

Table 19. The lexical items from all informants from all the picture descriptions cross-checked against German dictionaries and Internet

	N	Sum of items found	Difference of items not found	Mean
Duden Fremdwörterbuch 1997	79	24	55	.30
Duden Fremdwörterbuch 2005	79	33	46	.42
Internet German sites in similar context, 2007	79	57	22	.72
Valid N (listwise)	79			

Table 20. The lexical items from all informants from all the interviews cross-checked against German dictionaries and Internet

	N	Sum of items found	Difference of items not found	Mean
Duden Fremdwörterbuch 1997	84	26	58	.31
Duden Fremdwörterbuch 2005	84	31	53	.37
Internet, dt, Seiten im gl.Kontext	84	70	16	.83
Valid N (listwise)	84			

books and on the internet sites is the highest for *Duden* 6th Edition (1997) with 58 items. On the other hand, only 16 items were not found on the German Internet sites. In the eight years time difference between the dictionaries publication years, there is a constant increase of English borrowings in the German language as seen from the above results. The Internet domain however, reveals the highest rate of English borrowings. These results indicate a tendency of the German informants in the present study to supply in their L1 the most fitted term for a given context, even if the term is not German.

Summary of the Lexical Findings in the Picture Description Task and Interview

These results show that all informants at some point during the picture description or interview have used English words or expressions instead of German ones. Some older informants, especially over 60, have used a large number of borrowings as seen from the data, with a maximum of 30 for one person. These results, were assumed given the fact that the majority of the older informants have also emigrated to U.S. more than 30 years previously. Younger informants have used a variety of English borrowings, while informants in the age group 50 to 60 surprisingly had the fewest English borrowings compared to the younger and older informant group. The computing of the data based on the variable Time since Immigration indicated that even in the groups with shorter time since immigration, 4 to 10 years and 10 to 20 years, there was a certain number of English borrowings (mean of 10), while in the Immigration Subgroup 20 to 40 years there were fewer borrowings. Level of Education did not affect the number of borrowings while

Amount of L1 contact did. The immigrants who declared “less frequent” contact to L1 speakers or L1 country had the highest number of English borrowings.

Comparing the present lexical items with their occurrence in dictionaries and Internet is a new and experimental technique for the present study. At the present time there are no studies that I am aware of which investigate language attrition using these techniques. The results indicated that there was an increase of English borrowings in the German language as exemplified by their occurrence in dictionaries. At the present moment German sites, as identified by the Google domain filter, are characterized by a very high number of foreign borrowings and English slang.

However, calculating the percentages from the above mentioned numeric values, the unique English words represented only 4.71 % from the total of all unique word occurrences, which is an indication that German is still dominant for these informants.

5.2 Morphological Findings in the Study group

In order to assess possible morphological errors in the Study Group the data from the cloze test, the picture description task and the interview were analyzed in the same manner as the lexical changes. The data consisted of 28 morphological items, representing 65% of the total of 43 items from the cloze test. For the cloze test the morphological items were divided following the function word categories: (1) prepositions and conjunctions, (2) plural endings, (3) pronouns, (4) definite articles,

and (5) negative and indefinite articles. While introducing the morphological data into the Excel files, the same categories were used for the picture description and interview. Since the task description for the cloze test did not ask for the exact missing word, any synonyms were accepted as long as the meaning of the sentence or phrase was not changed.

The items were assigned the following values: three for the exact missing word or a perfect synonym, two for an accepted synonym which did not affect the sense of the sentence, one for a wrong word and zero for a missing item. These numeric values were considered in order to easily identify a morphological item from a lexical one and it was not intended to assign lower value to morphological items. In most of the cases the context required an exact match, thus in the case of supplying the morphological items, there was less flexibility than with supplying lexical item.

5.2.1 Cloze Test Study Group: Morphological Findings

In this section, the morphological findings from the cloze test will be evaluated. In the preposition-conjunction group there were three items, one preposition and two conjunctions, in the plural endings group there were eight endings, in the definite article group there were 11 missing articles, and in the indefinite and negative article group there were four items, three indefinite articles and one negative indefinite article and finally, there were two pronouns.

The maximum possible score for the morphological items was 84, and the range of accepted values was between 56 and 84. Every score below 56 meant that the informant

had at least one missing or incorrectly supplied morphological item. The individual morphological categories presented in the next tables are abbreviated as follows: **prep conj** for preposition-conjunction category, **plend** for plural endings, **art** for definite articles, **pron** for pronouns, **indef neg art** for indefinite and negative articles.

The Effect of Age on Morphological Errors

Analyzing the effect of the independent variable age on the dependent variable morphological items, the results indicate that there is less overall attrition than expected. Compared to the lexical results, the overall morphological results show fewer errors for the Age Subgroups 1-3 but significant errors for the Age Subgroup 4 (over 60 years old). Each Age Subgroup had the maximum score possible, this means that at least four informants had a perfect score for at least one morphological item. The first three Age Subgroups had each one category of morphological items which had a minimum lower than the rest of the Age Subgroups with exception of the fourth which had three categories with low minimums. The detailed statistical results are presented in the following discussion.

For all age groups, the minimum sum of correctly provided morphological items was 56.00, the maximum was 81.00, and the mean was 73.55, as seen in Table 21. The results indicated that the overall score of morphological items was rather high compared to the score for lexical items. None of the informants scored under the accepted sum of 56.00, which pointed to the fact that there was less attrition than anticipated, if all correctly provided morphological items were counted as a total. When, analyzed per individual morphological categories, the independent variable

Table 21. All Age Groups and Sum of All Morphological Items

	N	Minimum	Maximum	Mean	Std. Deviation
Age	22	28	67	48.32	12.073
sum all morphol	22	57	81	73.55	6.100
Valid N (listwise)	22				

Sum all morphol= sum of all morphological items

age seemed to affect the results and revealed that there are some changes within and between all four Age Subgroups.

The last Age Subgroup (over 60 years) showed more deficiencies in providing the correct items in the preposition-conjunction, plural endings and negative indefinite and indefinite articles categories. While the scores of overall morphological sums showed certain degrees of attrition, especially in the Age Subgroup 4 (over 60), the next set of tables will present more aspects of attrition per individual morphological items.

The data computed per individual Age Subgroups revealed patterns in morphological attrition similar to those seen in lexical attrition in the previous section. For Age Subgroup 1 (20-40 years), the maximum value of correctly supplied morphological items was 79.00, the minimum was 76.00 and the mean was 77.2 out of the 84.00 maximum possible. The standard deviation at 1.6 indicated minimal variation among the sums, which means that the answers of the informants were homogenous, close to the mean. In this Age Subgroup, the lowest score was observed in the preposition and conjunction category, with a low mean of 9.8. All the other categories had high means. See Table 22 for detailed results.

Table 22. Age Subgroup 1(20-40 years) and Sum of Individual Morphological Items

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
Age	5	28	37		32,40	3,362
sum all morphol.	5	76	79	84	77.20	1.643
sum prep conj	5	7	12	12	9.80	2.588
sum plend	5	18	24	24	22.00	2.828
sum def art	5	25	30	30	28.00	1.871
sum pron	5	6	6	6	6.00	.000
sum indef neg art	5	10	12	12	11.40	.894
Valid N (listwise)	5					

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum pron = sum of pronouns

Sum indef. neg. art = sum of all indefinite and negative articles

sum of correctly supplied values increased to 81.00, out of the maximum of 84.00.

In the second Age Subgroup (40-50 years), the descriptive statistics revealed that the minimum for all morphological items was lower at 71.00, but the maximum The mean pointed to slightly lower sums compared to the first Age Subgroup, and the standard deviation was higher at 3.7, which indicated some variation among the answers. See Table 23.

In the Age Subgroup 2 the lowest minimum was in the definite article category, with a low mean of 24.86. It was the lowest sum compared to the first and third Age Subgroups, and it had the standard deviation of 4.00, representing a slightly higher variability in the answers. See Table 23 below for detailed results.

The Age Subgroup 3, which covered the age range from 50 to 60, showed a decrease in the maximum sum of the correctly supplied morphological items (78.00)

Table 23. Age Subgroup 2(40-50 years) and Sum of Individual Morphological Items

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
Age	7	40	49		43.43	3.409
sum all morphol	7	71	81	84	76.14	3.716
sum prep conj	7	9	12	12	11.14	1.069
Sum plend	7	21	24	24	22.57	1.397
Sum def art	7	20	30	30	24.86	4.018
Sum pron	7	6	6	6	6.00	.000
Sum indef neg art	7	10	12	12	11.57	.787
Valid N (listwise)	7					

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum pron = sum of pronouns

Sum indef. neg. art = sum of all indefinite and negative articles

and also a lower mean (74.8). Table 24 presents the findings for this group. With regard to the individual morphological categories, the plural endings (with a minimum of 15.00 and with the mean of only 21.80 out of 24.00 maximum possible) are lower than the Age Subgroups 1 and 2. Also the preposition-conjunction category had a low mean of 9.8, exactly the same mean as the first Age Subgroup.

The last Age Subgroup, with 5 informants at ages over 60, had the lowest minimum of correctly provided morphological items i.e., 57.00, a maximum of 72.00 and a mean of only 65.00. These results indicate that these informants had more incorrectly supplied morphological items or missing items, and their answers differed more widely, as pointed out by the higher standard deviation of 6.3. These could be an indication of more significant aspects of language attrition on the morphological level in this age group. This last Age Subgroup, as already pointed out from previous

Table 24. Age Subgroup 3(50-60) and Sum of Individual Morphological Items

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
Age	5	53	57		55,40	1,817
sum all morphol	5	71	78	84	74.80	3.114
sum prep conj	5	8	12	12	9.80	1.483
Sum PLend	5	15	24	24	21.80	3.899
Sum Art	5	21	30	30	26.60	3.975
Sum Pron	5	6	6	6	6.00	.000
Sum indef neg art	5	10	12	12	10.60	.894
Valid N (listwise)	5					

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum pron = sum of pronouns

Sum indef. neg. art = sum of all indefinite and negative articles

data, had more categories with low minimums, for example: in the preposition-conjunction category, the plural ending category and the indefinite-negative article category. Also the means for these categories are the lowest from all four Age Subgroups. The detailed results are presented in Table 25.

Since the findings per individual Age Subgroups indicated differences between the groups, an ANOVA test was used to compare the means between and within the Age Subgroups to see if there was significance between the different scores. At a significance level $p \leq .05$, the Post Hoc Test of Multiple Comparisons was also executed in order to see between what age groups the significance level is $p \leq .05$ regarding the supplying of morphological items. As seen in Tables 26 and 27 below, there is a significant difference between the means of the sums of the morphological items for the last Age Subgroup with informants over 60 and all of the remaining Age Subgroups.

Table 25. Age Subgroup 4(60-70) and Sum of Individual Morphological Item

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
Age	5	61	67		64.00	2.121
sum all morphol	5	57	72	84	65.00	6.364
sum prep conj	5	3	10	12	5.20	2.775
Sum plend	5	13	21	24	17.00	3.082
Sum art	5	21	30	30	27.20	4.087
Sum Pron	5	6	6	6	6.00	.000
Sum indef neg art	5	8	12	12	9.60	1.673
Valid N (listwise)	5					

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum pron = sum of pronouns

Sum indef. neg. art = sum of all indefinite and negative articles

Table 26. ANOVA test for the sum of all morphological items and Age Subgroups

	Sum of Squares	Df	Mean Square	F	Sig. (<i>p</i>)
Between Groups	1396.985	3	465.662	17.727	.000
Within Groups	472.833	18	26.269		
Total	1869.818	21			

Table 27. Multiple Comparisons test for the sum of all morphological items and Age Subgroups

(I) AgeGroup	(J) AgeGroup	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
		Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound
less than 40	40 to 50	-2.833	2.959	.775	-11.20	5.53
	50 to 60	2.400	3.104	.865	-6.37	11.17
	more than 60	18.200(*)	3.104	.000	9.43	26.97
40 to 50	less than 40	2.833	2.959	.775	-5.53	11.20
	50 to 60	5.233	3.104	.359	-3.54	14.00
	more than 60	21.033(*)	3.104	.000	12.26	29.80
50 to 60	less than 40	-2.400	3.104	.865	-11.17	6.37
	40 to 50	-5.233	3.104	.359	-14.00	3.54
	more than 60	15.800(*)	3.242	.001	6.64	24.96
more than 60	less than 40	-18.200(*)	3.104	.000	-26.97	-9.43
	40 to 50	-21.033(*)	3.104	.000	-29.80	-12.26
	50 to 60	-15.800(*)	3.242	.001	-24.96	-6.64

* The mean difference is significant at the .05 level.

The output of the Multiple Comparisons test in Table 27 shows the significance levels between the Age Subgroups. The significance is between the Age Subgroup 4 (60-70 years) and the rest of the groups ($F(3,18) = 17.727, p < .001$). This indicates that the last Age Subgroup had significantly different answers and lower means from the previous groups.

From these results, the variable age affected negatively language abilities in the morphological domain. All four groups had difficulties in supplying the correct morphological items, as the means indicate. Prepositions, conjunctions and definite and indefinite articles showed the same trend. The most changes were in the plural endings category, with all four groups having difficulties supplying them. As the means show, low scores in the plural endings category were followed by low scores for the prepositions-conjunctions and the definite articles. The fourth group, surprisingly, did not have a low mean in the definite article category, but had the lowest means for the remaining morphological categories. None of the groups had a problem supplying the correct pronouns.

The Effect of Level of Education on Morphological Errors

Similarly as for the lexical errors, the different morphological sums were computed against the variable Level of Education. The majority of informants had a high level of education, meaning at least college level and beyond, except for three. The highest possible education level was coded with a value of 60 and the lowest 10. None of the informants had scores below 30. Because the data was not well balanced, with the majority of informants having higher levels of education, the next statistical

computation can not be generalized beyond the present study. The statistical analysis shows, however that at the significance level of $p < .05$, there was a significant difference between the sum of all morphological items ($F(2,19)=8.217, p < .003$) specifically, preposition and conjunctions (sum prep-conj) ($F(2,19)= 5.818, p=.01$), plural endings (sum plend.) ($F(2,19)= 20.473, p = 000$) and the variable level of education. These results suggest that there is a significant difference between the level of education groups regarding the usage of plural endings, prepositions and conjunctions. The significance level, however, is low for the computation of the variable level of education, and the sum of definite articles (sum def. art.) ($F(2,19)= 6.948, p = .6$) and indefinite and negative articles (sum indef. neg. art.) ($F(2,19)= 4.410, p= .06$). The findings indicate that in the articles category there are no significant differences between the level of education groups. The detailed ANOVA test and the Post Hoc Multiple Comparison test were computed and the results are presented in Table 28.

The Multiple Comparison test reveals between which level of education groups and what dependent variables there are significant differences at the level $p < .05$. The dependent variables represent the sum of all morphological items and the sums of individual morphological items: definite articles, prepositions and conjunctions, indefinite articles and plural endings. The significance level $p < .05$ is between the level of education group 30 and 50 for the sum of all morphological items, the preposition and conjunction sum and for the plural endings.

Table 28. ANOVA test for the variable Level of Education and Individual Morphological Items

		Sum of Squares	df	Mean Square	F	Sig.
Sum all morphol	Between Groups	867.214	2	433.607	8.217	.003
	Within Groups	1002.604	19	52.769		
	Total	1869.818	21			
Sum prep conj	Between Groups	69.606	2	34.803	5.818	.011
	Within Groups	113.667	19	5.982		
	Total	183.273	21			
Sum plend	Between Groups	169.396	2	84.698	20.473	.000
	Within Groups	78.604	19	4.137		
	Total	248.000	21			
Sum def .art	Between Groups	13.896	2	6.948	.509	.609
	Within Groups	259.604	19	13.663		
	Total	273.500	21			
Sum indef neg art	Between Groups	8.820	2	4.410	3.251	.061
	Within Groups	25.771	19	1.356		
	Total	34.591	21			

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum pron = sum of pronouns

Sum indef. neg. art = sum of all indefinite and negative articles

Between the level of education groups 30 and 60 and the plural endings sum there is significant difference at the level $p < .05$. This means that informants with a lower education level had a higher incidence of errors in supplying the correct prepositions, conjunctions and plural endings in the cloze test. The Multiple Comparison test has been included in Appendix L due to the large statistical output size.

The Effect of Time since Immigration on Morphological Errors

The following analyses looked at the relationships between the variable time since immigration and the same morphological items as computed before with the variable age. The same four different Immigration Subgroups created for the lexical analyses were used in identifying the effect of time since immigration on errors in the different morphological categories.

For the first Immigration Subgroup with the range of four to nine years since immigration, the sum of correctly provided preposition-conjunctions and definite articles were low, with seven as minimum for preposition-conjunctions, but 20 for definite articles with 9.57 and 27.00 as means respectively. The maximum possible for these categories, on the assumption that the informants have supplied all items correctly is, 12 for the preposition-conjunctions category and 30 for the definite articles category. See detailed results in Table 29.

The second Immigration Subgroup, which includes the individuals having 10 to 20 years since immigration, shows errors in the plural endings and definite articles category, different from the first Immigration Subgroup. The mean sum of the preposition-conjunction category is the highest for this group compared to the other

Table 29. Immigration Subgroup 1 (4-10 years) and All Morphological Items

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
Time Imm	7	4	9		6.00	2.000
sum prep conj	7	7	12	12	9.57	2.149
Sum plend	7	21	24	24	23.29	1.254
Sum def art	7	20	30	30	27.00	3.512
Sum pron	7	6	6	6	6.00	.000
Sum indef neg art	7	11	12	12	11.71	.488
Valid N (listwise)	7					

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum pron = sum of pronouns

Sum indef. neg. art = sum of all indefinite and negative articles

three groups. As seen from Table 30 below, the mean for plural endings is 21.50, compared to the maximum possible of 24, and the mean for definite articles sum is 24.83, compared to the 30 maximum. This Immigration Subgroup has the lowest mean in the definite article category from all Immigration Subgroups, even lower than the last Immigration Subgroup.

The Immigration Subgroup 3 contains 5 informants with a considerable number of years since immigration, 26 to 38 years. In this group the lower minimum sums were for prepositions, conjunctions, for plural endings and for definite articles. The means were lower than the previous two groups for the preposition-conjunction (10.00) and plural endings category (20.60). In Table 31 the data show these findings.

In the last Immigration Subgroup, with four informants and mean time since immigration of 46.25 years, the difficulties were mostly all morphological except in the definite articles and pronouns category.

Table 30. Immigration Subgroup 2 (10-20 years) and All Morphological Items

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
Time Imm	6	10	18		13.17	3.061
Sum prep conj	6	11	12	12	11.50	.548
Sum plend	6	18	24	24	21.50	2.345
Sum def art	6	20	29	30	24.83	3.312
Sum pron	6	6	6	6	6.00	.000
Sum indef neg art	6	10	12	12	11.33	1.033
Valid N (listwise)	6					

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum pron = sum of pronouns

Sum indef. neg. art = sum of all indefinite and negative articles

Table 31. Immigration Subgroup 3 (20-40 years) and All Morphological Items

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
Time Imm	5	26	38		31.80	4.324
Sum prep conj	5	8	12	12	10.00	1.414
Sum plend	5	15	24	24	20.60	3.975
Sum def art	5	21	30	30	26.80	3.834
Sum pron	5	6	6	6	6.00	.000
Sum indef neg art	5	10	12	12	10.60	.894
Valid N (listwise)	5					

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum pron = sum of pronouns

Sum indef. neg. art = sum of all indefinite and negative article

While in the Immigration Subgroup 4 the mean for the sum of preposition-conjunctions (4.00), plural endings (16.75) and indefinite-negative pronouns (9.00) were lower than those of the other three immigration subgroups, the mean of the definite articles was surprisingly the highest of all groups at 27.75.

For the first three Immigration groups the sum of the definite articles was consistently the lowest, followed by the prepositions-conjunctions sum and the plural endings sum. The last Immigration Subgroup had low means for the sum of the preposition-conjunctions, plural endings and indefinite articles. The sum of the pronouns was the same in all four groups, which indicates no loss of this morphological item (Table 32).

The ANOVA test of comparing the means indicated significant differences between the immigration groups in reference to the preposition-conjunction category

Table 32. Immigration Subgroup 4 (over 40 years) and All Morphological Items

	N	Minimum per group	Maximum per group	Maximum possible	Mean	Std. Deviation
Time Imm	4	44	51		46.25	3.202
Sum prep conj	4	3	5	12	4.00	.816
Sum plend	4	13	21	24	16.75	3.500
Sum def art	4	21	30	30	27.75	4.500
Sum pron	4	6	6	6	6.00	.000
Sum indef neg art	4	8	10	12	9.00	1.155
Valid N (listwise)	4					

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum pron = sum of pronouns

Sum indef. neg. art = sum of all indefinite and negative articles

($F(3,18)= 21,018, p< .001$), the plural endings category ($F(3,18)= 4,781, p= .03$), the definite articles category ($F(3,18)= 7,412, p=.002$) and the indefinite and negative article category ($F(3,18)=9,374, p= .001$). Thus, the time since immigration variable produced greater effects in certain morphological categories as seen above. At the same time, not only the last Immigration Subgroup showed the most variation in the answers, but all four groups had lower means in some morphological categories and not on a consistent basis.

The Effect of Amount of L1 Contact on Morphological Errors

The last independent variable tested against the morphological findings from the cloze test was amount of contact. There were three groups of informants; those with “more frequent contact to L1,” those with “frequent contact to L1” and those with “less frequent contact to L1.” The descriptive statistics, resulting from the computing of this variable with the sums of the different morphological items, indicated that there are differences in the means of all morphological items between the group with less contact and the one with more contact. See the detailed results in Tables 33 and 34.

As seen in the two tables 33 and 34, the minimum sums of correctly supplied morphological items are higher in the group with more frequent contact to L1 and lower in the group with less L1 contact. Similarly, the means for all sums of correctly supplied morphological categories are lower in the group with less L1 contact. In this group the standard deviations for all items are slightly higher than in the group with more frequent L1 contact, which indicates more variation in the answers. The higher

Table 33. Amount of L1 Contact “more frequent” and Individual Morphological Items

	N	Minimum	Maximum	Mean	Std. Deviation
Amount of L1 Contact “more frequent”	11				
sum all morphol	11	73	85	79.82	3.842
sum prep conj	11	7	12	10.18	1.834
Sum plend	11	18	24	22.64	2.111
Sum def art	11	23	30	27.82	2.442
Sum indef neg art	11	10	12	11.36	.809
Valid N (listwise)	11				

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum indef. neg. art = sum of all indefinite and negative articles

Table 34. Amount of L1 Contact “less frequent” and Individual Morphological Items

	N	Minimum	Maximum	Mean	Std. Deviation
Amount Cont “less frequent”	9				
sum all morphol	9	53	84	70.67	10.536
sum prep conj	9	4	12	8.33	3.279
Sum plend	9	13	24	19.56	3.844
Sum def art	9	20	30	24.78	4.324
Sum indef neg art	9	8	12	10.67	1.414
Valid N (listwise)	9				

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum pron = sum of pronouns

Sum indef. neg. art = sum of all indefinite and negative articles

deviations and lower means are in the plural endings and definite articles sum in the group with the less frequent amount of L1 contact.

The ANOVA test performed revealed significant differences between the groups only regarding the sum of all provided indefinite and negative articles by amount of L1 contact ($F(2,19)=3,888$, $p= .03$). No significant differences were recorded in the other morphological categories. Thus, less amount of L1 contact correlates with less accuracy in supplying the correct negative and indefinite articles.

Summary of the Morphological Findings from the Cloze Test

Analyzing the effect of the independent variable age on the dependent variables morphological items, the results indicate that there is less overall attrition than expected. Compared to the lexical results, the overall morphological results show fewer errors for the Age Subgroups 1-3 but significant errors for the Age Subgroup 4 (over 60 years old). All four groups had difficulties in supplying the correct morphological items, specifically prepositions, conjunctions and definite and indefinite articles. All four groups had difficulties in supplying the correct plural endings. The fourth group, surprisingly, did not have a low mean in the definite article category, but had the lowest means for the remaining morphological categories. The significant difference is between the Age Subgroup 4 (60-70 years) and the rest of the groups ($F(3,18)= 17.727$, $p< .001$).

In testing the variable level of education it shows that at the significance level of $p < .05$ there was a significant difference between the sum of all morphological items ($F(2,19)=8.217$, $p< .003$) specifically, preposition and conjunctions ($F(2,19)= 5.818$, $p=.01$), plural endings ($F(2,19)= 20.473$, $p = 000$) and the variable level of

education. These results suggest that there is a significant difference between the level of education groups regarding the usage of plural endings, prepositions and conjunctions. The significance level, however, is low for the computation of the variable level of education, and the sum of definite articles ($F(2,19) = 6.948, p = .6$) and indefinite and negative articles ($F(2,19) = 4.410, p = .06$).

For the first three Immigration groups the sum of the definite articles was consistently the lowest, followed by the prepositions-conjunctions sum and the plural endings sum. The last Immigration Subgroup had low means for the sum of the preposition-conjunctions, plural endings and indefinite articles. The ANOVA test of comparing the means indicated significant differences between the immigration groups in reference to the preposition-conjunction category ($F(3,18) = 21.018, p < .001$), the plural endings category ($F(3,18) = 4.781, p = .03$), the definite articles category ($F(3,18) = 7.412, p = .002$) and the indefinite and negative article category ($F(3,18) = 9.374, p = .001$). Conjunctions and prepositions have been omitted or replaced with ones which do not fit semantically in the given context.

*Nicht **dass** er es mag,*

___ weil er die Sticheleien seiner Frau Mona nicht länger erträgt (EF11).

- a. *Nicht so wie er es mag,*
***aber** weil er die Sticheleien seiner Frau Mona nicht länger erträgt (HF18).*
- b. Expected form: Nicht **weil** er es mag,
sondern weil er die Sticheleien seiner Frau Mona nicht länger erträgt.
(Original text).
- c. English: Not because he likes it, but because he could no longer stand his wife's teasing.

The last independent variable tested indicated higher deviations and lower means in the plural endings and definite articles sum in the group with the less

frequent amount of L1 contact. The ANOVA test performed revealed significant differences between the groups only regarding the sum of all provided indefinite and negative articles by amount of L1 contact ($F(2,19)=3,888, p=.03$). No significant differences were recorded in the other morphological categories. Thus, less amount of L1 contact can determine less accuracy in supplying the correct negative and indefinite articles.

5.2.2. Picture Description and Interview Study Group: Morphological Findings

The picture description and interview tasks, as stated before, gave the informants the flexibility to monitor their speech and practice avoidance, if they were not comfortable with some structures. The avoidance strategies however were not measured per se, but the transcribed data indicated, that some informants rephrased very often, had false starts or took longer pauses to find the contextual appropriate words or phrases. Some of these strategies were accounted for, not only on the lexical level, but also on the morphological level, as the results will indicate in the following.

In this section, it could not be anticipated what amount or type of morphological items would be gathered. I anticipated aspects of language attrition consistent with the same morphological categories analyzed in the cloze test. The same morphological categories, as for the cloze test, were identified in the transcriptions from the picture description and interview data. However, the same numerical values as for the cloze test from 0 to 3 could not be assigned to the morphological items in this section because of the diversity of contexts in comparison

to the rather fixed nature of the cloze test. Since all the items from the picture description and interviews were either incorrectly supplied for their individual contexts or missing, all incorrect items were given the numeric value of 1 and all missing values were given the numeric value of 0.

E.g.*ok das ist deutsches Fussball* (HF18). Incorrect adjectival ending.

.....*ok das ist deutscher Fussball*. Correct adjectival ending.

.... ok this is German football.

While the lexical errors in these two tasks showed more variation, (see 5.1.2) the morphological findings were not as numerous as anticipated. The case markings were not explicitly tested in the cloze test. After the transcription was done, however, and the following careful reading of the data, instances of incorrect case markings throughout the picture description and interview data were observed. For this reason the new morphological category of case marking was introduced for analysis in this section.

The German case system is much more complex than the English because the marking depends on gender and number of the denoted noun and not on prepositions as it is marked in English. Previous studies (De Bot & Clyne, 1994; Jordens & de Bot, 1994) indicated that in case of language attrition, case markings in German were affected. Since the supplying of articles is directly related to case marking, errors in this category would be an indication of possible linguistic erosion. The tendency to simplify grammar was noticed in the transcription by avoiding highly marked features, such as the genitive in German, which was in many cases replaced by the colloquial form: von (prep.) + dative:

- a....das Haus **von meinem** Onkel ist.... (HF18).
- b. (correctly in Genitive) ...das Haus **meines Onkels** ist....
- c. (Engl.)...*my uncles' house is...*

While some forms, as the example given above, are specific for the spoken language other forms of case and gender markings were inaccurate. This present analysis will show that, even if there are instances of incorrect case markings, the results are not as severe as encountered in previous research.

The Effect of Age on Morphological Errors in the Picture Description Task

In the present study, case proved to be a fairly stable feature, despite some instances of incorrectly marked cases. As seen in Table 35, there were six instances of incorrectly marked cases and 18 incorrectly provided definite articles for all informants in the picture description task. One informant from Age Subgroup 4 with more than 30 years since immigration had seven incorrect definite articles.

Table 35. All Age Groups and Individual Morphological Items from the Picture Description

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
sum all morphol		0	9	32	1.45	1.993
sum prep conj	2	1	1	2	1.00	.000
Sum plend	3	1	1	3	1.00	.000
Sum def Art	8	1	7	18	2.25	2.053
Sum indef neg art	3	1	1	3	1.00	.000
Case	6	1	1	6	1.00	.000

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum indef. neg. art = sum of all indefinite and negative articles

The sum of all incorrectly supplied items was 32 and the standard deviation was low at 1.9, which meant that the data did not vary a lot. Only one informant had a maximum of nine incorrectly supplied items in these two tasks. As seen in table 35 the definite article category had the most errors, but overall, for all informants the morphological errors in this open-ended task are not many. Table 35 presents the descriptive analysis for the picture description task is next.

The Effects of Age on Morphological Errors from the Interview

The following two tables show an even smaller degree of variation in the data and also lower sums of incorrectly supplied morphological items in the interview data as compared to the previous task data. The higher scores of incorrectly supplied items were reported in the case marking, with seven incorrectly supplied items, and definite article usage with six incorrectly used items, as seen in Table 36. The sum of all incorrectly supplied morphological items was lower in the interview task (n=21), where monitoring and avoidance were presumed to play a greater role, than in the picture description. Only one informant had more than five incorrectly provided morphological items.

From the supplied data in Table 36, we can conclude that the occurrence of mistakes show a high dependency on the type of testing task. A more controlled testing task will produce a higher number of errors as seen in the results from the cloze test, while a less controlled task, like an interview, will give the informants more flexibility in answering and at the same time increased monitoring of language usage and more freedom in exercising avoidance strategies.

Table 36. All Age Groups and Individual Morphological Items from the Interview

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
sum all morphol		0	5	21	.95	1.214
sum prep conj	2	1	1	2	1.00	.000
Sum plend	3	1	1	3	1.00	.000
Sum def art	5	1	2	6	1.20	.447
Sum indef neg art	3	1	1	3	1.00	.000
Case	5	1	2	7	1.40	.548

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum indef. neg. art = sum of all indefinite and negative articles

These data confirm my hypothesis that open-ended tasks would create opportunities for avoidance behaviors, which are themselves a reflection of the awareness of the subjects that they are uncertain of a structure or word they intend to use. This uncertainty, which arises from the subjects' monitoring of their speech, may in itself indicate attrition. Unfortunately, there is no reliable instrument to capture or verify these avoidance strategies, and for this reason, research in L1 attrition is still seeking a reliable means to account for these occurrences, which can still mask the actual performance of the L1 attriters.

The Effect of Time since Immigration on Morphological Errors in the Picture Description and Interview

The descriptive statistics of dependent variables, morphological errors in the picture description by the independent variable time since immigration show different results than expected. All the morphological errors from the transcriptions of the two tasks were grouped by the independent variable time since immigration as seen in

Tables 37 and 38. The two Immigration Subgroups with less than 30 years since immigration had a higher number of morphological errors, especially in the definite article category. In the last Immigration Subgroup (more than 40 years since immigration) only one informant had seven incorrectly used definite articles.

The data from the interview, based on the above extralinguistic variable contains minimal morphological errors, so the output of the descriptive statistics will not be presented or discussed.

The Effect of Level of Education and Amount of Contact on Morphological Errors in the Picture Description and Interview

The number of morphological errors from the two tasks and from all informants were collected and analyzed similarly as above. These dependent variables together with the independent variables level of education and amount of L1 Contact were introduced in the SPSS statistical program and an ANOVA test was performed. The results indicated that level of education and amount of L1 contact did not have any significant effects at the level $p < .05$ on the number of morphological errors. There were two informants with lower education level (secondary school) and less frequent L1 contact that had some errors in supplying the correct articles and prepositions, but the data were too limited to support further discussion.

Summary of the Morphological Findings from the Picture Description and the Interview Task

A partial conclusion, based on the above data, is that more morphological errors were revealed in the cloze test task, which was the more restrictive task with

Table 37. Immigration Subgroup 1 (4-10 years) and All Morphological Items

	N	Minimum	Maximum	Mean	Std. Deviation
Time imm	7	4	9	6.00	2.000
sum all morphol	7	0	3	.71	1.254
sum prep conj	0				
Sum plend	0				
Sum def Art	2	2	3	2.50	.707
Sum indef neg art	0				
Valid N (listwise)	0				

Time imm= Time since Immigration

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum indef. neg. art = sum of all indefinite and negative articles

Table 38. Immigration Subgroup 2 (20-30 years) and All Morphological Items

	N	Minimum	Maximum	Mean	Std. Deviation
Time imm	7	10	26	15.00	5.598
sum all morphol	7	0	3	1.14	1.069
sum prep conj	1	1	1	1.00	.
Sum plend	1	1	1	1.00	.
Sum Art	3	1	2	1.33	.577
Sum indef neg art	0				
Valid N (listwise)	0				

Time imm= Time since Immigration

Sum all morphol.= sum of all morphological items

Sum prep conj = sum of all prepositions and conjunctions

Sum plend= sum of all plural endings

Sum def art = sum of all definite articles

Sum indef. neg. art = sum of all indefinite and negative articles

the relatively fixed content. In more naturalistic contexts, like the picture description and the interview, there are fewer errors, possibly because of less contextual restrictions and more monitoring of the language used.

There were six instances of incorrectly marked cases and 18 incorrectly provided definite articles for all informants in the picture description task. One informant from Age Subgroup 4 with more than 30 years since immigration had seven incorrect definite articles. The sum of all incorrectly supplied morphological items was lower in the interview task (n=21), where monitoring and avoidance were presumed to play a greater role, than in the picture description. Only one informant had more than five morphological items incorrectly provided.

The findings based on the variables time since immigration, level of education and amount of L1 contact did not reveal any important errors in any morphological category.

5.3 Lexical and Morphological Findings in the Control Group

For the Control Group, I applied a classification similar to that for the Study Group and I used age and level of education as the independent variables for the analyses, while the dependent variables are the lexical and morphological items supplied by the informants in the different tasks. Below is the division according to age.

Age Control Group 1: 25-40 years old includes 7 informants

Age Control Group 2: 40-68 years old includes 5 informants

Also the variable level of education was considered, to see if there were any effects depending on these variables, like errors in supplying of the different morphological and lexical items. For the level of education variable, the sub classification is in level of education 1 (defined as education beyond secondary school), with scores between 40-50 and level of education 2 (defined as education including secondary school), with scores between 10-30, where 10 is the minimum and 50 is the maximum. The quantitative findings from the Control Group were expected to be reduced in number so they will be discussed only in the next two subchapters 5.3.1 and 5.3.2.

The Control Group was given the same cloze test and picture description task, but for the interview the questions were modified to reflect the German settings. There were only four interview questions, the first two about recalling a childhood memory and describing the daily routine remained unchanged. The third question referred to things liked vs. disliked in Germany. There was no question about things missed about Germany and also no question about things liked or disliked in the USA. The last question for the Control Group was the same as for the Study Group. Similarly to the Study Group, the main purpose of the picture description task and interview questions was to gather language data and was not intended to be analyzed from a cultural or social perspective, but mainly from a linguistic perspective.

5.3.1. Cloze Test: Control Group Findings

The cloze test posed challenges to the German informants similar to those experienced by the U.S. informants. Even if there were instructions on how to

complete the task, they asked for additional explanations, just as the U.S. informants did and seemed to have similar difficulties with certain items. After they started completing the first blanks, the task became clear for the German informants.

Both the morphological and the lexical items were grouped exactly as for the Study group (see 5.1 and 5.2). Out of the 43 blanks on the test, 15 were lexical items and 28 were morphological items. The maximum possible score for the lexical items, given an informant would supply all missing items exactly as in the original text or with accepted synonyms without affecting the context, was 75. The range of accepted values was between 60 and 75. Every score below 60 meant that the informant had at least one missing or incorrect value. The maximum possible score for correctly or accepted morphological items was 84, and the range of accepted values was between 56 and 84. Every score below 56 meant that the informant had at least one missing or incorrect value.

The following statistical results show that there is variation among the usage of the lexical items by the Control Group and by the Study Group in reference to age. The similarities are greater in the Age Subgroup 45+, where the sums for correctly provided lexical items from both the Control Group and the Study Group were lower than in the younger age groups. At the same time, the Control Group performed better than the Study group regarding all lexical items analyzed (verbs, nouns, adjectives and adverbs). With respect to level of education and the performance on the cloze test in providing lexical items, the results are not significant at the significance level $p < .05$. An ANOVA test of comparing the means of the lexical and morphological findings at the group level was performed in order to see if the Study Group and the

Table 39. Age and All Lexical and Morphological Items from the Control Group

	N	Minimum	Maximum	Mean	Std. Deviation
Age	12	27	68	40.00	13.974
Sumall lex	12	29	64	45.67	12.146
Sumall morph	12	56	83	74.67	7.303
Valid N (listwise)	12				

Sumall lex= sum of all lexical items

Sumall morph= sum of all morphological items

Control Group had significant different results. As it will be mentioned later in the summary of the results, the tests revealed that there are no significant differences at the $p < .05$ level. The detailed analyses below show and discuss these findings.

The Effect of Age on Lexical and Morphological Errors

The first variable to be analyzed is age as it affects the supplying of lexical and morphological missing items from the cloze test. Table 39 presents the minimums, maximums, means and standard deviation for all age groups and all lexical and morphological sums. The high value of the standard deviation for the lexical and morphological sums. The high value of the standard deviation for the lexical items denotes a large variation in the data from a minimum of 29 to a maximum of 64. However, the minimum is higher, with 2 points, than the minimum for the Study Group but the mean for the sum of lexical items is lower than the mean from the Study Group, 45.67 vs. 49.36.

The Effect of Age by Subgroups on Lexical and Morphological Errors

The next tables present the lexical data from the two age subgroups, in which the informants from the Control Group were divided. The first Age Group (ages 23-40), with seven informants, had similar means of the sum of the different lexical

items as the corresponding Age Subgroup from the Study Group. Higher means were expected, since the Control Group was composed of informants who primarily used German as their language of communication, but occasionally used other languages. Thus in the following, the Control Group will be called monolinguals as opposed to the Study Group of bilinguals, even if, in the parameters of the present study, they are not “pure monolinguals.” The standard deviation for the sum of all lexical items was high at 12.79, which indicated a lot of variation in the answers. Also in the noun-verbs category the results indicated variation as given by the high standard deviation at 7.4. Surprisingly, Age Subgroup 1 (ages 20-40) from the Study Group had higher scores in all categories than this age subgroup from the Control Group. Further, Table 40 presents these results.

In order to compare the second Age Subgroup from the Control Group with the one in the Study group, a different Age Subgroup (ages 45-68), with 12 informants from the Study Group, was created. In the Study Group, this age range was represented by three Age Subgroups while in the Control Group this age range was represented by only one Age Subgroup, as can be seen in Table 41. The results indicate that the means for all lexical categories were lower in the Study Group at 11.33 for the adjective adverb category and at 30.42 for the noun-verbs category (see Table 41). The standard deviation for this category was high at 11.2, which indicated great variation in answers below and above the mean. These findings suggest that there is considerable lexical variation in the Age Group 45 + in both the Study and the Control Group. The Control Group had a standard variation of 16.4 for the sum of all lexical items and the Study Group had 11.1 for the same category. The means for all

Table 40. Age Control Group 1 (25-40) and All Lexical Items

	N	Minimum	Maximum	Maximum Possible	Mean	Std. Deviation
Age	7	27	35		30.00	3.215
Adj Adv	7	3	19	20	12.29	5.648
Noun vbs	7	25	44	50	33.57	7.413
Lex Part	7	1	5	6	2.71	2.138
Sumall lex	7	31	66	75	48.57	12.791
Valid N (listwise)	7					

Adj Adv= sum of all adjectives and adverbs

Noun vbs= sum of all nouns and verbs

Lex part= lexical particle

Sumall lex= sum of all lexical items

Table 41. Age Control Group 2 (45-68) and All Lexical Items and Factor Age

	N	Minimum	Maximum	Maximum possible	Mean	Std. Deviation
Age	5	43	68		54.00	10.075
Sum adj adv	5	8	22	20	13.80	6.017
Sum noun-verbs	5	17	45	50	31.80	11.278
Sum all lex	5	27	68	75	47.40	16.456
Valid N (listwise)	5					

Sum adj adv= sum of all adjectives and adverbs

Sum noun vbs= sum of all nouns and verbs

Sum all lex= sum of all lexical items

Table 42. Different Age Subgroup (45-68) for the Study Group and Sum of Individual Lexical Items and Factor Age

	N	Minimum	Maximum	Maximum possible	Mean	Std. Deviation
Age	12	47	67		57.75	6.369
sum adj adv	12	7	19	20	11.33	3.055
sum noun-verbs	12	16	41	50	30.42	8.670
sum all lex	12	27	62	75	44.50	11.123
Valid N (listwise)	12					

Sum adj adv= sum of all adjectives and adverbs

Sum noun-vbs= sum of all nouns and verbs

Sum all lex= sum of all lexical items

individual lexical categories were lower in the Study Group for this age group (ages 45 +) than in the Control Group, which indicate that language was affected. See tables 41 and 42 for more detailed findings.

The Effect of Level of Education on Lexical Items Errors

In the following the descriptive statistics for the relationship between the two level of education groups and the lexical findings from the Control Group are presented. Comparing the two levels of education and the provided lexical items in the cloze test, there was more variation in Level of Education group 1 (beyond secondary school) on the sum of all lexical items, as indicated by the very high standard deviation 17.06 compared to standard deviation of 11.36 in the Level of Education group 2 (secondary school included). See Tables 43 and 44. These results show that the informants had more sums below or above the mean. High variation was also in the verb-noun category in the first Level of Education group at 10.87. All means from the first Level of Education group were still higher than that of the second Level of Education group.

Table 43. Education Level 1 (beyond secondary school) and All Lexical Items

	N	Minimum	Maximum	Mean	Std. Deviation
Sum Adj Adv	5	8	22	15.20	6.301
Sum Noun vbs	5	17	45	34.60	10.877
Lex Part	5	1	5	2.60	2.191
Sum all lex	5	27	68	52.40	17.068
Educ Level	5	40	50	48.00	4.472
Valid N (listwise)	5				

Sum Adj Adv= sum of all adjectives and adverbs

Sum Noun vbs= sum of all nouns and verbs

Sum Lex part= lexical particle

Sum all lex= sum of all lexical items

Educ Level= Level of Education

Table 44. Education Level 2 (secondary school included) and All Lexical Items

	N	Minimum	Maximum	Mean	Std. Deviation
Sum Adj Adv	7	3	18	11.29	4.821
Sum Noun vbs	7	25	44	31.57	7.613
Lex Part	7	1	5	2.14	1.952
Sum all lex	7	31	60	45.00	11.136
Educ Level	7	10	30	22.86	7.559
Valid N (listwise)	7				

Sum Adj Adv= sum of all adjectives and adverbs

Sum Noun vbs= sum of all nouns and verbs

Sum Lex part= lexical particle

Sum all lex= sum of all lexical items

Educ Level= Level of Education

After running an ANOVA test on the data, however, no significant difference between the means of the individual lexical categories, e.g. Level of Education 1 and adjective-adverbs ($F(1,3) = 2.046, p = .24$) or Level of Education 2 and adjective-adverbs ($F(2,4) = .167, p = .85$), were found.

The descriptive statistical analysis shows some differences among the groups, but the ANOVA and Post Hoc Multiple Comparisons Test within and between the groups did not present any significant differences at the lexical level. This means that the variable level of education for the Control Group does not have a significant effect at the lexical level.

The Effect of Age on Morphological Errors

In this section the results from the descriptive statistical analysis of the morphological findings from the Control Group are presented. Again age and level of education were the two independent variables considered in the analysis. Table 45 below illustrates the descriptive statistics for the first Age Group (ages 25 to 40). In this group, there was no significant variation in the sums of the morphological items. Only the mean of the preposition-conjunction category was lower at 9.29. This Age Group compared with the one in the Study Group showed no major differences; instead it indicated that the Study Group had slightly higher scores for all the morphological categories. See Appendix C for complete results.

In the second Age Group there was some variation in the sum of all morphological items. The standard deviation was 10.56, which indicates variation, with answers low below the mean and high above the mean. The minimums for the

plural endings sum, the preposition-conjunction sum and indefinite-negative article sum were lower than those in the previous Age Group. In order to compare this group to the Study group a different Age Subgroup (ages 45-68) with 12 informants from the Study Group was created to better approximate the age range of the two groups. The findings presented in tables 46 and 47 below illustrate that the Control Group had higher scores than the Study Group in four of the morphological categories and equal scores in the pronoun category.

The standard deviations for the Control Group for all morphological items is lower than for the Study Group, which can be interpreted that the German informants had more homogenous answers, with scores closer to the mean. The higher variation of the answers was in the Study Group for the sum of the preposition and conjunctions, plural endings and definite articles. These results are similar to the ones

Table 45. Age Control Group 1 (25- 40) and All Morphological Items

	N	Minimum	Maximum	Mean	Std. Deviation
Age	7	27	35	30.00	3.215
Sum indef neg art	7	8	12	10.71	1.496
Sum prep conj	7	6	12	9.29	2.563
Sum plend	7	20	24	22.86	1.574
Sum defart	7	23	30	28.43	3.409
Sum pron	7	6	6	6.00	.000
Sum all morph	7	70	82	75.29	4.821
Valid N (listwise)	7				

Sum indef neg art= sum of indefinite and negative articles

Sum prep conj= sum of prepositions and conjunctions

Sum plend= sum of the plural endings

Sum pron= sum of pronouns

Sum all morph= sum of all morphological items

Table 46. Age Control Group 2 (ages 45-68) and Sum of Individual Morphological Items

	N	Minimum	Maximum	Mean	Std. Deviation
Age	5	43	68	54.00	10.075
Sum Indefneg art	5	8	12	11.00	1.732
Sum prep conj	5	4	11	8.80	2.775
Sum plend	5	14	24	20.40	4.336
Sum defart	5	24	30	27.60	2.302
Sum Pron	5	6	6	6.00	.000
Sum all morph	5	56	83	73.80	10.569
Valid N (listwise)	5				

Sum indef neg art= sum of indefinite and negative articles

Sum prep conj= sum of prepositions and conjunctions

Sum plend= sum of the plural endings

Sum pron= sum of pronouns

Sum all morph= sum of all morphological items

Table 47. Different Age Subgroup (ages 45-68) for the Study Group and Sum of Individual Morphological Items

	N	Minimum	Maximum	Mean	Std. Deviation
Age	12	47	67	57.75	6.369
Sum indef neg art	12	8	12	10.17	1.267
Sum prep conj	12	3	12	8.00	3.191
Sum PLEnd	12	13	24	20.00	4.045
Sum Art	12	20	30	25.42	4.078
Sum Pron	12	6	6	6.00	.000
Sum all morphol	12	53	83	70.75	10.644
Valid N (listwise)	12				

Sum indef neg art= sum of indefinite and negative articles

Sum prep conj= sum of prepositions and conjunctions

Sum plend= sum of the plural endings

Sum pron= sum of pronouns

Sum all morph= sum of all morphological items

for the lexical items in this Age Subgroup. These findings confirm that age can affect language performance and lead to language attrition.

The Effect of Level of Education on Morphological Errors

Computing the same morphological data from the cloze test with the variable level of education revealed surprising results in the informants group with a higher level of education. This group produced a very large variation in the sum of all morphological items, at 11.32, and a lower minimum sum in the preposition conjunction category, plural endings category and a low minimum of all morphological items, at 56, which was also the lowest limit for accepted sums. These sums were lower than those in the Level of Education 2 Group (Secondary School included), as seen from Tables 48 and 49.

The Education Level 2 Group had almost homogenous scores, close to the mean, with low standard deviations, which meant that this was a stable group. The Study Group performed differently on this statistical computation. The lower Level of Education Group from the Study Group had significant lower sums in the preposition-conjunction and plural endings category as described in 5.2.1.

Summary of Lexical and Morphological Findings from the Cloze Test in the Control Group

The variable age did affect the lexical domain, but the limited number of informants in the Control Group does not permit generalization. However, in comparing the Study Group to the Control Group, the similarities in the findings

Table 48. Education Level 1(beyond Secondary School) and Morphological Items

	N	Minimum	Maximum	Mean	Std. Deviation
Educ Level	5	40	50	48.00	4.472
Sum indef neg art	5	8	12	11.00	1.732
Sum prep conj	5	4	12	9.00	3.391
Sum plend	5	14	24	21.60	4.336
Sum defart	5	23	30	26.80	3.114
Sum Pron	5	6	6	6.00	.000
Sum all morph	5	56	83	74.40	11.327
Valid N (listwise)	5				

Sum indef neg art= sum of indefinite and negative articles

Sum prep conj= sum of prepositions and conjunctions

Sum plend= sum of the plural endings

Sum pron= sum of pronouns

Sum all morph= sum of all morphological items

Table 49. Education Level 2 (Secondary School included) and Morphological Items

	N	Minimum	Maximum	Mean	Std. Deviation
Educ Level	7	10	30	22.86	7.559
Sum indef neg art	7	8	12	10.71	1.496
Sum prep conj	7	6	12	9.14	2.035
Sum plend	7	18	24	22.00	2.309
Sum defart	7	22	30	27.00	2.708
Sum Pron	7	6	6	6.00	.000
Sum all morph	7	70	79	74.86	3.485
Valid N (listwise)	7				

Sum indef neg art= sum of indefinite and negative articles

Sum prep conj= sum of prepositions and conjunctions

Sum plend= sum of the plural endings

Sum pron= sum of pronouns

Sum all morph= sum of all morphological items

depending on age indicate that age is an important independent variable to be considered in studies on language attrition. The findings from the present study have demonstrated what type of lexical errors appear in older age. A caution in interpreting these results needs to be taken, because similar errors in L1 are visible, as studies suggest (de Bot & Lintsen, 1989; Goral, 2004) both in older immigrants but also in healthy aging elderly, who do not speak a different language. These conclusions are based on the present data only and further research, possibly on a larger scale, is needed to make conclusive generalizations. The role of the factor level of education on lexical performance indicated no difference between the Study and the Control Group.

From the statistical analyses performed on the morphological level, some differences between the Study and the Control Group were visible in the Age Subgroup 2 with informants over 40 years old. The sums of all morphological items investigated in the cloze test, prepositions and conjunctions, definite, indefinite and negative articles, and plural endings were lower in the Study Subgroup with ages 40+. Both Age Subgroups had no problems supplying the correct pronouns. The first Age Subgroup from the Control Group (ages 25-43) was stable. The statistical results obtained after computing the level of education variable and the morphological items indicates that the means of all categories in the two education groups in the Control Group were similar. There were differences in the means between the lower Level of Education Group from the Study Group and the same one from the Control Group. The group with the lower level of education in the Control Group performed better on this task, having higher means in all morphological categories, as seen in Table 49.

However, the ANOVA test of significance performed on the lexical and morphological findings from both the Study and the Control Group did not reveal significant differences. The closest to the significance level $p < .05$ was the sum of definite articles at ($F(1,32)= 4,049$, $p = .053$), all other individual morphological and lexical categories had a difference of $p < .05$. Not even the sum of all morphological items ($F(1,32)= .018$, $p= .89$) and the sum of all lexical items ($F(1, 32)=.094$, $p=.761$) were significant different between the Study and the Control Group.

5.3.2 Picture Description and Interview: Control Group

In order to mirror the analysis procedure used for the Study Group, the transcripts from the picture description and interview were computed into QDA Miner v. 2.0 and analyzed for frequency, standard deviation, maximum and minimum in WordStat v. 5.1. The findings from the analysis will be presented in the following.

As stated earlier in this chapter, the picture description task and the interview were somewhat open-ended tasks. The informants in the Control Group, same as those in the Study Group, had the flexibility to practice avoidance of difficult, uncertain phrases or items in their narration, reformulate sentences or shift the topic to something of their interest. These were features of speech, which could not be controlled or measured by the researcher. This is why, similarly to the Study Group data, the items were varied, problematic to analyze and harder to classify. Problematic lexical items, which were identified and analyzed, were new word formations or unusual word combinations and German words and idiomatic expressions substituted by English ones.

Following the same procedure as for the Study Group, problematic lexical items from the Control Group were isolated from the transcriptions and introduced into Excel spreadsheets. In order to identify, compare and contrast them, two spreadsheets were created, one for the picture description and one for the interview.

Out of the total number of 19,413 words produced in all 18 picture descriptions and interviews, 3,236 were unique word tokens, meaning individual contiguous letters which form a word. Sixty were unique English words and 20 were used more than one time. Examples of English words and phrases used by the German informants were: *cubicles, football players, highway, call centers, counter, tell me, corporate check* and *truck*. Some other English words used by the informants were eliminated from the analysis because they are considered foreign loan words accepted already in Standard German: *fast food, fitness, computer* or *cool*. Out of the 60 unique English words, the majority were lexical items (n=53). These English borrowings will be discussed in more detail in Chapter 6. Only seven were morphological or function words: *about, and, for, main, who, me* and *up*.

Only three German problematic or incorrectly used morphological items were identified in the picture description, one instance for each of the following categories: plural ending, definite article and case. There were no incorrectly or problematically used morphological items in the interview data.

Looking at the percentages from the above mentioned numeric values, the unique English words represent only 1.8 % of the total of unique words, which is an indication that in everyday communication very little English was being employed by German native speakers from the Control Group. The following chapter will analyze,

compare and contrast in more detail the contextual settings where English borrowings, transfers or problematic German phrases and words were used, both in the data from the Study Group and the Control Group.

6. QUALITATIVE RESULTS

In this chapter I will discuss the qualitative findings from the picture description and interview data. The discussion and analysis of the qualitative data were designed to follow the quantitative analysis in order to better uncover unexpected language patterns and changes or occurrences in L1 which were not sufficiently elicited by the statistical analysis. The results of the holistic analysis as well of the lexical density analysis will be presented in the following subchapters. Subchapter 6.1 presents lexical changes and English borrowings in the Study Group in the different domains: home, dining, traffic, leisure, shopping and work. Also the data from the interview are analyzed and discussed in this subchapter. In subchapter 6.2 the data from the Control Group from the same domains are presented. The last subchapter summarizes the findings and compares the performances of the two groups.

6.1 Study Group

As described in the Methodology chapter, the verbal picture description was the third task after the questionnaire and the cloze test. The same order of administering the tasks was kept for all informants. This order put the less controlled data collection instruments in the second half of the meeting in order to give the informants time to relax and familiarize themselves with the researcher and the tasks. The use of this technique was intended to make the informants feel less intimidated and more open to express themselves more freely. Nine pairs of pictures, a total of 18,

were taken from Internet sites and are not subject to any copyright. All the faces of people, brand or store names were blurred to protect privacy and not give involuntary publicity to any product. Based on the statements they made after completing the task, most of the informants enjoyed this task the best; some even found it humorous and had fun doing it. No real names were used for the individual descriptions, but code names which indicated the initial letter of the first name of the informant, the letters M or F for male or female and the number corresponding to the order in which they were interviewed. For example FM01, was the first male informant interviewed, with a first name starting with F, and MF07 was a female informant, whose name starts with M and was the seventh informant interviewed.

The pictures represented different themes which will be clustered in domains for a more cohesive presentation of the data. Some domains contain more English content, such as word borrowings, loan translations also called calques, as well as phrases, idiomatic expressions or collocations. In some cases, the informants might have purposely used English borrowings as a better fit for the setting or because a perfect German equivalent was not available. In this case, the borrowings were mentioned, but a comment was added that they can not be seen necessarily as a sign of language attrition. The clustered domains are the following: home and dining, leisure and sports, traffic and work and shopping situation. To assess the lexical richness of the picture descriptions, a lexical density test was performed on the data from both groups and compared between the groups. To perform this test, only words with five letters or more were considered for analyses, in order to eliminate most of the function words. It was assumed that most of the content word will be included in

the analysis, but also some function words, while some content words with less than five letters were not included by this word restriction. The details of this procedures were described in Chapter 3-Methodology.

6.1.1 Picture Description

Housing and Dining

The six pictures in this domain represent houses, restaurants and bars, one from each context: American and German. The description of these pictures exhibited less English interference than the other domains, but some interesting loan translations, also called calques, were observed.

All of the informants correctly identified the houses and the context they came from, meaning U.S. or German culture. While describing the German house, most of the informants felt proud of the sturdy, modern and environmentally friendly built house and made jokes about the wood frame, energy-consuming American house, which appeared to them to be in poorer condition. One informant started with the phrase: *Dieses Bild zeigt deutlich, warum ich deutsche Häuser lieber habe als amerikanische. Amerikanische Häuser haben manchmal ... erwecken manchmal den Eindruck einer Baracke, Holzhütten, deutsche Häuser sind viel stabiler gebaut*³¹(IM05). Another informant had a hard time finding the right words to describe the house, but was positive that it is German: *A ist bestimmt deutsch ...der roof...[laughs] ...swigle...schw.. [laughs] ..schigel....[laughs]...da und wie es gebaut*

³¹ This picture shows clearly why do I like German houses more than American ones. American houses have sometimes.....they give the impression of a barrack, cottages, German houses are much more stable built. (IM05)

*ist und es hat stucco da drin...*³² (CF15).

Among the words which were difficult to retrieve was the German term for *roof*. Three informants were not able to correctly retrieve it, the same for the terms *siding*, *porch* and *solar panels*. In these cases the informants, after trying to recall the German words for a few seconds, just switched to the English word. But it is important to remark the high number of retained special vocabulary items:

Seitenverkleidung, Fassadenverkleidung, Solarzellen, Schieferdach, Ziegel, Ziegelplatten, Dachpappe, Verputz or *Backsteine*³³.

The two pictures depicting a dining situation were the interior of two restaurants. The German one was a cellar with stone arches, stone walls and long wooden tables and chairs. The American restaurant had a stone fireplace in the center of the room with round tables seating four to six persons. The stone fireplace in the middle of the room and the artificial decorations were the most frequently mentioned items informants identified the American context. The German picture was described as “a real old restaurant” or “cellar” with “*blau weiss karierte Tischdecken*,”³⁴ which seemed typically Bavarian from the choice of color. Three of the informants used the English word *fireplace*, fourteen used the German word *Kamin* and one used an English calque from the words fire and place, which semantically does not fit to the picture: *Feuerplatz*.³⁵ This term, however, could have been also a regional variant.

None of the German informants from the Control Group used this term. One

³² ...A is certainly German ...the..roof..[laughs].. swigle..schw...[laughs]...schigel...[laughs].. here and the way it is built it has stucco here inside....(CF15)

³³ lining, siding, solar cells, slated roof, bricks, brick plates, roofing paper, brick tiles, plaster or bricks.

³⁴ “blue and white checkered tablecloth“

³⁵ In German context used to describe a medieval fire place, also a possible regional variant.

of the informants used three words to name the fireplace: oven, fireplace and *Kamin*.³⁶ The three informants who used *fireplace* have more than 35 years since immigration and are in Age Group 4 (ages 60+).

Other English words used to describe the pictures were *screen doors* and *gas log*. Another instance of calque from English was observed: *Platzsetzer*, which could stand for the English place mats. However the German words describing the German restaurant are more diverse, precise and show a still very rich array of vocabulary: *Bierkeller, Brauhaus, Kellergewölbe, Steingewölbe, Rundbögen, Bierstube* or *Weinstube*.³⁷

The two pictures which depicted a bar scene, one in Germany and one in USA, were relatively easy to identify. Only three informants had their doubts, stating that the scenes could be in either of the countries. However the determinant items were the number of TV screens in the American bar and the sizes of the bars, the German one being definitely smaller. Two correctly identified the American picture as being a sports bar and the German one was called *Kneipe*³⁸ by most of the informants and some called it bar.

This topic did not trigger many English words with the exception of the word *sportsbar*, which was mentioned five times. This term, however, does not have a perfect German equivalent, and this could be a reason why some informants preferred to describe the American bar as a *sportsbar*. This topic triggered a very descriptive and rich German vocabulary to describe the settings: *Kupferlampe, Bierfass,*

³⁶ Fire place

³⁷ Beer cellar, brewery, basement vault, stone vault, round arch, ale house and wine house.

³⁸ pub

Bartheke, Barhocker or *Gemütlichkeit*³⁹.

The lexical density test performed for this domain (housing, dining and bar) revealed a total of 5,791 words, 2,167 content words of 5 characters or more, 914 unique lexical words and a lexical density of 15.7 %, expressed by the formula:

$$\text{Lexical Density} = (\text{Number of different words} / \text{Total number of words}) \times 100$$

(Stubbs, 1996). This is not as high a density as expected from a spoken text, but it is the highest among all the domains described in the picture description. Spoken texts tend to have lower density when feedback is expected, as in a conversation and higher density, when no feedback is expected, as in a narration (Stubbs, 1996). This density is still lower than the one from the Control Group from the same domain, as seen further in 6.2.1. A less dense text however is characterized by higher communicative power and easy listener or reader comprehensibility (Halliday 1989; 1995).

Leisure and sports

Under this domain the pictures shown to the informants were of two parks, one in U.S. and one in Germany, and pictures of football and soccer stadiums were shown respectively. The pictures depicted game situations where both the stadiums with fans and the players on the field were visible. The informants did not have any trouble identifying the sports and correctly naming them; however some chose to use the English word soccer instead of *Fussball*. On this topic, the informants did not elaborate much, because some admitted not having any knowledge of the games, but there were still many English words used: *....also die spielen American football....und*

³⁹ Copper lamp, beer keg, bar counter, bar stool or coziness.

deutsches soccer, englisches soccer....englisches Fussball..hmm.....und cheerleaders.. wobei heisst das...schon in Deutschland zu finden sind⁴⁰.. (FM01). The English words used were: yards, yard lines, cheerleaders, live, soccer game, teams, kick-off, super bowl, pounds and trick question. While some of these words have a German correspondent, some do not and some are preferred to be used in their English variant in Germany as well: Super bowl, teams, cheerleaders and yards.

The pair of pictures depicting two types of parks was intended to collect lexical items relating to nature, but also to provoke a cultural discussion. The German picture showed a small park with Pampas grass and narrow paths, more like a garden surrounded by apartment buildings and having a sign in German planted in the middle: *please do not step on the meadow*. The American picture showed a typical lawn and trees park, with a parking lot adjacent to it and concrete paving leading to the park entrance.

Most praised the American park as being child and dog friendly and made to be enjoyed by people: *ich habe es eigentlich viel liebe, wenn man auf den Rasen laufen kann⁴¹...*(IM05). Some however defended the German sign as being a way to preserve the park: *...natürlich, das ist sicher ein Problem in ganz Europa, nicht dass man überall die Menschen hat⁴²...*(GF12). In this section just a few English words were used and most of them were phrases, speech fillers and some expressions: *green, you know, well, lawn, get off and trick*.

The majority of the informants correctly identified the two contexts, some said

⁴⁰ So, they play American football....and German soccer, English soccer...English soccer....hmm and cheerleaders...well ..it is found now in Germany, too. (FM01)

⁴¹ I like it much more if I can go on the lawn...(IM05)

that they are similar and possible in both countries and some commented on the German sign as being a typical German cultural or social aspect of putting restrictions on individuals:*Wiese nicht betreten...also bitte nicht betreten, das ist schon mal deutsch ... get off the lawn..steht you know.. also very German to keep you,.. sehr deutsch...das einem zu verbieten*⁴³...(MM17). As seen from the comments above, some informants spontaneously used English to comment on the pictures and then translated or rephrased in German, thus using a mix of the two languages.

From the lexical richness and density, these two domains had a similar proportion to the home and dining domain, as expressed by the lexical density of 15.4%. The total number of words of 3,749, the total number of lexical words of 1,373 and the number of different lexical words, at 579, was lower than the previous domain.

Traffic and work

In order to test the usage of vocabulary related to traffic situations, two parallel pictures showed busy traffic during rush hour, *Stau*⁴⁴ or vacation time traffic on an interstate or *Autobahn* respectively. Half of the informants identified the two contexts correctly, but the rest experienced difficulties in finding typical things which clearly identified or distinguished the German picture from the American one. Some took the larger size of the vehicles as the determining factor for USA, some identified trucks and also called them by the English word, as well as *SUVs*, *station vans* or

⁴² Of course this is a problem, in whole Europe, not that you have the people everywhere...(GF12)

⁴³ Do not step into the meadow...so please do not step, this is German ...get off the lawn,...says, you know...so very German to keep you....very German to forbid one something...(MM17)

⁴⁴ Traffic jam

*eighteen wheeler:... aha und hier ist ein eighteen wheeler, die haben wir in Deutschland bestimmt nicht*⁴⁵ (AF19). Some used the words *interstate, highway, lanes, country code plates* or *license plates* to describe the American picture but most of them used *Autobahn, Standspuren, Autokennzeichen* or *Nummernschilder*, as well as *LKWs* or the full name *Lastkraftwagen* for trucks: *.B ..würd ich sagen Amerika, denn ich sehe grössere Autos ...da ist ein grösserer truck..... Autobahn, A und B denke ich mal eine interstate, highway*⁴⁶ (BM13). The usage of the word *interstate* for the description of the American setting, could have been for some informants, as exemplified above, a conscious choice, because *Autobahn* is not a perfect equivalent of the *interstate*.

The pair of pictures depicting offices was the most controversial one, almost all the informants, spent the greatest portion of the interview time on these pictures to try to identify typical items. Their indecision came from the fact that this type of office can be in both countries: *was soll denn nun der Unterschied sein, das sind beide offices..und das ist also....ja,.. nein aber trotzdem...man sieht beides in Deutschland, also das ist nicht typisch irgendwie*⁴⁷ ... (HF18). The German office was a smaller three person office with half partition walls, so that the employees can see and talk to each other. All faced a window. The American office was a typical large room with high wall cubicles with at least one glass wall.

Most of the informants used the words *cubicles* or *booths* to describe the

⁴⁵ Aha, and here is an eighteen wheeler, we do not have these in Germany for sure. (AF19)

⁴⁶ ...b I would say America, because I see bigger cars... here I see a bigger truck...a *Autobahn* and b I think an *interstate, highway*. (BM13)

⁴⁷ ..what should be the difference here, both are offices....and this is well,..yes, ..no, anyway...you can see both in Germany, so this is somehow not typical. (HF18)

American large room office, some even admitted not knowing the German name for it.

English words and expressions used to describe this section were more substantial: *cubicles, higher, inserts, like we have here, you know, drawstring bag, warehouse, booths, compartments, clutter, teamwork, offices* and *executives*. The German words to describe the work situation were varied, too: *Arbeitsumgebung, Arbeitsbereich, Grossraumbüro, Modulsystem* or *Trennwände*.⁴⁸

For these two domains, work and traffic, the lexical density is the lowest from all domains described in this section, at 14.9 %. This is an indication that the informants used less varied content words to describe the pictures. The total number of words is 5,006, the number of content words is 1,861, and the number of different or unique content words is 750.

Shopping

For the shopping domain four pictures were selected: A shopping street in a downtown area of a German city, a strip mall in U.S., a situation at the cash register at a U.S. food court and a view of a German department store were selected to be described. Some of the informants mentioned, that malls and strip malls are now also popular in Germany. But the most distinctive pattern they found between the two pictures, which again fueled little cultural distinctions, was the big parking lot visible on the American picture and the pedestrian street on the German picture. The informants made comments about the importance of the car in the American culture

⁴⁸ Work environment, work area, open floor office, modular system or partition walls.

and elaborated on the topic:.. *hier geht alles mit 'm Auto*⁴⁹(IF02),... *auf Bild B sieht man nur Autos, denn die Amerikaner fahren ja nur mit 'm Auto bis vor die Tür des Geschäfts, nee ?*⁵⁰...(GF12) and the accessibility issues in the U.S. Twenty of the informants used the English words *shopping mall* or *mall* or *strip mall* to describe the U.S. picture and only two used the German word *Einkaufszentrum*. This word choice, however, could be explained due to the fact that the word *mall*, is so specific for this type of shopping setting in the U.S. and the German word *Einkaufszentrum* is not a perfect equivalent. For the German picture on the other hand, *Einkaufsstraße*⁵¹ was used by three of the informants, the rest used *Geschäfte* or *Laden*.⁵²

The English words used to describe the two pictures were: *cobblestones, mall, strip mall, shopping mall, mall entrance, parking lot, kinda, cheap* and *well*.

But the German nouns used to describe the settings are very accurate and varied still: *Kopfsteinpflaster, Fussgängerstraße, Eingangsstraße, Marktplatz* or *Stadtkern*.⁵³

At the cash registers in U.S. and Germany, the pictures showed the inside of a department store and a food court with different people in the foreground and a cash register in the background. The most interesting descriptions came for the „ivy golf cap“ of an older gentleman in the German picture: *...in erster Linie wegen der Jacken und Hüte die die Leute tragen...das kommt mir irgendwie mehr so vor wie man 's typischerweise in Deutschland sieht..besonders diese Prinz Wilhelm Kappe hier ...auf*

⁴⁹ Here runs everything with the car...(IF02)

⁵⁰ On picture b one can see only cars, because the Americans drive only cars up to the entrance of the store, right...(GF12)

⁵¹ Shopping street

⁵² Store

⁵³ Cobblestone, pedestrian zone, access street, market place or city center.

*dem älteren Herrn ..genau*⁵⁴ ..(TM21). Surprisingly there was a wealth of terms used to describe it: *Mütze, Prinz Wilhelm Mütze, Helmut Schmidt Mütze, Kopfbedeckung, typisch deutsche Kappe, tollen Hut, Schirmmütze, Käppchen* or *Nordseemütze*⁵⁵.

There were more English speech fillers, collocations and idiomatic expressions noticed in this section compared to the previous ones: *that's it, das looks to me, oh boy, you know, self service, definitely, check out counter, department store, law suit, food court* and *tourist*. This domain is similarly lexically dense, at 15.3 %, to the previous ones, with a total number of 4,961 words, a variety of lexical words of 759 and a total number of content words of 1,771.

6.1.2 Interview

The interview was the last task for the Study Group. It was left as the last task to be performed, with the intention to have the informants already somewhat familiarized with the researcher and more relaxed and ready to talk openly. There was no time constraint and the informants were not interrupted. The minimum time recorded was 5 minutes and the maximum 17 minutes. No informant refused to answer any of these questions, but some talked less on some topics. Also because of a recording failure, the answers for the last two questions of two of the informants were not recorded.

The five questions asked dealt with remembering an important childhood

⁵⁴ ..first of all because of the jackets and hats, which the people wear, this looks to me more like you would typically see in Germany...especially this Prince Wilhelm cap, on the older man, right.. (TM21)

⁵⁵ *Cap, Prince Wilhelm cap, Helmut Schmidt cap, headgear, typical German cap, great hat, Schirmüte, little cap or North Sea cap.*

memory or a turning point in childhood, daily routine and weekend activities, things they miss from Germany, things they like in USA and social and cultural differences or similarities between Germany and USA.

I looked for similar topics and patterns across the answers. When commonalities were found, these were compared, contrasted, discussed and given excerpts from the interviews in support of the discussions. From a language perspective the English borrowings were counted, each occurrence was taken once per section and the percentage of the total word count was calculated. Morphological particularities were only briefly mentioned in this section. The lexical density test was performed on these data as well. The results below indicate a higher lexical density of the free spoken text than of the picture description text. These higher densities were expected, since the interview task dealt with broad topics and left the informants much flexibility to speak about them, thus giving them the possibility to use a variety of vocabulary, without any restrictions.

Childhood memories

The first question was to recall a childhood event or significant experience. This question was influenced by extensive research by William Labov and Waletzky (1997) on narrative analysis and life history. Labov (1981) states that, vivid, authentic and less processed language is obtained when the interviewee recalls a crucial moment in life, maybe something dramatic or tragic.

I adapted this method by not asking for a tragic happening in the childhood, to

avoid putting my informants in a delicate and maybe traumatic position. Instead I asked them to recall a memorable or a crucial point in their childhood, something significant which would bring back intact memories. I assumed that childhood memories would be described with a vocabulary deeply embedded in the past setting, maybe using dialect or special vocabulary which would not be influenced by any changes in their present language proficiency.

Most of the informants needed more time to think about a specific moment, and some could not remember one remarkable moment, so they chose to talk in general about childhood memories. All these general memories, which span over years, like summer vacations or family outings are positive experiences. Two of the older informants remembered the times after World War II. They chose to recall the positive ones, like happy Christmas with the anticipation of sweets or the chocolate and candies they received from American soldiers:... *und dann am Heiligen Abend dann wurde den...das aufgemacht..die Tür aufgemacht und da war der Baum erleuchtet...und dann hat sie immer so Kringel, so typische Schokoladenkringel...hatte sie am Baum gehängt und die waren alle gezählt..und weh...hat einer einen geklaut*⁵⁶....(HF18). Two described with a wealth of details their First Communion, the fact that they received all new clothes and they were the center of attention that day. One described the excitement he felt and the candies he received in the traditional *Schultüte*⁵⁷ on the first school day and one remembered his first West German money he received after he and his family defected from East Germany to

⁵⁶ ... and then on Christmas Eve the door was opened, and the tree was lit, and then she always had rings, so typical chocolate rings....hung in the tree and all were counted and woe...had somebody stole one...(HF18).

West Germany.

All negative memories however are very specific, they indicate usually the exact time, age and even weather conditions. But some avoidance of words which described a terminal disease, very sad circumstances or traumatic situations was noticed. The informants had visibly greater difficulty in narrating those events, pausing more between ideas, rephrasing and searching for less traumatic words to express their feelings or the situation. Two chose the death of one of their parents as being their crucial moment in childhood :...*ein Moment, an dem ich mich im Grunde... sehr gut erinnere, ist der Tag, an dem mein Mutter gestorben ist.... ich hab eine wunderschöne...grosse Erdbeere gefunden...,die ich meiner Mutter reingebracht hab...und sie sagte...ich hab sie ihr angeboten..aber natürlich sie war nicht in einem sehr guten Zustand, sie hatte Krebs..und sie hat's gesagt ich soll sie selber essenes ist im Grunde die letzte Erinner..das letzte Gespräch mit meiner Mutter*⁵⁸...(FM01).

One informant confessed a traumatic episode; she had not talked about it in a very long time. She was abused by her grandfather and decided to tell her mother about it and, when the grandfather was turned in to the police, he committed suicide. She had visible difficulty narrating this incident, and she lacked or avoided some of the vocabulary. The deep emotional trauma made her repress those feelings and possibly also the vocabulary items needed to express it. She paraphrased the abuse

⁵⁷ Large school bag filled with candies on the first day of school in first grade.

⁵⁸ ..a moment of which, after all...I can remember very good, is the day when my mother died....I have found a wonderful...big strawberry, which I brought inside for my mother....and she said...I offered it to her...but of course she was not in a very good shape, she had cancer,..and she said I should eat it myself,..this is basically the last mem...the last talk with my mother....(FM01)

and searched longer for words to express it, as noticed by the pauses between sentences:....*oh Gott, das ist ein bisschen persönlich, ... aber mein Grossvater hat sich das Leben genommen, im Gefängnis, weil er hat ...nicht meine Schwester aber mich ...wie sagt man das auf Deutsch, ich hab das auf Deutsch lange nicht mehr gesagt, ah.... sich nicht dem entsprechend verhalten, wie ein Grossvater sich den Enkelkindern verhalten soll, das war der Vater meiner Mutter und ich war 10, von 7 bis 10 und hab das meiner Mutter gesagt und brauchte ihn nicht mehr zu sehen*⁵⁹ (AF19).

In this section there are hardly any English words, less restructuring of the sentences and less reformulations. The only English words found in this section are: *well, you know cool* and *fieldtrip*. The total word count for the answers to this question is 3,788 and the English borrowings at four items represent only 0.0010% of the total. Although almost all of the informants needed more time to answer, to recall a certain event from their childhood, all narrated that specific event with many details and in a coherent manner.

After the lexical density was calculated for the data, similarly as for the picture description data, by eliminating all words with less than five letters, the results indicated the following: out of the total word count of 3,788, the total of content words with more than five letters is 1,389, the total of unique words is 742 representing 53% of the total words and the lexical density is 20.3 %, much higher than any of the lexical densities from the picture description data. This is an

⁵⁹ ..oh, God, this is a little personal, but my grandfather has taken his life, in jail...because he, ..not my sister but me,...how do you say this in German, .. I have not said this in a long time in German, ah he

indication that the informants used varied vocabulary to describe this topic, richer in not repeated content words. These findings corroborate the absence of English words and lend weight to a preliminary conclusion that narration of memories from the past or memories related to life in Germany tend to be resistant to forgetting or attrition on the vocabulary level.

Daily and Weekend Routine

The question which asked the informants about their daily and weekend routine was intended to gather lexical data related to their house activities, personal routine, work and family outings. It was assumed that informants would speak about activities inside and outside the house, about work situations and leisure activities.

Most of the informants structured their answers chronologically, starting in many cases with the morning routine, going to work, coming home and evening with the family and ending with the weekend activities.

The majority of informants, 73%, are active in the work force. Four women were retired and two women were stay-at-home mothers. All of them have intense social contact, are involved in activities outside the house, like volunteering, going to fitness clubs, church, visiting friends, shopping or practicing different sports.

From the language contact perspective, it was assumed that activities related to home, food preparing, household chores and family would be more resistant to retrieval and use difficulty in the lexical domain, similar to the picture descriptions in these areas. One of the informant described her weekend: *Aber morgen gehe ich*

did not behave like a grandfather should with his grandchildren, this was the father of my mother and I

dann...., mein Tag beginnt nicht so früh, es ist Samstag, geh ich wandern mit einer Gruppe, weil ich gerne wandere hier und dann gehen wir zu Haus.... und was wir danach machen, weiss ich noch nit, na ja könnte ich mal abstauben in meinem Haus oder den Staubsauger sausen lassen, aber der wird immer weniger jetzt benutztund am Sonntag besuch ich meinen Enkelsohn.⁶⁰..(EF11). During a regular work week most of the informants described the same daily routine of waking up early in the morning, taking a shower, eating breakfast, going to work, coming back from work and spending some time with family at night before going to bed.

Lexical items related to work outside the house, in contact with authorities, at work or some specific leisure activities, were hypothesized to be more prone to changes and borrowing from English. One retired informant talked about her volunteering work: *...bin doch pensioniert ...[laughs].. ja..ok..nein....im Moment,.. also im Moment..also ich tu sehr viel volunteering...einmal die Woche gehe ich zur food pantry und give..gib also Säcke...mit Essen aus⁶¹..(HF18). Another female informant talked about her physical activities and therapy: *drei mal in der Woche da gehe ich zum healthclub....work out..da ich geh zu therapy im Schwimmbad⁶²... (CF15).**

Dividing the activities into these two categories, first: inside the home, food and family related and second: work, leisure and outside the house, the findings

was 10, since 7 until 10 , and I have told my mother, and I did not have to see him again,... ..(AF19)

⁶⁰ ..but tomorrow I go then,...my day starts not so early, it is Saturday, I go hiking with a group, I like to hike, and then we go home...and what we do afterwards I do not know now, well I could dust my house or let the vacuum cleaner swish, but it is used less and less now....and on Sunday I do visit my grandson.. (EF11)

⁶¹ ..I am retired, ..[laughs], ..ok, no,..at the moment,...so at the moment...I do a lot of volunteering ..once a week I go to the food pantry and give...well bags,..with food. (HF18).

⁶² ..three times a week I go to the health club,..work out,..I go to therapy in the swimming pool. (CF15).

Table 50. Total Number of English Lexical Items in Categories

Lexical categories	English Lexical Items	Total of 5,385	Percentage of 5,385
Home, food and family related	Lunch, mental health problems, pool, snack , soccer Spiel, busy, dinner parties, you know	8	0.0015%
Outside the house, leisure and work related	Health club, work out, going in, therapy, volunteer, food pantry, community ministry, down town, neighborhood, service department, workshops, back country, market square, hiking, surf the Internet, glider port, errands, computer science department	18	0.0033%

showed the following. The items which constitute a chunk or a unitary expression were taken as one item and not separated. No brand names or proper names were considered borrowings. The total word count for this section is 5,385 with 0.0048% English borrowings (Table 50).

As seen from the table above, the percentage of English borrowings is not high compared to the total number of words, but it shows the uneven distribution in the two categories. These results support the hypothesis that vocabulary items related to household activities, family and food are less affected by language attrition. Due to the group distribution and insufficient data an ANOVA test of significance could not be performed. On the morphological level, there were some instances of wrong case markings, incorrect articles, incorrect usage of prepositions or conjunctions and plural endings. These instances have been reported and analyzed in subchapter 5.2.2.

The lexical density test performed on the data was lower than the one from the childhood memories at only 17.9%. The total content word count was 2,097 and the

total number of unique content words was 965 representing 46% of the total words. The lower lexical density is an indication that the informants used less varied words to describe their daily routine, with words having numerous occurrences in the same persons' speech or in all data.

Things missed from Germany

The third question in the interview was intended to collect cultural data related to specific items, activities or persons which are missed from Germany. On the linguistic level, it was hypothesized that we would find difficulties in retrieval of specific vocabulary items and a lot of reformulations. These assumptions were not confirmed. The informants retrieved without difficulties a variety of vocabulary items related to food, social or physical activities or family.

Almost all informants mentioned missing certain food items: beer, bread, sweets and meats: ...*die frischen Brötchen und das Brot,Mischbrot*⁶³(IM05); *das Essen ... Klösse*⁶⁴. (CF15);*Erdinger Weissbier und.....ja Schwarzbrot.*⁶⁵ (FM01); *ich vermisse denn die Wurscht, die Käse, nee,?... und so mein Marzipan, meine Weinbrandbohnen*⁶⁶.. (HF18); *Marzipan, ja...[laughs]..., Marzipan und Käsekuchen*⁶⁷...(AF19). From a cultural point of view, these items constitute also the stereotypical German foods, as they are viewed from outside Germany.

Second on the list were family members and third were activities like: riding a

⁶³ the fresh rolls and the bread, the mixed bread. (IM05)

⁶⁴ the food...dumplings (CF15)

⁶⁵ Erdinger white beer...and yes brown bread (FM01)

⁶⁶ I miss the sausage and the cheese..nee?. ..and so my Marzipan and my brandy beans (HF18)

⁶⁷ Marzipan, yes, [laughs] Marzipan and cheese cake ...(AF19)

bicycle in and around the city, going out with friends and *bummeln*⁶⁸ in the inner city. Also cultural products like movies, going to the theater or reading books, are among the missed items. The informants did not have any difficulties retrieving special vocabulary related to food or other activities they used to do in Germany and there were also hardly any instances when they needed more time than usual to recall specific names. In this section, the only English borrowings are those related to the U.S. context and their life here, like the following example: *...ich hab sehr direkten feedback zu meinen Mitarbeiter gegeben und das hat denen gar nicht gefallen.....wenn die kleinen kids hier Fussball spielen und die schiessen drei mal soweit am Tor vorbei wie das Tor breit ist ...oh nice try, good shotdas ist lachbar ...falsch...das ist falsch verstanden das positive enforcement*⁶⁹...(TM21).

The total word count for this section including both content and function words is 3,672 and only 0.0035% out of these are English words or expressions.

The lexical density test performed on this section of the free speech data revealed a slightly higher density than in the previous section about the daily routine, 18.6%. This is still lower than the childhood memories section, which is an indication that the informants had a higher communicative level but less restricted vocabulary to express the things or persons they miss from Germany. The total number of content words of at least five letters or more are 1,392 and the number of unique words is 685 representing 49% of the words.

⁶⁸ to stroll

⁶⁹ I gave very direct feedback to my coworkers and they did not like it at all.....when the little kids play soccer and they shoot so far from the goal, three times the width of the goal...oh nice try, good shot, ...this is hilarious, ..false, ..false understanding of the positive enforcement...(TM21)

Things liked in the USA

The fourth question in the interview asked informants to tell what they liked about the USA or in the USA. The question was made open-ended to give the informants the flexibility to choose what they liked about the USA. In some cases I had to give them some starting hints like: things, activities, persons, about their life, family, work or society. These hints would not have influence the content of the answers because the main purpose was to gather general spoken data and not specific targeted answers. It was assumed that informants would speak mostly about their life and work in the USA and maybe use a lot of borrowings. On this topic, as it will be seen in the following, the answers were more varied then on the previous one.

One recurrent answer was freedom. Whether it was freedom of speech, gender freedom, freedom to wear jogging suit while shopping in a department store, freedom of living where you want, freedom from too many laws or free thinking, most of the informants agreed on this concept, that in the USA an individual has more liberties and less control from the authorities: *zum Beispiel freedom of speech und solche Sachen...also Meinungsfreiheit wird ja hier sehr ernst genommen*⁷⁰...(MM17), *.das freiere Denken*⁷¹...(HF18); *unkompliziert ...wesentlich weniger auf Urschriften und Regeln*⁷²...(TM21).

Some informants mentioned their work being better rewarded here than in Germany and some said that doing business in the USA was much easier and simpler than in Germany. A lot of informants liked the friendliness of their American

⁷⁰ For example freedom of speech and such things, ...well freedom of opinion, is taken here very seriously ..(MM17)

⁷¹ The more free thinking..(HF18)

acquaintances, the ease of communication and the better acceptance of foreigners: *ich finde die Leute hier sind sehr freundlich, vor allem kinderfreundlich*⁷³,... (AF10).

This topic provided more varied answers, but there are some commonalities like the less complicated social and work relationships, more individual freedom to express themselves and the friendliness of Americans both in personal and work related situations. The initial assumption that this question would produce more English borrowings and show more changes in language usage was not confirmed. In fact, this topic offered very few English borrowings, at 0.0023%, out of the total word count of 3,375.

Surprisingly, this question provoked the most varied answers and the richest lexical content of all the prior questions. It was expected that the last question would lead to very rich and dense narrations, but the lexical density test revealed that this section was the densest in content words at 21.1%. At a total number of content words of 1,258 the number of unique content words is 713, representing 56.6% from the total content words. The high lexical density is closer to the average density of written texts, which have higher densities than spoken text, but less communicative function (Stubbs 1996).

Cultural and Social Differences between the USA and Germany

The last question was intended to be a summarizing of concepts and ideas already expressed in previous interview questions. It asked the informants to talk

⁷² Uncomplicated...considerably less documents and rules..(TM21)

⁷³ I figure that the people are much friendlier here, especially children friendly...(AF10)

broadly about social and cultural differences or similarities between the two contexts, the German and the American one. It was intended to give those who did not discuss any social or cultural particularities of the two contexts an opportunity to talk about these.

The fact that all informants had lived for more than four years in the USA at the time of the interview, gave them the necessary background to be able to elaborate on this question. It was designed to be less open than the other questions, but still open enough to give the informants much freedom in answering and elaborating on cultural and social aspects of the lives in the USA and Germany. Because the question had two parts, one dealing with cultural aspects and the other one about social issues, I had to remind some of the informants who spent more time on one topic to talk also about the other topic. Some informants spent most time on this question comparing and contrasting the German and American contexts and trying to find balanced negative and positive aspects or views for both contexts. Some informants did not answer the question exactly and used this opportunity to talk about issues of personal interest or their views.

Talking about cultural differences especially was more difficult for most of the informants and some confusion was evident. In some cases the views were contradictory, so generalizations of the findings were difficult to be made.

From the language use perspective, it was assumed that the answers would generate an average number of English borrowings. This last question was answered at length by most of the informants, and the total number of words used exceeded by far all the previous questions, with 7,838. Some informants talked only about social

issues, but the majority talked about differences on both the social and cultural level.

Among the social differences mentioned more often were human relationships, family, education and economical situations. The USA was seen as a family centered place, with more permissive and less strict education of the children but where clashes between the rich and the poor were more evident. On the other hand, Germany was described as a more closed society, more strict in the education of children, with more rigid relationships among members of different social and economical groups. Social security and health care were perceived as much better in Germany than in the USA.

Other social differences mentioned were dating, marriage, religion and work. Life centered on work, money and career was also seen as typically American and the stereotype of the “hard working German” alternated with the German who works diligently, but enjoys life and time out as well.

The second part of the question, dealing with cultural differences or similarities between the German and American context, was not answered by all informants and some of the answers were rather vague and did not relate to any specific cultural product. Some mentioned the TV and fast food culture. Americans prefer watching TV, going to the movie theater or going out to eat as entertainment, over going to a theater or symphony: *...was hier auffällt ist, dass überall wo man hingehht ..der Fernseh rollt...das ist auch immer die Art Kultur zu empfangen*⁷⁴ ... (FM01); also in Deutschland geht man eher in einem Konzert oder ins

⁷⁴ What here so striking is,.. that the TV is on wherever you go, this is so the kind of culture to welcome...(FM01)

*Theater, das macht man hier glaube ich so nicht, da geht man irgendwo ins Kino oder da geht man essen*⁷⁵ ..(FM14).

Under this topic one informant used the opportunity to compare the politics of the two countries, the American too quick in making decisions and Germany more stable in politics. America was seen as the land of the opposites, where research is at its highest and very dynamic, but religion plays a very important role, even in politics.

Based on general observations after the transcriptions were finished, from the language usage perspective, this last section is the most cohesive and well developed for most of the informants. The sentence constructions were more complex and well-formed. There were fewer speech pauses or rephrasings and most of the informants were much more fluent in their speech on this topic, than in the previous ones. These pauses were not measured per se and a future research project on the data might reveal interesting findings based on these measurements. Thus the discussions regarding cohesiveness and fluency of the narrations are informative in the present study.

The majority used a large and varied vocabulary to talk about these themes. Because it was the last question, the informants had sufficient time to warm up, get comfortable and become better storytellers. For the majority of the informants, this section shows good German language proficiency. It seems that dormant vocabulary and in general language structures need time to be activated and the longer they talk,

⁷⁵ Well in Germany one goes rather to a theater or to a concert, which is not done here, I believe, here people go to the movie theater or to eat out....(FM14).

the better their language becomes.

However, there are instances of English borrowings, especially in collocations, colloquial phrases and speech fillers, which are encountered more in this section than in the previous ones: *more power to you, be self-confident, believe in yourself, headed for disaster, big deal, Bible belt*. Some of the informants probably did not even notice that they were mixing English words in their speech. In some cases they used the German grammatical rules to inflect the English nouns, assigning gender markings or conjugating the English verbs: *die Geschichte mit demdating*⁷⁶ (BM13), *gleich next zum Haus parkt...*; *ich date keinen Deutschen*⁷⁷ (CF15). Calques were also identified: *...drei Platz laufen ...* similarly to the English *to run* or *to go three blocks*. Other English borrowings were: *opportunities, opinionated, six pack, date, history, comic strip format, stiff, too much, make up, better off* and *benefits* represent 0.0040% of the total word count for this section.

Surprisingly, the lexical density of this last question was the lowest among the interview questions at 17.4%, even if it contained the highest number of words. The total number of content words, as described by the lexical density procedure, was 2,990 and the unique words summed up to 1,368, representing 45.7% of the total content words. The lower number of unique words could be explained by the fact that the informants focused on some themes and reused and repeated most content words instead of using a variety of new words. Later on in subchapter 6.2, the comparison of these results to the lexical density in the Control Group will reveal that the Study

⁷⁶ ...the story with thedating. (BM13)

⁷⁷ ..to park right next to the house... , I do not date no German. (CF15)

Group had a lower density at the group level. Also the ANOVA test applied to the two groups, which compared the significant difference in terms of lexical density between the Study and the Control group, will reveal that the difference is significant at ($F(1,15) = 10,296, p = .006$). However, the ANOVA tests applied on the individual topics in the two groups will reveal that there are no significant differences in lexical densities ($F(7,8) = 2,623, p = .099$) between the Study and Control Group.

The Effect of Age on Theme Density from the Picture Description and Interview

In this section, the effect of age on the lexical density of the picture description and interview was analyzed. The word count for the different themes, also called codes in the WordsStat program, was listed into an Excel spreadsheet by age groups. The same four age groups as for the quantitative analysis were used. This procedure was used to identify what particular themes had the highest or the lowest word count in relationship to age. Percentages were used to express the groups' word count by dividing the word count of the different age groups by the total word count from all twenty two informants. However, due to some missing data in the different age groups, the last two codes were eliminated from the analysis. Also, due to the limited number of groups ($n=4$) and insufficient data per group, no ANOVA tests for testing significance between the groups could be performed.

The Age Subgroup 2 (ages 40-50) had the highest overall word count for all picture descriptions and interview themes, at 35 %, representing the total word count per group of seven informants divided by the total word count from all 22 informants. The last Age Subgroup 4 (ages 60 +), with five informants, had the lowest

percentages in word count, as expected, at 20.65%, followed by the Age Subgroup 3 (ages 50-60), with five informants, with the word count percentage, at 21.4 % .The theme with the least word count in the Age Subgroup 1 was shopping, at 2.7 %, from the total group word count, in the Age Subgroup 2 the bar setting, at 5.27%, in Age Subgroup 3 it was sports, at 4.24%, and in the Age Subgroup 4 it was restaurant, at 4.6%.

Since the last two interview questions were eliminated from the analysis, the percentages for the themes with the highest word count are the following: for Age Subgroup 1, 2 and 4 the daily routine theme had the highest word count from the total word count per groups but for Age Subgroup 3 the situation as the cash register had the highest word count.

The Effect of Time since Immigration on Theme Density from the Picture Description and Interview

The effect of time since immigration on the lexical density of the picture description and interview was analyzed in this section. The same four immigration groups as for the quantitative analysis were used in order to identify what particular themes had the highest or the lowest word count in relationship to time since immigration. Identically to the previous section, percentages were used to express the word count, and the last two codes were eliminated from the analysis due to some missing data. Similarly to the previous section, the ANOVA significance test could not be performed, due to the small group number (n=4) and data per group.

Immigration Subgroup 1 (4-10 years since immigration) had the overall highest word count for all pictures description and interview themes, at 39.8 %,

representing the total word count per group of seven informants divided by the total word count from all 22 informants. The last Immigration Subgroup 4 (40+ years since immigration), with four informants, had the lowest percentages in word count: 16.65%. The theme with the least word count in the Immigration Subgroup 1 was the bar situation, at 5.1 % from the total group word count, in the Immigration Subgroup 2 the shopping setting, at 4%, in Immigration Subgroup 3 it was sports, at 4.8 % and in the Immigration Subgroup 4 it was the bar setting, at 3.4%.

The results for the highest word count are the same as for the Age Subgroups: for Immigration Subgroup 1, 2 and 4 the daily routine theme had the highest word count from the total word count per groups and for Immigration Subgroup 3 the situation as the cash register had the highest word count.

The Effect of Amount of Contact to L1 on Theme Density from the Picture Description and Interview

Similarly to the previous two independent variables, the effect of the third variable, the amount of contact to L1 was analyzed in relationship to the lexical density of the picture description and interview texts. There were three groups of informants distributed based on more or less frequent contact to L1. This distribution was done in order to identify what particular themes had the highest or the lowest word count in relationship to amount of contact to L1. Percentages were used again to express the word count and the last two codes were eliminated from the analysis due to some missing data. Similarly to the previous two sections, the ANOVA significance test could not be performed, due to the small group number (n=3) and insufficient data per group.

The informants' group with more frequent contact to L1 had the overall highest word count for all picture descriptions and interview themes, at 54.3 %, representing the total word count per group of 11 informants divided by the total word count from all 22 informants. The group with less frequent contact to L1, with nine informants, had a word count percentage of 39%. The theme with the smallest word count in the more frequent L1 contact group was the shopping situation, at 5.2%, from the total group word count; in the less frequent L1 contact group the sports setting, at 4.2 %, and in the group with frequent L1 contact it was the restaurant setting, at 3.1%. The results for the highest word count are the same for all groups; the daily routine theme had the highest word count from the total word count per groups.

A detailed discussion of the effects of the three independent variables age, time since immigration and amount of L1 contact on the lexical data from the picture description task and interview, as well as a comparison of the findings from the two groups, can be found in subchapter 6.3. In the following, the results of the data analysis from the Control Group are presented.

6.2 Control Group

The picture descriptions task was the third one for the Control Group of 12 informants in Germany. The use of this technique was intended to make the informants feel less intimidated and more open to express themselves more freely. They enjoyed this task better than the cloze test and did not feel as if they were being

tested. While most of the informants tried to speak Standard German, dialectal influences were in some cases very much present. Most of the informants come from the Bavarian and Baden-Württemberg areas, but some were born and raised in Northern and Eastern Germany. I will not discuss any dialectal particularities in detail in this section, but I will mention them if these are the reason for some unusual language construction or ungrammatical forms. Also I have considered the possibility that some topics presented to the informants from the Control Group were not familiar to them, such as the American football, the American shopping mall or the sportsbar, and they might have lacked the German equivalent lexical terms to describe the settings. These topics were analyzed with more attention. To present the data I used the same domains as for the Study group and the same lexical density tests.

6.2.1 Picture Description

Housing and Dining

The two pictures of houses were correctly identified by all the informants, and the German one was considered typical from the construction type. The solar panels on the roof were also considered something that Germans would do to save energy and protect the environment:... *.das nennt man dann auch eine Biowiese oder ein Ökohaushaus, ja...da hat jemand sehr auf Umweltschutz und Klimaschutz geachtet*⁷⁸....(LMD12). Some made somewhat ironic comments about the wooden American house, as being old, not sturdy and not ecological: *B ist typisch*

*amerikanisch, ... wiederum so eine Bretterbude und irgendwie das Dach zusammengeschustert*⁷⁹ ... (AMD02). The German words used to describe the pictures are similar to those used by the American-Germans in East Tennessee. There are no English borrowings in this section.

The two contexts of the restaurant situation were also very easily identified. Similar to the Study group, the white and blue checkered tablecloth was identified as typical Bavarian. Most of the informants mentioned that an open stone fireplace, *Kamin* in the middle of the room and artificial decorations would be most untypical for the German context: ... *von dem offenen Kamin her würde ich eher sagen, dass das Bild B eher das amerikanische ist*⁸⁰ ... (CMD01). It needs to be mentioned, that the term “*offener Kamin*,” which would be a good equivalent for the English “*fireplace*” was not used by any of the informants from the Study Group. The German informants used some similar terms as the German American informants to describe the German setting: *Kellergewölbe, Keller, Gaststätte, Gastwirtschaft, Gasthaus* and *Kneipe*.⁸¹ There was only one unexpected English borrowing, but the informant who used it had visited his family in the USA before: *breakfast house*.

The bar situation was correctly assigned to the two contexts by the majority of the informants, but some remarked that the two settings could be possible in Germany, one in a traditional *Kneipe* and the other one possibly in a bowling center. None of the informants used the term *sportsbar* to describe the setting, and this was

⁷⁸ This is called then a bio meadow and an eco- house ...yes, somebody has paid very much attention to environmental protection and climate protection... (LMD12)

⁷⁹ B is typical American,... again such a shack and somehow a kludged roof ... (AMD02)

⁸⁰ From the open fireplace, I would say that picture b is the American... (CMD01).

⁸¹ Cellar vault, cellar, inn, tavern, guest house and pub.

expected, since this typical American bar type is not familiar in Germany. There were hardly any borrowings, except for *bowling center* and *Irish pub*.

The total number of words used by the informants to describe these topics was 2,807 the total number of content words with five and more characters was 993, and the number of unique words was 514. The lexical density performed for this section resulted in 18.3% compared to only 15.7% for the Study Group. This is an indication that the informants from the Control Group used more varied lexical items to describe the housing and dining pictures. However, even if the lexical density is higher, the ANOVA test performed afterwards on this theme indicated no significant difference between the Study and the Control Group ($F(7,8) = 2,632, p = .09$).

Leisure and sports

The fourth pair of pictures dealt with sports, more precisely American football and European soccer. The informants had no difficulty identifying the soccer game, some were not sure if the American context showed a football or a rugby game. This set of pictures was intended to gather possible English borrowings used to describe the American football game. However, there was no high expectancy that the informants would use much English terminology to describe the setting, since American football is not very popular in Germany.

Surprisingly, all but one informant correctly used the American Football term to describe the sport. Some commented on the division of the field as being different and on the perceived bigger size of the American stadium: ... *und Bild A ist American Football denk ich ..und die Zuschauerreihen sind viel mehr wie bei uns ... undja*

...das Spielfeld, das gibts jetzt bei uns nicht so⁸²..(SFD03). One informant used the English borrowing *yards* to describe the football field and used language productively to form a compound noun *Footballfeld* in analogy to the German *Fussballfeld*: *da sind die Yards angezeichnet, das ist das Footballfeld und das ist das Fussballfeld hier*⁸³(DMD04).

The two park settings on the pictures raised some indecision among the informants. Most of them mentioned that both were possible in either context. The main detail, which made them decide, was the German sign “ *Wiese bitte nicht betreten*,⁸⁴” which was considered typical for Germany:... *also Bild B natürlich Deutsch aufgrund des Schildes „Wiese bitte nicht betreten,“ das wird wohl kaum in Amerika sein*⁸⁵...(AMD02). In this section there were no English borrowings. It is important to mention that in describing the same domain, the Study Group used a variety of English borrowings.

The lexical density test used to assess the lexical richness of the descriptions revealed that this was again higher than the one from the Study Group. The Control Group had a lexical density of 16.5% compared to only 15.4 % from the Study Group. The total number of words used to describe the pictures was 1,648, the total number of content words was 564 and that of unique words was 273. The ANOVA test performed on this theme in relationship to the Study Group, however indicated no significant difference ($F(7, 8) = 2,632, p=.089$).

⁸² ...and picture a is American Football, I think,....and the viewers rows are more than in our country...and...yes... the play field , it exists in our country not like this.... (SFD03).

⁸³ Here are the yards marked, this is the football field and this is the soccer field here....(DMD04)

⁸⁴ Please do not step on the lawn,.....

Traffic and work situation

The two pictures depicting busy traffic on an interstate and *Autobahn* posed some difficulties for the informants, because of the similarities, but most of them identified the two contexts correctly. They compared the sizes and the brands of the cars and trucks and looked for distinctive features, like traffic signs, lane markings, license plates or exit markings. There were some instances of English borrowings: *trucks, horror, front motor, made in Germany* and *highway*.

The pair of pictures showing office settings raised doubts with some of the informants, who believed that the two settings could exist in both countries. The term used to describe the large open office was *Grossraumbüro*⁸⁶ and only one informant, the one who spent some time in the USA referred to *cubicles*. The only English borrowings were: *cubicles* and *call centers*.

The total number of words used to describe the two settings was 1,859, the total number of content words was 617, and the number of unique lexical items was 351. The lexical density was higher than the one from the Study Group at 18.8 % compared to only 14.9% in the Study Group, but the statistical tests performed on the data did not reveal significant differences ($F(7,8)=2.632$, $p=.099$) between the two groups regarding this topic.

Shopping situation

The German picture was taken in the center city and represented an old

⁸⁵ Well, picture B of course Germany because of the sign “Please do not step on the meadow,” this could hardly be in America....(AMD02)

⁸⁶ Open plan office

shopping street with no parking places and cobblestones streets. The American one, parallel in concept, was a strip mall with a big parking lot in front of it. The informants had no difficulty in identifying the two settings. Some, however, were unsure if the American setting represented a shopping situation as well: ... *A Deutschland Altstadt, typisches ah..., Stadtbild, Stadtkern, Apotheke ist hier erkennbar und hier B Amerika, soll es ein Bahnhof sein?*⁸⁷..(DMD04). Only one informant used the English borrowing, *mall* to describe the American shopping center.

The pair of pictures representing scenes at the cash register raised some uncertainty among the informants. The two situations were believed to be possible in both countries, especially because one picture, the American one depicted a fast food restaurant and the other one a department store. The majority of the informants used the term *fast food* to describe the American setting, but with the German pronunciation: ...*das würd ich sagen A is Amerika, Fastfood Kette*⁸⁸...(DMD04); ..*einfach Fastfood Essen, McDonalds* ?⁸⁹..(BFD05). Besides the term *fast food*, two more English terms were used, but all by an informant who recently spent some time in the USA. He used *counter* and *sales*. On a cultural note, one informant used the same terms as some American German informants to describe the cap of an older man, *Prinz Heinrich Mütze* and *Helmut Schmidt Mütze*.

This section was the most lexically dense in comparison to all the other

⁸⁷ A Germany, old city, typical, ah...city picture, inner city, pharmacy is here observable, and here America, should it be a railway station?....(DMD04)

⁸⁸ I would say, a is America, fast food chain...(DMD04)

⁸⁹ ..simple fast food , Mc Donalds?....(HFD05)

themes presented before. Even if it totaled fewer words than the previous ones, 1,692, it contained 603 content words and 321 unique content words; the lexical density is the highest so far, at 18.9%. The lexical density for the Study Group is only 15.2% for the same topic.

As seen from the above results, the Control Group consistently used more varied words to describe the pictures compared to the Study Group. The lexical densities of the spoken texts were higher than the ones from the Study Group. As mentioned before in 6.2, the ANOVA test which compared the means of the lexical density data from the two groups indicated no significance at the individual themes level $F(7,8)=1,286$, $p=.363$). There were hardly any English borrowings in the picture description. In the following, similar comparisons between the groups regarding the answers to the interview questions are performed.

6.2.2. Interview

The interview was the fourth task for the Control Group as well. It consisted of only four questions, three of them with two parts. The order was kept the same as for the Study Group. The first question was the one about remembering a childhood memory which was remarkable or dramatic. The second was to describe their daily, weekly routine and what they do on the weekends. The third dealt with things liked and disliked in Germany and the fourth asked them to talk about cultural and social differences or similarities between the USA and Germany.

On this last question they were directed to rely on media information or any other sources if they did not have personal information about the USA. It was

assumed that there would be comparable data gathered from the Control Group with respect to the first and second question and somewhat divergent data in the third and fourth question.

Childhood Memories

Only one informant did not answer the question pertaining to childhood memories, the other 11 remembered mostly positive memories or memories with happy ending, even if some dangerous or stressful situations preceded them. Among the positive memories were family vacations, dressing up or playing with childhood friends. Among the dangerous moments remembered by two informants were falling from a house and a bus roof top. One informant remembered the hard life on the farm, where a lot of work was involved, but also her games with her siblings. Another one talked about growing up without a father but with a very caring mother. Similar to the Study Group, there were no borrowings in this section, which confirms Labov's (1982) observation, that events related to childhood memories suffer almost no linguistic change.

From the richness of the descriptions, this was the densest lexical section for the Control Group at a lexical density of 23.2%. The Study Group had also a high density on this topic, but still lower than the Control Group at only 20.3%. However, the ANOVA test of significance showed that the findings are not significantly different between the groups ($F(7,8)=2,632, p=.099$). The total number of words for this section was 2,215, the number of content words was 823 and the number of unique lexical words was 515.

Daily and Weekend Routine

Most of the informants are still working, two are retired and two are stay-at-home mothers. The daily weekly routine is similar for the working group: waking up early in the morning, eating breakfast, going to work, coming back from work later in the evening and spending some time with the family, watching TV or playing on the computer. The weekend for most consists of sleeping more in the morning, family outings, shopping, house cleaning or practicing some hobbies. Only three mentioned practicing any sports or going to a fitness studio.

Some of the informants were very elaborate in answering this question, some very brief:... *also arbeiten von Montag bis Samstag, manchmal hab ich einen Tag frei in der Woche und sonntags faulenzten oder Familie halt ja...ja machen wir schon mal also Ausflüge*⁹⁰...(AMD02). In this section there are no English borrowings as well.

This section had a higher number of content words than the previous one at 1,037, the unique content words was 579, but the lexical density was lower, at 21%. The total number of words was 2,731 more than in the previous topic. The fact that the lexical density was lower indicates that the section was not as dense in unique content words as the previous one. The lexical density of the Study Group for the same topic was only 17.9%. The ANOVA test performed later on revealed that only the lexical density on the group level was significant different at the significance level $p < .05$ between the Study Group and the Control Group ($F(1,15)=10,296$, $p=.006$) but not on the theme level ($F(7, 8) = 2,632$, $p < .099$).

Things liked and disliked in Germany

Since there was no parallel question possible for things liked in the USA, this third question was designed with two parts. Since some informants from the Study Group mentioned things they disliked in Germany, this section will illustrate possible cultural, economical, political or social parallels between the groups.

In this section the amount of spoken data was much higher than in the previous sections, with a total of 2,473 of words. The things liked ranged from beautiful landscaping, tidiness, to social security and worldviews. The things they most disliked came from the political domain and social behavior. Five of the informants talked about the beautiful landscapes. One expressed an indirect xenophobia and another one believed the German history as being a burden.

In this section there were some dialectal particularities or personal deviations from Standard German, which were noticeable on both the morphological and lexical level: the usage of the plural ending *-s* for *See*⁹¹ instead of *-n*, *Akkuratheit* instead of *Akkuratesse*⁹² and dial. “*Schundflech*”⁹³ instead of *Schund*. There was only one instance of English borrowing: *level*.

The lexical density for this topic was high, at 23%, with a total of 916 content words and 571 unique content words. The answers to this question were not congruent to the ones from the Study Group, so they could not be directly compared. At the similar question about things liked or disliked in the U.S., the American

⁹⁰ Well, work from Monday to Saturday, sometimes I have a free day in the week and Sundays be lazy or family ..yes and we do sometimes trips. (AMD02).

⁹¹ lakes

⁹² Accuracy

German informants had a lower lexical density of 21%, which was, however, the highest among all topics from the Study Group. This higher lexical density in both groups could be explained by the openness of the question and the variety of possible answers.

Cultural and Social Differences between the USA and Germany

For this question, the informants were given a supplemental note to use information from the media or any other resources to talk about the American context. It was expected that most would rely on stereotypes to describe the American social and cultural environment. Similar to the Study Group, the Control Group focused the discussions more on the social aspects within the two contexts. The cultural aspects were mentioned in general terms and very few specific cultural products were given as examples. The German culture was perceived as old in comparison to the American one. On the other hand the American one was seen as influenced by many other cultures. The term fast food was often used in association to the American food.

The second part of the question dealing with social differences, however, incited the informants to speak about a variety of themes. A few were critical about both countries; the majority however criticized the American context more. Among the larger themes mentioned were: social support, health care, politics, relationship between people and institutions and personal relationships.

Americans were believed to be friendlier and more open; the customer care

⁹³ Possible translation: trash place.

much better and friendlier than in Germany, and as a nation that was more charitable. On the other hand pessimism was considered a *Volkskrankheit*⁹⁴ in Germany. Some other specific social components were mentioned: the punctuality of German public transportation, the dynamic and more flexible economical environment in the USA and the lower food prices in the USA.

Based on the overall observations, after the transcription of the interviews, this section was the longest and richest for the Control Group as well, with longer sentences and less pauses or rephrasing. From a language perspective, there were still instances of dialect usage but also some English borrowings, especially from the three informants who have visited the USA on at least one occasion: *team, job, corporate check, available, cash* and *have a nice day*.

Similar to the Study Group the lexical density for this section was not as high as expected at 20.1%, compared to the previous answers. The ANOVA test of significance, however, indicated no significance difference between the groups ($F(7,8)= 2,623, p= .0982$) The total number of words was the highest from all topics from the Control Group at 4,273. The total number of content words was 1,572 and the unique content words were 863.

6.2.3 Evaluation Task

The Control Group was given an extra task as described in the Methodology chapter. This task was intended to uncover possible lexical or morphological mistakes in the speech of the Study Group. The evaluation task consisted of listening to two

⁹⁴ Widespread disease

minute excerpts from individual informants' interviews and filling out a short language evaluation questionnaire. The excerpts were selected to contain some instances of language mixing or some morphological or lexical particularities. After listening to the excerpts, the informants filled out the questionnaire, which consisted of five questions asking to identify and rate the accent of the informants they listened to and what types of language particularities, if any, such as lexical or morphological mistakes they heard (See Appendix H).

As described in the Methodology Chapter 3, at the time of the data collection in Germany, there were only four informants interviewed in the Study Group. Initially it was expected to have all four informants from the Study Group evaluated each by at least four informants from the Control Group. But since it was not known at the time of the visit in Germany exactly how many informants would be found for the Control Group, the informants were divided the following way: IF06, a 53-year-old female informant, who has lived for seven years in the US was evaluated by CMD01, AMD02, GüMD09 and HMD10; FM01, a 44-year-old male informant, who has lived in the U.S. for 11 years was evaluated by SFD03, DMD04, JMD11 and LMD12; IF02, a 57-year-old female, who has lived in the U.S. for 38 years was evaluated by BFD05 and SMD06; and finally JF07, a 57-year-old female, who has lived in the U.S. for 33 years was evaluated by HFD07 and GMD08. The informants from the Control Group will also be called evaluators in this section and the evaluation results are presented below.

Three informants from the Control Group who evaluated the male informant FM01 from the Study Group agreed that he had an accent; one said he did not have

any accent. When asked to identify the accent there were three different answers: *Münchenerisch*⁹⁵, *Österreichisch*⁹⁶ and *Fränkisch*⁹⁷. However three of them agreed that the accent is weak. Three mentioned that they hear particularities in this persons' pronunciation and they indicated what: Bavarian dialect, lengthening of the words and the pronunciation of the *r*-sound (/r/) and *sch*-sound (/ʃ/).

At the question which asked the evaluators to identify mistakes if any, three identified the following: incomplete sentences, sentence construction, endings and plurals. The next question related to the previous one, in asking the evaluators to circle the appropriate type of mistakes they heard: syntactical, lexical, morphological or semantical. Because it was assumed that some of the informants do not know what these grammatical categories mean, a short explanation in parentheses was given. Only two evaluators out of the four circled the appropriate grammatical categories: syntactical and morphological, but they did not provide specific examples. The last question asked the evaluators to state if the person they just heard was a native speaker of German. Three answered yes and one circled no.

The next American German informant, IF06, who was evaluated by four informants from the Control Group, was a female. Three of her evaluators identified her accent as being American. They perceived the accent as being weak. The fourth evaluator said her accent was *Hessisch-Pfälzisch*⁹⁸. At the third question about language pronunciation particularities three evaluators gave some example but not all

⁹⁵ Munich dialect

⁹⁶ Austrian

⁹⁷ Franconian

⁹⁸ Hessian- Palatine.

fit the content of the question: enumeration of things and themes, some words end in -*schlang*⁹⁹, the word *Küsch*¹⁰⁰ and the f-sound (/f/). The mistakes the evaluators identified were: *anstreichen*,¹⁰¹ *fuhren in die Berge*¹⁰² and swallowing of endings. These mistakes were considered syntactical and morphological. However, since the context from which the excerpts were extracted was about enumerating weekend activities, the spoken text did lack some cohesion and “*anstreichen*” (to paint a house/wall), was probably considered a mistake in the sense of out of context. The phrase “*fuhren in die Berge*” is in fact grammatically correct, so the evaluator did incorrectly consider this a mistake. Two of the evaluators considered informant IF06 a native speaker of German and two did not.

The next female informant IF02 was evaluated by two informants from the Control Group. One informant said IF02 had a weak Russian accent and the other one did not find any accent. Both evaluators mentioned hearing mistakes but only one identified the mistakes: starting of sentences with the word *well*. One evaluator indicated the type of mistakes as being morphological and syntactic, however, without giving specific examples they noticed. At the last question one evaluator said that the informant IF02 was a native speaker of German, the other one did not.

The last informant who was evaluated was IF07, a female informant from the Study Group. None of the two evaluators perceived any accent in her speech, she was considered typically German by one of the evaluators, but the other one noticed the fact that the informant was searching harder for words. No mistakes were identified

⁹⁹ Unidentified word

¹⁰⁰ A dialectal form of kitchen; Standard German: Küche.

¹⁰¹ To paint

and IF07 was considered a native speaker of German by both evaluators.

As noticed from this evaluation task, which was done on a very small sample of informants, there are some incongruities among the results of the evaluation. The purpose of the task was to have another objective evaluation of the Study Group data in order to identify accents and specific lexical, morphological or syntactic mistakes. Given the varied answers and the small sample, this type of task, did not offer conclusive or reliable findings for the study and its limitations and future improvements will be discussed in Chapter 7.

6.3 Summary of Qualitative Findings

The qualitative findings of the study supported and complemented the quantitative findings which together provide some evidence of language attrition. While the quantitative analysis identified the most prominent independent variables which can lead to language attrition, time since immigration and age, the qualitative analysis presented the social or cultural domains where variations, borrowings, new word formations or mistakes are identified in the lexical domain.

The major domains given to the informants to comment or elaborate on them were also called themes or topics throughout the chapter: home, leisure, work situation, dining, shopping, traffic situation, childhood memories, things liked and disliked in the USA and parallel in Germany, daily routine and cultural and social differences or similarities between the two contexts. Social and cultural attitudes were reflected both in the picture description and in the interview. On a thematic level, the

¹⁰² Drive to the mountains

home domain from the picture description did reveal some amount of English borrowings in the Study Group, especially among the informants with longer time since immigration and older age. Among the most frequent borrowings were those denoting the parts of the house: *porch*, *siding* and *roof*.

Not as much lexical variety and difficulties as expected were detected in the dining and bar situation. Again the English borrowings were mostly to denote imperfect lexical equivalents like *fireplace* instead of *offener Kamin* or *Feuerstelle* (a regional variety). The lexical density for this theme was the highest among the picture description answers at 15.7%, but still lower than the one of the Control Group at 18.3%. However, the ANOVA test performed on this theme, did not reveal significant difference among the Study and Control Group ($F(7,8) = 2,632, p = .09$).

The themes associated with leisure activities, park and sports, showed more English borrowings than the previous domain. A higher number of English phrases, collocations and idiomatic expressions were used in the descriptions: *yard lines*, *cheerleaders*, *live*, *soccer game*, *teams*, *kickoff*, *Super bowl*, *pounds*, *trick question*, *green*, *you know*, *well*, *lawn* and *get off*. The lexical density of these themes was not high at 15.4%. However, some of these borrowings need to be treated with caution and not considered aspects of language attrition, but rather of language enrichment, since some terms do not have perfect German equivalents, such as: *Super Bowl* or *cheerleaders*.

The two shopping situations, one depicting people at the cash register and the other one showing typical shopping streets in the USA and Germany, were the two domains where the most English borrowings were observed. All age and immigration

groups used English words, colloquial speech, phrases and collocations: *cobblestones, strip mall, mall entrance, parking lot, kinda, cheap, that's it, das looks to me, oh boy, you know, self service, definitely, check out counter, department* and *well*. The lexical density was comparable with the previous one at 15.2% and it was not significantly different from a statistical point of view ($F(7,8)=1,050, p=.9$).

The last domains from the picture description task corresponded to the work and traffic situations. The traffic situation had an amount of borrowings similar to the home domain. However the age group which used more English borrowings was the younger immigrant group, those under 50. Examples of borrowings were especially for things which did not have a perfect equivalent in German life: *eighteen wheeler, interstate, license plate* or *station vans*. The two offices depicted produced in some cases rich descriptions, but also a high number of English borrowings, one of the highest among the themes after the shopping one: *cubicles, higher, inserts, like we have here, you know, drawstring bag, warehouse, booths, compartments, clutter, teamwork, offices* and *executives*. This last section from the picture descriptions had the lowest lexical density, 14.9%, among the picture descriptions, which indicated more repetitions of lexical words and a less varied number of content words. There was no significant difference between the lexical density of this topic and the previous one ($F(7,8)= 2,106, p=1$).

In the analysis of the effects of the independent variables age, time since immigration and amount of L1 contact on lexical density and richness of vocabulary, the descriptive statistics results indicated that the themes shopping, bar setting, sports and restaurant had the lowest lexical density for all the groups. Thus these topics

seem to be more prone to attrition and more open to borrowings from L2. The highest lexical density was registered in the daily routine topic, where the informants used a more diverse vocabulary to describe their daily routine. However, due to the distribution of the groups, an ANOVA test was not possible, thus there can not be concluded that these domains had significant lower densities compared to the remaining domains.

On the interview task for the Study Group, the four themes: childhood, daily routine, things missed in Germany, things liked in the USA and cultural and social differences between the two cultures nicely complement the ones from the picture description. The childhood experiences were probably more distinctive, since it asked the informants to recall past events. The informants recalled both positive and negative memories, some very dramatic like the death of a loved one, but some were almost comical. On this question almost no answers contain any English borrowings or lexical mistakes. Based on the descriptive statistics, the lexical density was higher than the previous descriptions at 20.3%, which indicates a rich and dense amount of unique content words. However, the ANOVA test performed to reveal any significant differences at the $p < .05$ level between this theme and all the other ones did not indicate any significant differences.

The daily routine question triggered the use of some borrowings, especially when informants talked about their spare time and weekend activities like: *Health club, work out, going in, therapy, volunteer, food pantry, community ministry, downtown, neighborhood, service department, workshops, back country, market, lunch or soccer*. The percentage of English borrowings made up 0.0048% of the total word count for this section. This is also the section with the highest number of English

borrowings and lower lexical density at 17.9%.

The third question about things missed in Germany had more similar items. Food, drinks, friends and family were the commonly missed items or persons. The only borrowings in this section come from situations related to the American context. This section is lexically somewhat richer with a lexical density of 18.6%, which indicates a greater variety of content words used.

The fourth question dealing with things liked in the USA had surprisingly fewer borrowings than expected, but was more diverse in the answers given. This theme also triggered a wealth of content words and rich descriptions as expressed by the high lexical density of 21.1%, which is the highest among all themes from both the picture description task and the interview.

The last question dealing with cultural and social differences provoked the most developed answers. The answers contained a larger number of English borrowings, 0.0040 %, second after the daily routine question. However, this section, despite the highest word count had the lowest lexical density among the interview themes of only 17.4%.

As the results suggest, instances of severe language attrition were not detected either on an overall group level or on an individual level. The ANOVA and Post Hoc tests, which compare the means between and within the groups did indicate significant differences at $p < .05$ level only at the group level, meaning between the Study and the Control Group regarding the lexical density of all the themes ($F(1, 15) = 10, 296, p = .006$).

Based on the general observations after the transcriptions where made, there

were however, individuals with less fluent speech, characterized by frequent pauses of different lengths, rephrasing and usage of speech fillers. Some had diminished lexical, morphological or syntactical richness, by using common terms over specific ones, or a very simple sentence construction, especially in certain daily life domains: leisure, sports, bar setting, shopping and work situation. On a more abstract level, talking about the daily routine and cultural and social differences between the US and Germany were less varied and rich lexically, as indicated by lower lexical density, 17.95% and 17.4% respectively. As mentioned elsewhere in the chapter, the statistical analysis of the individual themes in relationship to lexical density, however, did not reveal significant differences.

The results from the Control Group suggest that there are a few instances of English borrowings in everyday vocabulary. The domains in which some of these borrowings were identified are: shopping, traffic and work situation. The descriptions of the eight pairs of pictures from the picture description task were similar to those of the Study Group. The lexical densities for all themes are higher in this group than those from the Study Group, an indication that the Control Group used a more varied vocabulary to describe the settings, and on the group level these results were significant different from the Study Group as mentioned in previous paragraphs, but not on the theme level.

On the four questions from the interview task the informants from the Control Group gave similar answers, some providing rich details, but some being very brief. There are a few instances of borrowings except for the last section, which dealt with cultural and social differences between the two contexts. The few borrowings, mostly

from the informants who visited the USA before, were: *team, job, corporate check, available, cash* and *have a nice day*. From the themes discussed, similarly to the Study Group most informants mentioned social differences than cultural ones. Most of the informants, like those in the Study Group used this opportunity to discuss political issues. These four interview tasks were again lexically richer than the ones from the Study Group, the densest one being about childhood, differently from the Study Group where the question about things liked in USA was the richest lexically.

In order to test if the two groups, the Study and the Control group had significant differences in terms of lexical density of the two tasks, an ANOVA test was performed. The two groups were coded 1 for the Study Group and 2 for the Control Group and all the lexical densities from all the themes were computed in one SPSS file. The results indicated that the overall lexical densities of the themes showed significant differences at the level $p < .05$ between the groups ($F(1, 15) = 10, 296, p = .006$).

The Evaluation Task revealed that some informants from the Study Group do not “sound” in totality like German Native Speakers any more. Some were perceived to have an American accent, but some mentioned also Russian and Austrian. Some evaluators however thought they could identify a Munich dialect, Franconian and Hessian-Palatine. The domains where evaluators identified mistakes were the lexical, morphological and syntactical, in addition to the mention of accent. The findings from the task however are based on a very small number of informants and can not be generalized. Also given the subjective and less reliable nature of an evaluation done by untrained native speakers, caution has been taken in interpreting these results.

They served more as informative findings and were not used to indicate aspects of language attrition.

The qualitative results show that there are some instances of language attrition, predominantly in certain domains: daily routine, traffic, work, shopping, dining, leisure and sports. There were no important aspects of language attrition in the home domain, as well as in narrating past memories. In spontaneous free speech data, the instances of borrowings and transfer were mostly in describing one's daily routine and in the usage of idiomatic expressions, collocations, phrases and speech fillers: *well, you know, I mean, more power to you, get off, etc.* On an overall level, as mentioned before, there is no indication of severe L1 attrition in the Study Group.

7. DISCUSSIONS OF THE QUANTITATIVE AND QUALITATIVE FINDINGS RELATING TO LANGUAGE ATTRITION

In this chapter the main quantitative and qualitative findings of the present study on aspects of first language attrition will be reconsidered and discussed in the context of language contact. The findings will be discussed in reference to the five research questions and the existing research up to the present date. The main objective of the study was to investigate which extra-linguistic variables affect the language performance of the group of 22 German immigrants to East Tennessee.

7.1. Lexical Findings

Attrition studies have shown that the lexical domain is the most vulnerable to changes and most prone to undergo attrition (Altenberg, 1991; Ben Rafael, 2001; de Bot & Clyne, 1994; Hulsen, 2000; Köpke, 1999). While some studies within the contact linguistic framework have argued that most of the changes appear to be intergenerational, for example, between the first and the second generation (Pan & Berko-Gleason, 1986; Hakuta & d'Andrea, 1992; Hulsen, 2000), more recent studies have investigated and revealed intragenerational changes, meaning changes in the first generation even within a short time since immigration (Köpke, 1999; Pavlenko, 2004; Schmid, 2002). Therefore, in the present study I focused on first generation immigrants, in order to see if aspects of lexical variation are present. One of the research questions in the present study deals with aspects of lexical loss or variation and it was formulated as following: *If lexical transfers from L2 to L1 can be identified, what items or expressions have been transferred from English to German?*

Given a range of topics such as home related words, childhood, daily life, job, leisure activities, service, small talk or shopping, which of these topics are more prone to transfer or loss?

Given the fact that language is such a complex phenomenon, the social aspect of language use in case of language attrition can not be investigated in isolation, only from a purely linguistic point of view, without careful consideration of extralinguistic factors. Research within the sociolinguistic framework needs to investigate the interplay of extralinguistic factors like age, time since immigration, level of education, amount of contact with L1 and attitudes toward language maintenance, to name just a few, and linguistic changes in the context of language contact. While some of the variables, such as young age (Hakuta & d'Andrea, 1992; Kaufmann, 2001) or old age (de Bot & Lintsen, 1989; Goral, 2004; Olshtain & Barzilay, 1991) have been identified as playing an important role in language attrition, level of education was considered a problematic factor, and few studies have investigated this aspect (Jaspaert & Kroon, 1989; Köpke, 1999; Yağmur, 1997). Therefore, this study was designed to test the effects of different extralinguistic variables: age, time since immigration, level of education and amount of L1 contact on the lexical and morphological data collected from the informants.

7.1.1. Age and Lexical Attrition

The findings of the present study have revealed that there are significant differences at the $p < .05$ level in the lexical domain between the elderly age group (ages 60+) and the younger informant groups (ages 28-40), especially in the retrieval

of adjectives, adverbs and verbs in more controlled tasks, such as the cloze test. These findings are in keeping with Jaspaert & Kroon (1992), who found some attrition in the usage of verbs in letters, and Hutz (2004), who reported that his elderly informant had lexical difficulties in writing letters. On the other hand, the age groups 40-50 and 50-60 seemed to be the more stable groups regarding lexical variation in a controlled task, with fewer lexical errors and less variation than expected (MacKay et al., 2001). Similarly, in less controlled tasks, where the informants had more freedom of expression, for example in the interview, the lexical findings in the elderly group indicated a larger amount of L2 transfer and borrowings, whereas the age groups 40-50 and 50-60 had fewer L2 borrowings, even fewer than the age group 25-40.

These results would indicate that lexical difficulties do not necessarily have a constant progression over time, but rather are selective, non-linear and more pronounced at an older age. As stated elsewhere, these findings can not be viewed solely from the language contact perspective in case of bilingual immigrants, but also must take into account natural aging processes, as Goral (2004) proposes in her study on first-language decline in healthy aging monolingual individuals. The fact that younger informants are actively involved in the social and work environment of the L2, thus in a more linguistically intense contact with the L2, suggests that they are also more or less conscious borrowers of terms from L2 into their L1.

Olshtain & Barzilay (1991), Waas (1997), Hulsen (2000) and Jarvis (2003) found lexical retrieval difficulties and diminished verbal fluency in elderly immigrants, and the results of the present study confirm their finding, that older age is associated with lexical attrition.. Therefore language attrition research must consider

the possibility of age-related decreased language proficiency. Future approaches should try to isolate groups of younger informants but with longer time since immigration and older informants with shorter time since immigration to control for the effect of age.

7.1.2. Level of Education and Lexical Attrition.

This study also found more errors in the noun-verb category in the group with a lower level of education. In brief, more education appears to stem or slow linguistic attrition. Again, in the more controlled task, the cloze test, there was more variation and were more errors than in the less controlled tasks, such as the picture description and interview. This suggests perhaps that more educated speakers were somewhat more adept at monitoring their speech to avoid areas of uncertainty, but when the task forced a very narrow range of choices, even these more educated speakers showed some evidence of attrition. These results are in line with Jaspaert & Kroon's (1989) and Köpke's (1999) findings, but the small amount of data and the low number of informants with lower levels of education does not permit generalizations beyond the present study. Future research might address this issue more effectively by selecting larger groups of informants with more varied levels of education, so as to compare an equivalent number of informants with lower and higher level of education.

7.1.3. Time since Immigration and Lexical Attrition

Another independent variable that proved to have considerable effects on lexical performance was Time since Immigration. The effect of this variable was mostly noted in the group with 40 or more years since immigration, where the

informants had more errors in all lexical categories, but had more homogeneous answers than the other groups. In the more open-ended tasks, all immigration groups had a certain number of L2 borrowed words, however Immigration Subgroup 2 (10-20 years) had the fewest lexical variants and English borrowings. These results were similar to those based on the variable Age, mentioned above, and might indicate that lexical variation and English borrowings in German speech occur more frequently in younger informants and those with less time since immigration and in older informants and those with considerable time since immigration.

Possible explanations might be that younger immigrants were accustomed to a relatively large number of English borrowings in the German they spoke before immigration, which might have predisposed them toward borrowing even more in an English speaking environment, whereas older immigrants with greater time since immigration may be exhibiting a genuine attrition of the lexical command of the German they spoke before immigration. Future testing of these hypotheses could incorporate the a writing task on a sensitive cultural, political or economical topic, which could trigger possible English borrowings from the informants tested.

The middle-age group 35-60 and the informants with the time since immigration between 10 and 30 years seem to be the lexically more stable group, both in a more controlled and open-ended task setting. These results are somewhat different than what previous studies found (Gürel, 2002; Schmid, 2002; Hutz, 2004), who found that even less time since immigration determined some variation on the lexical level, especially in the amount of borrowings.

7.1.4. Amount of L1 Contact and Lexical Attrition

The fourth independent variable tested both in controlled tasks and open-ended tasks in relationship to lexical variables was Amount of L1 Contact. Different from previous research (de Bot et al., 1991), this extralinguistic factor was tested independently from Time since Immigration and the results show that less Amount of L1 Contact was associated with a lower ability to supply correct nouns and verbs in a controlled task (cloze test). In the picture-description and interview tasks, the findings indicate that informants with less contact with L1 (i.e. less L1 communication and travel to Germany), had a larger number of L2 borrowings and transfers. This may be somewhat analogous to attrition with greater Time since Immigration since both groups of speakers, those long absent from a German-speaking environment and those with more limited communication in German, both have proportionally more contact with English.

In measuring the effects of these factors in a more differentiated manner, future research should consider these factors together in analysis (de Bot et al., 1991) and isolate informants with frequent Contact and long Time since Immigration and those with little Contact and less Time since Immigration. Also in the future, measuring Amount of L1 Contact has to carefully weigh informants' self-ratings in the light of data relating to the types of activities associated with L1 Contact and how they promote or inhibit the usage of L1.

7.1.5. L2 transfer and borrowings in specific social life domains

From a methodological point of view, the present study contributes new data collection methods. Some previous studies have not identified and/or focused enough on changes in specific lexical domains, but rather have identified changes only on a general level (Bolonyai, 1999; Gross, 2002; Waas, 1996). Most of the previous studies have used open-ended interviews, which were either too broad to identify specific themes (Gross, 2002; Kouritzin, 1999; Schmid, 2002) or employed picture naming tasks or picture stories, which were too narrow and controlled (Hulsen 2000; Waas 1993).

By using a variety of authentic pictures representing daily life activities, the present study succeeded in better isolating English borrowings, lexical transfers, lexical density and innovations used by the informants. This task addresses the second research question, which was formulated to identify lexical variation, L2 borrowings and transfer in specific social-life domains. Although informants were impelled to talk about certain daily life activities, they were still presented with a variety of activities to comment on.

Furthermore, the findings revealed that the themes shopping and work situation had the most L2 interference in the Study Group, as well as transfers, calques and borrowings, followed by the leisure themes: in the park and sports. A range of discourse markers, idiomatic expressions, collocations, speech fillers or phrases, appeared to be affected. These themes also generated the lowest lexical density, which means that the informants used more repetitions of lexical words and a

smaller variety of new content words. The lexically densest themes were home and dining, which had the lowest number of English borrowings. Also German words sharing similar spelling and pronunciation with their English equivalents were used by some informants with the English pronunciation: *war, was, Winter, Salat, Apartment, Intuition, Amerika*. Examples of loan translations or lexical innovations induced by language contact, similar to those found by Brons-Albert (1994) from Dutch into German, were found in the picture description: *Vorzeuge* for witness, *drei Platz laufen* from the English idiom: three blocks down, or *Platzsetzer* from placemats. Matthias Hutz (2004) found similar “necessary loanwords” (p.195) in the work and leisure domain, where the speakers augmented the missing German lexical repertoire with an English word, e.g. *Junior High* or *Expressways*, arguing that these should not be considered attrition because the referent is not present in German reality.

The findings from this section confirm the results from prior research (Altenberg, 1991; Brons-Albert, 1994; Schmitt, 2001), that borrowings and loan translations from L2 are more frequent for lexical items similar in the two languages. Pavlenko (2000, 2004) had found similar borrowings and transfers from English L2 to Russian L1, for immigrants to the U.S. Altenberg (1991) investigated German L1 attrition in the American context and concluded that attrition is most evident in the lexical domain, especially when L1 and L2 are similar. As researchers mentioned in previous studies (Schmid, 2002; Yağmur, 1997) the L2 user can not switch off completely one language while using the other one, which causes the two systems to compete especially when accessing the lexicon.

In the present study this phenomenon was also observed: the longer the informants talked in German, the better they expressed themselves in that language, even if German-English code-switching was otherwise a common practice. Among the interview tasks, the fewest transfers or borrowings in the Study Group were found in the narration of a childhood memory and the greatest interference was observed in the daily routine theme and where the informants were called upon to talk about cultural and social differences between the American and German context. When asked about things they liked or disliked in the U.S., the informants from the Study Group used a variety of content words, registering the lexically densest section of the interview, followed by the childhood memories recollection. Interestingly, both the Control Group in Germany and the Study Group produced the richest content for these two themes

The findings from the childhood question can be explained by Green's dormant speech theory (1986), where special language has been activated by long-term memory. This type of speech, it appears, has been better preserved and is not affected by L2 transfer. In contrast, the daily routine theme triggers the active speech used spontaneously and frequently by the informants and is thus more open to borrowings from L2.

While some of the borrowings in the present study do not have perfect German equivalents and cannot be considered a sign of language attrition, as Hutz (2004) contends, some borrowings were possibly used as a result of L1 lexical retrieval difficulties in spontaneous speech. While previous studies found that loss predominates in less frequent and less regular lexical and morphological items

(Hulsen, 2000; Köpke & Nespoulous, 2001, Waas, 1993), the present study found lexical substitution or attrition for frequent, everyday items, such as: snack instead of *Imbiss*, lunch instead of *Mittagessen*, neighborhood instead of *Nachbarschaft*, basement instead of *Keller*, amount instead of *Menge* or *Summe*, green instead of *grün*, to date *someone* instead of *mit jemandem ausgehen*, or roof instead of *Dach*. Some borrowings might not be considered a clear sign of language attrition, but possibly only of temporary code-switching. However, a clear distinction between aspects of language attrition and of code-switching cannot be made in a cross-sectional study like this one; instead a longitudinal design would be necessary. Such a longitudinal study should test the same informants over periods of time to investigate if indeed these borrowings are manifestations of language attrition or just code-switching.

7.1.6. Term occurrences in dictionaries and on Internet sites

The present study has introduced two new tests for lexical richness and term occurrences. I have not been able to identify any studies in language attrition research that have used a lexical density test applied to the data in order to determine the richness and variety of the word content. The second innovative task is the cross-checking of term occurrences in dictionaries and on Internet sites. Based on the elaborations and discussions with the informants, the majority of them mentioned some type of e-communication (chat, email, internet-videoconference) to keep in contact with family and friends in Germany and used the internet very often.

The findings from this latter analysis revealed that many of the English

borrowings used by the German informants were found on select German internet sites. The two editions of the *Duden Fremdwörterbuch* dictionaries contained a smaller number of English words accepted in the German Standard Language; however, the increased number of borrowings accepted in the *Duden* 8th Edition over the 6th Edition is an indication that over a period of eight years (between the two *Duden* editions), there was an increase in English borrowings in the German language. The same borrowings looked up in German sites in March and April 2007 indicated a high rate of occurrence (57 out of 79).

These findings indicate an increased tendency of the German media and especially German internet language to borrow terms from English, which I suggested above might also be reflected in the relatively larger number of English borrowings in the speech of younger immigrants. This analysis was performed in order to better situate a context of language usage in a digital era of globalization, where the internet plays an important role in everyday life. Given the novelty of this type of analysis and the need for it to be perfected in the future, no generalizations beyond the present study will be made. The limitations of this tool will be further discussed in Chapter 8.

7.2. Morphology and Language Attrition

While the above discussion focused on lexical variation and attrition in the speech of the German immigrants to East Tennessee, another focus of the study was on morphological attrition. Tendencies to simplify grammar features have been also noted in studies investigating changes in the morphological domain, especially when

the two languages in contact (Schmid, 2002; Seliger, 1991), like English and German, have different degrees of expressing marked features. The tendency is to suppress, simplify or even avoid the most marked features, for example, the complex German case marking or gender assignment of the nouns (de Bot & Clyne, 1994; Gross, 2000; Jordens et.al, 1989).

The research question formulated for this part of the study was: *Will the German immigrants to East Tennessee show variation, alteration or attrition in morphology such as: defective article usage, wrong case markings and plural endings, even after a relatively short time since immigration?* These aspects of morphological variation were analyzed both in controlled tasks, such as the cloze test, and in open-ended tasks, such as the picture description and interview. The effects of Age, Time since Immigration, Level of Education and Amount of L1 Contact on morphological items were investigated.

7.2.1 Age and Morphological Attrition

The age group of 60-70 years old showed a higher number of variants in the preposition-conjunction category, the plural form and the indefinite-negative article category, while the most stable age groups with evidence of minimal morphological language attrition on most of the tests, were those 20-40 years old and 40-50 years old.

Nevertheless, all four groups had difficulties in supplying correct plural forms as well as the correct morphological items, specifically prepositions, conjunctions and definite and indefinite articles. The fourth group with elderly informants, surprisingly,

did not have a low mean in the definite article category. In contrast to previous studies (de Bot & Jordens, 1994; Schmid 2002), there were no substantial findings of defective usage of gender markings, specifically of the definite article. These findings might be explained by the fact that the elderly informants in the present study were not as advanced in age (60-67) as in previous studies (70+), or that the more open-ended tasks gave the informants relative freedom to reformulate and better monitor their language output. Another possible conclusion could be that gender/case markings are more stable than initially assumed.

7.2.2. Level of Education and Morphological Attrition

As mentioned before, few previous studies have investigated the effect of Level of Education on morphological errors but some have found it to be the most significant extra linguistic variable correlating with attrition (Jaspaert & Kroon, 1989; Waas, 1993; Yağmur, 1997). The statistical results from the present study confirm a significant difference between German immigrants with lower level of education (vocational or secondary school only) and those with higher level of education (college level and beyond), especially in incorrectly supplying or failing to supply prepositions-conjunctions $F(2,19)= 5.818, p<.01$ and plural endings $F(2,19)= 20.473, p<.000$.

This suggests that that the correct usage of prepositions, conjunctions and plural endings might be related to the level of education, especially in this language contact situation. However, as stated before in relation to the lexical findings, the small number of informants in this category ($n=3$) does not permit a generalization of

the results beyond the present study. Future studies with more informants will indicate if this factor indeed plays an important role in language attrition.

7.2.3. Time since Immigration and Morphological Attrition

The third variable, Time since Immigration, revealed more morphological variation among informants with more than 40 years since immigration. Providing the correct plural endings, articles, prepositions and conjunctions posed some problems. Previous studies (Folmer, 1992; Seliger & Vago, 1991) had not specifically documented the attrition of conjunctions and prepositions, as does the present study. These results were expected since both previous research (Schmid, 2002; Waas, 1993) and personal observation have shown that time since immigration plays an important role in language attrition. These results were consistent with the findings of de Bot, Gommans and Rossing (1991) on Dutch L1 informants in France, where less Amount of Contact with L1 and Time since Immigration indicated language attrition.

For the Immigration Subgroup with 40+ years since immigration, the means for the sum of preposition-conjunctions, plural endings and indefinite-negative pronouns were lower than those of the other three immigration subgroups, but surprisingly, the mean of the definite articles was the highest of all the groups. These findings could be explained by relating the longer Time since Immigration to older age. This relationship has been discussed before: the effects of Time since Immigration on gender/case markings in L1 are similar to the effects of Age on gender/case markings in L1. As stated before, however, these factors are particularly

difficult to isolate from one another because of the frequent direct correlation of time since immigration with age. In the present case, most informants over 60 also had more than 40 years since immigration. Thus there are certain limitations in analyzing and interpreting these findings, and generalizations beyond the present study cannot easily be made.

7.2.4. Amount of L1 Contact and Morphological Attrition

Previous research reported problems in investigating the effect of the variable Amount of L1 Contact on language use and possible attrition (Jaspaert & Kroon, 1989; Schmid, 2002, Waas, 1993). The results from the cloze test indicated lower means of correctly provided morphological items in the group with less frequent L1 contact, especially in the plural endings and definite article category. An ANOVA test revealed significant differences between the different Amount of L1 Contact groups regarding usage of the indefinite and negative articles $F(2,19)=3,888, p=.03$, where the group with less L1 contact had the higher number of mistakes in the usage of articles. No significant differences were recorded in the other morphological categories. Thus Amount of L1 Contact seems to affect only certain morphological categories, but more extensive research with this variable needs to be done to generalize the present findings.

7.2.5 Morphological Attrition in the Picture Description and Interview

In the more naturalistic tasks, picture description and interview, the morphological errors were less numerous than the lexical ones. Most errors were observed in supplying the correct article, plural endings and prepositions. The sum of

all incorrectly supplied items was 32 for all 22 informants and the standard deviation was low, which meant that the data did not vary a lot. Only one informant had a maximum of nine incorrectly supplied items in these two tasks. The independent variables tested previously on the cloze test did not have any effects on the morphological errors in the picture description and interview data.

On the contrary, the descriptive statistics revealed some surprising results in the group with younger informants (20-40 years), who had more morphological errors than the older immigrants group (60 + years). The sum of all incorrectly supplied morphological items was lower in the interview task, only one informant provided more than five morphological items incorrectly. As indicated above, this may be a result of the freedom given to the speaker to avoid particular areas of uncertainty in this type of task.

These findings indicate that the occurrence of mistakes in the morphological domain highly depends on the type of task. A more controlled testing task will produce more incidences of variants as seen in the results from the cloze test, while a less controlled task such as an interview allows the informants to monitor their language usage and choose or even avoid specific items. Despite the current lack of a reliable instrument to capture or verify these possible monitoring strategies, research in L1 attrition needs to identify test approaches which can reliably identify the functioning of these psycholinguistic mechanisms.

7.3. Lexical and Morphological Findings in the Control Group

7.3.1 Age and Lexical Findings in the Control Group

The lexical findings from the Control Group indicated that age is again an important independent variable which can determine some variation in the language use. Older informants from the Control Group performed similarly on the cloze test to the older informants from the Study Group in relationship to younger age groups. At the same time, the means for all individual lexical categories were lower in the Study Group for this age group (ages 45 +) than in the same age group in the Control Group. These results confirm previous research (Goral, 2004; MacKay et al., 2001; Olshtain & Barzilay, 1991) that age related language variation can be a result of healthy aging and does not necessarily have to be attributed to L1 attrition in an immigrant setting. This finding may also indicate differences in language use across generations, particularly in the lexical area, where certain words and turns of phrase have gone out of favor by the time the younger speakers acquire the language.

7.3.2 Level of Education and Lexical and Morphological Findings in the Control Group

Level of Education did not have any observable effect on lexical and morphological performance in the Control group, thus no mistakes could be attributed to lower or higher education level. These results raise the question of whether the findings in the Study Group for Level of Education, can be considered valid. Consequently, a future larger scale study with informants with a variety of levels of

education, would offer more insights.

7.4. Attitudes and Values in the Study Group

The lexical and morphological findings in the present study have been also interpreted in light of the affective factor attitude. Attitudes towards L1 and L2 were investigated and the fourth research question dealt with possible attitudes and value changes of the German immigrants towards the German language and culture:

Due to the continuous changes in technology and globalization, attitudes toward and values associated with language identity might undergo also changes.

Will the East Tennessee group reflect changes in attitudes or values if contrasted with the Control Group in Germany?

In order to best answer this question, the last four questions from the sociolinguistic questionnaire were designed to ask the informants to express their spontaneous associations with the German culture and language as well as the American culture and English language. Also, the last question from the interview asked the informants to talk about cultural and social differences between the USA and Germany. The purpose of these questions was to uncover possible negative attitudes towards L1, which would have led to a rejection of the usage and maintenance of L1. Severe negative attitudes towards a language, as in the case of German Jews who experienced trauma during the Holocaust, have led in some cases to refusal to speak it at all (Schmid, 2002). No such extreme attitudes were expected from the Study Group, but in order to rule out the possibility of any negative effects

of attitudes on L1, the informants were asked about their attitudes towards L1 and L2 languages and cultures, as well as values associated with these languages and cultures.

The answers given by the informants indicate that the attitudes toward the German culture remained highly appreciative, even if some of the answers were stereotypical: food, beer and fast cars, but also music, literature, philosophers, family and social life. The question asking to associate values to the German language posed some difficulty to the informants, and most of them tried to create a portrait of what the German language means for them: their mother tongue, “Heimat”¹⁰⁴ or roots, while others tried to describe it as being exact, direct, rich, descriptive or analytic. On the other hand, the English language received much more appreciation and respect from the informants as being a world language with tradition. Compared to German, it was described as clearer, sometimes more precise and easier to learn.

These findings have a rather informative value and set the larger context of what L1 and L2 represent for the informants and what attitudes are associated with each of the language. They have not been measured quantitatively in the present study but are mentioned as the contextual background in which aspects of language attrition occurred. Some topics have influenced the use of a larger number of English borrowings such as idiomatic expressions, phrases and collocations. However, these findings, similar to Yağmur’s (1997) study investigating Turkish immigrants in Australia and Hulsen’s (2000) study investigating three generations of Dutch immigrants in New Zealand, account for only some aspects of language attrition. In

further research, more in-depth analysis of longer interviews and more informants would reveal if some aspects of language attrition are indeed determined by shifts in attitudes, motivation and social, economical, political or cultural interests.

7.5. Attitudes and Values in the Control Group

In parallel, the Control Group in Germany was asked the same questions to see if the two groups behave similarly in terms of values and attitudes. The Control Group had similar stereotypical answers associated with the German culture: food, cars, precision, politics and some high culture products like music, theater and literature. The question about the German language yielded similar answers as from the Study Group and the one about the English language and associated values was answered by nine of the informants and “world language” and “global means of communication” were almost the unanimous answers.

Similar answers given by the Study and Control Group regarding the values associated with English and German and the attitudes toward both these languages could indicate these attitudes and values had remained unchanged in the Study Group even over longer periods of time or that they represent a present-day global perspective on these languages.

¹⁰⁴ Homeland in German.

7.6. Language Mixing in the Study Group

Finally, the last research question dealt with the informants' self-perceived language or code mixing. *How do the informants from the East Tennessee group perceive their language change/mixing, if any?* This question was put explicitly at the end of the socio-biographic questionnaire, but some informants approached or mentioned this issue spontaneously during the picture description and interview, especially when they had difficulty recalling a German word or phrase.

In terms of language contact, all German informants from the Study Group and their families were very well integrated in the U.S. social environment, with permanent contact to the L2 community and using English on a daily basis in different contexts outside and inside the house with American spouses and with their children. Some preferred to converse in English and out of the six who reported English language dominance, four had more than 30 years since immigration. The English preference findings were similar to Gross (2002), whose informants with more than 40 years since immigration reported English as their dominant language.

More than half of the informants still prefer to speak German in many situations, even outside the family environment. This fact would have contributed to a better maintenance of the L1 as similar findings from a study on first-generation Dutch immigrants to Australia show (Hulsen, 2000). All informants admitted to mixing English words in their German conversations with friends and even family in Germany. Specific situations when this occurred were usually work-related conversations, technical terms, politics, jokes, daily activities and school related.

Idioms and phrases were among the items mentioned to be frequently borrowed from English.

For the majority of informants (60%), the attitudes towards mixing the languages were relatively neutral, ranging from “common” and “acceptable” to “it happens.” For six, however, this mixing was perceived as negative. Only three found it acceptable, which indicates that the majority of the informants do not like English-German code switching and using of English words in their German speech, even if all agreed that it happened and sometimes is unavoidable. Older informants seemed to be more neutral towards this practice than informants in the age group 40-60, who expressed the most strongly negative attitudes toward language mixing. These findings are an indication that the informants are well aware of their code-mixing practices, which makes some of them feel sad or disappointed.

7.7. Language Mixing in the Control Group

In contrast, four informants from the Control Group in Germany found language mixing positive and four had a negative attitude towards these practices. The German Study Group had a much lower percentage of positive attitudes to mixing than the Control Group. The highest percentage of the Study Group (40.9%) reflected a neutral attitude. These results could be possible indication of some attitudinal changes over time regarding L1 use. Older informants have experienced this code-switching and language mixing over a longer period of time in comparison to younger ones. Those informants in the 40-60 group still feel that they have to make

the effort to keep the two languages apart as much as possible, in order not to accelerate the attrition process. On the other hand, much younger informants, having more neutral to positive attitudes toward the mixing, realize that English is omnipresent in a large variety of domains, especially the language at the work place, thus language mixing is inevitable.

7.8. Brief Summary of the Main Findings

In conclusion, the Study Group had neutral to negative attitudes to code switching or language mixing, with only 13.3% registering positive views compared to the Control Group that had more balanced attitudes toward language mixing. However, the conditions and contexts of the two groups can not be equated, since for the Germans in Germany using English is a deliberate choice to show language enrichment, while for the Germans in USA, this could be a necessity in order to successfully communicate precisely, as discussed above.

The findings from the present study have indicated that certain language domains are more susceptible to attrition in different degrees and some extra-linguistic factors are more likely to induce them. Overall, language attrition in German immigrants in East Tennessee is not severe, but there are tendencies towards simplification of the language as well as frequent code-switching.

However, as with any empirical study, where different tests were performed on the data--some more frequently used in L1 data analysis, such as the ANOVA test of significance but some completely innovative, such as the lexical density test and

the cross-checking of term occurrence in dictionaries and Internet sites--the limitations of the present study need to be addressed. This will be done in the following Chapter 8, which includes the conclusions, limitations and future research agenda.

8. CONCLUSIONS, LIMITATIONS AND IMPLICATIONS FOR FURTHER RESEARCH

Although the present study was experimental in nature and looked only at the interplay between a few sociolinguistic factors and different lexical and morphological variables, it has shown that the variables Age, Level of Education, Amount of L1 Contact and Time since Immigration affect to different degrees the first language usage of German immigrants. Different aspects of first language attrition have been isolated in the analyses of these factors in relationship to different linguistic variables. Inferences about aspects of first language attrition have been made mainly in relationship to the language performance of a Control Group in Germany, which received the same tasks as the Study Group in the U.S.

In analyzing these independent factors, some limitations of the research design were observed. As discussed in Chapter 7, the difficulty in treating separately the variables Age and Time since Immigration raised some problems, especially regarding the data from the elderly immigrants. Older immigrants tend to have emigrated long time ago, thus some of the results do overlap and cannot be easily treated independently. Most noticeable aspects of first language attrition have been observed in lexical retrieval difficulties in the age group 60+ years, but English borrowings and calques have been identified in all age groups. The tendency to simplify grammar, especially the avoidance of highly marked features such as irregular plural endings and case markings was noticed in the transcriptions. Older immigrants had less fluent speech, mostly characterized by longer pauses, rephrasing

or frequent speech fillers, and their productive skills diminished, but receptive language skills were still very well preserved, as discussed in Chapter 7.

In this study, a lower Level of Education in this study affected use of adjectives, adverbs, plural endings, prepositions and conjunctions. However, the limited number of informants in this variable group does not permit a generalization beyond this study, though it provides a starting point to further investigate the relationship between this extra-linguistic independent variable and different linguistic variables on a larger scale study and with informants with more varied educational background. The investigation of this independent variable tends also to be more difficult, since more recent immigrants tend to have a higher education level (Schmid, 2004), as is the case with the present study, where 86 % of the 22 informants had an education beyond secondary school.

Given the importance of the investigation of attitudes and motivation towards language change and attrition (Schmid, 2004), which can highly influence the maintenance or loss of ones language, the present study has tried to investigate briefly and discuss the effects of the variable Attitude. The findings were based, however, only on the informants' answers to three explicitly asked questions relating to attitudes towards L1, L2 and language mixing. Some implicit findings were obtained from the interview and discussed in relationship to attitudes. Attitudes toward language mixing in the Study Group ranged from positive (13.6%) to negative (17%), but the most (41%) were neutral. All of the informants from the Study Group mentioned employing English words in their German speech in different situation.

The limitations of the study design, main objectives and data collection

methods did not permit a more in-depth analysis of this independent variable. A future ethnolinguistic study with a design focused on language attitudes, values, motivation, language prestige together with questions about ethnicity and identity, would better uncover the complex relationship between these variables and language use.

While the focus of the present study was mainly on lexical and morphological language attrition, a future analysis of the same or new data from a syntactical perspective will be of great importance to complement the findings. Some general observations on the lack of syntactical complexity in the language use of some informants were made and discussed in Chapter 6, but a more detailed and focused analysis of sentence constructions and variety, with careful consideration of discourse markers, speech fillers, repartee, number of rephrases, or length of pauses, will shed more light on the complex language processing immigrant bilinguals undergo.

Also a larger control group better matching the immigrant informants from different geographical regions of Germany would give a better understanding of the local language varieties. In the present study, financial and time constraints interfered with the possibility of collecting more data from more than 12 Germans in Germany. At the same time, the present study did not investigate dialectal peculiarities of the informants from the Study Group, even if some questions regarding usage of regional versus Standard German arose during the data analysis. This is another limitation of the study, which could be addressed in future research through an in-depth analysis of the present data or new data from a dialectal or regional language perspective. The findings might reveal interesting distinctions between the language varieties spoken

by the informants from both the Study Group and the Control Group.

In conclusion, the overall language proficiency level of the informants indicated a still good command of German on both the productive and receptive language level. Their productive abilities were tested in all tasks: in the socio-linguistic questionnaire, where they had to answer in writing by their choice in German or English, in the cloze test to fill in the gaps with the correct German function or content words and in the picture description task and interview where they had to spontaneously produce spoken data. The receptive language skills were not tested per se, but emerged indirectly through the questionnaire, where they had to understand the meaning of the questions in German in order to give answers and through the cloze test, where they had to understand the context in order to supply the appropriate terms.

Instances of language attrition encountered in the data were selective and more noticeable in tests with time and content constraints, such as the cloze test and the picture description. On the lexical level, these came mainly in form of different English borrowings or loan translations, but also in unusual word choice in German or even new word formations, as described in Chapter 6. When informants encountered difficulties in finding the exact German word, they frequently used circumlocutions by paraphrasing in German or provided the English equivalent, if no matching term was easily retrieved.

The advantages of the tasks used in the study were that they offered the researcher some control over the data to be provided, but at the same time, the informants had relative freedom to choose the appropriate terms, without struggling

for exact matches as in the case of picture-naming tasks frequently used in previous language attrition studies (Hulsen, 2000; Waas, 1993). In the interview setting, the informants had even more control over their language production and more time to activate certain language features. They also had control over the choice of events to be described, as long as they were responsive to the general questions asked by the researcher. All informants had at least one or two instances of code-switching or English borrowings.

While descriptions of realistic pictures are a good tool to uncover some language use aspects, they cannot account for the multitude of themes surrounding daily life. For possible future research, descriptions of a realistic picture or video story instead of just unrelated pictures would address an array of themes from social, economical, familial, religious, political or cultural contexts, which might better uncover certain patterns in the language use of immigrants undergoing language attrition, provided the language presented in the video dialog does not re-activate dormant language, i.e. precisely the material giving evidence of attrition, thereby skewing the data.

From a methodological point of view, this study improved and refined some of the data collection tools used in previous research and also incorporated some new techniques to analyze the data. Some of the tasks, however, still need to be perfected in future research, such as the evaluation task. The findings from the evaluation task given to the Control Group indicated some interesting aspects but this task needs to be further refined and developed to be a more reliable tool to evaluate language proficiency. Also, the limited number of informants did not offer enough data to

make generalizations beyond the present study.

Also more innovative testing tools need to be developed, which better reflect the present highly communicative era in which we live, where globalization is bringing the farthest cultures into close connection and where digital media and associated language are impinging daily on the life of people around the world. A first attempt in this direction was made in the present study by including a cross-checking test of terms used by the informants on different Internet sites and in two editions of the *Duden Foreign Word Dictionary*. This type of analysis, a novelty in first language research as far as I am aware at the present date, did reveal the existence of a high number of English terms on German Internet sites. The limitations and possible faults of this test are, however, the minimal control on the researcher side over the authorship of the content of the Internet sites and whether they can be attributed to a specific country or standard language. This is why the results of this analysis have been interpreted with caution in the present study. A further development and refinement of this testing tool is possible and it would give great insights into language attrition research, by enabling instant and real-time comparison of language varieties and usage on different continents.

The qualitative analysis revealed some interesting accounts of language processing, which shed more light on the “on/off switching” bilinguals practice in trying to keep the two languages apart and how difficult this switching oftentimes can be. The code-switching in certain life domains such as work setting, daily routine, shopping or leisure activities indicates that these lexical domains were more prone to language change, and ultimately language attrition, whereas retelling childhood

memories did not trigger any English borrowings. Informed by these findings, it would be particularly interesting to investigate from a neurolinguistic perspective: what activation and deactivation techniques are accounted for in bilingual language processing; what themes trigger more language code switching and how exactly they do this.

Further on, most of the studies, due to financial and time constraints tend to investigate the language phenomenon synchronically. There is still the need for larger studies on the same population repeated over a period of time. Longitudinal studies are better for observing precisely what language changes appear in individuals of a certain group over time and to what degree (de Bot & Clyne, 1994; Hutz, 2004). The present study has investigated aspects of first language attrition synchronically, but a future longitudinal study, repeated in a decade, might reveal different aspects of language attrition.

As other researchers have suggested (Schmid & Köpke, 2004), a more challenging endeavor for future study is the close investigations of first language loss patterns which could parallel patterns in second language acquisition. It has been previously suggested (Berko-Gleason, 1982; Seliger& Vago, 1991; Valdman, 1982) that insights from language loss studies, both L1 and L2 loss, applied in formal second language acquisition settings could give foreign language instructors a better knowledge of what language aspects to focus on when teaching a second language. Such studies also can provide a better understanding of what language domains are more vulnerable to loss and which are better maintained. Also better information on bilingual families on the different research findings will help them better understand

the complex processes bilingual children and adults undergo. These dual-purpose studies are of great importance, even though the design and the procedures for setting up such a study, the actual data collection and analysis would be a great challenge, both in expenditures of time and money, but the findings have the potential to benefit generations of bilinguals and foreign language learners.

In conclusion, the present study revealed that L1 proficiency decreases over time in first generation German immigrants, especially in the elderly, despite relatively high frequency and intensity of L1 contact including efforts to maintain the language proficiency through visits to the country of origin. Informants of all ages had instances of L1 and L2 lexical mixing, L2 borrowings, especially in the work, shopping, leisure and daily routine domain as well as some noticeable morphological errors, which were discussed in detail in Chapter 5. Depending on the level of activation, the “on/off” language switch could not prevent lexical interference from L1 to L2 and vice versa. However, language attrition is not severe overall and all informants still maintain good conversational skills.

I conclude my study with the hope that the present research in language attrition helped to improve our understanding of how multilinguals process their L1, L2 and language in general and helped to shed some light on the possible order and patterns in which items are lost, as well as factors that contribute to these occurrences in the language system. For the future I would urge more studies on languages in danger of disappearing and more promotion of language diversity in the USA. It is my hope that this study may contribute to a better awareness of the need of a better language planning policy in USA, support for minority language maintenance and the

preservation of endangered languages and their associated cultures. A sustained effort of promoting language diversity, bilingual schools, multilingual cultural and social programs in broadcasting and cultural events on large scales could reverse or at least slow down the rate of dramatic loss of world languages in the near future.

REFERENCES

- Abraham, R., G., & Chapelle, A., C. (1992). The meaning of cloze test scores: An item difficulty perspective. *MLJ*, 76, 468- 479.
- Altenberg, E. P. (1991). Assessing first language vulnerability to attrition. In Seliger, H., W. & Vago, R. M. (Eds.). *First language attrition*, 189- 206 New York, NY: Cambridge U Press.
- Altenberg, E. P., & Vago, R. M. (2004). The Role of Grammaticality Judgments in Investigating First Language attrition: A cross-disciplinary Perspective. In Schmid, Monika S., Köpke, Barbara, Keijzer, Merel, & L. Weilemar (Eds.), *First language attrition: Interdisciplinary perspectives on methodological issues* (pp. 105-129). Amsterdam; Netherlands: John Benjamins.
- Anderson, Keith O. and Williard, M. Martin (1976). Language loyalty among the Pennsylvania Germans: A status report on Old Order Mennonites in Pennsylvania and Ontario. In Erich, A. Albrecht and J. Anthony Burzle (Eds.), *Germanica Americana* (pp. 73-80). Lawrence: University of Kansas.
- Anfara, V., A., & , Mertz, N., T. (Eds.). (2006) .*Theoretical frameworks in qualitative research*. Thousand Oaks, California: SAGE Publications.
- Ben-Rafael, M. (2004). Language contact and attrition: The Spoken French of Israeli Francophones. In Schmid, Monika S., Köpke, Barbara, Keijzer, Merel, & L. Weilemar (Eds.), *First language attrition: Interdisciplinary perspectives on methodological issues* (pp. 165-187). Amsterdam; Netherlands: John Benjamins
- Berko-Gleason, J. (1982). Insights from child language acquisition for second language loss. In R.D.Lambert & Freed (eds.), *The Loss of Language Skills* (pp.13-23). Rowley, MA: Newbury House.
- Blessner, Ria de & Kauschke Christina. (2003). Acquisition and loss of nouns and verbs: parallel or divergent patterns? *Journal of Neurolinguistics*, 16, 213-29.
- Bolonyai Agnes. (2000). Elective Affinities: Language Contact in the Abstract Lexicon and its Structural Consequences. *The International Journal of Bilingualism*. 4, (1), 81-106.
- Bolonyai Agnes and Lida Dutkova-Cope.(2001).L1 Attrition of Verbal Morphology in Bilingual Children and Adults. In Xenia Bonch-Bruevich et al (Eds.), *The Past, Present, and Future of Second Language Research* (pp104-123).Somerville: Cascadilla Press.
- Bowen, J.D., Madsen H, and Hilferty, A. (1985). *TESOL: Techniques and Procedures*. Rowley, MA: Newbury House Publishers.

- Boyd, S. (1993). Attrition or expansion? Changes in the lexicon of Finnish and American adult bilinguals in Sweden. In K. Hyltenstam & A. Viberg (Eds), *Progression and regression in language: Sociocultural, neuropsychological and linguistic perspectives* (pp.386-411). Cambridge: Cambridge University Press.
- Brittingham Angela, & G. Patricia de la Cruz (2004, June). *Ancestry 2000. Census 2000 Brief*. Retrieved February 20, 2007, from U.S. Census Bureau <http://www.census.gov/prod/2004pubs/c2kbr-35.pdf>
- Brons-Albert, R. (1994). Interferenzfehler in der Muttersprache von in den Niederlanden lebenden Deutschen. In B. Spillner (Ed.), *Nachbarsprachen in Europa [Kongreßbeiträge zur Jahrestagung der Gesellschaft für Angewandte Linguistik 23]* (pp. 96- 105). Frankfurt: Peter Lang.
- Brown, J. D. (1988). Tailored cloze: Improved with classical item analysis techniques. *Language Testing*, 5(1), 19-31.
- Chamberlain, J. T. (1993). First language attrition. *Studies in Second Language Acquisition*, 15(4), 524-525.
- Clyne Michael. (1992).Linguistic and Sociolinguistic Aspects of Language Contact, Maintenance and Loss. Towards a Multifacet Theory. *Maintenance and Loss of Minority Languages*, Amsterdam: 17-36.
- Cook, V.J. (1992). 'Evidence for multi-competence', *Language Learning*, 42, 4, 557-591
- Cook, Vivian. 2003. Introduction: the Changing L1 in the L2 Users Mind. Cook Vivian (Eds.). In *Effects of the Second Language on the First. Second Language Acquisition* (3).Series. David Singleton (Ed.). Clevedon, Buffalo, Toronto, Sydney: Multilingual Matters Ltd.
- Corvalan-Silva, Carmen.(1991). Spanish Language Attrition in a Contact Situation with English. In Seliger, H. and Robert Vago. (Eds.), *First Language Attrition* (pp151- 74).Cambridge: Cambridge UP.
- Creswell, J. (1998).*Qualitative inquiry and Research Design: Choosing Among Five Traditions*. Thousand Oaks: Sage.
- De Bot, K. & Lintsen, T. (1989). Perception of own language proficiency by elderly adults.*I.T.L.*, June (83-84), 51-61.
- De Bot , K. & Weltens B. (1991). Recapitulation, regression and language loss. In Seliger, H. W., & Vago, R. M. (Eds.), *First language attrition*. New York, NY: Cambridge U Press.

- De Bot, K. & Clyne, M. (1994). A 16-year Longitudinal Study of Language Attrition in Dutch Immigrants in Australia. *Journal of Multilingual and Multicultural Development*, 15(1), 17-28.
- De Bot, K. and Monika Schmid. (2004). Language Attrition. In Alan Davis, Catherine Elder (Eds.) *The Handbook of Applied Linguistics* (pp 210-231). Malden: Blackwell Publishers.
- De Bot, K., Gommans P., and Carola Rossing. (1991). L1 Loss in an L2 Environment: Dutch Immigrants in France. In H. W. Seliger & R.M. Vago (Eds), *First Language Attrition* (pp 87- 98). Cambridge: CUP.
- De Bot, K. and Saskia Stoessel. (2000). In Search of Yesterday's Words: Reactivating A Long Forgotten Language. *Applied Linguistics*, 21/3, 333-353.
- Denzin, N.K. & Lincoln, Y.S. (2005). *The Sage Handbook of Qualitative Research*. 3rd Edition. Thousand Oaks: Sage.
- Dorian, N. C. (1992). First language attrition. *Language*, 68(4), 844-848.
- Dudenredaktion (Bibliographisches Institut). (1997). *Duden Fremdwörterbuch*. [Duden Foreign Language Dictionary]. Duden in 12 Bänden, 6. Auflage, Bd. 5. Mannheim: Dudenverlag.
- Eisenberg, P. et al. (Hsg) (1998). *Duden, Grammatik der deutschen Gegenwartssprache*. [Duden, Grammar of the German Present-day Language] Der Duden in 12 Bänden, 6. Auflage, Bd. 4. Mannheim: Dudenverlag.
- Dudenredaktion (Bibliographisches Institut). (2005). *Duden Fremdwörterbuch : auf der Grundlage der neuen amtlichen Rechtschreibregeln*. [Duden Foreign Language Dictionary on the base of the new official spelling rules] Duden in 12 Bänden, 8. Auflage, Bd. 5. Mannheim: Dudenverlag.
- Durell, M., (1996). *Hammer's German Grammar and Usage*. 3rd ed. London: Edward Arnold.
- Folmer, J. (1992). Dutch Immigrants in New Zealand: A Case Study of Language Shift and Language Loss. *Australian Review of Applied Linguistics* 15 (2), 1-18.
- Francis, N. (2005). Research findings on early first language attrition: Implications for the discussion on critical periods in language acquisition. *Language Learning*, 55(3), 491-531.
- Gal, Susan. (1979). *Language Shift: Social Determinants of Linguistic Change in Bilingual Austria*. New York: Academic Press.

- Giesbers, H. (1997). Dutch in Indonesia: Language attrition or language contact? In J. Klatter-Folemer & S. Kroon (Eds.), *Dutch Overseas: Studies in maintenance and loss of Dutch as an immigrant language* (pp.163- 180), Tilburg: Tilburg University Press.
- Goral, Mira. (2004). First- language decline in healthy aging: implications for attrition in bilingualism. *Journal of Neurolinguistics*, 17, 31-52.
- Gordon, Raymond G., Jr. (Ed.). (2005). *Ethnologue: Languages of the World*, fifteenth edition. Dallas, TX: SIL International. Retrieved July, 3, 2007 from <http://www.ethnologue.com/>.
- Goss, Emily L., Salmons, Joseph C.(2000). The Evolution of a Bilingual Discourse Marking System: Modal Particles and English Markers in German-American dialects. *The International Journal of Bilingualism*, 4, (4), 469-484.
- Green, David W. (1986). Control, Activation, and Resource: A Framework and a Model for the Control of Speech in Bilinguals. *Brain and Language*, 27(2), Mar, 210-223.
- Gross, S. (2004). A modest proposal: Explaining language attrition in the context of contact linguistics. In Schmid, Monika S., Köpke, Barbara, Keijzer, Merel, & L. Weilemar (Eds.), *First language attrition: Interdisciplinary perspectives on methodological issues* (pp. 281-297). Amsterdam; Netherlands: John Benjamins.
- Gross, S. (2000). *The role of abstract lexical structure in first language attrition: Germans in America*. Dissertation Abstracts International, A: The Humanities and Social Sciences, 61 (7), 2681-A.
- Guardado, Martin. (2002). Loss and Maintenance of First Language Skills: Case Studies of Hispanic Families in Vancouver. *The Canadian Modern Language Review/ LA Revue Canadienne des langues vivantes*. 58, (3), 341- 63.
- Gürel, A. (2004). Attrition in L1 competence: The case of Turkish. In Schmid, Monika S., Köpke, Barbara, Keijzer, Merel, & L. Weilemar (Eds.), *First language attrition: Interdisciplinary perspectives on methodological issues* (pp. 225-242). Amsterdam; Netherlands: John Benjamins.
- Gürel, A. (2003). *Linguistic characteristics of second language acquisition and first language attrition: Turkish overt versus null pronouns*. Dissertation Abstracts International: The Humanities and Social Sciences, 64 (4), 1235-A.
- Gürel, A. (2003). Selectivity in L2- induced L1 attrition: a psycholinguistic account. *Journal of Neurolinguistics*, 17, 53-78.

- Håkansson, G. (1995). Syntax and Morphology in Language Attrition: A Study of Five Bilingual Expatriate Swedes. *International Journal of Applied Linguistics*, 5 (2), 153-171.
- Halliday, M. A. K. and Christian M. I. M. Matthiessen. 1999. *Construing Experience through Meaning: A Language-based Approach to Cognition*. London: Cassell.
- Harres, Anne. (1989). 'Being a Good German': A case study analysis of language retention and loss among German migrants in North Queensland. *Journal of Multilingual and Multicultural Development*, 10 (5), 383-399.
- Haugen, Einar. (1938) Language and Immigration. *Norwegian-American Studies and Records*, 10:1-43.
- Hawkins, John, A., (1986). *A Comparative Typology of English and German. Unifying the Contrasts*. London & Sydney: Croom Helm.
- Heine, Bernd and Tania Kuteva (2005). *Language contact and grammatical change*. Cambridge; New York : Cambridge University Press, .
- Helbig, Gerhard, Joachim Buscha. (1980). *Deutsche Grammatik. Ein Handbuch für den Ausländerunterricht*. 6. Aufl. Leipzig: VEB Verlag Enzyklopädie
- Hinofotis, F.B. (1987) Cloze testing: An overview. In M. Long and J. Richards (eds) *Methodology in TESOL*, Rowley, MA: Newbury House.
- Houtkoop, Hanneke. (2000). *Interaction and the Standardized Survey Interview: The Living Questionnaire*. Cambridge, New York: Cambridge University Press.
- Huffines, Marion Lois.(1980). Pennsylvania German: Maintenance and Shift. *International Journal of the Sociology of Language*, (25), 43-57.
- Hulsen, M. (2000). *Language Loss and Language Processing. Three Generations of DutchMigrants in New Zealand*. Unpublished Doctoral Dissertation., Katholieke Universiteit Nijmegen.
- Hutz, M.(2004). Is there a natural process of decay? A longitudinal study of language attrition. In Schmid, Monika S., Kopke, Barbara,Keijzer, Merel, & L. Weilemar (Eds.), *First language attrition: Interdisciplinary perspectives on methodological issues* (pp. 189-206). Amsterdam; Netherlands: John Benjamins.
- Isurin, L.(2000). Deserted island or a child's first language forgetting. *Bilingualism: Language and Cognition*, 3, 151-166.
- Jaspaert, K., Kroon.S.& van Hout, R. (1986). Points of reference in language loss

- research. In Weltens B., K. de Bot, & T. van Els (Eds.), *Language Attrition in Progress* (pp. 37-49). Dordrecht: Foris.
- Jaspaert, K., & Kroon, S. (1989). Social determinants of language loss. *I.T.L. Review of Applied Linguistics*, 83-98.
- Jessner, Ulrike. (2003). A Dynamic approach to Language Attrition in Multilingual Systems. In Cook Vivian (Ed.) *Effects of the Second Language on the First. Second Language Acquisition* (3). Series. David Singleton (Ed.) (pp.234-250). Clevedon, Buffalo, Toronto, Sydney: Multilingual Matters Ltd.
- Jimenez Jimenez, A. F. (2004). A sociocultural approach to language attrition. In Schmid, Monika S., Köpke, Barbara, Keijzer, Merel, & L. Weilemar (Eds.), *First language attrition: Interdisciplinary perspectives on methodological issues* (pp. 61-80). Amsterdam; Netherlands: John Benjamins.
- Jordens Peter and Kees De Bot. (1994). Linguistic Aspects of Regression in German Case Marking, *SSLA*, 11, 179-204.
- Kaufman, D. (1995). Where have all the verbs gone? Autonomy and interaction in attrition. *Southwest Journal of Linguistics*, 14(1-2), 43-66.
- Kaufman, D. H. (1992). *First language attrition as a creative interplay between two languages*. Dissertation Abstracts International, A: The Humanities and Social Sciences, 52 (9), 3263-A.
- Kecskes, I., & Papp, T. (2000). *Foreign language and mother tongue*. Mahwah, NJ: Lawrence Erlbaum.
- Keiser, Steven Hartman (2001). Language change across speech islands: the emergence of a Midwestern dialect of Pennsylvania German. Unpublished Doctoral Dissertation. Columbus, OH: The Ohio State University.
- Keijzer, Merel. (2004). First language attrition: a cross-linguistic investigation of Jacobson's regression hypothesis. *International Journal of Bilingualism*, 8, (3), 389-393.
- Kenny, K. D. (1996). *Language loss and the crisis of cognition: Between socio- and psycholinguistics*. Berlin, Federal Republic Germany: Walter de Gruyter & Co.
- Kobayashi, Miyoko. (2002). Cloze Tests Revisited: Exploring Item Characteristics with Special Attention to Scoring Methods. *The Modern Language Journal*, 86(4), pp 571- 586.
- Köpke Barbara. (1999) L'Attrition de la première langue chez deux groupes de

bilingues tardifs.(First-Language Attrition in Two Groups of Late Bilinguals)
Revue PArole, 1999, 11-12, 199-219.

Köpke, B. (2001). What linguistic changes occur in first-language attrition of adults who become bilingual? *Travaux neuchatois de linguistique (TRANEL)*, 34-35, 355-368.

Köpke, B. & Nespoulos, J.-L. (2001). First language attrition in production skills and metalinguistic abilities in German- English and German- French bilinguals. In T. Ammerlaan, M. Hulsen, H. Strating, & K. Yagmur (Eds.), *Sociolinguistic and Psycholinguistic Perspectives on Maintenance and Loss of Minority Languages*, 221-234. Münster: Waxmann.

Köpke, B. (2002, June 06). *Attrition is not a unitary phenomenon. On different possible outcomes of language contact situations*. Paper presented at the 2002 ACTAS, II SIB, 1331-1347. Article retrieved May 15, 2007, from <http://webs.uvigo.es/ssl/actas2002/06/06.%20Barbara%20Kopke.pdf>

Köpke, B., & Schmid, M. S. (2004). Language attrition: The next phase. In Schmid, Monika S., Köpke, Barbara, Keijzer, Merel, & L. Weilemar (Eds.), *First language attrition: Interdisciplinary perspectives on methodological issues* (pp. 1-43). Amsterdam; Netherlands: John Benjamins.

Köpke, Barbara.(2004). Neurolinguistic aspects of attrition. *Journal of Neurolinguistics*, 17, 3-30.

Kouritzin, Sandra G. (1999). *Face(t)s of First Language Loss*. New Jersey; London: Lawrence Erlbaum Associates, Publishers.

Labov, William. 1981. Speech actions and reactions in personal narrative. In D. Tannen (ed.), *Analyzing Discourse: Text and Talk*. Georgetown University Round Table. Washington, DC: Georgetown University Press. Pp. 217-247.

Lambert, R., D., and Freed , B., F. (1982). *The loss of language skills*. Rowley, MA: Newbury House Publishers.

Levy, B., McVeigh N., Marful A., & Anderson M. (2007). Inhibiting Your Native Language. The Role of Retrieval- Induced Forgetting during Second Language Acquisition. *Association for Psychological Studies*. 18(1).p 29-34.

[Mackay, Anna J](#); [Connor, Lisa Tabor](#); [Albert, Martin L](#); [Obler, Loraine K](#).(2001). Noun and Verb Retrieval in Healthy Aging. *Journal of the International Neuropsychological Society*. 8, (6 Sept).p 764-770.

- Mackey, William F. (1979). Geocoding Language Loss from Census Data. In William Mackey and Jacob Ornstein (Eds.), *Sociolinguistic Studies in Language Contact. Series. Trends in Linguistic. Studies and Monographs*, 6. The Hague, New York: Mouton Publishers.
- Major, R.C.(1992). Losing English as a first language. *The Modern Language Journal*, 7(2), 190-208.
- Mesthrie, Rajend et al. (2000). *Introducing Sociolinguistics*. Philadelphia: John Benjamins.
- Millroy, L., & Gordon Matthew (2003). *Sociolinguistics: Method and Interpretation*. Blackwell Publishing.
- Modern Language Association.(2006, March 15). *MLA language map*. Retrieved January 12, 2007, from http://www.mla.org/map_single
- Montrul, S. (2004). Convergent outcomes in L2 acquisition and L1 loss. In Schmid, Monika S., Köpcke, Barbara, Keijzer, Merel, & L. Weilemar (Eds.), *First language attrition: Interdisciplinary perspectives on methodological issues* (pp. 259-279). Amsterdam; Netherlands: John Benjamins.
- Montrul, S. (2002). Competence and performance differences between monolinguals and 2nd generation bilinguals in the Tense/Aspect domain. In Lee, James F., Geeslin, Kimberly L., & J. C. Clements (Eds.), *Structure, meaning, and acquisition in Spanish: Papers from the 4th Hispanic linguistics symposium* (pp. 93-114). Somerville, MA; United States: Cascadia.
- Nussbaumer, Markus. (2003). *Die Zukunft der deutschen Sprache. Eine Streitschrift*. Hrsg. v. Helmut Glück und Walter. Leipzig: Ernst Klett, Schulbuchverlag, 2000, 93 S. *Zeitschrift für Germanistische Linguistik*, 31, 1, 109-118.
- Odlin, T.(1989). *Language Transfer: Cross- linguistic influence in language learning*. Cambridge: CUP.
- Olshtain, E., & Barzilay, M., (1991). Lexical retrieval difficulties in adult language attrition. In Seliger, H. W., & Vago, R. M. (Eds.) *First language attrition*. (pp 139- 150). Cambridge: Cambridge University Press.
- Osgood, C.E., Suci, G., & Tannenbaum, P.(1957). *The measurement of meaning*. Urbana, IL: University of Illinois Press.

- Pan, Alexandra & Jean B. Gleason. (1986). The Study of Language Loss: Models and Hypotheses for an Emerging Discipline. *Applied Psycholinguistics*, 7, 193-206. Cambridge: CUP.
- Paradis, M. (1981). Neurolinguistic Organization of a Bilingual's Two Languages. In J. E. Copeland and P. W. Davis (Eds.) *The Seventh LACUS Forum*, 486-494. Columbia, SC: Hornbeam Press.
- Paulston, Christina Bratt. (1994). Social Factors in Language Maintenance and Language Shift. *Linguistic Minority in Multilingual Settings. Implication for Language Policies. Studies in Bilingualism*. Amsterdam; Philadelphia: John Benjamins.
- Pavlenko, A. (2000). L2 influence on L1 in late bilingualism. *Issues in Applied Linguistics*, 11, 175-205.
- Pavlenko, A. (2004). L2 influence and L1 attrition in adult bilingualism. In Schmid, Monika S., Kopke, Barbara, Keijzer, Merel, & L. Weilemar (Eds.), *First language attrition: Interdisciplinary perspectives on methodological issues* (pp. 47-59). Amsterdam; Netherlands: John Benjamins.
- Porte, Graeme. (1999). English as a Forgotten Language. *ELT Journal*, 53, (1), 28-35.
- Porter, M. F. (1980). An algorithm for suffix stripping. *Program*, 14(3):130-137.
- Queen, Robin. (2001). Bilingual intonation patterns: Evidence of language change from Turkish- German bilingual children. *Language in Society*, 30, 55-80
- Ramos-Pellicia, Michelle, F. (2004). Language Contact and Dialect Contact: Cross-Generational Phonological Variation in a Puerto Rican Community in the Midwest of the United States. Unpublished Doctoral Dissertation. Columbus, OH: The Ohio State University.
- Roeper Thomas. (1999) Universal Bilingualism. *Bilingualism: Language and Cognition*, 2, 169-186, Cambridge University Press.
- Romaine, S. (1989). *Bilingualism*. Oxford: Blackwell.
- Rubin, Herbert J. and Irene. (2005). Qualitative Interviewing. *The Art of Hearing Data*. 2nd Edition. Thousand Oaks: Sage.
- Salmons, Joe (1992). *Accentual change and language contact: Comparative survey and a case study of early northern Europe*. Stanford, California: Stanford University Press.

- Samarin, William, Kalmar Ivan.(1979). Evaluational Reactions to Foreign Accent among Immigrants in Toronto. In William Mackey and Jacob Ornstein (Eds), *Sociolinguistic Studies in Language Contact. Series.Trends in Linguistic. Studies and Monographs, 6*.The Hague, New York: Mouton Publishers.
- Scherag, Andre, Demuth Lisa, Rösler Frank, Neville, Helen J., Röder, Brigitte. (2004). The effects of late acquisition of L2 and the consequences of immigration on L1 for semantic and morpho-syntactic language aspects. *Cognition, 93*, B94-B108.
- Schmid, M. S. (2004). A new blueprint for language attrition research. In Schmid, Monika S., Kopke, Barbara,Keijzer, Merel, & L. Weilemar (Eds.), *First language attrition: Interdisciplinary perspectives on methodological issues* (pp. 349-363). Amsterdam; Netherlands: John Benjamins.
- Schmid, M. S. (2004). First language attrition: The methodology revised. *International Journal of Bilingualism, 8*(3), 239-255.
- Schmid, M. S. (2004). Language attrition research: An annotated bibliography. In Schmid, Monika S., Kopke, Barbara,Keijzer, Merel, & L. Weilemar (Eds.), *First language attrition: Interdisciplinary perspectives on methodological issues* (pp. 317-348). Amsterdam; Netherlands: John Benjamins.
- Schmid, M. S. (2002). *First language attrition, use and maintenance: The case of German Jews in Anglophone countries*. Amsterdam: John Benjamins.
- Schmid, M. S. & Kees de Bot (2004). Language Attrition. In Davies Alan, Catherine Elder (Eds.) *The Handbook of Applied Linguistics* (pp. 210-231) Malden: Blackwell.
- Schmid, M. S., Köpke, B., Keijzer, M., & Weilemar, L. (2004). *First language attrition: Interdisciplinary perspectives on methodological issues*. Amsterdam: John Benjamins.
- Schoenmakers, Marian, Klein Gunnewiek (1989). Structural Aspects of the Loss of Portuguese Among Migrants: A Research Outline (pp 83-84).ITL.
- Seliger, H. W., & Vago, R. M. (1991). *First language attrition*. New York, NY: Cambridge U Press.
- Shah, Sonali & Corley Kevin (2006) Building Better Theory by Bridging the Quantitative-Qualitative Divide. *Journal of Management Studies, 43*:8. Oxford: Blackwell Publishing Ltd, 1821-1835.
- Slobin, D. I. (1977). Language change in childhood and in history. In J. Macnamara

- (Ed.), *Language Learning and Thought*, pp.185-214. New York, NY: Academic Press.
- Stake, Robert E. (2005). Qualitative Case Study. In Denzin, N.K. & Lincoln (Eds.). *The Sage Handbook of Qualitative Research*. 3rd Edition. Thousand Oaks: Sage.
- Stubbs, M. (1996). *Text and Corpus Analysis*. Oxford: Blackwell.
- Taylor, W. (1953) "Cloze Procedure": a new tool for measuring readability. *Journalism Quarterly* 30, 415-433.
- Tesch, Renata (1990). *Qualitative research: analysis types and software tools*. New York : Falmer Press.
- Textalyser.net. (2004). *Textalyzer. Text analysis V 1.05* [Online text analysis software]. Retrieved March 20, 2007 from <http://textalyser.net/>
- Thomason, Sarah G. (2000). Linguistic areas and language history. In D.Gilbers, J. Nerbonne, & J. Schaeken (Eds.). *Languages in contact*. Amsterdam: Rodopi, 311-327.
- Thomason, Sarah G. (2001). *Language contact: an introduction*. Washington: Georgetown University Press.
- Trudgill, P. (1986). *Dialects in Contact*. New York: Blackwell.
- Tsimpli, I., Sorace, A., Heycock, C., & Filiaci, F. (2004). First Language Attrition and Syntactic Subjects: A Study of Greek and Italian Near-Native Speakers of English. *International Journal of Bilingualism*, 8(3), 257-277.
- Unesco Culture (2003, March 26). *Endangered Languages*. Retrieved June 15, 2007, from http://portal.unesco.org/culture/en/ev.php-URL_ID=8270&URL_DO=DO_TOPIC&URL_SECTION=201.html
- Valdman, A. (1982), Language attrition and the administration of secondary school and college foreign language instruction. In R.D. Lambert & B.F. Freed (eds.), *The loss of language skills*, 155-175.
- Van Els, T. (1986). An overview of European research on language attrition. In B. Weltens, K. de Bot, & T. Van Els (Eds.). *Language attrition in progress* (pp.3-18). Dordrecht: Foris.
- Waas, M.(1993). Loss of first language skills in the community: Intermediate stage. *Language Problems and Language Planning*, 17(3), 225-237.

- Waas, Margit. (1993). *Language Attrition among German Speakers in Australia: A sociolinguistic inquiry*. Unpublished Doctoral Dissertation, Sydney: Macquarie University.
- Weinreich, U. (1953). *Languages in Contact*. The Hague: Mouton.
- Weltens, B., K. de Bot, & T. Van Els (Eds.). (1986). *Language attrition in progress*. Dordrecht: Foris.
- Wright, Sue (2004). Introduction. *International Journal on Multicultural Societies (UMS)*, Vol.6, nr.1, 2004:5-13.
- Yağmur, K. (2004). Issues in finding the appropriate methodology in language attrition research. In Schmid, Monika S., Kopke, Barbara, Keijzer, Merel, & L. Weilemar (Eds.), *First language attrition: Interdisciplinary perspectives on methodological issues* (pp. 133-164). Amsterdam; Netherlands: John Benjamins.
- Yağmur, K., De Bot, K., & Korzilius, H. (1999). Language attrition, language shift and ethnolinguistic vitality of Turkish in Australia. *Journal of Multilingual and Multicultural Development*, 20(1), 51-69.
- Yin, Robert K. (1989). *Case Study Research. Design and Methods*. *Applied social research methods series: vol.5*. Newbury Park, London, New Delhi: Sage Publications.
- Zentella, Ana Celia. (1997). *Growing up bilingual. Puerto Rican children in New York*. Massachusetts: Blackwell Publishers.

APPENDICES

Appendix A

INFORMED CONSENT STATEMENT

Aspects of First Language Attrition among German Immigrants in East Tennessee

INTRODUCTION

You are invited to participate in a research study. The purpose of this study is to collect, analyze and comment on various morphological and lexical aspects of first language attrition in German immigrants to East Tennessee.

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY

Your participation in the study is voluntary. You will be interviewed, given a questionnaire, a cloze test to fill in missing words and to describe some pictures. The researcher will audio record the picture description and the interview. The interviews will take place at the interviewee's convenience, either their home or a public place: a library or a restaurant.

RISKS

This study presents no risks to you. All the data will be treated as strictly confidential.

BENEFITS

The research project should shed more light on what kind of changes do immigrants reveal in the usage of their first language after years of immigration. Research on language loss improves our understanding of language acquisition by revealing the order in which items are lost. It also illustrates the role of affective, cultural and social factors, which play an important role both in loss and acquisition. This knowledge may help promote language diversity, support minority language maintenance and preserve endangered languages and their associated cultures. This study may contribute to a better awareness of the need of a language planning policy in the US. Several countries in Europe, Australia and Canada have such programs to support language diversity and preservation of minority languages, while the US does not.

USAGE OF THE STUDY

To collect, analyze and comment on various aspects of first language attrition. The study itself represents the dissertation, part of the requirement for obtaining the Ph. D.

The results of the study will be written in the dissertation. The results of the study might be presented at conferences, published or used as a pedagogical tool. After the completion of the study the researcher will also give each participant a summary of the results.

CONFIDENTIALITY

The information in the study records will be kept confidential. Participants' names will not appear on the audio recordings or the transcripts. Audio files will be destroyed after they have been transcribed. Participants' verbal consent will be included on the audio files of the interviews. Access to the files and transcripts will be granted to the principal investigator only. All files, including the consent forms will be kept for 3 years in a locked cabinet at the Dept. of Modern Foreign Languages and Literatures, University of Tennessee.

CONTACT INFORMATION

If you have questions at any time about the study or the procedures, you may contact:
Raluca Negrisanu (rnegrisa@utk.edu)

Department of Modern Foreign Languages and Literature,
701 McClung Tower ,Knoxville, TN 37996-0470
(865) 974-2311 Fax (865) 974-7096

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate. If you decide you do not approve any part of your participation in the study, your data will be discarded and destroyed upon your request.

CONSENT

I have read the above information. I have received a copy of this form. I agree to participate in this study.

Participant's signature _____ Date _____

Investigator's signature _____ Date _____

I give my consent for the additional purpose of presenting this study at conferences, submitted it for publication or use it as pedagogical tool.

Yes

No

Participant's signature _____ Date _____

Investigator's signature _____ Date _____

Appendix B

TEILNAHMEERKLÄRUNG

Aspekte des Sprachverlustes der Muttersprache unter deutschen Einwanderern in Osttennessee

EINFÜHRUNG

Sie sind eingeladen sich an einer Forschungsstudie zu beteiligen. Der Zweck dieser Studie ist das Sammeln, Analysieren und Kommentieren von verschiedenen morphologischen und lexikalischen Aspekten des Sprachverlustes der Muttersprache unter deutschen Einwanderern in Osttennessee.

INFORMATIONEN ÜBER DIE BETEILIGUNG DER TEILNEHMERN AN DER STUDIE

Ihre Teilnahme in der Studie ist freiwillig. Sie werden interviewt, sie werden eine Umfrage und einen Lückentext mit fehlenden Wörtern ausfüllen und einige Bilder beschreiben. Die Untersucherin wird die Bildbeschreibung und das Interview digital aufnehmen. Die Interviews werden entweder bei der befragten Person zu Hause oder an einem öffentlichen Ort stattfinden (z.B. eine Bibliothek oder ein Restaurant, wo immer es der befragten Person am liebsten ist).

RISIKEN

Diese Studie weist keine Risiken für Sie auf. Alle Daten und Informationen werden streng vertraulich behandelt werden.

VORTEILE

Diese Forschungsstudie soll untersuchen, welche Art von Veränderungen deutsche Einwanderer im Gebrauch ihrer Muttersprache mehrere Jahre nach der Einwanderung aufweisen. Forschung im Bereich des Sprachverlustes verbessert unser Verständnis des Spracherwerbs anhand der Reihenfolge, in welcher man verschiedene Aspekte seiner Muttersprache weniger beherrscht, wenn man im Ausland lebt. Es illustriert auch die Rolle emotionaler, kultureller, psychischer und sozialer Faktoren beim Sprachverlust als auch im Spracherwerb. Diese Kenntnis kann uns helfen Minderheitsspracherhaltung zu fördern und gefährdete Sprachen und ihre Kulturen zu erhalten. Diese Studie kann auch zu einem besseren Verständnis von Sprachpolitik in den USA beitragen. In mehreren Ländern in Europa, Australien und Kanada existieren Programme, die Sprachverschiedenheiten und das Erhalten von Minderheitssprachen unterstützen, während es solche in den USA nicht gibt.

METHODIK DER STUDIE

Die Studie sammelt, analysiert und interpretiert verschiedene Aspekte des Sprachverlustes in der Muttersprache. Diese Studie selbst ist Teil einer Doktorarbeit. Die Ergebnisse der Studie werden in der Dissertation geschrieben werden. Die Ergebnisse der Studie werden vielleicht auch bei Konferenzen präsentiert, veröffentlicht oder als ein pädagogisches Material benutzt werden. Die Informationen und Aufzeichnungen werden streng vertraulich behandelt und aufbewahrt. Die Namen der Teilnehmer werden auf den Aufnahmen oder in den Abschriften nicht erscheinen. Anstelle der Namen der Teilnehmer werden Kodennamen benutzt. Die Audioaufnahmen werden nach der Vollendung der Dissertation zerstört. Die Teilnehmer werden ihre Zustimmung am Anfang der Audioaufnahme der Interviews geben. Zugang zu den Audioaufnahmen und den Abschriften werden nur der Untersucherin gewährt. Die Aufnahmen werden nach der Transkribierung zerstört. Die Daten und Erlaubnisformulare werden in einem gesicherten Aktenschrank an der Universität Tennessee, Knoxville, in der Abteilung für Moderne Fremdsprachen und Literaturen 3 Jahre aufbewahrt und danach zerstört.

KONTAKTINFORMATION

Wenn Sie weitere Fragen über die Studie haben, können Sie

Raluca Negrisanu kontaktieren : rnegrisa@utk.edu

Abteilung für Moderne Fremdsprachen und Literaturen, 701 McClung Tower,
Knoxville, TN 37996-0470

TEILNAHME

Ihre Teilnahme in dieser Studie ist freiwillig. Sie können jederzeit ablehnen daran teilzunehmen. Wenn Sie sich entscheiden die Verwendung Ihrer Informationen nicht zu genehmigen, werden Ihre Daten nicht verwendet und auf Wunsch zerstört.

ZUSTIMMUNG

Ich habe die obige Informationen gelesen und eine Kopie dieses Formulars bekommen. Ich stimme überein, mich an dieser Studie zu beteiligen.

Unterschrift des Teilnehmers _____ Datum _____

Unterschrift der Untersucherin _____ Datum _____

Ich gebe meine Genehmigung auch dafür diese Studie an Konferenzen zu präsentieren, zu veröffentlichen, oder als pädagogisches Material zu benutzen.

Ja

Nein

Unterschrift des Teilnehmers _____ Datum _____ Unterschrift
der Untersucherin _____ Datum _____

Appendix C

Person Code _____
Date _____

QUESTIONNAIRE

FRAGEBOGEN

LANGUAGE USE AMONG GERMAN IMMIGRANTS IN THE USA

SPRACHGEBRAUCH DER DEUTSCHEN IMMIGRANTEN IN DEN USA

I am a graduate student at the University of Tennessee, Knoxville and I am conducting a study on German speakers in USA as part of my dissertation with the title: *Aspects of First Language Attrition among German Immigrants in East Tennessee*. I would appreciate it if you could help me in this. This questionnaire is anonymous, I will use codes instead of names and all individual information will be treated as strictly confidential. All the questions are both in English and German. Please do feel free to answer in the language of your preference. If you feel uncomfortable with any of the questions do not answer it.

1. Gender : female/ male	1. Geschlecht: weiblich/ männlich
2. Age: _____ years	2. Alter: _____ Jahre
3. Occupation: Are you currently employed? Yes No	3. Beruf: Sind Sie zur Zeit berufstätig? Ja Nein
4. Industry or Field:	4. Branche:
5. What is your family situation? married single widowed divorced living with a partner	5. Was ist Ihr Familienstand ? verheiratet ledig verwitwet geschieden lebe mit einem(r) Lebensgefährten (in)

<p>6. Is your spouse or partner also German?</p> <p>Yes No</p>	<p>6. Ist Ihr /Ihre Ehepartner(in) oder Lebensgefährte(in) auch Deutsche(r)?</p> <p>Ja Nein</p>
<p>7. If not German, what nationality?</p>	<p>7. Wenn nicht Deutsch, dann welche Nationalität?</p>
<p>8. Do you have children?</p> <p>Yes No</p>	<p>8. Haben Sie Kinder?</p> <p>Ja Nein</p>
<p>9. Which is your country of birth?</p>	<p>9. In welchem Land sind Sie geboren?</p>
<p>10. In what country did you grow up?</p>	<p>10. In welchem Land sind Sie aufgewachsen?</p>
<p>11. When did you arrive in USA?</p>	<p>11. Wann sind Sie in die USA gezogen?</p>
<p>12. Why did you leave your country of birth?</p> <p>1. _____</p> <p>2. _____</p>	<p>12. Warum haben Sie Ihr Geburtsland verlassen?</p> <p>1. _____</p> <p>2. _____</p>
<p>13. Immigration status?</p> <p>Permanent resident Naturalized citizen other_____</p>	<p>13. Einwanderungsstand?</p> <p>Unbegrenzt aufenthaltsberechtigt Bürger Sonstig_____</p>

<p>14. Describe your education. Circle the highest level you completed.</p> <p>Primary Secondary Vocational High School College Other _____</p>	<p>14. Beschreiben Sie Ihre Ausbildung. Kreuzen Sie Ihren höchsten Abschluss an.</p> <p>Grundschule Mittelschule oder Realschule Berufsfachschule Gymnasium Hochschule/ Fachhochschule Sonstige _____</p>
<p>15. At what age did you start learning English?</p>	<p>15. In welchem Alter haben Sie angefangen, Englisch zu lernen?</p>
<p>16. When you first arrived in the USA, how well did you speak English?</p> <p>very well well moderately well adequately well poorly not at all</p>	<p>16. Als Sie zuerst in den USA ankamen, wie gut sprachen Sie Englisch?</p> <p>sehr gut gut mäßig gut ausreichend schlecht gar nicht</p>
<p>17. How do you rate your knowledge of English now?</p> <p>very well well moderately well adequately well poorly</p>	<p>17. Wie würden Sie ihre jetzigen Englischkenntnisse bewerten?</p> <p>sehr gut gut mäßig gut ausreichend schlecht</p>

<p>18. How would you rate your knowledge of German now?</p> <p style="text-align: center;">very well well moderately well adequately well poorly</p>	<p>18. Wie würden Sie ihre jetzigen Deutschkenntnisse bewerten?</p> <p style="text-align: center;">sehr gut gut mäßig gut ausreichend schlecht</p>
<p>19. Have you learned other languages besides German and English?</p> <p style="text-align: center;">Yes No</p> <p>If yes, please specify _____</p>	<p>19. Haben Sie ausser Deutsch und Englisch noch andere Sprachen gelernt?</p> <p style="text-align: center;">Ja Nein</p> <p>Wenn ja, bitte welche _____</p>
<p>20. In which of the languages do you prefer to speak in general?</p>	<p>20. In welcher Sprache sprechen Sie im allgemeinen lieber ?</p>
<p>21. In what situations do you speak English?</p>	<p>21. In welchen Situationen sprechen Sie Englisch?</p>
<p>22. In what situations do you to speak German?</p>	<p>22. In welchen Situationen sprechen Sie Deutsch?</p>
<p>23. Do you still have contact with German speakers?</p> <p style="text-align: center;">Yes No</p>	<p>23. Haben Sie noch Kontakt zu Deutschsprachigen?</p> <p style="text-align: center;">Ja Nein</p>
<p>24. In what situations?</p>	<p>24. In welchen Situationen?</p>
<p>25. What is your relationship to these</p>	<p>25. Was ist Ihre Beziehung zu</p>

speakers?	diesen Leuten?
26. While you speak German, are there situations when you find it easier to express something in English? Yes No	26. Während Sie Deutsch sprechen, gibt es Situationen, wenn sie es leichter finden, etwas auf Englisch auszudrücken? Ja Nein
27. Can you name some specific situations in which that occurs?	27. Können Sie einige spezifische Situationen nennen, wann es passiert?
28. Does your spouse or partner speak German? Yes No	28. Spricht Ihr/Ihre Ehepartner(in) oder Ihr/Ihre Lebensgefährtin(e) Deutsch? Ja Nein
29. If you have children, do you speak German to them? Yes When? _____ No	29. Wenn Sie Kinder haben, sprechen Sie Deutsch mit ihnen? Ja Wann? _____ Nein
30. Have you ever noticed that you employ English words in your German speech? Yes If yes, answer below No	30. Haben Sie schon mal bemerkt, dass Sie englische Wörter gebrauchen, wenn Sie Deutsch reden? Ja Wenn ja, siehe unten Nein
31. In what situations have you noticed it?	31. In welchen Situationen ist das vorgekommen?

<p>32. When you speak German, do you have any difficulties with sentence structure?</p> <p>Yes No</p>	<p>32. Wenn sie Deutsch sprechen, haben Sie Schwierigkeiten mit der Satzkonstruktion?</p> <p>Ja Nein</p>
<p>33. Do you think you have any trouble in German in using the following grammatical features (please check all that apply):</p> <p>Nouns _____ Plural endings _____ Articles _____ Case _____ Verb conjugation _____ Expressions _____</p>	<p>33. Glauben Sie, dass sie Probleme haben, die folgenden grammatischen Strukturen im Deutschen zu verwenden (bitte kreuzen sie alle zutreffenden Antworten an):</p> <p>Substantive _____ Pluralendungen _____ Artikel _____ Kasus _____ Verbkonjugation _____ Redewendungen _____</p>
<p>34. How often do you converse with other German speakers?</p> <p>daily weekly monthly every year or so at rare intervals/emergencies never</p>	<p>34. Wie oft kommunizieren Sie mit anderen Deutschsprachigen?</p> <p>taglich wochentlich monatlich etwa jahrlich selten/ in Notfallen nie</p>
<p>35. How often do you travel to German-speaking countries?</p> <p>at least once a year every few years hardly ever never</p>	<p>35. Wie oft besuchen Sie deutschsprachige Lander?</p> <p>wenigstens einmal im Jahr alle paar Jahre sehr selten nie</p>

36. What do you think of, if you hear “ <i>German culture</i> ”?	36. Wenn Sie “ <i>Deutsche Kultur</i> ” hören, woran denken Sie?
37. What values do you associate with the German language?	37. Welche Werte verbinden Sie mit der deutschen Sprache?
38. What do you think of, if you hear “ <i>American culture</i> ”?	38. Wenn Sie “ <i>Amerikanische Kultur</i> ” hören, woran denken Sie?
39. What values do you associate with the English language?	39. Welche Werte verbinden Sie mit der englischen Sprache?
40. How do you feel in general about it when you hear English words in German conversations ?	40. Was halten Sie im allgemeinen davon, wenn Sie englische Wörter in deutschen Gesprächen hören?

Appendix D

Person Code _____

Date _____

FRAGEBOGEN

QUESTIONNAIRE

SPRACHGEBRAUCH DER DEUTSCHEN IMMIGRANTEN IN DEN USA

LANGUAGE USE AMONG GERMAN IMMIGRANTS IN THE USA

Sie sind eingeladen sich an einer Forschungsstudie zu beteiligen. Der Zweck dieser Studie ist das Sammeln, Analysieren und Kommentieren von verschiedenen morphologischen und lexikalischen Aspekten des Sprachverlustes der Muttersprache unter deutschen Einwanderern in Osttennessee. Alle Daten und Informationen werden streng vertraulich behandelt werden. Die Namen der Teilnehmer werden auf den Aufnahmen oder in den Abschriften nicht erscheinen. Anstelle den Namen der Teilnehmer werden Kodennamen benutzt.

1. Geschlecht: weiblich/ männlich
2. Alter: _____ Jahre
3. Beruf: Sind Sie zur Zeit berufstätig? Ja Nein
4. Branche:
5. Was ist Ihr Familienstand ? verheiratet ledig verwitwet geschieden lebe mit einem(r) Lebensgefährten (in)

<p>6. Ist Ihr /Ihre Ehepartner(in) oder Lebensgefährte(in) auch Deutsche(r)?</p> <p>Ja Nein</p>
<p>7. Wenn nicht Deutsch, dann welche Nationalität?</p>
<p>8. Haben Sie Kinder?</p> <p>Ja Nein</p>
<p>9. In welchem Land sind Sie geboren?</p>
<p>10. In welchem Land sind Sie aufgewachsen?</p>
<p>11. Beschreiben Sie Ihre Ausbildung. Kreuzen Sie Ihren höchsten Abschluss an.</p> <p>Grundschule Mittelschule oder Realschule Berufsfachschule Gymnasium Hochschule/ Fachhochschule Sonstige_____</p>
<p>12. Sprechen Sie Englisch?</p>
<p>13. Wie würden Sie ihre jetzigen Englischkenntnisse bewerten?</p> <p>sehr gut gut mäßig gut ausreichend schlecht</p>

<p>14. Haben Sie ausser Deutsch und Englisch noch andere Sprachen gelernt?</p> <p>Ja Nein</p> <p>Wenn ja, bitte welche _____</p>
<p>15. Spricht Ihr/Ihre Ehepartner(in) oder Ihr/Ihre Lebensgefährte(in) Deutsch?</p> <p>Ja Nein</p>
<p>16. Wenn Sie Kinder haben, sprechen Sie Deutsch mit ihnen?</p> <p>Ja Wann? _____ Nein</p>
<p>17. Haben Sie schon mal bemerkt, dass Sie englische Wörter gebrauchen, wenn Sie Deutsch reden?</p> <p>Ja Wenn ja, siehe unten Nein</p>
<p>18. In welchen Situationen ist das vorgekommen?</p>
<p>19. Wenn sie Deutsch sprechen, haben Sie Schwierigkeiten mit der Satzkonstruktion?</p> <p>Ja Nein</p>
<p>20. Glauben Sie, dass sie Probleme haben, die folgenden grammatischen Strukturen im Deutschen zu verwenden (bitte kreuzen sie alle zutreffenden Antworten an):</p> <p>Substantive _____</p>

Pluralendungen	_____
Artikel	_____
Kasus	_____
Verbkonjugation	_____
Redewendungen	_____
21. Wie oft kommunizieren Sie mit anderen Deutschsprachigen?	
<p>täglich wöchentlich monatlich etwa jährlich selten/ in Notfällen nie</p>	
22. Wenn Sie " <i>Deutsche Kultur</i> " hören, woran denken Sie?	
23. Welche Werte verbinden Sie mit der deutschen Sprache?	
24. Wenn Sie " <i>Amerikanische Kultur</i> " hören, woran denken Sie?	
25. Welche Werte verbinden Sie mit der englischen Sprache?	
26. Was halten Sie im allgemeinen davon, wenn Sie englische Wörter in deutschen Gesprächen hören?	

Appendix E-1

Person Code _____

Datum _____

Please fill in the missing information with items that reconstruct the text. Look at the context to help supply the missing words. Do not be concerned about the exactly correct word as long as the sentence makes sense.

Bitte ergänzen Sie die fehlende Information mit Wörtern oder Endungen, die den Text rekonstruieren. Schauen Sie auf den Kontext um die fehlenden Wörter zu finden. Machen Sie sich keine Sorgen um das genaue treffende Wort, solange der Satz sinnvoll ist.

Die Renngräte und der Suppenkasper

Adapted from Spiegel .de" ACHILLES' VERSE" by Achille Achim, 2005

Heute ist ___(der)___₁ Tag ___(der)___₂ Wahrheit . Showdown. Keine Ausreden___₃ (Pl). Irgendwas ___(im)___₄ hinteren oberen Knie ist nicht ___(okay)___₅ . Außerdem ___(spüre)___₆ ich ___(einen)___₇ Druck auf dem Brustkorb. Man solle auf gar ___(keinen)___₈ Fall zum Test kommen, wenn ___(man)___₉ sich nicht fit fühle, hatten sie in ___(der)___₁₀ Charité gesagt. Ich fühle ___(mich)___₁₁ nicht fit. Aber Mona will, dass ich mich ___(checken)___₁₂ lasse; Schon gut, schon gut: Ich geh' ja schon.

Achim Achilles ist ___(einer)___₁₃ von über zehn Millionen Freizeitsportle (m)___₁₄ in Deutschland. Er ist nicht mehr ganz jung, nicht mehr ganz schlank, nicht mehr ganz fit. Früher war er gut trainiert. Dann kam ___(der)___₁₅ Job, die Familie, ___(der)___₁₆ Rotwein, ___(der)___₁₇ Stress. Jetzt ___(fängt)___₁₈ er wieder ___(an)___₁₉ zu laufen. Nicht ___(weil)___₂₀ er es mag, ___(sondern)___₂₁ weil er die Stiche___(leien)___₂₂ (Pl) seiner Frau Mona nicht länger erträgt . ___(Das)___₂₃ Gerede vom Spaß beim Laufen macht Achim nicht ___(mit)___₂₄.

Der Doktor trägt supercoole Adidas-___(Schuhe)___₂₅ , Rapper-Ware, die sie ihm in Neukölln in drei Minut(en)___₂₆ (Pl) vom Fuß gezogen hätten.

Endlich aufs Laufband.

"Die ersten drei Minut_(en)___₂₇ (Pl) bei 8 Stundenkilometer ___(n)___₂₈ (Pl)", sagt die sachliche Assistentin, "ist das ___(okay)___₂₉ ? ". Natürlich ist das ___(okay)___₃₀ , Kleines. Ich bin doch kein gott (verdammt)___₃₁ Walker. Ich laufe rhythmisch, mein Atem geht ruhig, jede Zahl auf ___(dem)___₃₂ Computer signalisiert Kraft, Anmut und Ausdauer. 12 Stundenkilometer. Es geht gut ___(los)___₃₃ Aber nach ___(einer)___₃₄ Weile wird es unangenehm. Ich schiele auf ___(den)___₃₅ Rechner. Erst 48 Sekunden. Die Sekunden wollen nicht verschwinden. Aber ___(der)___₃₆ Streetfighter Achilles beißt sich ___(durch)___₃₇. War ich gut? ___(Na)___₃₈ ja 38. Schlecht ___(war)___₃₉ ich nicht. Das bestätigt auch ___(die)___₄₀ Diagnose vom Doc Dimeo. Er hat mir sehr viele spann (ende)___₄₁ Ding (e)___₄₂ über mich verraten, manche waren nicht mal peinlich. Aber sie (werden)___₄₃ mein Geheimnis bleiben.

Appendix E-2

Person Code _____

Date _____

Please do fill in the missing information with items that reconstruct the text. Look at the context to supply the missing words. Do not bother about the exact meaning as long as the sentence makes sense.

Bitte füllen Sie die fehlenden Information mit Wörter die den Text rekonstruieren. Schauen Sie auf dem Kontext um die fehlenden Wörter zu finden. Machen Sie sich keine Sorgen um die genaue Bedeutung solange der Satz richtig ist.

The Treadmill and the Suppenkasper

Today is 1. ___ day 2. ___ truth. Showdown. No excuse 3 ___ (Pl). Something 4 ___ rear upper knee is not _____ 5_. Moreover 6. _____ I 7. _____ pressure on the breast bone. 8 ___ should not come to the test if 9 ___ would not feel fit, they had said in 10 ___ Charité. 11 ___ feel not fit. But Mona wants that I let myself 12 _____. Good, good: I'll go already. Achim Achilles is 13 _____ of more than ten million free time sportsman 14 ___ in Germany. He is no longer entirely young, no longer very slim, no longer very fit. Earlier he was well trained. Then came 15 ___ job, the family, 16 ___ red wine, 17 ___ stress. Now he 18 _____ to 19 ___ again. Not 20 _____ he likes it, 21 _____ because, he no longer does bear the sting 22 ___ (Pl) of his wife Mona. 23 _____ fun talk about running does Achim not join. The doctor carries super cool Adidas-24 _____, Rapper-outfit that they would have robbed him off the foot in Neukölln in three minut 25 ___ (Pl). Finally on the treadmill. "The first three minut 26 ___ (Pl) at 8 kilometers per hour 27 ___ (Pl)", says the assistant impersonally, "is this 28 ___?" It is 29 _____, little. I am yet no god 30 _____ Walker. I run rhythmically, my breath goes quietly, each number on 31 _____ computer signals power, gracefulness and endurance. 12 kilometers per hour. 32 ___ goes well. But after a 33 _____ it becomes unpleasant. I would peak on 34 _____ computer. First 48 seconds. The seconds do not want to disappear. But 35 _____ Streetfighter Achilles bites himself 36 _____. Was I good? 37 ___ yes. I was not 38 _____. That confirms also 39 _____ diagnosis of Doc Dimeo. He told me many exciting 40 ___ thing 41 ___ (Pl) about me, some were not even embarrassing. But they 42 _____ remain my secret. Adapted From mirror. de "ACHILLES' VERSES" by Achile Achim, 2005

Appendix F

Pictures for the Picture Description Task

Bar situation – Picture A



Bar situation- Picture B



House- Picture A



House- Picture B



Cash register –Picture A



Cash register – Picture B



Park- Picture A



Park- Picture B



Sports- Picture A



Sports- Picture B



Traffic- Picture A



Traffic- Picture B



Shopping- Picture A



Shopping- Picture B



Dining- Picture A



Dining- Picture B



Office- Picture A



Office- Picture B



Appendix G

Fragen für den Interview (Study Group)

1. Beschreiben Sie eine interessante/markante Erfahrung aus Ihrer Kindheit. Es kann ein Wendepunkt oder ein Erlebnis sein, dass Sie beeindruckt hat.
2. Beschreiben Sie einen Wochentag und einen Wochenendtag in Ihrem Leben hier in Amerika.
3. Was vermissen Sie am meisten an oder aus Deutschland?
4. Was mögen Sie am meisten hier in Amerika?
5. Können Sie über einige kulturelle oder soziale Unterschiede zwischen den USA und Deutschland ein wenig sprechen? Besonderheiten der beiden Kulturen die Sie für wichtig halten.

Fragen für den Interview (Control Group in Germany)

1. Beschreiben Sie eine interessante/markante Erfahrung aus Ihrer Kindheit. Es kann ein Wendepunkt oder ein Erlebnis sein, dass Sie beeindruckt hat.
2. Beschreiben Sie einen Wochentag und einen Wochenendtag in Ihrem Leben hier in Deutschland.
3. Was mögen Sie am meisten hier in Deutschland? Was mögen Sie nicht?
4. Können Sie über einige kulturelle oder soziale Unterschiede zwischen den USA und Deutschland ein wenig sprechen? Besonderheiten der beiden Kulturen die Sie für wichtig halten.

Appendix H

Person Code _____
Date _____

BEWERTUNGSBOGEN

SPRACHGEBRAUCH VON DEUTSCHEN IMMIGRANTEN IN DEN USA

Sie werden jetzt einige Auszüge aus einem Interview hören. Bitte beantworten Sie dazu folgende Fragen. Sie können das Interview mehrmals hören wenn nötig.

<p>1. Hat diese Person einen fremden Akzent? Ja Wenn ja, welchen _____</p> <p>Nein</p>
<p>2. Wie würden sie diesen Akzent bewerten: 1. sehr stark 2. stark 3. schwach</p>
<p>3. Bemerken Sie Besonderheiten in der Aussprache dieser Person? Ja Wenn ja, welche _____</p> <p>Nein</p>
<p>4. Haben Sie irgendwelche Fehler gehört? Ja Nennen Sie welche _____</p> <p>Nein</p>
<p>5. Wenn Sie Fehler gehört haben, welcher Art waren sie? 1. lexikalische (Wörter) 2. morphologische (Singular/Plural, der/die, das/etc) 3. syntaktische (Satzkonstruktion) 4. semantische (Wortbedeutung, Redewendungen)</p>
<p>6. Ist diese Person ihrer Meinung nach ein(e) deutsche(r) Muttersprachler(in)? Ja Nein</p>

Appendix I
Borrowed Lexical Items for the Picture Description
Study Group

Words from the US pict.descript	Duden 1997	Internet	Duden 2005	
compartment,	0	0	0	
Oven	0	0	0	
strip mall	0	0	0	
die Jeeps,	1	1	1	
Cubicles	0	1	0	
station vans,	0	0	0	
Siding	0	1	0	
SUVs,	0	1	1	
gaslog,	0	0	0	
Sportsbar	0	1	0	
White	0	1	0	
vinyl,	1	1	1	
Baseball	1	1	1	
trainstation, ,	0	0	0	
t-shirts,	1	1	1	
alright,	0	1	0	
american,	1	1	1	
intution,	1	1	1	
office,	1	1	1	
Teams	1	1	1	
der roof,	0	1	0	
definitely,	0	0	0	
well,	0	0	0	
cafeteria,	1	0	1	
Tricky	0	1	1	
Trick	1	0	1	
cheap,	0	0	0	
God	0	0	0	
fire,	0	1	0	
Downtown	0	1	1	
interstates	0	0	0	
die amount	0	0	0	
green,	0	1	0	

Lunch	0	1	1
Cobblestone	0	1	0
Pounds	0	0	1
Clutter	0	0	0
solar panels	0	1	0
Porch	0	1	0
shopping mall, mall	0	0	1
soccer,	1	1	1
trend, ,	1	1	1
booths,	0	1	0
Executives	1	1	1
Warehouse	0	1	0
Hurricanes	1	1	1
Superbowl	0	1	1
arch,	0	0	0
Fireplace	0	0	0
Busstop	0	1	0
food court	0	1	0
back ground	0	1	1
Entrance	0	1	0
Lawn	0	1	0
Doors	0	1	0
Image	1	1	1
Cashier	0	1	0
Box	1	1	1
Cell	0	0	0
Day	0	1	0
Bear	0	1	0
Cheerleaders	1	1	1
Keep	1	1	1
exit,	0	1	1
screens,	1	1	1
pub,	1	1	1
appartments,	0	1	0
well kinda	0	1	0
check out	1	1	1
Counter	1	1	1
I mean	0	1	0

you know	0	0	0	
draw string bag	0	1	0	
eighteen wheeler	0	0	0	
english cottage	1	1	1	
Typical	0	1	0	
tiffany style	0	1	0	
licence plates	0	1	0	
Skinheads	1	1	1	
Total count	79	79	79	
Sum of items found in context	24	57	33	Average
Sum of items borrowed from English to replace German words	55	22	46	41

Appendix J

Borrowed Lexical Items for the Interview Study Group

Words from the US interview	Duden 1997	Internet	Duden 2005	
code,	1	1	1	
Fine	0	1	0	
food pantry,	0	1	0	
media art	0	1	0	
party,	1	1	1	
pool,	1	1	1	
reasonable	0	1	0	
Therapy	0	1	0	
das college	1	1	1	
sundown in the city	0	0	0	
,big deal,	0	1	0	
Be self-confident	0	1	0	
believe in yourself,	0	0	0	
Benefits	0	1	1	
bible belt,	0	1	0	
Black	1	1	1	
boss,	1	1	1	
busy,	0	1	0	
cancer research	1	1	1	
come by,	0	1	0	
community ministry	0	1	0	
computer science dept.,	0	1	0	
consumer,	0	1	1	
cool,	1	1	1	
Correct	0	1	0	
Creek	1	0	1	
das scanner	1	1	1	
dating,	1	1	1	
department,	1	1	1	
dinner party	0	1	0	
dinner,	1	1	1	
Errands, ,	0	0	0	

Enforcements	0	1	0
field trip	0	1	0
Freedom of speech	0	1	0
fresh market,	0	1	0
glider port,	0	0	0
good shot	0	1	0
Headed for disaster	0	0	0
Healthclub	0	1	0
History	0	1	0
I do not know	0	0	0
inserts,	1	1	1
Appointment	0	1	1
Kids	1	1	1
kick off	1	1	1
Law	1	1	1
Leads	1	1	1
Major	1	1	1
market square, ,	0	1	0
more power to you,	0	0	0
Neighborhood	0	1	0
Next	0	1	0
nice try	0	1	0
oppinionated	0	0	0
Opportunities	0	1	0
Outdoor	1	1	1
Pantry	1	1	1
Phone	0	1	0
Pictures	0	1	0
Podcast	0	1	0
Political	0	1	0
Positive enforcement	0	1	0
Problems	0	0	0
Rings	0	1	0
Salt	0	0	0
school campus, ,	0	1	0
scout,,	1	1	1
service dept, , ,	0	1	0
Shell	0	0	0

six pack und DVDs	0	1	1	
Snack	1	1	1	
software	1	1	1	
Stiff	0	1	0	
Suit	0	0	0	
Sweat suit	0	1	0	
Take	0	1	1	
teamwork	1	1	1	
teenager	1	1	1	
Tells	0	0	0	
think,	0	1	0	
videopodcast,	0	1	0	
volunteer	0	1	0	
volunteering,	0	1	0	
Total count	84	84	84	
Sum of items found in context	26	70	31	Average
Sum of items borrowed form English to replace German words	58	14	53	41.6667

Appendix K

ANOVA Test and Post Hoc Multiple Comparisons test for the Individual Lexical Items Cloze Test Study Group and Factor Age

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
sum adj adv	Between Groups	108.997	3	36.332	4.453	.017
	Within Groups	146.867	18	8.159		
	Total	255.864	21			
sum verb nouns	Between Groups	635.397	3	211.799	4.820	.012
	Within Groups	790.967	18	43.943		
	Total	1426.364	21			

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) AgeGroup	(J) AgeGroup	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
			Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound
sum adj adv	less than 40	40 to 50	2.000	1.649	.627	-2.66	6.66
		50 to 60	2.833	1.730	.383	-2.06	7.72
		more than 60	6.233(*)	1.730	.010	1.34	11.12
	40 to 50	less than 40	-2.000	1.649	.627	-6.66	2.66
		50 to 60	.833	1.730	.962	-4.06	5.72
		more than 60	4.233	1.730	.103	-.66	9.12
	50 to 60	less than 40	-2.833	1.730	.383	-7.72	2.06
		40 to 50	-.833	1.730	.962	-5.72	4.06
		more than 60	3.400	1.807	.270	-1.71	8.51
more than 60	less than 40	-6.233(*)	1.730	.010	-11.12	-1.34	
	40 to 50	-4.233	1.730	.103	-9.12	.66	
	50 to 60	-3.400	1.807	.270	-8.51	1.71	
sum verb nouns	less than 40	40 to 50	-2.500	3.827	.913	-13.32	8.32
		50 to 60	-.133	4.014	1.000	-11.48	11.21
		more than 60	11.667(*)	4.014	.043	.32	23.01
	40 to 50	less than 40	2.500	3.827	.913	-8.32	13.32
		50 to 60	2.367	4.014	.934	-8.98	13.71
		more than 60	14.167(*)	4.014	.012	2.82	25.51
	50 to 60	less than 40	.133	4.014	1.000	-11.21	11.48
		40 to 50	-2.367	4.014	.934	-13.71	8.98
		more than 60	11.800	4.192	.051	-.05	23.65
more than 60	less than 40	-11.667(*)	4.014	.043	-23.01	-.32	
	40 to 50	-14.167(*)	4.014	.012	-25.51	-2.82	
	50 to 60	-11.800	4.192	.051	-23.65	.05	

* The mean difference is significant at the .05 level.

Appendix L

Post Hoc Multiple Comparison Test for the Factor Education Level and the Individual Morphological Items in the Study Group

Dependent Variable	(I) Educ Level	(J) Educ Level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
			Lower Bound	Upper Bound		Lower Bound	Upper Bound
sum all morphol	30	50	-17.896(*)	4.570	.003	-29.51	-6.29
		60	-10.333	5.931	.216	-25.40	4.73
	50	30	17.896(*)	4.570	.003	6.29	29.51
		60	7.563	4.570	.248	-4.05	19.17
	60	30	10.333	5.931	.216	-4.73	25.40
sum prep conj	30	50	-4.583(*)	1.539	.020	-8.49	-.67
		60	-1.333	1.997	.785	-6.41	3.74
	50	30	4.583(*)	1.539	.020	.67	8.49
		60	3.250	1.539	.114	-.66	7.16
	60	30	1.333	1.997	.785	-3.74	6.41
Sum PLEnd	30	50	-8.104(*)	1.280	.000	-11.36	-4.85
		60	-5.667(*)	1.661	.008	-9.89	-1.45
	50	30	8.104(*)	1.280	.000	4.85	11.36
		60	2.438	1.280	.165	-.81	5.69
	60	30	5.667(*)	1.661	.008	1.45	9.89
Sum Art	30	50	-2.271	2.326	.600	-8.18	3.64
		60	-1.333	3.018	.899	-9.00	6.33
	50	30	2.271	2.326	.600	-3.64	8.18
		60	.938	2.326	.915	-4.97	6.85
	60	30	1.333	3.018	.899	-6.33	9.00
Sum indef neg art	30	50	-1.854	.733	.051	-3.72	.01
		60	-1.333	.951	.360	-3.75	1.08
	50	30	1.854	.733	.051	-.01	3.72
		60	.521	.733	.760	-1.34	2.38
	60	30	1.333	.951	.360	-1.08	3.75
		50	-.521	.733	.760	-2.38	1.34

* The mean difference is significant at the .05 level.

Appendix M

Post Hoc Multiple Comparisons test for the Individual Lexical Items
Cloze Test Study Group and Factor Immigration
Post Hoc Multiple Comparisons

Dependent Variable	(I) ImmgrGroup	(J) ImmgrGroup	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
			Lower Bound	Upper Bound		Lower Bound	Upper Bound
sum all lex	less than 10	10 to 20	2.175	4.986	.971	-11.92	16.27
		20 to 40	5.775	4.986	.660	-8.32	19.87
		more than 40	17.625(*)	5.355	.019	2.49	32.76
	10 to 20	less than 10	-2.175	4.986	.971	-16.27	11.92
		20 to 40	3.600	5.531	.914	-12.03	19.23
		more than 40	15.450	5.866	.073	-1.13	32.03
	20 to 40	less than 10	-5.775	4.986	.660	-19.87	8.32
		10 to 20	-3.600	5.531	.914	-19.23	12.03
		more than 40	11.850	5.866	.218	-4.73	28.43
sum adj adv	more than 40	less than 10	-17.625(*)	5.355	.019	-32.76	-2.49
		10 to 20	-15.450	5.866	.073	-32.03	1.13
		20 to 40	-11.850	5.866	.218	-28.43	4.73
	less than 10	10 to 20	-2.575	1.739	.469	-7.49	2.34
		20 to 40	1.625	1.739	.787	-3.29	6.54
		more than 40	3.375	1.868	.302	-1.90	8.65
	10 to 20	less than 10	2.575	1.739	.469	-2.34	7.49
		20 to 40	4.200	1.929	.167	-1.25	9.65
		more than 40	5.950(*)	2.046	.042	.17	11.73
20 to 40	less than 10	-1.625	1.739	.787	-6.54	3.29	
	10 to 20	-4.200	1.929	.167	-9.65	1.25	
	more than 40	1.750	2.046	.827	-4.03	7.53	
sum verbs nouns	more than 40	less than 10	-3.375	1.868	.302	-8.65	1.90
		10 to 20	-5.950(*)	2.046	.042	-11.73	-.17
		20 to 40	-1.750	2.046	.827	-7.53	4.03
	less than 10	10 to 20	4.000	3.416	.652	-5.65	13.65
		20 to 40	1.600	3.416	.965	-8.05	11.25
		more than 40	16.500(*)	3.669	.001	6.13	26.87
	10 to 20	less than 10	-4.000	3.416	.652	-13.65	5.65
		20 to 40	-2.400	3.789	.920	-13.11	8.31
		more than 40	12.500(*)	4.019	.028	1.14	23.86
20 to 40	less than 10	-1.600	3.416	.965	-11.25	8.05	
	10 to 20	2.400	3.789	.920	-8.31	13.11	
	more than 40	14.900(*)	4.019	.008	3.54	26.26	
more than 40	less than 10	-16.500(*)	3.669	.001	-26.87	-6.13	
	10 to 20	-12.500(*)	4.019	.028	-23.86	-1.14	
	20 to 40	-14.900(*)	4.019	.008	-26.26	-3.54	

* The mean difference is significant at the .05 level. Tukey HSD

Appendix N

Post Hoc Multiple Comparisons test for the Individual Lexical Items
Cloze Test Study Group and Factor Amount of L1 Contact

Tukey HSD

Dependent Variable	(I) AmountCont	(J) AmountCont	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
			Lower Bound	Upper Bound		Lower Bound	Upper Bound
sum all lex	less frequent	Frequent	-4.944	6.827	.752	-22.29	12.40
		more frequent	-12.717(*)	3.925	.011	-22.69	-2.75
	frequent	less frequent	4.944	6.827	.752	-12.40	22.29
		more frequent	-7.773	6.713	.492	-24.83	9.28
	more frequent	less frequent	12.717(*)	3.925	.011	2.75	22.69
		Frequent	7.773	6.713	.492	-9.28	24.83
sum adj adv	less frequent	Frequent	1.889	2.777	.778	-5.17	8.94
		more frequent	-1.020	1.597	.801	-5.08	3.04
	frequent	less frequent	-1.889	2.777	.778	-8.94	5.17
		more frequent	-2.909	2.731	.546	-9.85	4.03
	more frequent	less frequent	1.020	1.597	.801	-3.04	5.08
		Frequent	2.909	2.731	.546	-4.03	9.85
sum verbs nouns	less frequent	Frequent	3.167	5.490	.834	-10.78	17.11
		more frequent	-8.697(*)	3.156	.032	-16.72	-.68
	frequent	less frequent	-3.167	5.490	.834	-17.11	10.78
		more frequent	-11.864	5.398	.097	-25.58	1.85
	more frequent	less frequent	8.697(*)	3.156	.032	.68	16.72
		Frequent	11.864	5.398	.097	-1.85	25.58

* The mean difference is significant at the .05 level.

Appendix O

New Age Subgroup (45-68) for the Study Group and Sum of Individual Lexical Items and Factor Age

	N	Minimum	Maximum	Mean	Std. Deviation
Age	12	47	67	57.75	6.369
sum adj adv	12	7	19	11.33	3.055
sum verb nouns	12	16	41	30.42	8.670
sum all lex	12	27	62	44.50	11.123
Valid N (listwise)	12				

New Age Subgroup (45-68) for the Study Group and Sum of Individual Morphological Items and Factor Age

	N	Minimum	Maximum	Mean	Std. Deviation
Age	12	47	67	57.75	6.369
sum prep conj	12	3	12	8.00	3.191
sum all morphol	12	53	83	70.75	10.644
Sum PLEnd	12	13	24	20.00	4.045
Sum Art	12	20	30	25.42	4.078
Sum indef neg art	12	8	12	10.17	1.267
Valid N (listwise)	12				

Appendix P

Transcription U.S. informant CF15

Bilderbeschreibung (starken amerik. akzent)

00:10.....10s...ich glaube das ist deutsch, wegen den stühle a, und die...die arch...so das ist deutsch, ...nein ich sehe nix besonderes, das tisch, ...der tisch und die stühle sind anders ah..und die dt. haben meistens kein fire...ah...fireplace ...aber sonst schauts ähnlich aus.

01:12.....oh.. natürlich, des, des ist deutsch, a ...a ist bestimmt deutsch ...der roof....[laughs]
...swigle...schw...hhaha...schigel....ha..da und wie es gebaut ist und es hat stucco da drin... und die bilden ja die decke auch ganz anders als hier in amerika und des ist normal amerikanisch...englisch....

02:07....natürlich das ist deutsch ...a...deutsch als erschte sieht man ja de den, die kleinen steinen auf dem weg, de cobblerstone und....wie das gebäude gebaut ist und natürlich, da kann man die apotheke schon sehen ...ah...des ist typ..typisch amerikanisch des kann eine mall sein oder a trainstation ...eh..ich hab vergessen wie man das sagt,...bahnhof..es könnte ein bahnhof sein oder a mallbusstop..aber des ist ungefähr a marktplatz ...

03:12.....12s...ja des ist ein bisschen schwererich möchte sagen, dass des ist deutsch, b, ..die amerikaner sind mehr am fernseh...wollen immer fernseh sehen, mehr so wie die deutschen, wenn die irgendwo wohin gehen die wollen nämlich spass haben ...eh...ich denk ..b ist deutsch...

04:03.....wenn ich daheim war hatten sie keine, nicht viel autos gehabt.....10s..... ich glaube dass b deutsch ist, hab ich da recht?...eh die autos und der lastwachen ist ein bisschen anders hier sind zu viele autos ewh...in deutschland das sind mehrere auch die selben autos....ist das richtig?(eigentlich das ist umgekehrt...)..ja? das ist deutsch?...ok..da hab ich schon hingeschaut aber ich hab nit so....ok das ist a stau ...

ich bin oft auf dem stau gewesen...ja

05:30.....oh ich bin nicht so oft aufm.....he?...ich weiss nicht viel vom sport10s...ich denke b ist deutsch ah.....blos wegen der uniform ich glaub das ist fussball ich weiss nicht ob es fussball ist aberder ..amerika hat des ...eh...die ten yard lineand...so hab ich da recht?

06:28.....6s.....ja natürlich das ist deutsch, weil da sit a deutsches zeichen drauf ...jawiese nicht betreten

06:59.....30s.....(sind sie in dt einkaufen gegangen?).....nicht oftnein ich möchte sagen, dass des ist deutsch, a , ich weiss nicht warum.. aber in amerika haben nicht so oft ein hut aufund die männer haben mehr ein hut auf wie dort....ganz verschieden , andere hütte als baseball cap und a bissl so ein tourist....das looks to me wie auf der autobahn one of thosethings...which one is correct?....das sieht mehr ameirkanisch aus als wirah...eh...ich ...like cafeteria, in checkout ..

08:50.....10s ..na des ist schwer4s...aber ich möchte sagen das a ist deutsch ich weiss...viel die ameirkaner die machen die ...die cubicles higher ...meistens und das schaut aus wie amerikanische inserts like wir hier haben ...ich weiss nicht ob ich recht habe...

Interviewfragen

09:59.....yes, ja ...schlitten fahrenin nürnbergdas war ganz grosser berg da hat ma vielleicht ein oder zwei km laufen müssen mit dem schlitten ..aber des sind all die kinder hingegangen, haben schlitten gefahren, manche ski gefahren, aber mir meistens schlitten, ohne elterneh..des war schön.. (wie alt?)..ach ungefähr zehn ..acht bis zehn., zwölf..

10:57.....jeden Tag ?....am Wochenende gehe ich zum bootund wir going in de bucht...eheh..drei mal in der woche da gehe ich zum healthclub....work out..da ich geh ich zu therapy im schwimmbad..ja...für meine hüfte und das nimmt eine gute zeit ...und dann hausarbeit in meinem garten und so zeugch.

11:36...das essen ...klösse...ich mag klösse und den auch den einen salat...endiviensalat..aber des ist nicht des selbedas salat ist nicht das gleiche und rettiche..und die grossen, die bierrettiche..

12:17.....viele sachen I think...man kann auf dem see, es ist viel leichter ..man kann ein haus leichter haben man kann ein boot leichter haben, man kann einen wohnwachen zumeh..zum canada fahren, das ist alles viel leichter als im deutschland das man solche sachen hat als solche, ..ich hatte einen job der hatte einen college degree und ich habe eigentlich mit weniger schul...in deutschland wäre des

nicht so möglich weil da muss man ja ..durch lehre....., das ganze sachen gehn, das gefällt mir in amerika, man kann man kann wenn man arbeiten will da kann man schonmachen...das ist a bissl leichter als deutschland...ne

13:45.....seitdem ich political ich war ja 17, da hat mich gar nicht interessiert, und was da drüben jetzt losgeht und was ich da nit viel davon ah...so kann ich wirklich nicht davon sprechen, denn ich kenn ja nicht viel davon...(aber so wie normale menschen da leben, verwandte)..ich hab keine verwandten mehr, jetzt hab ich bekannte und die sachen das , wo das osten auch ist, das leben ist schwerer..und das alles....schlechter da drüben wird ..bei denen ist es auch....ich glaube das leben hier ist eigentlich gut ..ob ich da drüben wohnen möchte..nein...wenn ich genug geld hätte sechs monate drüben und sechs monate hier, ja ...hahhaaber ich dann dort wohne...dann könnte ich mehr sagen ..ja..mir gefällt es hier dass man sein auto gleich next zum haus parkt, wo drüben die müssen drei platz laufen ...für ihr auto und manche strassen sind viel zu klein, in manchen städten kann man nit man reinfahren, es ist viel leichter hier, das ist von dem was ich weiss.....(menschen vergleichen...)..ich möchte keinen deutschen mann..die sind zu oppinonated ...ich hab.....ich kenne nicht mehr so viele deutsche die drüben wohnen, well, ich hab bloss noch eine freundin die mit mir in die schul gegangen ist und die...well die mädchen mit denen ich in die schul gangen bin und ich kenne ungefähr zwei männer und dann date ich eben unddann eben welche deutsche hier, ich date keinen deutschen...vergeß es....die fern ..ich glaub die haben es auch nicht so gut da drüben wie hierI think wir schau hier jünger auch im unseren alter als die da drüben, ja wirklich,..weil meine freundin war da drüben vor zwei jahren, zu einem klassentreffen und da hat sie gesagt eh...die alle haben so alt ausgeschaut und des kann ich jetzt sehn vom bilder die ich die sie mir schicken, die schau viel älter aus als hier, ich weiss nicht ob des weil vielleicht wie sie sich kleiden oder oder was es ist...wir sind jünger im kopfund das andereeh...ich weiss ja aber nicht wie die jünger sind ...die sind so stiff, meine generation ist nimmer so schlimm aber die vor mir die nicht so in einem cafe trinken, die müssen tasse und teller unterteller haben ...ne und ...mir sind sie mir nicht so wo man tischdecken und so zeuch, in manchen sachen ist es schön aber die machen zu much , zu viel...aber ..ich hätte aber lieber etiquette in amerika weil mir haben etiquette in der schule gelernt und ich weiss ja nicht mehr ob sie es noch lernen aber amerikanische kinder haben überhaupt keine etiquette...des wo ich liebe dt. weil ..wenn amerikansiche ...leut...die ..die ziehn sich schön an drüben ..na mit guten sachen, wo amerikaner die gehen rum in in sportsuit und die deutschen die schau dahin und sagen, schau mal die schlammigigen amis an...na mir laufen mehr schlammig rum ...ja aber da sit..bequem is ok aber nicht wenn wir auf urlaub geht in ein fremdes land da geht man nicht in die sweatsuit...[laughs] ja

Transcription U.S. informant MM17

Bilderbeschreibung

00:06...ja..ehm...das ist eine gute frage ich würde mal sagen..und das sind meine anhaltspunkte hier dass a aus dem amerikanischen bereich kommt und b aus dem deutschen oder europäischen undswar das ist eine einsame begründung weil a ist eine mülltone mit einem drawstringbag ...und die hab in dt. noch nie gesehn...und b da ist ein frau mit halstuch und da es in dt. sehr viele türkinnen gibt , fällt mir das sofort auf, aber so vom büro gesehn ich mein es gints grossraumbüro sowohl hier als auch in dt. insowerfn, ich seh so mehr kleine kulturelle unterschiede...alright, kein problem

01:07...[laughs] ich mag dass sie die schilder eh..entstellt wurden dass man es nicht sehen kann ..ahm also ich würde mal sagen, b, das ist b , b ist usa und a ist dt. ehm b sieht einfach viel zu viel wie ein foodcourt..irgendwo in der mall aus also das und a könnte ich mir vorstellen..da sis her..karstadt...oder irgendso ein grosses kaufhaus in dt. ...und man sieht auch selten hier leute mit nordseemützen und...solche sachen, also ich würde sagen das hier ist ...so sehr typisch amerka mehr und das ist so mehr ein typisch deutsches kaufhaus also b...amerika , a dt. ...

01:54...ah...da steht nicht betreten, also glaub ich mal...wiese nicht betreten...also bitte nicht betreten das ist schon mal dt. ..obwohl natürlich die vegetation sieht tropisch aus, aber trotzdem ich würde sagen b ..ist deutschland und a ist usa ..ahm..einfach wegen dem schild...also ich hab noch nie,...also bis auf vielleicht..ganz selten gesehn get off the lawn..steht you know..also very german to keep you,..sehr deutsch. das einem zu verbieten....

02:45...an gut das ist sehr einfach, fussball und football das ist ziemlich einfach football ist amerika

also a und b ist fussball würde ich mal sagen, hier steht auch georgia power also würde ich mal vorausgehen es ist irgendwo in , in georgia is...und da drüben is ein fussballspiel ...also eindeutig deutsch...

03:16...ah also a ist europa also deutschland sieht man schon an den nummerschildern und vor allem an diesen warndieckszeichen sind sehr typisch für dt. und b ist irgendwo in usa ..haben auch amerikanische kennzeichen ..a dt. b usa...das ist interessant das hätte ich nicht gedacht..

03:46...also ich würde mal sagen auf dem ersten blick, a usa b dt. weil man in dt. si eher mit gemütlichkeit verbindet na und usa so mehr mit protz und ..und grossem aufwand..aber ich kann mich auch irren ...aber das ist ein kleines fässchen auf dem tisch und so ich würd schon sagen b ist deutschland und a mehr so ein sportsbar so irgendwo in der usa

04:23...ja ist klar b ist usa und a ist dt. apotheken gibts hier wahrschienlich weniger ...ah und sieht einfach wie eine dt.-..ausserdem ist es vielleicht so eine nachgeahmte dt. stadt oder so... auf jedem fall a dt. und b irgendwo eine stripmall in der usa ..

04:47...ja..also ich würd sagen a ist ein deutsches haus und b ein amerikanisches, es gibt nicht sehr viele holzhäuser in dt. die meisten häuser ..fast alle häuser sind, sind ziegelsteine oder backsteine oder irgendwelche gesteinshäuser und b sieht auf jedem fall wie so ein eher typischer amerikansiches vor allem das knatschgelb ..glaub ich wäre in dt. sehr wenig beliebt ..ahm..es sind einfach sehr wenige holzhäuser also würde ich sagen a ist dt. und b ist usa...

05:27...ok, oh...das ist schwer..ahm.. das sind beide so kellerrestaurant oder so ein bierkeller oder so was nun mögen natürlich die amerikaner acuh gerne so den stil anderer leute nachzuzahmen..hm, ich würde mal sagen, b ist amerika und a ist dt. wenn man doch hier ein bisschen mehr so auf farben und viel blumen und mehr kitsch steht ..und vor allem dingen wenn man versucht zwar wenn man schon in amerika in einem dt. restaurant geht ...das siehjt immer deutscher als deutsche rest in dt. wenn das sinn ergibt...zum beispiel mit dem ludwig auf dem...an der wand und so deutsche musik, so dt. restaurants gibts in dt. nicht ...also würde ich mal sagen a ist dt. und b ist usa...ja sehr viel dezenter als das andere...ja...ok..ja ..alright.

Interviewfragen

06:50.....also ich meine....natürlich kann ich mich an vieles erinnern ich meine soahm was ...was sehr lustig war also das war nicht nicht spezi...spezif...spezifisch deutsch aber was sher lustig war...als ich so...als ich so 15 war...oder so ...bin ich mit einem freund essen gegangen, so einfach nach der schule so irgendwas pizza essen gegangen und wir unterhielten uns darüber was wir später so im leben machen wollen und sein ziel...ich werde nachdem...nach der der abitur oder nach der uni auswandern, ich will auf jedem fall nach amerika und ich hab damals gesagt ich könnte mir das nie vorstellen...also ich könnte mir nicht vorstellen irgendwas in einem fremden land zu leben, ..er lebt immer noch in dt. und ich leben inzwischen hierdas war also ganz lustig wenn ich mich noch genau dran erinnern kann das gesagt zu haben, ja das kann ich mir überhaupt nicht vorstellen, mein ganzes leben in einem anderen land zu leben ohne also meine familie ..in dt. und das wäre für mich nichts und er war ganz sicher nein, ich will auf jeden fall nach amerika , amerika ist tollalso da muss ich unbedingt hin und damals das hat mir das nicht viel gesagt ...ja ich muss noch jünger gewesen, ich würde sagen 13 ...ja dann heute lebe ich hier und er lebt in dt. also das istalso man weisst nie so genau wie die zukunft wird nee, und als ich so 16 war..und als meine eltern anfangen so in meiner...sind halt viele ins ausland gegangen ..ehm...mehr nach amerika, 2-3 nach england... nach frankreich..damals habe ich nicht gedacht dass ich hier bleiben werde, aber man weiss ja nie..nee,

09:12.....ich stehe auf..also ganz normal...ich mein ich bin verheiratet...meine frau muss früher auf die arbeit als ich...also das heisst sie geht immer ein wenig früher raus....ehm, ich arbeite hier an der uni im computer science departmentabends, arbeite halt...also es gibt nicht viel zu sagen ..ehm abends, leider wir sind sehr , sehr...bourgoise..wie man das sagen würde ...wir gucken fern...wir kochen, ich bin der koch zu hause..ich koche meistens wenn wir nicht essen gehen....was natürlich in knoxville...alle welt geht dauernd essen wir sind,..wir lieben es hier zu essen zu gehen aber sonst ich bin mehr der koch der familie...also machen wir nicht viel an den wochentagen, also meistens you know..nur fernseh gucken.....uns unterhalten und dann am wochenenede....samstag ist so mehr der tag....wo wir immer so ..wie man es so schön auf english sagt...errands ...so einkaufen gehen, dinge besorgen, dinge erledigen,...ehm...ja am sonntag ich hab meistens irgendwas am haus zu tun ..weder irgendwas zu reparieren oder irgendwas zu streichen also das mache ich das meistens...ja also ab und

zu gehen wir dann irgendwo auf urlaub oder so ...aber eigentlich so routine mässig relativ..relativ kleinbürgerlich normal also es gibt nicht viel...nicht viel zu sagen...aber im prinzip wenn wir etas tun wollen, dann tun wir das auch...also wir sind auch schon hier und da gewesen, also wir reisen gerne wenn wir die zeit dazu habenzeit ist noch viel schwiereiger ...zu haben als geld..ich meine ich hab hier noch glück ich arbeite für die uni daher habe ich relativ viel urlaub aber meine frau arbeitet nicht für die uni und sie..man kriegt hier in der usa sehr viel weniger urlaub als in dt. also irgendwann dieses jahr wollen wir nach spanien fahren ...meine eltern besuchen und sonst in spanien umfahren also wollten dass...eigentlich im mai machen aber dann ist was dazwischen gekommen ..und jetzt werden wir es wahrscheinlich im herbst irgendwann machen....ja vorallem nicht wahnsinnig teuer.....ja es ist nicht günstig im moment, ja aber meine eltern waren schon mal hier , kennen meine frau und alles....

12:10.....ahm...manchmal also ich versuche....mir die dinge zu besorgen, wenn es dinge sind....die ich vermisse, versuche ich sie mir irgendwie zu besorgen...zum beispiel..ahm...das internet ist wunderbar wenn es solche dingewas solche dinge angeht also ...ich höre deutsche nachrichten, also sich guck solche podcast...videopodcasts...und solche sachen..und so was ich an deutschland selbst vermisse....ehmm....ist es i do not know....es ist schwer zu sagen..wenn man hier so lange lebt..ehm...ich meine ausser von familie und solche sachen, direkt an deutschland also nicht gewisse personen...oder gewisse dinge ..so seltsam es klingt, man denkt ja immer so von amerika besonders aus deutschland als land der unbegrenzten möglichkeiten, alle welt ist offen aber sletsamerweise finde ich das viele ..viele deutsche sehr viel....sehr viel lockerer sind als manche amerikaner...was total dem stereotyp entgegen geht ..aber hier sind viele leute so, man muss immer dauernd arbeiten...ne..also arbeiten ist so wichtig und..immer weniger urlub nehmen undsehr viele mehr ehm....es ist sehr viel mehr karriere orientiert....hier als in dt...und die amerikaner denken immer die deutschen die sind immer sauber sein und alles muss..das stimmt zwar zum teil aber zum teil..viele deutsche sind auch sehr..viel..arbeit ist arbeit und spass ist spass das ist sehr viel hektischer als in dt. das vermisse ich manchmal...aber nicht jetzt so sehr das ich unbedingt hinwill...aber sonst was so dinge angeht also ehm....wenn ich die möglichkeit habe you know irgendwo hin gehen wo man deutsche leben.... deutschen lebensmitteln kaufen kann..oder so , kaufe ich schon paar dinge vor allem...um meiner frau solche dinge näher zu bringen weil sie natürlich nicht aufgewachsen ist ..und....also seit..ich habe sie an dinge wie quark gewöhnt den man hier nicht kiecht normalerweise.... sie liebt das inzwischen,...marzipan.. solche sachen die hier nicht so sehr beliebt sind wie in deutschland...aber so sonst eigentlich fühle ich mich hier sehr wohl...

14:46.....obwohl ich jetzt gesagt habe das die leute sehr viel karriere orientiert sind so was , was das leben hier angeht , ist eigentlich sehr viel einfacher...ehm...es gibt sehr viel wenige regeln und bestimmungen...und ..ich meine wenn ich nur daran denke dass in dt....ehm..da muss man hundert steuer zahlen, da muss man...kirchensteuer zahlen..da muss man all diese dinge tun...hie rist es alles sehr viel einfacher, ich meine die ameirkaner.....in diesem sinne ist es viel einfacher ..viele amerikaner denken dass es sehr kompliziert ist aber die haben noch nie in europa gelebt ..ne..ehm..natürlich..alles ist sehr viel..vom staat sehr viele regelungen das ist heir sehr viel weniger ich bin vor allem politisch gesehen sehr...eh...zum beispiel freedom of speech und solche sachen...also meinungsfreiheit wird ja hier sehr ernst genommen, vor allem auch in dt.zum grossen teil aber zum beispiel viele dinge die im dt. für beleidigung belangt wurde...das gibts ja hier nicht..es muss man jemanden schon verleumden um hier sein recht genommen zu bekommen...sein recht zu ...ahm..sein recht genommen zu bekommen freie meinung zu äussern oder so also das mag ich sehr, ich mag auch die geogrphe hier sehr also ich liebe ...die möglichkeiten im selben land ...von der wüste in die berge in die..in den mehr oder weniger tropischen regenwald zu fahren also es gibt alles hier und es ist einfacher gaube ich hier ..ehm menschen kennenzulernen als in dt.wenn man jemanden schon kennt in dt. ..dann man es schon sehr gute freundschaften aufbauen....und so aber hier braucht man weniger anlasspunkte aber ...sich duzen und siesen und so was das hier innerhalb von tagen...bieten sich die leuten den vornamen an , in dt. ich weiss mein vater hat in der firma gearbeitet, da gab es leute die kannte er 30 jahre zu denen sagte er noch sie...das wäre hier ummöglich das konnte man sich hier nicht vorstellen ich duze meinen boss also...ich gebrauche seinen vornamen..und so weiter ..in dt. herr sowieso, frau sowieso..you know..das.das mag ich.....dann doch hier schon sehr mehr....

17:21...ja also wie gesagt ehm..auf der eine seite ..ist amerika so ...sehr..karriere orientiert...und sehr..ehm..mehr noch geld orientiert als...deutschland..wie schon gesagt aber auch...auf der gleichen

seite die andere seite der münze ..ist das viele leute sehr..also sehr..leicht ...mit menschen umzugehen...also ich meine sehr viel spontaner deutschland....ist nicht so sonderlich spontan man muss alles so genau planen ehm..man darf spontan sein aber nur wenn mans vorher genau geplant hat ..nee..wir haben schon karneval in köln...das sind alsodas sind drei tage wo man verrückt spielen darf, aber nur in den fdrei tagen....also das ist ganz wichtig dass es in den drei tagen passiert ...ne also sehr unterschiedlich ..ehm..aber es sit natürlich auch positive ...unterschiede aber ..deutsche legen glaube ich mehr wert auf ordnung und sauberkeit, das hat natürlich sien vorteil hat so sieht man das man ganz einfach an den strand an den autobahnen und strassen also ich meine...als ich zum erstenmal hier gekommen binhab mich gewundert warum das so viele geplatze reifen auf den strasse sind ...das in deutschland ..würde das sofort weggeräumt..natürlich zahlen wir auch so viel mehr steure weil diese dinge bezahlt werden müssen ..das ist eine ander einstellung dazu da übernimmt der staat mehr viele dinge die hier der staat ..die heir der privat mann selber machen muss..ja dann muss man daran denken das dieses land grad 200- 300 jahren alt ist während dt. im köln die sind über 2000 jahre alt sind also da sit eine ganz andere geschichteja so denkt man dieser wald wurde im 15jh. vom könig soundso gepflanzt das könnt eman hier gar nicht sagen, also das ist natürlich schon anders und das gefällt mir so zum grössten teil in beiden ländern also ich mag diese junge kultura aber ich mag..auch diese alte kultur...ich kann nicht sagen dass ich in einem 300 jahre alte haus wohne..aber ich mag das auch diese inovation und junge kultur der amerikaner also es sit eine sehr junge kulturgegen eine sehr alte kultur..sie haben beide ihre nachteile...

APPENDIX Q

Inform	Gender	Age	Time Imm.	Employed	Partner	Amount of L1 Contact	Level of Educ	EnglImm	EnglPres	GermPres
MF09	1	42	4	no	German	40	50	20	40	50
BM13	2	28	4	yes	British	40	50	40	40	50
FM03	2	31	5	yes	No	40	50	50	50	50
FM14	2	37	5	yes	No	40	60	20	40	40
IF06	1	53	7	yes	American	30	50	30	40	40
MF08	1	47	8	no	German	40	50	30	50	50
TM21	2	41	9	yes	German	40	50	30	50	50
AF10	1	40	10	yes	Korean	40	50	10	20	40
FM01	2	44	11	yes	Russian	40	50	30	40	50
NF04	1	34	11	yes	American	30	50	40	50	50
MM17	2	32	14	yes	American	30	50	30	50	50
RM20	2	54	15	yes	No	40	50	30	40	50
AF19	1	41	18	yes	German	30	50	40	50	50
SM16	2	49	26	yes	American	35	50	20	40	50
IM05	2	56	31	yes	American	40	50	40	50	50
GF12	1	64	31	no	Italian	40	60	30	40	50
JF07	1	57	33	yes	American	20	50	50	50	40
IF02	1	57	38	yes	American	30	30	10	30	20
CF15	1	61	44	no	American	20	30	0	50	30
EF11	1	64	45	no	American	35	30	10	40	40
HF18	1	67	45	no	Estonian	30	50	10	50	50
AM22	2	64	51	yes	American	20	60	10	50	30

VITA

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Raluca obtained the doctorate in German and Applied Linguistics at the University of Tennessee, Knoxville, TN, USA.