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List of Abbreviations

SES	Socioeconomic Status
FL	Foreign Language
L2	Second Language
L1	First Language
WM	Working Memory
UG	Universal Grammar
LCDH	linguistic coding differences hypothesis
CANAL – F	Cognitive Ability for Novelty in Acquisition of Language (Foreign)

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1. Introduction

The following thesis is concerned with the connection between language aptitude and socioeconomic status (SES) and has been written to achieve the title *Magister der Philosophie* at the University of Vienna, Austria.

Language aptitude, also referred to as foreign language (FL) aptitude, described simply, is a measure of how easily, compared to other individuals, one can acquire a foreign or second language (L2). “[A]n individual’s initial state of readiness and capacity for learning a foreign language, and probable facility in doing so given the presence of motivation and opportunity” (Carroll 1982: 86). Most persons are likely to possess an average language aptitude, meaning they are well equipped to reach a certain level of proficiency of a given language, depending on their intrinsic motivation as well as outside factors, including, for instance, the received instructions and the provided time. Only very few individuals will possess a significantly high or significantly low language aptitude, meaning it would be very easy, or extremely hard for them to acquire an FL or L2.

Language aptitude is not the only factor influencing the level of possible proficiency regarding L2 acquisition; however, it is a central one. Nevertheless, its academic discourse only developed in recent decades. This is one of the reasons why this paper will frequently have to refer to related subjects when discussing language aptitude and its implications. As “[l]anguage learning is in this respect very similar to the acquisition of [literacy] and arithmetic skills and also requires that children maintain information in working memory while engaging in various cognitive activities” (Sáfár & Kormos 2008: 119), topics including L1 and L2 acquisition, the development of IQ, cognitive and linguistic skills will be discussed and, most

importantly, related to language aptitude, hopefully to gain a deeper understanding of the concept.

Of central interest to this study is a detailed examination of the possible connection of SES and language aptitude. Language aptitude research, as will be discussed in section 2, is still concerned with questions regarding the very nature of its essential theoretical framework. Investigating the possible environmental influences, such as SES, on language aptitude should logically be one of the future steps in linguistic research. Hopefully, this paper will provide useful in being one of the first to tackle this crucial issue. Many studies concerned with SES have shown its influence on individual's language development, cognitive skills or academic success. However, to my knowledge, only little researched has thus far been conducted, concerned explicitly with the relationship between SES and language aptitude. If SES has an impact on child language development and L2 acquisition, surely it must be connected to language aptitude as well.

Besides providing new insights in language aptitude research, this paper furthermore wants to contribute to the question whether language aptitude is an innate trait or can be influenced. As will be discussed in greater detail in section 2, language aptitude has long been believed to be an innate trait. One certain humans are simply born possessing. If this is in fact the case, SES, an environmental factor, should have a fairly limited impact on language aptitude.

The two main hypotheses this paper will be concerned with are now mentioned briefly and discussed later in section 7 focusing exclusively on the hypotheses. Firstly, H_0 , individuals with a higher SES possess a higher language aptitude. The theoretical framework undermining this assumption will be covered extensively in section 4. Many researchers have established, individuals from high SES backgrounds tend to have higher cognitive skills, higher IQ and higher language

skills than their lower SES counterparts. The question will be answered whether or not these findings can be replicated focusing on language aptitude. Secondly, H_1 , if individuals from high SES backgrounds do not necessarily possess a higher language aptitude, a greater variance of language aptitude scores must be found among the lower SES groups due to the impact of possible influencing or mediating factors. Maternal education, single-parent household, home literacy experiences, supportiveness of (learning) environment, neighborhood, and exposure to cultural activities will be examined for possibly providing a positive influencing effect on language aptitude scores of low SES participants.

To discuss in full detail, the connection between language aptitude and SES the thesis will be structured in two parts as follows. Sections 2 to 6 will be concerned with outlining the theoretical framework of this study.

In section 2, the concept of language aptitude will be discussed as to avoid any confusion with similar notions. A brief insight will be provided for the history of the linguistic field. Starting from the development of the MLAT to the most current developments including current theories on the nature of language aptitude and its testing.

Furthermore, the processes of first language (L1) and L2 acquisition will be outlined very briefly in section 3 to establish a full picture of the linguistic theories applied. To comment in great detail on these issues, unfortunately, would go beyond the scope of this paper and is, frankly, not the main focus. However, it will be emphasized which similarities of the concepts of L1, L2 acquisition and language aptitude can be identified and how MacWhinney's "Unified Model of Language Acquisition" combines them. The model's relevance for, firstly, L1 and L2 acquisition and, secondly, language aptitude will be accentuated.

Additionally, SES has to be discussed sufficiently in section 4. The problem of establishing a definition across different fields of research will be addressed. To present a detailed picture of the participant's SES, it will be defined for the purpose of this thesis by means of income, parental and grandparental education, parental and grandparental occupation. Emphasis will be particularly on its effect on cognitive and linguistic skills.

In section 5, other possible influencing factors related to SES will be focused on. Besides SES itself, maternal education, living in single parent, or guardian households, home literacy experiences, supportive learning environment, neighborhood, and exposure to cultural activities will be discussed with regard to their possible direct or indirect influence on language skills and, therefore, language aptitude. Section 4 will already provide a general insight into some of the major findings regarding mediating factors. This section will shift that focus to the factors which are of crucial interest in this study.

Lastly, section 6 will be emphasizing current developments in language aptitude research, including developments in testing procedures, attempts of re-conceptualizing language aptitude and outlining two studies previously conducted, which share great similarities in purpose with the one presented here.

For the second main part of the thesis, the hypothesis and the methodology applied to examine the connection between language aptitude and SES will be described in greater detail. Section 7 will, after all related studies and research have been discussed in the sections prior, once more focus explicitly on the hypothesis.

Section 8 will concentrate on the methodology of the testing procedure. In short, 63 individuals were tested with the purpose of establishing their language aptitude, testing commenced using the Llama language test battery. Additionally, the

participant's socioeconomic background was evaluated, by information gathered using a questionnaire (see Appendix).

The information the language aptitude test and the questionnaire provide will then be described in section 9 and analyzed in section 10. The data was analyzed using SPSS. A statistically significant difference of language aptitude scores between the different SES groups could be established. Individuals from a higher SES background did possess a higher language aptitude than their lower SES counterparts. However, the participants scoring highest in the language aptitude testing were placed in the mid- or low-SES categories. Several influencing factors failed to establish a statistically significant connection between themselves and language aptitude. Maternal education and neighborhood did, nevertheless, establish a statistically significant relationship with language aptitude. Exposure to cultural activities and literacy experience seem to have a mediating effect on the connection between SES and language aptitude. The results therefore propose that SES does in fact have an effect on language aptitude. Nevertheless, this effect can be influenced or mediated especially for the lower SES groups by factors including maternal education, neighborhood, exposure to cultural activities and literacy experiences.

Before concluding the thesis, its shortcomings must be discussed and the thesis will be placed in the context of current language aptitude research by discussing possible questions for future research regarding the findings summarized in this paper.

2. Language Aptitude

Firstly, before shifting the focus to other areas of research and the more specific purpose of this thesis, the term language aptitude or FL aptitude needs to be at the center of discussion. Language aptitude refers to the reality of some individuals acquiring an FL with greater ease, better results, and more quickly than others. Carroll (1982: 86) defines it as “an individual’s initial state of readiness and capacity for learning a foreign language, and probable facility in doing so given the presence of motivation and opportunity.” Dörnyei (2005: 249) refers to language aptitude as “a range of different cognitive factors making up a composite measure that can, in turn, be referred to as the learner’s overall capacity to master a foreign language.” Often it is conceptualized as certain individuals simply having a gift for languages. Carroll (1982: 83-86) conceptualized language aptitude as

- distinct from other individual difference variables such as motivation, anxiety, and intelligence;
- impervious to external influence;
- predictive of L2 learning rate;
- drawn upon in formal instruction where learners make “a deliberate effort to learn a foreign language” (Carroll 1982: 83);
- the “initial state of readiness” (Carroll 1982: 86) for learning a foreign language.

His initial conceptualization of language aptitude has framed research for many decades and has been subject to attempts of re-conceptualization in current research.

Research in the linguistic field of language aptitude dates back to the last century. Psycholinguist John B. Carroll and Stanley Sapon created The Modern Language Aptitude Test (MLAT) between 1953 and 1958 (Sáfár & Kormos 2008: 115), and they might therefore be considered the founding-fathers of language aptitude research. Language aptitude was defined as, and in subsequent research for many years understood as the “prediction of how well, relative to other individuals, an individual can learn a foreign language in a given amount of time and under given conditions” (D’Este 2012: 298).

Language Aptitude research has become a special interest of governments during the years of the Cold War, when much research in this area was even funded by the US government and military. Still, modern research is closely connected to these areas. Catherine Doughty’s language aptitude testing battery named Hi-Lab has, thus far, tested the language aptitude abilities of 476 US government employees and military personnel (Linck et al. 2013).

Early research discovered, a significantly high aptitude for learning foreign languages is only possessed by relatively few individuals (Carroll 1964: 89). Furthermore, it was established that language aptitude could hardly be measured by normal intelligence tests, as a number of several aspects are said to act as crucial parts of the acquisition of languages (Carroll 1964: 91). Carroll defines four components as significant for language aptitude, namely:

- “‘phonemic coding ability’ (i.e. the ability to identify and retain sounds and link them to phonetic symbols);

- sensitivity towards the grammatical functions that words fulfil in a sentence;
- the ability to learn inductively (i.e. to infer and generalize linguistic structures from language samples); and
- the ability to rote learn vocabulary items paired with their associated translations.” (Wen 2011: 233)

For many years the research in this area and its testing has come to a halt, but recently has gained new momentum. To this day, researchers cannot explain beyond doubt how language aptitude manifests itself in different individuals and which skills, abilities and mechanics help form it. Though, Carroll’s creation of the MLAT and the fundamental ideas are still relevant, new ideas have emerged. For a discussion of current developments in language aptitude research see section 6.

The main reason as to why language aptitude research has come to a halt after the first initial steps, may be due to language aptitude being considered a “gift” for languages, a special trait or ability, stable in individuals, not subjected to change (Carroll 1982, Skehan 1998). Some researchers focusing on L2 acquisition might cynically argue, language aptitude has little influence on L2 attainment and is simply what language aptitude tests measure. Others, including McLaughlin (1990: 173) argue that “aptitude should not be viewed as a static personality trait; novices can become experts with experience.” Robinson (2001) recommends to consider language aptitude as a “complex and dynamic construct, comprising cognitive resources and primary abilities which combine into high-order ability that are directly involved in various learning tasks” (Sáfár & Kormos 2008:117).

In more recent research, especially considering the role of WM for language aptitude, the conception of language aptitude as stable and separated from other abilities has been questioned (Singleton 2017). Whether or not language aptitude is a

gift certain individuals simply possess, innate and not subjected to change, is a question more recent research in this area is frequently concerned with.

Overall, language aptitude research nowadays has grown into a far broader research area than in its beginnings. Major fields in linguistic research besides the concept of language aptitude and testing batteries include, but are certainly not limited to language aptitude and musicality (Christener & Reiterer 2013; Fonseca-Mora Toscano- Fuentes, Wermke 2011), language aptitude and sex (Nyikos 1990), language aptitude and personality traits (Biedroń 2011), or language aptitude and personality (Verhoeven & Vermeer 2002).

For the purpose of this thesis, it will be tried to reveal whether or not a link between language aptitude and SES can be established. No similar research could be found regarding this area thus far. Many researchers have uncovered links between cognitive and linguistic skills and the SES background of individuals and their families, respectively, some will be discussed in sections 4 and 5 of this thesis. Additionally, it will be examined whether or not individuals from a lower SES background generally possess a lower language aptitude when being compared with their higher SES counterparts. Moreover, if this should not be the case, other possible factors will be examined for their direct or indirect influence on language aptitude. Several factors are being closely examined, analyzed and discussed to provide great insight into the area of linguistic research. To provide the theoretical framework for such a discussion, one must firstly emphasize the theories behind language aptitude by focusing on the theories of L1 and L2 acquisition as well.

3. Language Acquisition and Language Aptitude

As to establish a full picture of language skills and language aptitude, before going into greater detail regarding aspects of SES and its possible effects on language aptitude, the reasons for the emergence of language in humans need to be briefly discussed, and why speech is often considered as species-specific trait, as well as the theories of L1 and L2 acquisition and therefore the most significant discussions, relevant for the discourse, will be summarized in this section.

Firstly, a very significant question needs to be asked. Why is speech a species-specific endowment of humans? Snow (1999) interestingly discusses this question in a chapter in *The emergence of language*, a handbook focusing on this exact issue. She argues for 2 major hypotheses concerning the bootstrapping of grammar to be the reason for the emergence of language in human infants (for full discussion see Snow 1999). Both theories have in common that an infant would use their cognitive capacities to understand an event, while at the same time an adult would explain said event to the infant (Snow 1999). Seeing an event unfold, accompanied by an explanation of what is being observed, would function as a basis for the child to uncover the structure of sentences, i.e. the SVO-structure typical of clauses in English (Snow 1999: 258). However, this first theory would require great precocity of a very young infant, children would have to combine prior lexical knowledge, with an understanding of an event unraveling and simultaneously provide a semantic analysis of the observed action (Snow 1999: 259). This would suggest that children have to understand what is happening around them in order to make grammatical inferences, even though it seems more likely that children use language as a main tool for understanding the world surrounding them.

Snow suggests an additional theory to provide an explanation for the main mechanics behind the emergence and acquisition of language in infants. Primarily, she suggests a reliance on the pragmatic precocity of children. More specifically, children use means of communication to ensure attention from persons in their environment, even when they are still incapable of producing intelligible sounds, by means of pointing, or showing gestures (Snow 1999: 262). In the following stages of the emergence of language, Snow argues, children participate in speech games, naming body parts, or mimicking animal sounds, not necessarily for any other reason but develop their continuous participation in human social interaction (1999: 262). During the first year of life social-communicative precocity outstrips any other precocity in infants by far, and the acquisition of means in order to participate in communication is a more species-specific trait to humans than any other species (Snow 1999: 263). For children, language becomes about accomplishing goals for children, instead of pointing and gesturing to achieve something, children learn the verbal codes needed to communicate with other members of their environment and realize the benefits of language.

This theory provides some insight into the possible reasons for the emergence of language in the human species. The main reason for young children to acquire speech is so that they are capable of participating in the world surrounding them. The question this research mainly focuses on, however, is not why human language has emerged, but the mechanics of how it has emerged and the mechanics of how humans are able to acquire a number of languages and what influences this ability. A brief discussion of language acquisition is of importance as to understand how language aptitude theoretically comes into existence and how it can be tested at all. After discussing some main theories of L1 and L2 acquisition, it will be argued that

one needs a unified model of language acquisition to fully understand the notions of language acquisition, but more importantly, language aptitude.

3.1 Language Acquisition

Since the emergence of the linguistic research within the fields of L1 and L2 acquisition, these two fields have been mostly regarded as significantly different, therefore, their domains in the scientific community have largely developed separately (Nau 2015: 125). Differing opinions are still being held by researchers on whether or not L1 and L2 acquisition are related, or two different domains entirely. The most likely reason being that the findings of one domain could not simply be applied to or reciprocated by the other, or often failed produce similar findings (Nau 2015: 125). Truly, L1 and L2 acquisition differ in several fundamental ways (MacWhinney 2005: 2).

Nevertheless, it is still claimed by some, that the domains are connected. Research on the L1 acquisition of children has influenced theories of L2 acquisition and even practices in L2 education (Dixon et al. 2012: 34). Only very recently has the connection of the subjects been attempted to reconsider, in i.e. psycholinguistics, theoretical linguistics, or applied linguistics (Nau 2015: 125). However, as there are several differing theories regarding L1 acquisition, it seems almost impossible to establish relations between the two. Before nevertheless trying by referring to MacWhinney's Unified Model, the mechanics of L1 and L2 acquisition will be discussed briefly.

Famously, Chomsky describes the species-specific phenomenon of L1 acquisition similar innate as an infant learning to walk (Nau 2015: 124). Meisel (2011: 13) describes humans' language as a "gift [...] which manifests itself in the effortless

acquisition of language by toddlers [and] can safely be qualified as species-specific endowment of humans.” L1 acquisition happens to all human children, everywhere. All children learn an L1 only through exposure to language (Nau 2015: 126). Their level of proficiency may vary, but all native speakers acquire full grammatical competence in their native tongue in their first years of living, simply by means of exposure through caretakers and peers. Usually, all children will be able to use, for instance, the Passive, no matter their dialect or sociolect, unless they suffer a severe disability preventing them from acquiring any form of speech.

L1 and L2 acquisition are still regarded as different by many linguists. Meisel (2011: 22) describes three significant characteristics of L1 acquisition, which can not be applied to L2 acquisition. Firstly, except for cases of disabilities or pathological cases, L1 acquisition is always successful. L2 acquisition, on the other hand, is not necessarily successful. In very many cases learners acquire incomplete understanding of grammatical structures in an L2. Some learners will achieve native-like proficiency with relative ease, whereas others will never achieve a very high degree of proficiency. Secondly, he describes the rate of acquisition. How within only a few years, an infant is able to acquire their native language. This is also not applicable to L2 learning, as speed of acquisition differs greatly. What some learners are able to achieve in only a few weeks or months, will take other learners maybe years. Thirdly, he describes the uniformity of the acquisition process. L1 acquisition research has proven similar patterns of acquisition not only for various individuals sharing a language, but also across different languages. Recent research challenges the presumed uniformity of L1 acquisition (Nau 2015: 136). Early research into L1 acquisition showed a pattern in which grammatical meanings and patterns are usually acquired by children, however these findings could not be proved similar for

L2 acquisition, one of the main reasons as to why they are regarded different (Nau 2015: 138).

However, other linguists claim the fields of L1 and L2 acquisition are related. When discussing theories of L1 acquisition and the possibility of their application for L2 acquisition one must also mention Universal Grammar (UG) (for detailed discussion about UG see Chomsky 1981, 1986, 1995, 2000, among others). UG argues for a knowledge that exists in infants prior to the acquisition of language and, therefore, enables humans to learn a language, specific knowledge that is innate to the human-species. This knowledge is due to the fact, that no known languages violate certain principles, which considering the amount of languages spoken around the globe, is a most convincing argument. Whether or not the mechanics of UG are applicable to L2 acquisition is debated heatedly. Some argue that the mechanics of UG are only available to infants and young children, whereas others claim “that whatever enables a child to acquire a mother tongue might not be lost forever, rather that it could be hidden somewhere among or underneath our cognitive faculties” (Meisel 2011: 1). Meisel (2011) discusses which mechanisms are concerned with language acquisition in the human brain and provides convincing neurobiological reasons why these mechanisms are only available to young children.

It must be mentioned that some of the differences between L1 and L2 acquisition which are being observed regularly may be due to how certain domains of grammar might develop differently in older L2 learners as opposed to young children L1 learners (Meisel 2011: 244). One main issue as to why the two forms of acquisition appear to be different, because when acquiring an L2, the L1 is already and inevitably present in the speaker’s mind (Cook 2010: 151).

When focusing on L2 acquisition, one must also mention that the conditions of learners vary more greatly than the ones of infants learning to speak an L1.

According to Dixon et al. (2012: 5-6) optimal conditions for L2 acquisition include:

- 1) strong home literacy practices, opportunities to use the L2 informally, well-implemented specially-designed L2 educational programs, and sufficient time devoted to L2 literacy instruction, whereas L2 learners with little L2 exposure require explicit instruction to master grammar;
- 2) L2 learners with strong L2 aptitude, motivation, and first language (L1) skills are more successful;
- 3) Effective L2 teachers demonstrate sufficient L2 proficiency, strong instructional skills, and proficiency in their students' L1;
- 4) L2 learners require years to reach L2 proficiency, with younger learners typically taking longer but more likely to achieve close-to-native results.

Parents and teachers can influence several of these factors. They can encourage child literacy practices by providing age-adequate material, both in school and in the home, furthermore, they can help facilitate a learning atmosphere in which children feel comfortable to speak in an L2. Subsequently it will be examined whether or not these factors have a mediating effect on not only the proficiency level acquired in L2 acquisition, but also on language aptitude. A more detailed discussion follows in chapter.

The question most relevant to this research, however, should be concerned not with the differences, but with the connection and similarities of L1 and L2 acquisition, as well as the influence of language aptitude in L2 acquisition. If L1 and L2 acquisition are related, language aptitude must surely share cognitive aspects with the two notions. As language aptitude is simply, how easily compared to other individuals one can master a foreign language. The most compelling case in arguing that L1 acquisition, L2 acquisition and therefore language aptitude must be treated as related fields of linguistic research was made by MacWhinney and will be discussed in the next chapter.

3.2 MacWhinney's Unified Model of Language Acquisition

Even though, it has been often argued, that L1 and L2 acquisition are two entirely unrelated domains, the research of which has largely developed separately, in recent years, many have argued in favor of a connection of the linguistic fields. As discussed above, many findings regarding L1 acquisition have not yet been proven or even failed to be applied to and replicated in L2 acquisition. Nevertheless, MacWhinney (2005, 2008) has developed a model, which most convincingly argues, that these two domains are in fact connected. In his unified model, L1 and L2 acquisition are not regarded as inherently different. The main distinction between the

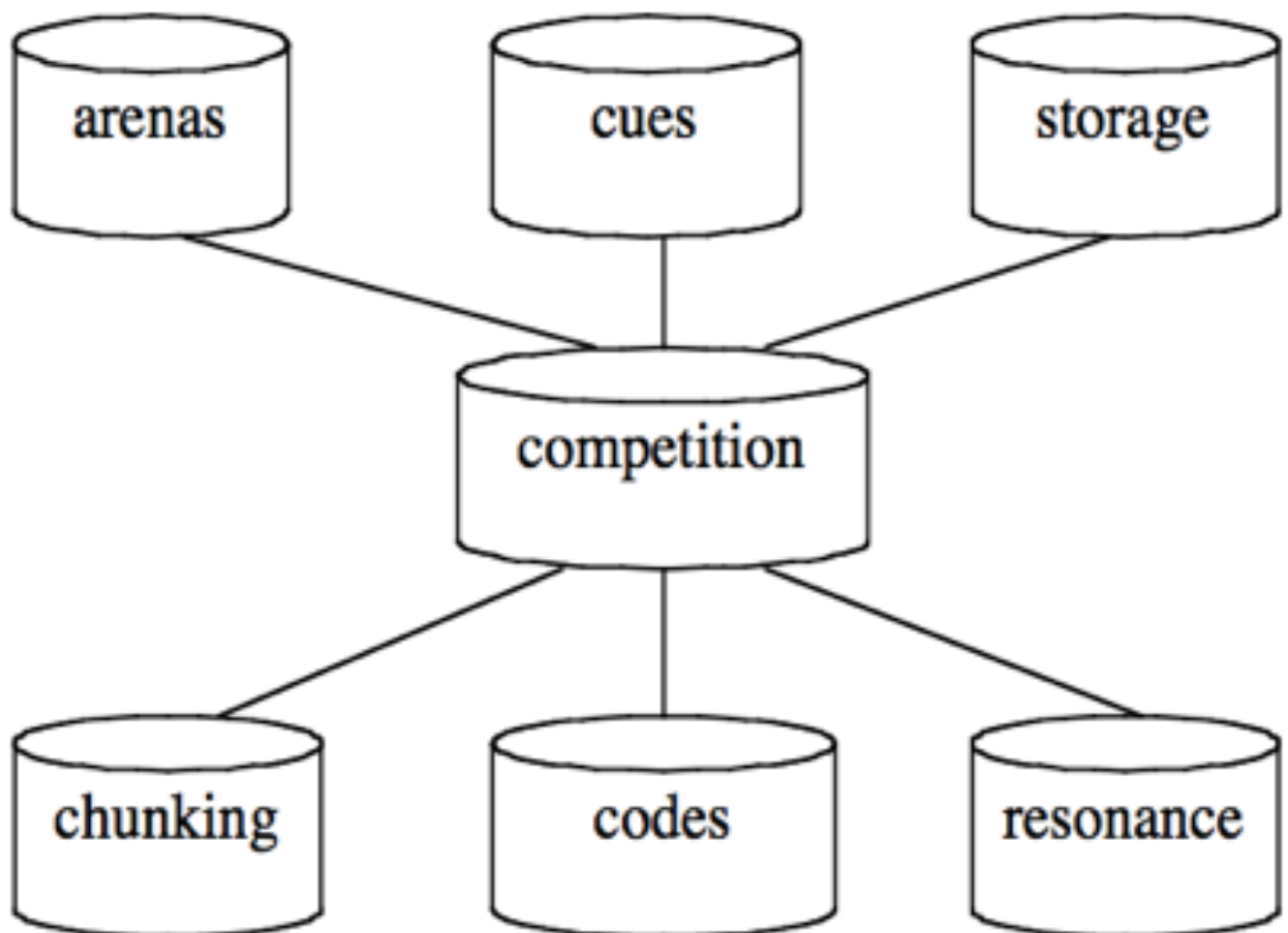


Figure 1 MacWhinney's Unified Model of Language Acquisition

(MacWhinney 2005: 4)

two being that at the onset of L2 acquisition, individuals are already capable of speaking an L1. But as learning continues, they will have to rely less and less on their L1 for L2 communication (Dixon 2012: 36).

In his unified model of language acquisition, Figure 1, MacWhinney describes several areas of language acquisition which are relevant to both L1 and L2 acquisition functioning as “non-modular interacting forces” (MacWhinney 2005: 1). In this section the different areas of the model will be reviewed. In section 8, focusing on the methodology used to test the hypothesis this model and its implications for language acquisition will be related to the language aptitude test, the Llama battery. Firstly, at the center of the model one can find the term “competition” (MacWhinney 2005: 5). The notion is fundamental in cognitive psychology and most of its information-processing models and can take different forms depending on the specific arenas. It generally refers to the selection between options and cues based on their relative strength. Competition relies on resonance and cue summation to achieve its function. It is the unconscious choosing of one’s mind between the different application processes necessary for L1 and L2 acquisition.

Secondly, MacWhinney (2005: 5) focuses on “arenas”, a notion typical for psycholinguistic models of language acquisition. Here arena refers to specific processing arenas requiring different neurological pathways for activation. Arenas are described as competitive, but are not encapsulated and use information of other arenas whenever available. The four main arenas of both L1 and L2 acquisition being phonology, lexicon, morphosyntax, and conceptualization. In production processes these arenas refer to message formulation, lexical activation, morphosyntactic arrangement, and articulatory planning. In comprehension processes they refer to auditory processing, lexical activation, grammatical role decoding, and articulatory

planning. All all of which are domains that have to be mastered in language acquisition.

Thirdly, “cues” (MacWhinney 2005: 5-6) are being discussed. Cues are social conventions which need to be learned. They are linguistic signs used for mapping between form and function. They could be described as what Halliday refers to in his systematic grammar with the term linguistic options. In comprehension, forms serve as cues to function, as functions or interpretations compete on the basis of cues from surface forms. In production, functions serve as cues to forms, meaning forms compete to express underlying intentions or functions. The outcome is determined by the relative strength of the cues.

The term “storage” (MacWhinney 2005: 6-7) refers to the brain’s capacity for the acquisition or learning of new mappings in both short term memory and long term memory.

Next, the model focuses on the notion of “chunking” (MacWhinney 2005: 7). This occurs when particular information, such as groups of words are being stored together. The size of the particular groups, also referred to as mappings depends on the operation of the processes of chunking. In L1 acquisition, for instance, children rely on combinatorial processes and chunking for building syllables, words and sentences. Similar processes can be observed for L2 acquisition.

Furthermore, “codes” (MacWhinney 2005: 7) refers to theories of code activation, and code competition, including theories of transfer and theory of code interaction. Essentially, it describes a choice of a particular code at a particular time during lexicalization, which depend on factor activations from previous lexical items, the influence of lexical gaps, expressions of sociolinguistic options, and conversational cues produced by the listener.

Lastly, MacWhinney's concept of "resonance" (MacWhinney 2005: 8) refers to a specific phenomenon of language acquisition which can best be explained by using an example. Resonance is when toddlers learning to speak comment on their actions themselves. For instance, a child is picking up a toy from the floor, but before doing this, they tell themselves what they are about to do, "pick up yellow truck". In later years, individuals do not usually do this anymore. Rather it is something happening in the mind via thoughts. The same goes for L2 acquisition. Eventually, it will find a way into the learner's mind and the learner will be able to produce thought in a new language.

The importance of this model for the hypothesis will be discussed in greater detail in section 7 of the thesis focusing on the methodology to test the hypothesis. The relationship between MacWhinney's Unified Model of Language Acquisition and the Llama battery, used to measure individual's language aptitude, will be central. The Llama battery is applied for the purpose of testing language aptitude. It focuses exactly the aspects of L1 and L2 acquisition MacWhinney describes as essential or even inevitable. If L1 and L2 acquisition are, in fact, not entirely different and unrelated, the concept of language aptitude must be related as well. Section 7 will make a convincing argument how all of MacWhinney's arenas are applied by an individual to a non-existent language in order to establish their language aptitude. As L1, L2 acquisition and language aptitude are related, the findings regarding SES, or other possible influencing factors on L1 and L2 acquisition or language development in general, should be, to some degree reciprocated by the field of language aptitude research.

Before focusing on the hypothesis and the methodology, one must cover all the theoretical aspects of the research. In the next part of this paper the notion of

SES will be central. It will be defined for the application in the present study, and, most importantly, its influence on linguistic skills will be outlined.

4. Socioeconomic Status

4.1 Difficulties of Establishing a Definition

Before examining the relation between SES and cognitive skills or, more specifically, SES and L1, L2 acquisition and language aptitude, it does suffice to establish what is being discussed exactly with regard to the term SES. SES is a widely used sociological concept, nevertheless, researchers have, thus far, failed to establish a common definition. White (1982: 462) describes this lack of a general definition for different academic research areas as disturbing. He even goes as far as to argue, researchers should avoid the term entirely due to its ambiguity, and rather state explicitly to which aspects relating to the concept they will be referring (White 1982: 474). When investigating areas related to SES, depending on the field, often working definitions of SES, or certain aspects of it being examined, have to be established first. Letts et al. (2013: 134) suggest most studies use a mix of SES variables. The complexity of the construct of SES itself might be one of the factors contributing to contradictory results of research in the different fields. Not all aspects might have equal, or even equally observable impacts on language skills and language aptitude (Letts et al. 2013: 139). Studies tend to focus, not on all aspects of SES, but on specific aspects of the notion. Therefore, it is understandable that some have managed to establish a connection between certain aspects of SES and cognitive skills, language skills, or IQ, whereas other studies have failed to put forward results in the same regard. By focusing on contrasting aspects of the sociological concept of SES, they might as well be discussing entirely unrelated fields of study.

Subsequently, this thesis defines aspects related to SES and the topic of language aptitude explicitly, but also chooses to refer to the outlined concepts as SES for closer exploration throughout the text, similarly to the presented research. Before doing so, typical aspects of the definition of SES will be discussed.

4.2 Working Definition of SES

Predominately, SES is defined with regard to measures of education, occupation and income of individuals, or families (Letts et al. 2013: 134; White 1982: 462). Education and occupation, as opposed to income, are rather simple concepts. To establish a families' or individual's status with regard to education and occupation, one might include factors such as ethnicity, size of family, educational aspirations, presence of reading materials in the home, amount of travel, or school related variables possibly including teacher's salary, pupil-teacher-ratio (White 1982: 462-463). Retrospectively, individuals should be sufficiently able to recall their own paths of education and occupations. Information will hopefully also be elicited about the parental education and occupation, as some information about parents should, in most cases, be available to the subject. Problematically, parental incomes cannot be reported adequately by adolescents, nor can they be recalled correctly by adults retrospectively (Duncan, Brooks-Gunn & Klebanov 1994: 297).

Incorrectly, low SES might be considered synonymous to poverty. The World Bank Organisation describes poverty as follows (BBC 2014):

"The most commonly used way to measure poverty is based on incomes. A person is considered poor if his or her income level falls below some minimum level necessary to meet basic needs. This minimum level is usually called the "poverty line". What is necessary to satisfy basic needs varies across time and societies. Therefore, poverty lines vary in time and place, and each country uses lines which are appropriate to its level of development, societal norms and values."

More concisely, one might describe poverty as “pre-tax income insufficient to cover the minimal needs of families” (Kaiser & Delaney 1996: 71). However, poverty is no synonym to low SES. Rather it should be considered as a part of the wider concept of SES. Parents most frequently defined to be in the category of low SES include females, unmarried individuals and members of either racial or ethnical minority groups (Kaiser & Delaney 1996: 71). In the early 90s in the U.S. it was estimated that roughly 14.3 million individuals lived in families with incomes failing to exceed the poverty line (Duncan, Brooks-Gunn & Klebanov 1994: 297). Low SES influences many aspects of living, it is part of “a psychological and physical context that significantly reduces the likelihood that parents can support children’s physical health, mental health, and social and cognitive development optimally” (Kaiser & Delaney 1996: 74).

As SES is a “multidimensional construct” (Letts et al. 2013: 134) connecting various factors of an individual’s upbringing, education, family background and social life, each of the aspect might have a different impact on language skills (Qi et al. 2006: 7). Besides education, occupation, and income, characteristics associated with a low SES include habitation in economically deprived neighborhoods, and relatively few positive family experiences (Kaiser & Delaney 1996: 71). Children are effected through substandard living conditions, lack of critical material resources, inadequate nutrition, inferior health care, and fewer opportunities for formal education and other development enhancing experiences (Kaiser & Delaney 1996: 74). Arguably, SES is a powerful predictor of many aspects of child development (Hoff 2003: 1368). Poverty and SES function as “demographic descriptors that have been accepted as indicators of risk for language performance, primarily because of the high prevalence

of low language performance” (Qi et al. 2006: 6) among low SES and minority children (Kaiser et al. 2000; Washington & Craig 1999; Whitehurst & Fischel 2001).

However, as it is a multi-faceted construct it is difficult to uncover exactly the mechanisms which influence the cognitive skills, language aptitude and behavior of children, as opposed to the ones which do not have a significant influence on these skills. What should be examined is which aspects of SES are related to language aptitude, and why they are related. The first objective, will hopefully be, at least partly, answered by this thesis. However, to answer the second objective, would go far beyond the scope of this paper.

4.3 The Effects of Socioeconomic Status

The effects of SES can be manifold. Not only does SES impact the cognitive skills, language skills, or IQ of individuals, often it shapes their entire lives. It is not unlikely for children to inherit their parents’ SES status, either high or low. Several reasons might be named when discussing why low SES children seem to inherit their parents’ low SES status in society. Some researchers suggest this development is due to “biologically based differences in [children’s] abilities, caused by genes and health” (Hoff 2003: 1368), with other researches even going as far as to argue for a genetic blueprint in language development (see Pinker 2002). Snow (1999: 269) argues that low SES families provide “less education, less involvement in high-level literacy activities, fewer economic resources, and homes where there is less talk over all and less child-directed talk”, meaning that families with less economic capital might potentially offer fewer learning possibilities and activities for cognitive and linguistic development of their children. This claim is supported by Hart & Risley (1995), who found a discrepancy in the words young children are exposed to by

professional parents at 40 million different words, working class parents at 20 million words and parents on welfare on 10 million words, and Hoff (2003) who also finds that low SES children develop their vocabularies at a slower rate. The correlation between children's vocabulary development and parental education can be mediated by the quality of living, the quality of the environment in which the child acquires their language (Wells 1986). Contradictory, Black, Peppé and Gibbon failed to prove a connection between SES and lexical development, "unlike the majority of previous findings, there is no significant relationship between deprivation category/socio-economic status and receptive vocabulary in primary school children, [however,] several factors [...] may obscure the relationship" (2008: 263).

Overall, it has been frequently suggested that parents with less education living in poverty have less capacity for creating an environment of supportive and consistent parenting, the effects of which can be seen and measured throughout child development (Kaiser & Delaney 1996: 72). Poverty is being describes as a "psychological and physical context that significantly reduces the likelihood that parents can support children's physical health, mental health, and social and cognitive development optimally" (Kaiser & Delaney 1996: 74). Low SES-families, often having fewer economic resources available, may fail or be unable to provide differential opportunities for the lexical development of their children. Fewer resources, including books and media, may be available, but also fewer learning opportunities, including visits to museums, being read to, or frequently talked to, may be provided. Whitehurst & Lonigan (1998) established these factors as important in emergent literacy, as well as intermediate reading skills. Research suggests, in low-SES families, home environment, due to the the number of children in the home, the neighborhood and also the lower income, may be less encouraging for the language development and therefore the language aptitude of children.

Furthermore, positive, consistent parenting as well as responsive behavior, including responsiveness to child, establishment of a generally positive affective valence in interactions instrumental support for the child in meeting their physical and emotional needs, have been connected to a more positive outcome in language development (Kaiser & Delaney 1996: 70). Kaiser and Delaney (1996: 71) discuss several patterns of parenting that have been connected to poor outcomes in language development, namely, limited parent responsiveness to the child (Harish, Dodge, & Valente 1995; Rubin, Stewart, & Chen 1995), harsh and abusive parenting (Patterson 1982; Pettit, Bates, & Dodge 1993), and failure to monitor child behavior outside the home (Patterson, DeBaryshe & Ramsey, 1989).

4.3.1 Cognitive Skills

Even though, the main aim of this thesis is to examine whether or not a connection between language aptitude and SES can be established, it does suffice to briefly mention, that in recent years, much research has been conducted with regard to SES and cognitive skills, or behavior. Cognitive skills, including working memory are a distinct part of establishing an individual's language aptitude.

Generally, many researchers have found tendencies proving that children from a lower SES background do receive lower scores on IQ test (Kaiser & Delaney 1996, Bee 1982), language test (Qi et al. 2006, Letts et al. 2013), as previously mentioned. Furthermore, these children are at risk for developing behavioral problems (Duncan, Brooks-Gunn & Klebanov 1994) more frequently than their mid, or high-SES counterparts. Poverty appears to have a negative effect on the acquisition and use of language skills; consequently, performance on standardized tests is often affected (Kaiser & Delaney, 1996; Rice, Romy, Spitz, & O'Brien, 1999; Washington & Craig,

1999), but also differences in language development between mid and low-SES children are frequently observed (Kaiser & Delaney 1996: 75). Qi et al. (2006) argue that generally, low-income, minority pre-school children perform lower on standardized tests of language abilities that are based on developmental norms, a claim supported by Letts et al. (2013). For the purpose of providing an overview over research connected to SES, major findings will be discussed in this chapter.

Specific findings in the area of research concerned with SES and cognitive skills include the following. Children who grow up in families with lower SES are at increased risk of reduced psychological well-being and emotional and cognitive development (Ronfani et al. 2015: 2). Qi et al. (2006: 10) closely examined several of the more “popular” factors including maternal education, monthly household income, marital status, teenage mother status and number of children in the family. They found that maternal education, marital status, and number of children in the home could positively effect language performance in the respective SES groups when focusing on low-income, minority preschoolers (Qi et al. 2006: 12). Similarly, Black, Peppé & Gibbon (2008: 260) established links between parents’ social class and levels of education, the quality of the home learning environment, and the lexical development, more specifically, vocabulary acquisition in children. Furthermore, Kaiser & Delaney (1996: 66) established that poverty in childhood years is a strong contextual factor in the development of children, including their language development. Their research was especially concerned with factors such as single-parenting, minority status, health problems in the children, chronic poverty, very low-income neighborhood and high level of incidental stressors (Kaiser & Delaney 1996: 67).

Another major research area of SES has to do with its connection to neurocognitive or cognitive skills in general. Ronfani et al., focusing on the interaction

between home environment, SES and early child neurocognitive development analyzing data from 502 mother-child pairs, established “a relationship between SES and maternal IQ, with a complete mediation effect of home environment in affecting cognitive and language domains” (2015: 2). Their analysis suggests a direct relation between maternal intelligence and child language development and a mediation effect of SES on this connection (Ronfani et al. 2015: 9). When focusing on the birth weight and family SES and their connection to cognitive skills among 4,189 Chinese adolescents between 10 and 22, Miao (2017: 1) found parent’s higher levels of education, not necessarily income, have a mediating effect on their children’s physical condition as well the cognitive development. SES was found to either moderate the effects of early health shocks or developmental problems, or reinforce those (Miao 2017: 4). More-educated parents are more likely to be able to compensate for low cognitive achievement among low-birth weight children (Miao 2017:16). However, for this sample group, mathematical performance was not positively mediated by parental SES (Miao 2017: 13).

Additionally, the connection between SES and intelligence, IQ and mathematical skills is of interest to researchers. Bradley & Caldwell (1984: 808) found a strong relationship between maternal responsivity to a child and its intelligence during preschool education. Furthermore, Crane (1996) investigated the connection between SES and mathematics achievement and found evidence suggesting that home environment has a significant effect on mathematics skills of children. Using the variables family income, mother’s education, father’s education, mother’s occupational status, father’s occupational status, household size, marital status, percentage of students at the mother’s high school who were poor, he found that the effects of SES were, compared to the effects of home environment not as significant as the latter ones, but by no means trivial (Crane 1996: 309). Hanscombe

(2012) attempted to establish a connection between SES and children's IQ. He found a greater variance of intelligence in low SES families, but not necessarily a hereditary component (Hanscombe 2012: 1). This variance, he subsequently argues, might be due to a moderating effect of the children's home environment (Hanscombe 2012: 1). All high SES families are usually able to create a positive atmosphere for child development, and some low SES families seem to be able to create the same for their children, it might be "reasonable to consider the possibility that heritability of intelligence is higher in higher SES families because such families seem likely to provide more opportunities to realize differences in children's genetic potentials. Conversely, in lower SES families, genetic differences might be restrained by poverty" (Hanscombe 2012:2).

Lastly, Mistry et al. (2008) discuss the connection of SES parental investments, and the cognitive and behavioral outcomes of low-income children. However, they observed no direct effect of SES on children's cognitive or behavioral outcomes (Mistry et al: 2012: 205). Nevertheless, a connection between family investment, socialization pathways and the effects of SES, assessed during infancy and the toddlerhood years, on preschool children's cognitive and behavioral outcomes could be uncovered (Mistry et al. 2008: 208).

4.3.2 Language Skills

As SES is a multifaceted concept with its aspects manifesting differently, it is a complex task to discuss which aspects of cognitive skills and language skills are impacted by which facet of SES. Children of low SES families have been found to be generally outperformed by children from higher SES backgrounds in many standardized tests focusing on cognitive skills, as well as language skills (Letts et al.

2013: 132). Qi et al. (2006: 5) argue that for many low-income children these early delays are associated with ongoing language deficits in the individual's further development. Hoff (2003: 1368) finds that "children from lower SES build their vocabularies at slower rates than children from higher SES". Furthermore, it is believed that children starting their education effected by language delays or difficulties are generally at risk for low educational and academic attainment (Snowling et al. 2001). Children with poor language skills often come from low SES backgrounds. As their poor language skills effect their academic lives, their early delays are rarely compensated for over the course of their educational careers, rather the gaps between high and low language skills increase steadily. Consequently, as adults, the affected will fail to increase their societal status, and will be considered part of a low SES group and in turn, their children will be affected by their parents' lack of education.

However, several researchers found that the level of maternal education has a significantly mediating effect on the vocabulary development of young children. Higher maternal education correlates with a more positive home environment, more active engagement with children through the means of "reading to children; teaching songs and nursery rhymes; painting and drawing; playing with letters and numbers; visiting the library; teaching the alphabet; teaching numbers; taking children on visits; and creating regular opportunities for them to play with their friends at home" (Black, Peppé & Gibbon 2008: 260). Mothers who are less well educated and from a low SES background read less to and with their children, have a less varied vocabulary, engage less in conversations with their child and provide less child-directed talk overall (Qi et al. 2006: 13). Hoff (2003: 1373) finds that higher SES mothers show characteristics that are more positively associated with language development, and "differences in child-directed speech arise from more general SES-related differences

in language use.” Higher SES, in her findings, correlates with longer utterances, which children readily incorporate into their own vocabularies. Letts et al. (2013) found that the level of maternal education positively affected both comprehension and production of language of low SES children, scores of children in their research increasing as the number of years of maternal education increased. Morris et al. (2012: 99) examining the relationship between reading disabilities and IQ, SES, and race, found that “50% of children from low-income families read below a basic level, as opposed to 21% of higher income children. By ethnic group, 54% of children who are African American, 51% of children who are Hispanic, and 23% of children who are European American read below the basic level on the NAEP.”

Overall, it can be stated that optimal conditions for L2 learning and acquisition and a connection to SES include a higher level of parental or even grandparental level of SES, parental and grandparental education, strong home literacy practices. These aspects are important for this research as well when examining the connection of SES and language aptitude. Information about them will be gathered by means of a questionnaire. The details of which will be outlined in a later section 8 focusing on the methodology of the study.

5. Other Possible Influencing Factors

As previously mentioned, SES is a complex notion with a multitude of definitions and a variety of facets influencing the concept. Different areas of research have established several definitions for SES and, it seems, for every study attempting to describe the influence of SES on cognitive skills, language ability, behavior, etc. another study disproves its findings. Henceforth, it might not be the entirety of the concept of SES influencing these skills and abilities, but simply certain aspects which have a positive or negative effect on the development of language skills in general, and language aptitude specifically. Some factors have already been briefly mentioned in section 4, however, now the focus shifts from SES to the possible other influencing factors or mediating factors. Maternal education, single-parent households, home literacy experiences, supportiveness of environment, neighborhood, and exposure to culture will be discussed in greater detail in this section.

Unfortunately, the subsequently discussed research does not focus explicitly on language aptitude, but rather related concepts, including language development in general, literacy development, and L1 or L2 acquisition. To my knowledge, there is no research yet available discussing the connection between language aptitude and possible influencing factors. However, research thus far has established a link between these factors and aspects language development. In order to identify these factors possible relationship to language aptitude, one must first examine their well established connections to other notable language skills. This might be a first step into unveiling the new connections and opening directions for further research. As the concepts are related, possibly one or several of these factors will prove to either have

a greater influence on language aptitude than SES, or a significant mediating effect on the connection between language aptitude and SES might be uncovered.

Before describing the influencing factors in detail, one must mention that they all share a relationship with SES and, more importantly with each other. To mention two examples, maternal education would, in most cases, effect other factors such as neighborhood, home literacy experiences, home environment. More highly educated mothers would be able to afford living in more affluent neighborhoods and possibly have a different attitude towards reading in the home than their less educated counterparts. Single guardian households might effect the exposure to culture, simply because they often have fewer monetary resources than households with two guardians or parents.

There is no “magic bullet” in predicting individual’s IQ and language skills (Bee 1982: 1145). Sidhu, Mahli & Jerath examining environmental and biological risk factors of Indian children, found that “the most detrimental effects on language development are caused when multiple biological and environmental risk factors act on one single child” (2010: 391). Even though, the main concern of this research are environmental factors, the notion applies similarly. All factors focused on in this research, are somewhat connected to each other and the concept of SES. Not one will predict the language aptitude, but most likely a combination of them will be able to help predict language aptitude. However, the relevant factors could possibly vary from individual to individual. Bee (1982: 1135) states that “specific aspects of the environment [...] appear to be particularly significant for predicting the child’s concurrent or later intellectual or language skill”. In this regard, this can only be a first step into research regarding language aptitude, SES and other influencing factors, as a detailed analysis would go far beyond the scope of one single thesis.

5.1 Maternal Education

As has already been established in section 4, maternal education seems to have almost a greater influence on language development and, subsequently, language skills than any other factor (Bee 1982; Garrett, Ng'Andu & Ferron 1994; Brooks-Gunn, Klebanov & Duncan 1996; Barratt & Roach 1995; Furstenberg, Brooks-Gunn & Morgan 1987). It is one of the most determining factors of child development in many regards and "consistently related to child outcomes" (Bee 1982: 1136). Qi et al. have defined the aspects of maternal educational level, marital status and number of children in the family (2006: 10) rather than the concept of SES to have an influence on cognitive skills.

Focusing on language skill and IQ and their connection to perinatal status and family characteristics, Bee (1982: 1151) found that "mother's level of education is an important ingredient in a cluster of variables, but social support appears to be [an] equally important predictor." In her study, mothers with more than secondary education had somewhat "larger and more motorically mature newborns, [and] their infants had significantly higher mental test and language test scores", as these mothers were said to "[provide] a more enriched environment and more facilitative teaching from the earliest observation" (Bee 1982: 1141). Similar conclusions were drawn by Garrett, Ng'Andu & Ferron (1994: 334) who describe "mothers with limited intellectual ability" to be "less able than their normal counterparts to provide safe and stimulating child care." Their analysis of the effects of the experiences of poverty on young children and the quality of home environments concluded that "all maternal characteristics were found to be significantly associated with quality of home environment" (Garrett, Ng'Andu & Ferron 1994: 340).

Magnuson et al (2009) examined how an increase in maternal education would effect young children's language skills. Their research suggests that increased maternal education provides mothers with "positive learning experiences [...], increases in basic skills, knowledge, and higher-order thinking" (321). Thus, it may shape expectations for their children's education.

5.2. Single-Parent households

Garrett, Ng'Andu & Ferron (1994) suggest that it may not necessarily be the years spent raised by a single parent that have an influence on a child's language skills, but rather that "single parenthood emphasizes that all [single parents] are subject to multiple demands, so they have limited time and energy. It is over-work, rather than family structure that is problematic" (334). Single parenthood would therefore be a factor closely connected to SES, but also the quality of home environment and exposure to cultural activities. Similarly, Brooks-Gunn, Klebanov & Duncan (1996) argue that it is not poverty that effects children, but rather characteristics related to resources and family structure including single parenthood and low literacy scores (397). If children live in a single-parent home, they would most likely, be exposed to other factors possibly influencing language skills and language aptitude consequently.

5.3 Home literacy experiences

Home literacy experiences are closely related to maternal education and SES. Bradley & Caldwell (1984) focusing on home environment and achievement test

performance in first grade, find that “toys, books, and experiences present on children’s home at age 2 ½ were correlated [...] with IQ” (807). Moreover, reading materials present in the home at age 3 highly with IQ measured at 3 and 4 years of age (Bradley & Caldwell 1984: 806). A broader examination focusing on the role of home literacy practices and their possible connection to children’s language development was conducted by Roberts, Jergens & Burchinal (2005). Hoff (2003) argues that time spent in context of book reading, but also maternal vocabulary use may be relevant to vocabulary development. Focusing on 4 specific measures of home literacy practices, namely, shared book reading frequency, maternal book reading strategies, child’s enjoyment of reading, and maternal sensitivity, established that they all showed large to moderate correlations to each other, but the strongest predictor of children’s language skills was home environment.

5.4 Supportive (learning) environment

Supportiveness of (learning) environment can hardly be examined without mentioning its connection to the other factors. Most importantly, education is closely connected to stimulating home environments (Garrett, Ng’andu & Ferron 1994: 334). Parents with higher educational levels tend to create better environments for the learning of their children. As previously discussed, a single parent status is another factor influencing the home environment.

In most of the research discussed in this thesis, it is usually the HOME index, which is used to gather information about the participant’s home environment. This index was initially established to investigate the home environment of subjects who are infants, toddlers or young preschool-children. The evaluation regarding the home

environment of participants of a study would be done by a member of the research team, visiting the families in their own, private homes and observing the home environment according to criteria set in the HOME index. The home index and is unfortunately not applicable to the present study in its full extent as the age of the participating subjects exceeds 18. However, the subjects need to be asked to recall their home environment retrospectively, rather than being able to actively observe it, for this reason, the questionnaire was conducted referencing aspects of the HOME index.

5.5 Neighborhood

Neighborhood is rarely explicitly examined as its own measure. It is most often tightly intertwined with the overall measure of SES. Kaiser & Delaney (1996: 71) suggest that a low SES includes habitation in an economically deprived neighborhood. Families with higher SES, higher income and education almost without exception live in more affluent neighborhoods.

Additionally, Qi et al. (2006), for instance, have reviewed the language performance of low-income African American and European American pre-school children in the U.S. The findings include that especially for the low-income African American children, living in neighborhoods that are almost exclusively inhabited by other low-income African American families, neighborhood seemed to be a factor correlating with poor language performance. Of course, the experience of living in a low SES neighborhood in a middle European country, cannot be compared to the ostracization many African Americans face in American communities, neighborhood as a factor should be included in the current study.

5.6 Exposure to Culture

Exposure to culture is not a measure usually included in studies focusing on SES and language skills. The inclusion of this measure was influenced by the ideas of Pierre Bourdieu's notion of cultural capital. Bourdieu was a French Sociologist, who described three notions of capital. These notions have, most notably, been discussed with regard to their influence on the academic success of children. Bourdieu's theories can suggest possible explanations for persistent social injustices when applied to the academic system, regarding the achievements of students. Why students from low SES backgrounds generally fall behind in the academic system, especially in comparison to their higher SES counterparts. But, more importantly, why some students from low SES backgrounds nevertheless manage to succeed. The social injustices of the educational systems around the world are not what this thesis is concerned with. The notions of capital might be referred to as mediating factors in an academic, scholastic discourse.

Bourdieu argues for the mediating nature of some aspects of capital to be the reason some students of low SES families do succeed in the educational system. Especially the notion of cultural capital, which will be explained and elaborated on briefly in this chapter, bears great resemblance to the aspects of SES which have been found to have an influence on the language development of preschool-children. Which is why this paper will try to apply these notions to the concept of SES and language aptitude, to establish whether or not they do in fact have a mediating effect on language aptitude.

To Bourdieu, capital is accumulated work and can exist in two forms, a material form and an incorporated form. Within his theory he describes three types of an individual's capital, namely, economic capital, social capital and cultural capital (Bourdieu 2015: 49). Any accumulation of capital requires time, and capital can reproduce itself throughout generations, but also grow (Bourdieu 2015: 50). Economic capital, frankly, being the economic resources, the wealth of an individual, including money, but also other forms of capital such as real estate, and valuable items. This form of capital is a prerequisite for the accumulation of the two other forms of capital, social and cultural capital (Bourdieu 2015: 70). If an individual lacks in economic resources, has little income or little family wealth, they will rather unlikely accumulate great capacities of other forms of capital.

Social capital is defined as resulting from the participation and involvement in certain groups, i.e. the upper class or lower class in a region or country, and the support the individual members of a group offer each other. It can only be acquired over time and includes all the possible and actual resources and benefits available to a member of a specific group (Bourdieu 1992: 63). In short, social capital is an individual's benefit from the social obligations and relationships that come with being a member of a specific group (Bourdieu 2015: 52).

Finally, and most relevant in this discourse, Bourdieu describes cultural capital. It can exist in three forms:

- it can be acquired through transmission i.e. inherited within a family
- it can be acquired by the means of personal interest and skills
- it can exist in the form of incorporated cultural capital (writings, artworks, monuments, instruments)

In any form of cultural capital, economic capital functions as a prerequisite. The individual process of acquiring cultural capital by means of acquiring skills and knowledge can only be successful, if certain economic resources are available to a person, meaning either one's own, or one's background capital. This form of capital is acquired by means of cultivation and can only be successful if individuals have time available as a resource. Time as a resource can be bought by family wealth, high SES or economic capital. An individual can only extend their time of accumulation to the degree to which the economic capital allows them to do so (Bourdieu 1992: 59). Time, as a resource, also has to be available within a family for all its, or at least one member, otherwise the parents cannot transmit large amounts of cultural capital to their children. Bourdieu argues that the time of socialization of an individual is to the same degree the time of accumulation of cultural capital (Bourdieu 2015: 58).

Incorporated cultural capital includes writings, artworks, monuments, instruments, which too, can be transmitted in families, in the form of inheritance (Bourdieu 2015: 59). It is frequently argued, that exposure to incorporated cultural capital is a mediating factor in low SES families regarding the academic success of children. Children from a lower SES background tend to do better in the educational system, if as children they had exposure to incorporated cultural capital. This might be similarly applied to the notion of language aptitude. Children who are more frequently exposed to books, or musical instruments in their homes and frequently throughout their childhood participate in cultural activities including visits to the theater, museum, library, might have a higher language aptitude. Possibly more interesting, the notion of cultural capital might function as a mediating factor. Children from low SES backgrounds, with rates of high exposure to cultural capital might possess a high language aptitude.

6. Language Aptitude – Current Developments

6.1 Construct Validity of Language Aptitude

Before focusing on the relationship of SES and language aptitude, other current developments in language aptitude research must be reviewed. In section 2, the history and some current issues related to language aptitude have been mentioned briefly. This section will now be discussing more current developments in language aptitude research and connect them to SES.

Firstly, issues with the very concept of language aptitude will be emphasized as current language aptitude research is often concerned with the question, whether or not the very concept of language aptitude needs re-conceptualization. Li (2016) investigated the construct validity of language aptitude by analyzing 66 studies which have all been conducted over the last 50 years. His findings include:

- “aptitude was independent of other cognitive and affective factors: it was distinct from motivation, had a negative [correlation] with anxiety, and overlapped with, but was distinguishable from, intelligence;
- executive working memory was more strongly [associated] with aptitude and aptitude components than phonological short- term memory;
- aptitude measured using full-length tests was a strong predictor of general L2 proficiency, but it had low predictive validity for vocabulary learning and L2 writing;
- different [aptitude] components demonstrated differential predictive validity for [different] aspects of learning.” (Li 2016: 801)

These findings are indispensable in reshaping the idea of language aptitude as an innate trait some simply possess as suggested by Carroll (1982) and Skehan (1998). The three major findings of Li include, firstly, the establishment of aptitude as a “relatively [distinct] construct” (2016: 833). Secondly, working memory seems to be a key component of language aptitude (see Linck et al. 2014). Thirdly, language “aptitude as a whole is strongly predictive of L2 proficiency [...]. Overall aptitude is also a consistent predictor for the learning of L2 knowledge and L2 skills, except for vocabulary learning and L2 writing” (Li 2016: 833-834). One aspect, in which the notion of language aptitude might profit from re-conceptualization, is its failure to be applied to advanced FL learning (Li 2016: 805). Even though, language aptitude tests seem to provide sufficient results for preliminary L2 learners, it cannot be as easily applied to all FL learner levels (Li 2016: 805).

6.2 Language Aptitude and Testing

Two recently developed approaches focusing on skills and skill development include, firstly, Sparks and Ganschow (2001) describing language aptitude as a ‘linguistic coding differences hypothesis’ (LCDH). They particularly emphasize the importance of L1 skills for the development of a high language aptitude (Wen 2011: 233).

Secondly, Grigorenko, Sternberg & Ehrmann (2000) developed the CANAL – F theory, Cognitive Ability for Novelty in Acquisition of Language (Foreign). Basically, it conceptualizes “language aptitude as the ability to cope with novel experience in language learning” (Sáfár & Kormos 2008: 114). In their research they emphasize individuals’ cognitive ability and its connection to the treatment of newly learned material. Most recently, the role of working memory (WM) has been examined in the

context of language aptitude research. As WM holds great importance in L1 and especially L2 acquisition (Singleton 2017: 94), its role in language aptitude must be of importance as well (Wen 2011: 234).

Another new development in the area of language aptitude, more specifically its testing, comes, as previously mention from the Hi-Lab battery. Unfortunately, very little information about this newly developed testing battery is available to the public. It consists of 12 measures of seven cognitive abilities that constitute language aptitude (see Linck et al 2013). Wen, Biedroń & Skehan (2017: 12) describe the Hi-Lab as “[t]he most significant contribution to aptitude theory in the last few years”, and “[a]t a construct validity level [...] very impressive [...] and it is likely to be a milestone for high-level aptitude testing for some time to come.” Unfortunately, no more information could be gained on the Hi-Lab battery and it is not yet made available to the general public.

6.2 Language Aptitude and Working Memory

As many researchers have expressed a need to re-conceptualize language aptitude, incorporating new findings into the Carrollian concept of language aptitude, a need to examine the connection between language aptitude and working memory has arisen. “WM capacity refers to the ability to manipulate and store information simultaneously” (Yalçın, Çeçen & Erçetin 2016: 146). Some researchers even arguing WM could entirely replace the notion of language aptitude (Yalçın, Çeçen & Erçetin 2016: 144).

Yalçın, Çeçen & Erçetin (2016) examined the role of working memory and language aptitude, as there is still limited research available focusing on this area. Participants were asked to complete two tasks in English and Turkish focusing on their WM and were subsequently testes using the Llama battery to establish their

language aptitude. Their findings suggest WM does, in fact, play a vital role in language aptitude, but it cannot be used interchangeably. A correlation analysis verified a connection between WM and language aptitude total score, not with language aptitude subcomponents. Yalçın, Çeçen & Erçetin (2016: 154) conclude that “[language] aptitude and WM capacity are two ID variables that can play key roles in L2 learning under various conditions.”

In a similar study, Sáfár & Kormos (2008: 129) conclude that there is a strong relationship between “attainment in an intensive language course and working memory test scores.” The correlation they established between language aptitude and WM, in their words, emphasizes the need for students to draw in different abilities in FL learning. Unlike Yalçın, Çeçen & Erçetin (2016) they suggest WM and language aptitude might possibly be used interchangeably in the future. However, considering the current stage of research, one should exert caution when using the term WM and language aptitude interchangeably. More research in this area is still required, before definite statements about the nature of the concepts can be implemented.

6.4 Language Aptitude and SES – Previous Studies

Only one study could be found with a very similar purpose to the one presented here. Simon & Chevrie-Muller (1975) examined the influence of the socio-cultural milieu on the results of verbal aptitude tests in children. 384 children in the Paris-region were tested by using 16 aptitude tests and divided into 3 equal groups of social backgrounds. Unfortunately, access could not be gained to the entire article, but the abstract could be uncovered. Simon & Chevrie-Muller (1975) concluded that “[sociocultural] background has a great influence on the linguistic development of

these children.” Apparently, what they refer to as “the least favored group”, the group from the lowest SES background, would “undoubtedly have trouble with written language” (Simon & Chevrie-Muller 1975).

Additionally, as has been established, WM plays a vital role in language aptitude. Engel et al. (2008) have reviewed the relationship between SES and WM by evaluating children’s performance on WM and vocabulary tests. They discovered, the performance of children from low SES backgrounds produced “significantly lower scores on measures of expressive and receptive vocabulary than their higher income peers but no significant group differences were found on the working memory measures” (Engel et al. 2008: 1580). This strikingly emphasizes “that environmental differences in background and opportunity have substantial impact on a child’s [performance] on norm-referenced tests of language [ability] (Campbell et al., 1997; Jensen, 1970; Tomblin et al., 1997)” (quoted in Engel et al. 2008: 1585).

Regarding the broader field of language aptitude and its possible connection to SES there is only a limited number of research available as this specific scientific issue is still rather new. Some of the most central studies will be briefly outlined. Findings include, Reese, Garnier, Gallimore, and Goldenberg (2000) who established a connection between parental and grandparental educational level predicted literacy skills promoting L2 reading proficiency in middle school for children from higher SES families only. Carhill, Suárez-Orozco, and Páez (2008), focusing on bilingualism and language aptitude, found a connection between maternal level of education, and parental L2 English skills and their influence on oral academic L2 proficiency in adolescent immigrants. Several researchers, including Duursma et al. (2007), Hammer, Lawrence, & Miccio (2008), Quiroz et al. (2010), also focusing on bilinguals found a connection between parents’ use of L2 in the home environment and children’s L2 vocabulary and literacy skills. The importance of home literacy practices

is discussed by Gonzalez & Uhing (2008), Hammer, Miccio & Wagstaff (2003), Reese et al. (2000), Roberts (2008). They all report in similar findings that the frequency of book reading, taking children to a library, contribute to later L2 literacy and oral achievements. Examining home book reading practices more closely, Quiroz et al. (2010) found that the more mothers asked labeling questions in L1, the higher their children's vocabulary was in both L1 and L2, though the effect was stronger for L1.

7. Hypothesis

As illustrated in the previous sections of this thesis, quite a number of studies has been conducted with regard to the connection between SES and cognitive or language skills. Most frequently concerned with the language development of infants and toddlers, their acquisition of vocabulary, or their reading skills. However, no similar study focusing solely on language aptitude, its connection to SES, and the cognitive skills concerned with language aptitude has been conducted. This is exactly what will be attempted here. If SES has an influence on cognitive and language skills as has been discussed in great detail in section 4, it will most likely have an influence on an individual's language aptitude as well.

Two main hypothesis, developed by the means of studying the results of the previously discussed literature, will be tested subsequently. Firstly, H_0 , individuals with a higher SES possess a higher language aptitude. As many researchers have established individuals from high SES backgrounds tend to have higher cognitive skills, higher IQ and higher language skills than their lower SES counterparts. These individuals should also possess a higher language aptitude.

Secondly, H_1 , if individuals from high SES do not necessarily possess a higher language aptitude, there must however be more variance of the results of the Llama battery mean score of low SES participants as other factors might have a more significant influence on language aptitude. Previous research, discussed in sections 4 and 5, has established that a number of factors might function as influencing or even mediating factors, including mother's education and home environment, and furthermore has a positive impact on cognitive skills, IQ and language skills of individuals, surely there must be mediating factors within the field of language aptitude as well. Whether or not the hypothesis is true and the influencing or

mediating factors are similar to the influencing or mediating factors previously characterized will be discussed within the results section of the paper.

The influence of possible mediating factors will be part of the analysis of H_1 . For a full discussion of possible mediating factors see especially sections 4 and 5. The possible mediating factors which will be discussed for the purpose of this paper include:

- maternal educational level
- experience in single-parent-household
- literacy experiences
- supportive (learning) environment
- quality of neighborhood
- exposure to cultural activities

To provide a full picture of the conducted research the applied methodology must be discussed in detail, before elaborating on the findings of the research conducted for this thesis.

8. Methodology

To verify or falsify the previously stated H_0 and H_1 , participants were asked to firstly, fill-in a questionnaire designed to acquire specific information about the individual's SES background. Additionally, a language aptitude test was conducted using the full Llama test battery, namely, Llama B, Llama D, Llama E, and Llama F.

8.1 Questionnaire

The questionnaire was filled-in in the presence of its author, to clarify any possible questions and to ensure as much information as possible could be elicited from the subjects (for full questionnaire see Appendix). During a previous study in the field of language aptitude it was uncovered that some subjects had minor issues understanding nuances of language in the statements correctly as they were conducted in English and the participant's degree of proficiency varied. To avoid this in the present research, the questionnaire was conducted in German, which is the L1 of all participants. This ensures that the individuals can identify all nuances of language important to establish the quality and validity of the research. Cronbachs Alpha for this questionnaire lies at 7.98.

"[M]inor differences in how a question is formulated and framed can produce radically different levels of agreement or disagreement, or a completely different selection of answers" (Gillham 2000: 23), which is why the wording of questions was carefully considered and of great importance. Additionally, the concept of multi-item scales was employed to ensure the validity of the questionnaire and therefore its results. Most questions eliciting factual information used to establish the participant's SES were positioned at the beginning of the questionnaire. Several non-

consecutively ordered questions were asked concerning one of the influencing factors, namely, maternal education, experience in single-parent-household, literacy experiences, supportiveness of (learning) environment, quality of neighborhood, and exposure to cultural activities. The participants were provided with statements which would have to be rated on a scale from 0 to 10, 0 meaning strong disagreement, 10 meaning strong agreement.

Gathering information about a person's SES, as mentioned in section 4, can prove to be a difficult task. As discussed prior, SES is constructed by means of income, occupation, and education. However, the measures used to establish these three areas can differ greatly. Furthermore, not all measures of SES seem to influence language aptitude, IQ, or cognitive skills to the same degree. Significant criteria of SES were defined using other research in this area and, subsequently, the questionnaire was constructed with these criteria in mind to elicit the most crucial information. The HOME index and the Hollingshead Four Factor Index were consulted in the development of the questionnaire; nevertheless, as neither of the two was applicable entirely, modifications for the present purpose had to be made. The HOME index is mostly used to gather information about the subjects' home environments, but as the subjects are not children it could not be applied without being connected to the Four Factor Index.

Hollingshead's Four Factor Index was established in the 1970s in the U.S. and is used to determine the SES of individuals with regard to scales provided in the index. Occupation, education, sex, and marital status. The index was developed after decades of studying the American class system and has gained influence in the scientific community as it may be the most cited unpublished paper in American sociology (Adams & Weakliem 2011: 11). Even though, his paper is not without flaw, as the occupational structure of the U.S has changed since the 70s and may not be

entirely applicable in the same regards to European citizens, it is still the only work widely acknowledged in the scientific community which offers a mathematical procedure to establish individual's SES (for full discussion of the Four Factor Index and its scales see Adams & Weakliem. "August B. Hollingshead's "Four Factor Index of Social Status". 2011). A combination of these measures was used to establish the participant's SES and identify possible mediating factors by means of the questionnaire.

Some the questions were developed referring to the notion of Bourdieu's cultural capital, as it has not yet been tested in the context of a linguistic study this was attempted with great caution. Exposure to cultural activities is not a measure usually focused on in linguistic research. Why its analysis was attempted has been discussed in section 5.

Firstly, the questionnaire elicited factual information about the participants themselves, but also the highest finished education of their parents as well as their current or last status of employment. To receive the greatest possible amount of measures with regard to family occupational and educational history, if the information was accessible, the status and employment history of the grandparents would also be elicited. Additionally, the number of children in the household the participant had grown up in and the divorce status within the immediate family were of interest.

Furthermore, participants were asked to agree or disagree with specific statements regarding the nature of their home environment growing up, closely connected to measures used in the HOME index and the notions of cultural capital, as well as the other previously mentioned possible influencing factors, maternal education, single-parent household, home literacy experiences, supportiveness of (learning) environment, and neighborhood. The statements were rephrasing's of

behavioral questions used to gather information about the specific issues. Statements would range from, income and employment status of the parents during childhood, neighborhood and family life, and measures which were by some studies found to have a mediating effect, especially for the low SES participants, namely, regarding parent-child-interactions focusing on reading, homework, and the spending habits of capital. In sum, participant's had to express their degree of agreement for 28 statements. Each of the mentioned categories consisting of no less than 4 questions.

Income and employment have the main function of establishing the participants standing within the sub-categories of SES. Criteria of neighborhood and parent-child interaction account for SES, but similarly offer information about the mediating factors. Some answers could be both, used to establish the SES, but also gather information about the possible influencing factors. Where each individual was positioned regarding the mediating factors would also be analyzed in detail. The acquired information was used to categorize the participant's SES background and identify possible mediating factors would then be examined in combination with their Llama test scores.

The information gathered in the questionnaire for further research was grouped for further analysis. Information would be gathered regarding specific issues related to the research, meaning that the information gathered was coded by means of using dummy variables to ensure the possibility of further analysis in SPSS. Firstly, the questions related to SES would be grouped in by referring to the Four Factor Index and the HOME Index, the participants' points were added according to their answers. A higher number of final points would mean a higher SES. The same would be done for categories such as, maternal educational level, experience in single-parent-household, literacy experiences, supportive learning environment, quality of

neighborhood, and exposure to cultural activities, which were all defined as possible mediating factors. These results were subsequently examined with regard to the language aptitude average score of each SES-category and statistically analyzed.

8.2 Llama Test

The participants' language aptitude was tested using the Llama battery, Llama B, Llama D, Llama, E and Llama F. Other tests for the testing of language aptitude were considered. Unfortunately, proficiency tests such as the TOEFL would most likely provide participants with a higher proficiency level of English with a higher score as a result, not necessarily due to their higher language aptitude, but rather due to their English language skills. The same problem would arise for tests conducted in German, native speakers of German would most likely score higher than non-native speakers. This would provide little indication on their actual language aptitude, but rather, redundantly, prove the native speaker's proficiency in German, their own L1. Both these problems could be avoided by using the Llama battery for testing. The score of the Llama tests would be established by establishing the mean of each participant and how their results for each sub-test are categorized by the Llama manual (Meara 2005).

Even though, Artieda & Muñoz (2016: 43) suggest the Llama battery should not be used in high-stakes testing situations as it is neither standardized nor validated it was used for the language aptitude testing in this research. Unfortunately, only very few language aptitude tests are available to the general public. Contacting persons and institutions has not proven successful to gain attainment to other testing batteries. Granena (2013) established that the Llama battery could provide respectable levels of reliability, as well as a stability of providing similar results in

retesting contexts. Furthermore, she found that Llama testing results “correlated with L2 measures that call for use of analytic, metalinguistic abilities and with L2 learning under explicit instructional treatments or feedback conditions” (Granena 2013: 112). Granena (2011, 2012, 2013) argues that Llama B, C, and F are concerned with deducting relationships of datasets, an ability which is greatly influenced by an individual’s native language linguistic experiences and Llama D measures sequence learning abilities, which are connected to the intellectual skills involving discovery of language structure. The Llama battery may not be the perfect nor the best language aptitude battery, however, it is available to the general public and has proven to be a valuable research for language aptitude research, which is why it was nevertheless used to establish the participants’ language aptitude in this research.

To establish the participant’s language aptitude as accurately as possible they were tested on symbol-word correspondence, Llama B, sound recognition, Llama D, sound-symbol correspondence, Llama E, and finally, grammatical inferencing, Llama F. The participants would make appointments to be tested individually in a quiet environment, usually right after filling-in the questionnaire. Each participant could choose the time and date as long as someone was available to execute the testing procedure professionally. Before testing each section, a brief introduction about said section would be given to the participants, explaining what they would be expected to do, without revealing too much information about the test, as to not temper the results. For each participant testing would commence after roughly 30 to 40 minutes. The Llama testing battery provides a manual created by Meara (2005). Testing was executed as it is suggested in the manual. Participants were not allowed to take notes, except for the Llama F test and the time limits were set as suggested in the manual.

Most importantly, it must be noted, that the manual offers a categorization for the results. In each of the four subtests subjects can reach a maximum of 100 and a minimum of 0 points. However, 50 points should not be considered a mid-score result. For Llama B, for example, poor results fall within a score of 0 – 20, a mid score ranges from 25 – 45, a high score falls in between 50 – 70, and a significantly high score is any score higher than 75. These scales as provided for each sub-test were used to determine the participant's language aptitude by means of their received score, but also whether or not they fall in the high, mid, or low category for each specific subtest. Bearing these categories in mind, the participants were grouped in high, mid, and low language aptitude average score categories.

8.2.1 MacWhinney's Model and Llama

Even though, Artieda & Muñoz (2016: 43) suggest the Llama battery should not be used in high-stakes testing situations as it is neither standardized nor validated, it was used for the language aptitude testing in this research. The Llama battery tests exactly what MacWhinney's Unified Model of Language Acquisition describes as necessary for L1 and L2 acquisition (for discussion see section 3.2). This is the main reason as to why the Llama test is being used in this study to establish individual's language aptitude. MacWhinney (2005, 2008), as discussed in a prior section of the thesis, makes a most convincing argument as to why all of the specific aspects of the model are relevant for language acquisition. Here it will be briefly argued, how the Llama battery can be related to his model and which subtest of the Llama battery relates to which facets of his model. Therefore, a most convincing argument for the application of the Llama battery will be made in this chapter.

Firstly, Llama B is a test in which the participants have to match symbols with a word. Needless to mention, Llama does not employ an existing, but rather an artificial language. The symbol-word-matching mostly relates to MacWhinney's notion of storage. All tests do to some degree relate to this aspect as subjects constantly have to add information to their short term memory. This test, nevertheless, emphasized storage to the highest degree. Participants have 120 seconds to memorize as many words and their connection to the pictures as possible. New mappings are introduced and it is explored how easily the individuals can access them again. Furthermore, it connects to the notion of cues. Cues are provided visually in this subtest by means of "words" and the connection of the word to an icon.

Secondly, in the Llama D test participants are exposed to a number of words in an artificial language and they have to determine whether or not it is their first time exposure to the explicit item. Participants click on a happy or sad smiley to make their decision. Relating this to the ideas proposed by MacWhinney, it is concerned with auditory processing and lexical activation, which he discusses as arenas necessary for language acquisition. It also relates to the notions of cues and codes. Cues, as linguistic input has to be analyzed and codes, as information has to be transferred.

Thirdly, Llama E combines a number of concepts. Participants have 120 seconds to listen to syllables by clicking on an icon representing the IPA transcription of the sound. Sound and symbol have to be subsequently connected. Afterwards participants are exposed to two syllable words and have to decide between two options of IPA transcriptions of the word to determine which the correct form would be. Again this test focuses on auditory activation, meaningful interpretation, and lexical activation. Furthermore, to some degree, chunking is involved, as the

different symbols need to be combined to sufficiently decide for the correct IPA transcription. It includes activation from previous lexical items and the information needs to be stored in short term memory and activated again.

Lastly, Llama F is concerned with grammatical-inferencing. Participants have 300 seconds to click on icons which show, for instance, two red dots. This visual cue is connected to a specific phrase. Another visual cue is one red dot on a line, another 2 green squares. All of these visual cues relate to phrases. These phrases similarities, meaning there is one term for red dot related to the term for two red dots. The mechanics behind the connections are not revealed to the test taker. Subsequently, they are presented with terms they have not yet been exposed to. They are a combination of the cues and phrases previously provided. Relating to the examples presented now, it could be only one green square, but this time on a line. Additionally, the participant is provided with 2 phrases, one of which is a combination of the previously seen examples, but combined in a new way to describe what is being depicted now. The subject has to decide which term describes the visual cue. This relates to MacWhinney's notion of chunking. Previously acquired information has to be newly grouped in order to correctly express meaning. Furthermore, it activates arenas such as lexicon, morphosyntax and conceptualization. It is also concerned with the comprehension and production of cues. This test, of course, also tests for WM capabilities.

The individual's language aptitude was established as follows. The Llama manual offers four categories for each sub-test. The categories are poor score, average score, good score, and outstanding score. For each of the sub-tests the participant's scores were analyzed and placed within the corresponding category. A mean of all the poor, average, good, and outstanding scores was established to categorize the participant's language aptitude as high, middle or low language

aptitude. These results were examined with regard to the answers provided in the questionnaire, to verify for H_0 and H_1 .

9. Results

The following section is focused on, firstly, depicting the results of the cross sectional study conducted, focusing on the participants, their gender and age and, secondly, an inferential discussion of the results in relation with the previously stated hypotheses. Most importantly, this section will focus on the examination of a possible connection between language aptitude and SES, but also illustrate the impact of the mediating factors, especially with regard to participants who have been established as having a higher than average language aptitude.

9.1 Descriptive Statistics

Overall, 63 subjects ($n=63$) participated in the study. As can be seen in Figure 2, 33.3% of participants are male and 66.7% are female. Age is represented in Figure 3, the participants range from

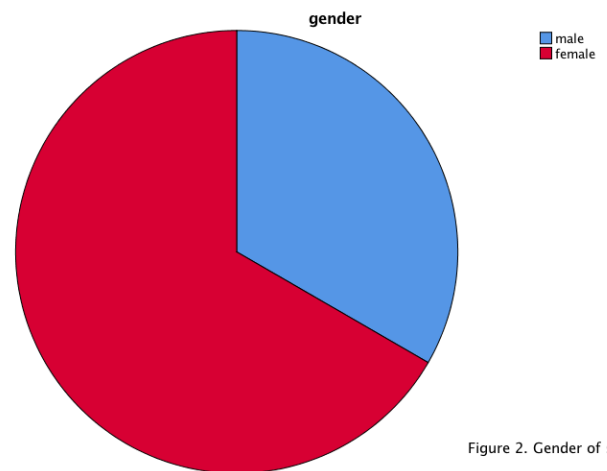


Figure 2. Gender of subjects

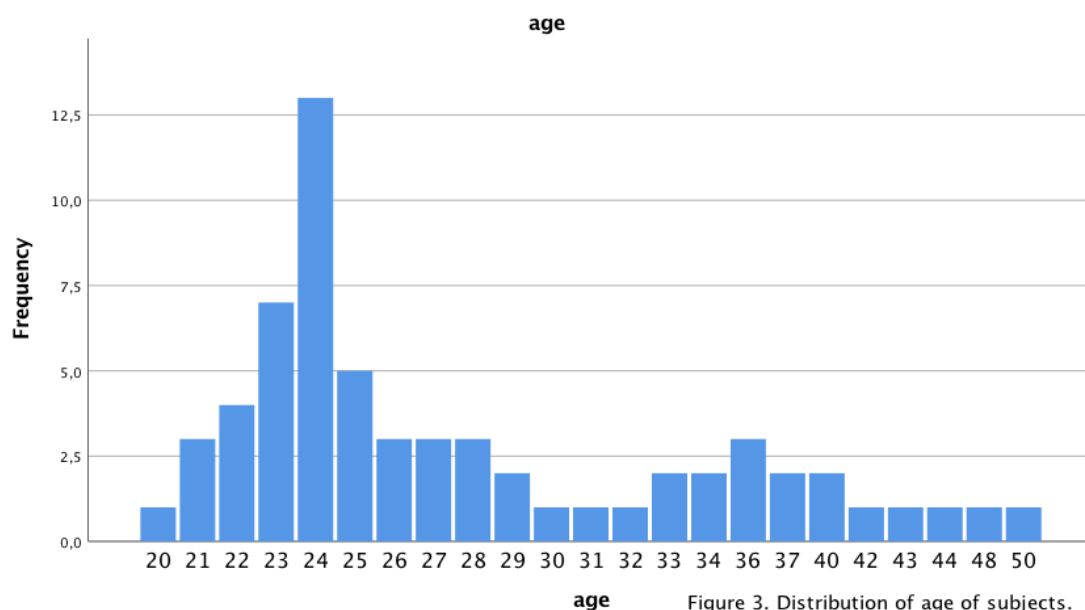
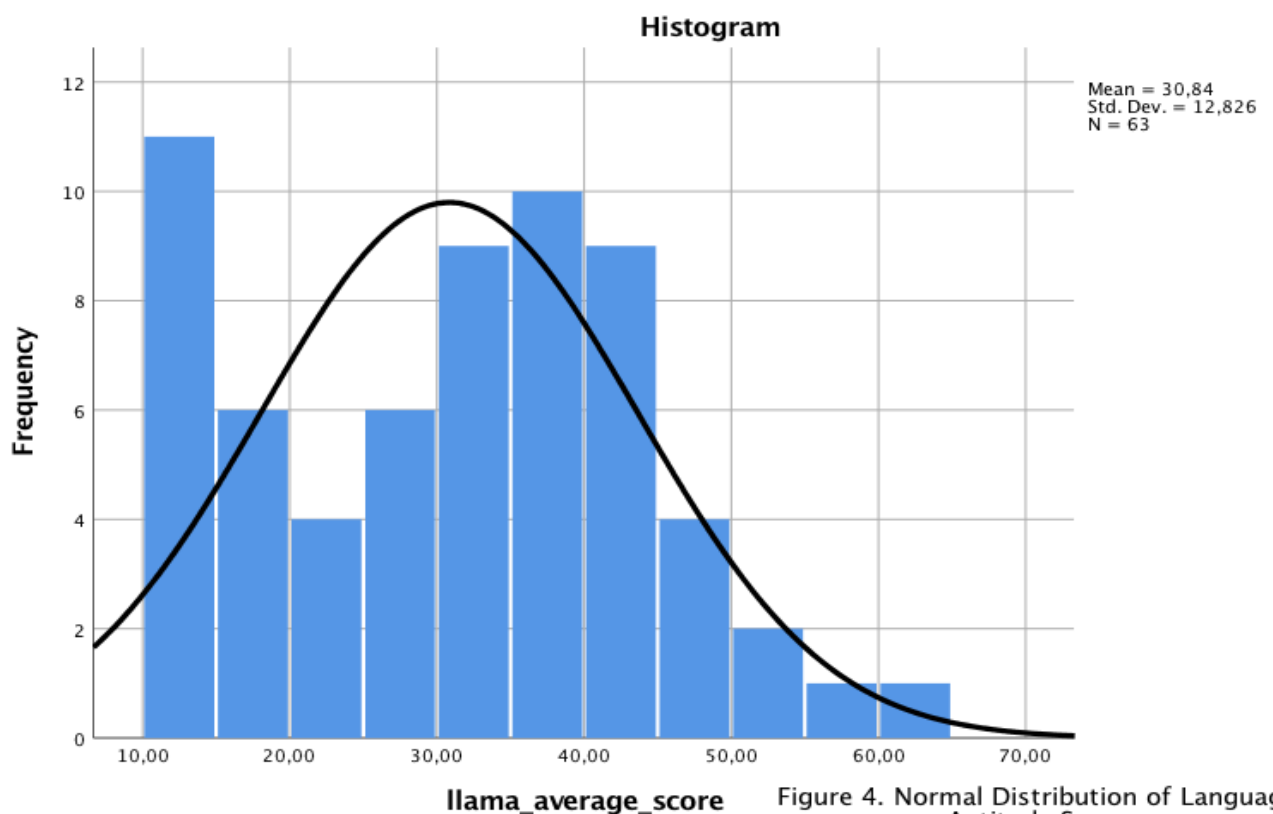


Figure 3. Distribution of age of subjects.

20 to 50. Most participants, however, are between the ages of 20 and 30.

All participants were tested using the Llama battery to establish their language aptitude. Before discussing the results of the language aptitude tests explicitly, it must be stated that most subjects, as assumed, possess an average level of language aptitude. Only few performed in the lowest category of the respective tests more than in one subtest. Only two individuals performed in the range of what the Llama manual describes as an “outstanding” result in at least two subtests and therefore are established to possess a significantly higher than average language aptitude. As can be seen in Figure 4, the mean score of all participants is 30.83873, with a Standard Deviation (SD) of 12.826. The results are normally distributed, with a slightly positive skewedness and a comparatively high number of participants scoring in the 10-15 points range. Applying a K-S-Test to the data proved the normal distribution of the accumulated data with a significance level of 0.2 (for Q-Q-Plot, K-S-Test controlling for normal distribution see Appendix).



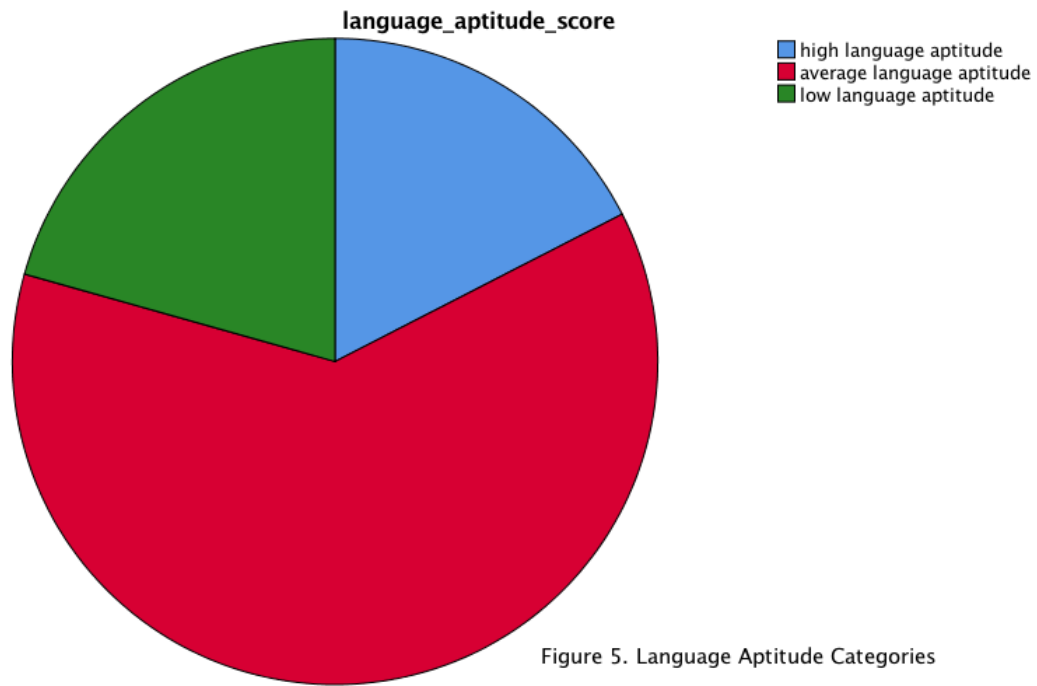


Figure 5. Language Aptitude Categories

The results of the Llama manual for each subtest, low score, average score, high score, were applied as suggested to define the results of the testing in the language aptitude categories, high, mid, and low overall language score as follows. The low language aptitude group is any score lower and still including 15. Any score in-between 15 and 42.5 correlates to an average language aptitude and any score higher than 42.5 would be considered high language aptitude. Figure 5 illustrates the distribution of the language aptitude scores in percentage. 17.5% of subjects exhibit a high language aptitude, including the two previously mentioned outstanding results. The majority, namely 61.9% of subjects demonstrate an average language aptitude, a middle score. 20.6% of participants present what the Llama manual describes as poor language aptitude with a score lower than 15.

To determine the participants' SES a number of information provided in the questionnaire was used. Firstly, the information provided regarding the own, as well as the parental and grandparental educational and occupational paths. Occupation was rated in accordance with the Four Factor Index. Furthermore, the number of siblings, questions related to spending of income and possible interactions with child

protective services. All of the information was coded by using dummy variables and an overall SES was therefore established. By applying this method to the accumulated data, 27% are confirmed to have a high SES, 41.3% are described to be in the mid SES category and 31.7% are in the low SES category.

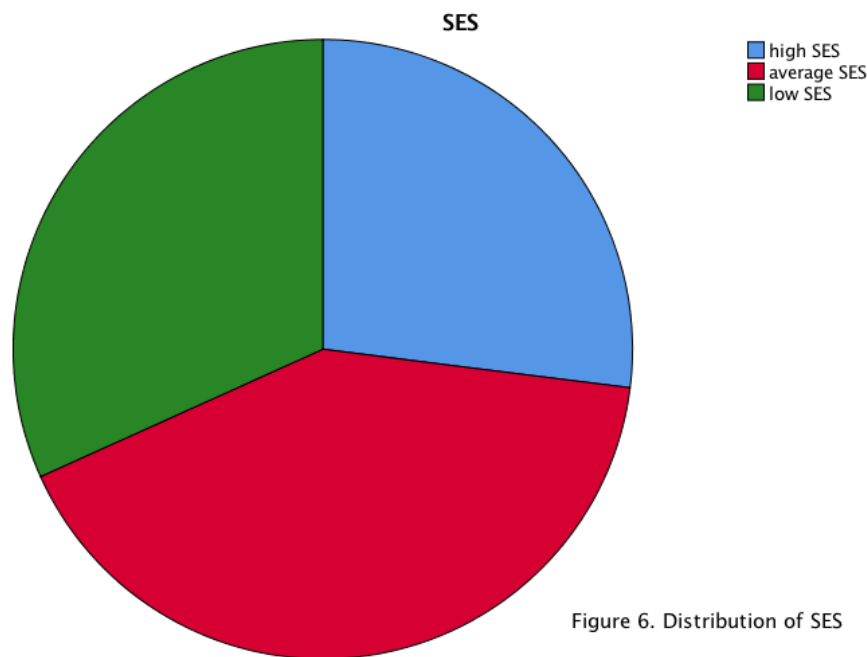


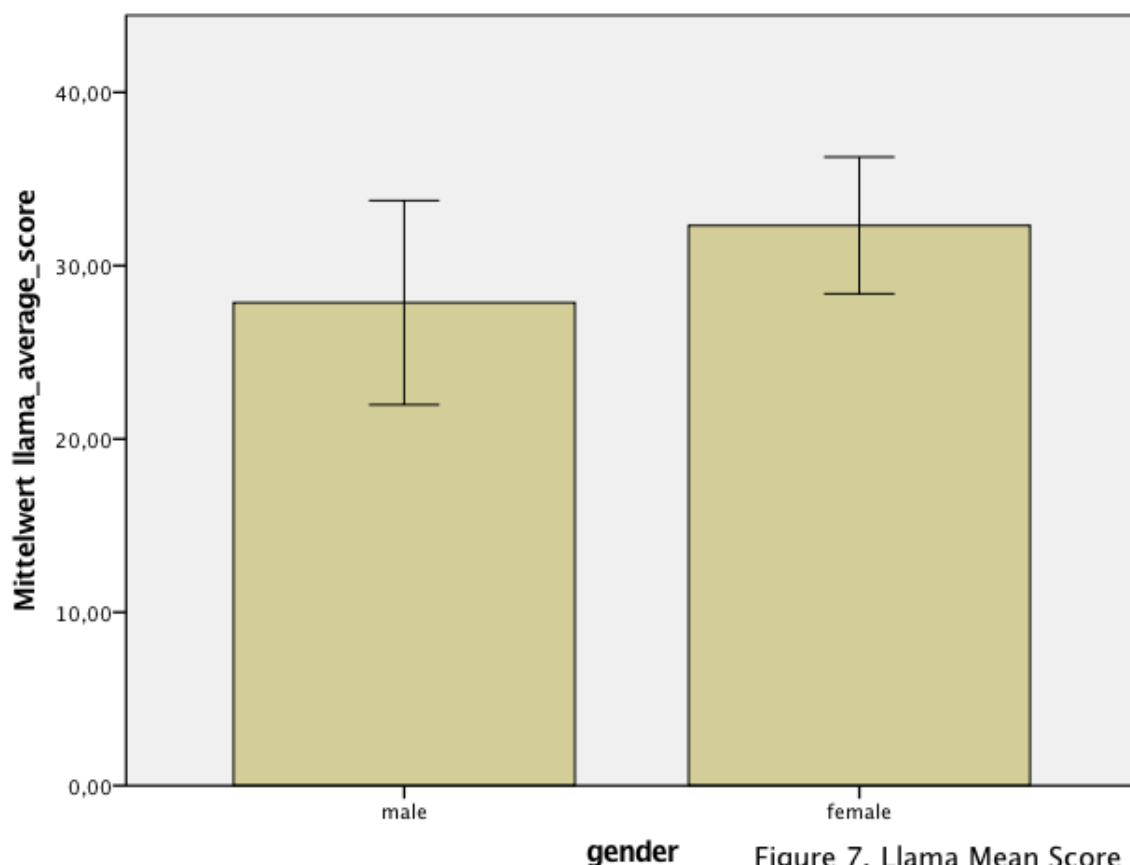
Figure 6. Distribution of SES

9.2 Inferential Statistics

This chapter will focus on the description of the accumulated data by means of analysis to establish whether or not H_0 and H_1 can be falsified. Firstly, T-Tests (for all tables regarding T-Tests, see Appendix) for independent samples and an ANOVA test will be applied to establish if SES has an influence on language aptitude. Secondly, it will be examined, if possibly other factors have a more statistically significant effect on language aptitude and if possibly, any factors seem to have a mediating effect on participants.

9.2.1 Difference between genders

As previously discussed, very often language aptitude and language acquisition research is concerned with the question of whether or not a significant difference between the result of the genders can be identified. Before focusing on the specifics of the hypotheses of this thesis, this issue will be briefly examined. Therefore, a T-Test for independent samples has been conducted. With 21 males and 42 females participating in the study, the mean score of language aptitude testing for male participants lies at 27.6890 with an SD of 12.93267. The mean score of female participants lies at 32.3214 with an SD of 12.66492, $p=.703$. As depicted in Figure 7, women outperformed males slightly, with a higher average mean score, however, the



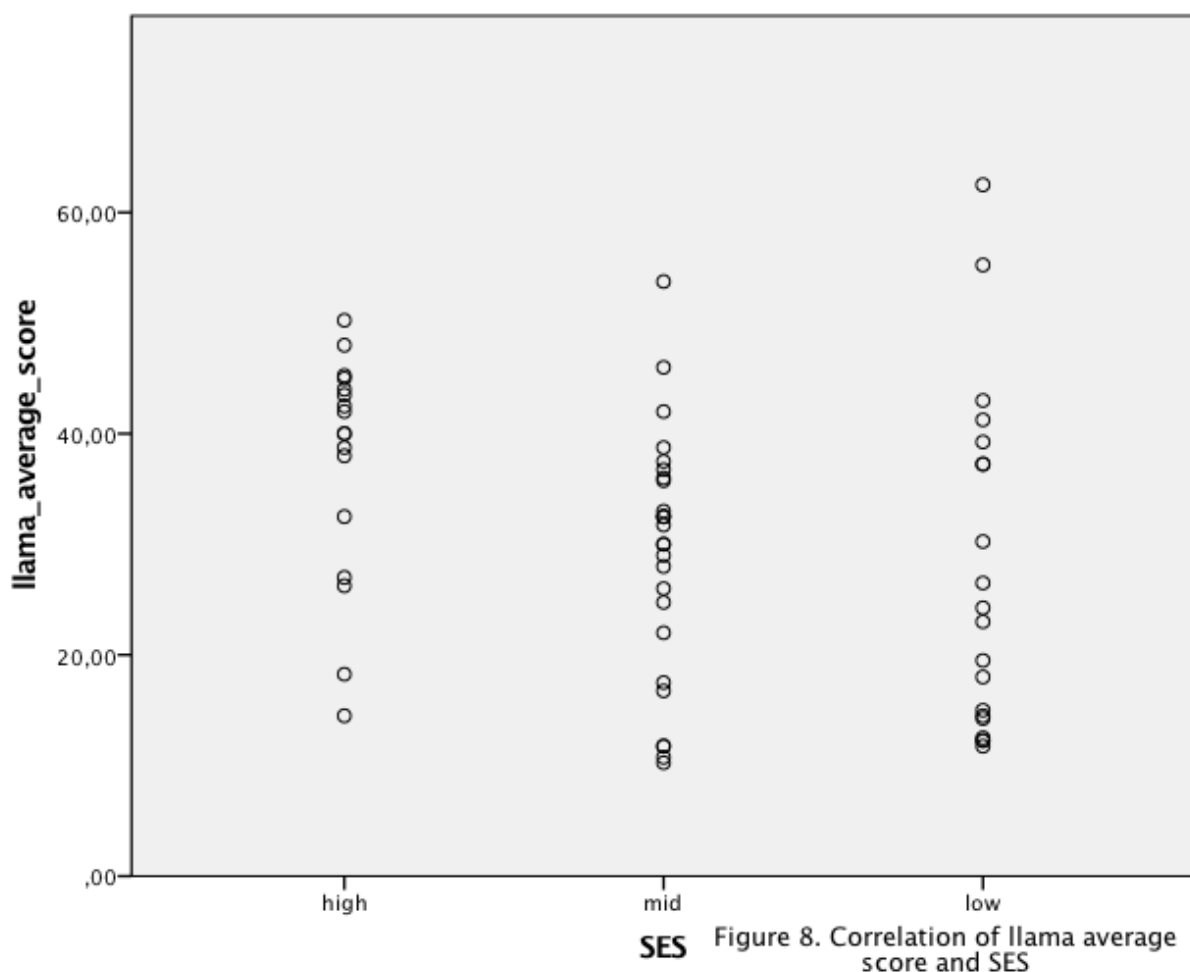
gender
Fehlerbalken: 95% CI
Figure 7. Llama Mean Score of Males and Females including SD

result of the T-Test cannot be described as statistically significant, as the significance level falls at $p=.703$.

9.2.2 Influence of SES on language aptitude

As discussed in greater detail in section 7, H_0 refers to the question if individuals with a higher SES also possess a higher language aptitude. The theoretical framework for this hypothesis has been discussed throughout the thesis, specifically in section 4.3.

To analyze the accumulated data a one-way ANOVA was conducted. The participants' SES, analyzed as discussed in section 7, was compared to the participants' mean language aptitude score. The language aptitude mean score for



the groups lie at, firstly, 37.3971 with an SD of 10.27172 for the high SES group. Secondly, a mean of 29.1250 and a SD of 11.12390 was established for the mid SES group. Lastly, 27.4875 and an SD of 15.19208 was established for the low SES group. A statistically significant difference between groups was determined by one-way ANOVA, $p=.042$. However, a Tukey post hoc test revealed, that no significant difference between the high SES and the mid SES groups could be established, $p=.089$. This result may be due to the overall proximity of the results. As previously illustrated in Figure 4, the results of the Llama tests are normally distributed, meaning they do lie closely together, most subjects performed slightly higher than average, but not necessarily highly in the language aptitude testing. Nevertheless, a statistically significant difference could be proven for the high and the low SES groups, $p=.047$. This result, most importantly, establishes a statistically significant difference between low SES and high SES and the groups respective results in the language aptitude testing.

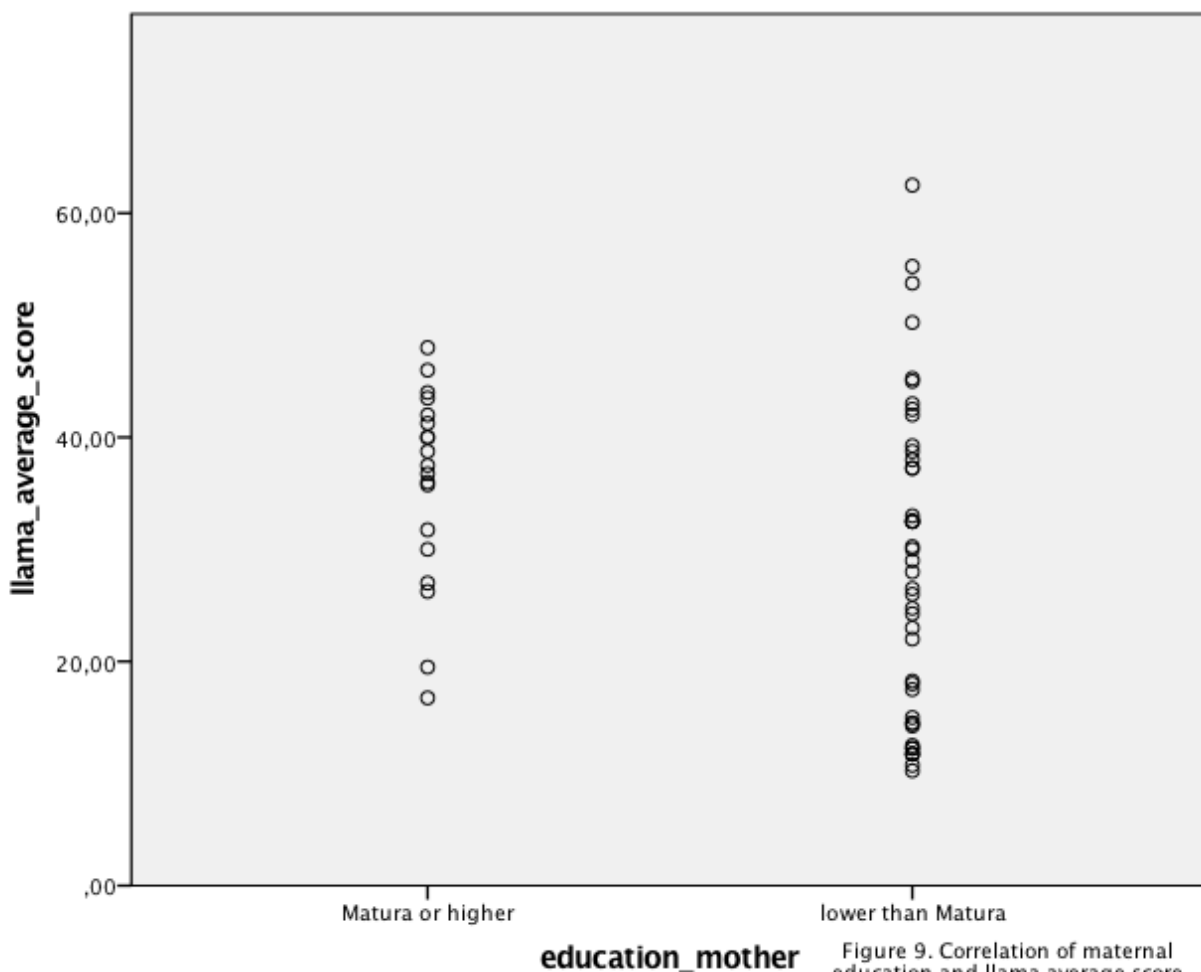
Even though the one-way ANOVA showed a statistically significant result for H_0 , it is nevertheless necessary, to conduct a closer examination of the influence of other factors. As depicted in Figure 8, the three highest scoring participants do in fact not come from the highest SES group. A possible explanation of this phenomenon may be found in closer examination of the influencing factors. As assumed in H_1 , a higher variance of results among the low SES group could be established.

9.2.3 Influence of other Factors on Language Aptitude

As for a closer examination of H_1 it was investigated, if or rather which previously defined factors possibly have a higher influence on the participants' language aptitude score. To compare the llama scores to the different influencing factors and

determine which of them have an effect on the language aptitude T-Tests for independent samples were conducted.

Firstly, the possible relationship between maternal education and the language aptitude score was examined. With $p=0.016$ a statistically significant relationship between the two variables could be established. Of the 19 participants, who reported their mother lowest finished education to be *Matura* (or similar education), or higher, the mean of the language aptitude lies at 35.8289 (SD 8.63659). 44 participants reporting the maternal education level to be lower score a language aptitude mean of 28.6818 (SD 13.79126). One should be careful however, to define maternal education as a mediating factor in this study. As illustrated in Figure 9, all three participants with the highest language aptitude score come from the lower maternal



education group. Overall, the mean of the first group may be higher, nevertheless, maternal education, at least for this sample, should not be defined as a significantly strong influencing factor.

Secondly, the relationship between living in single-parent households and language aptitude was examined. However, the T-Test for independent samples failed to prove a statistically significant relation between the two factors ($p=.553$). 35 participants, stating they have never lived in single-parent, or single guardian homes, have a language aptitude average score of 31.3643 (SD 12.75380). The 28 participants reporting having lived in a single-parent or single guardian home produced a mean language aptitude score of 30.1786 (SD 13.11873). An analysis of individual results, furthermore failed to provide a significant difference between high and low language aptitude individuals regarding this issue.

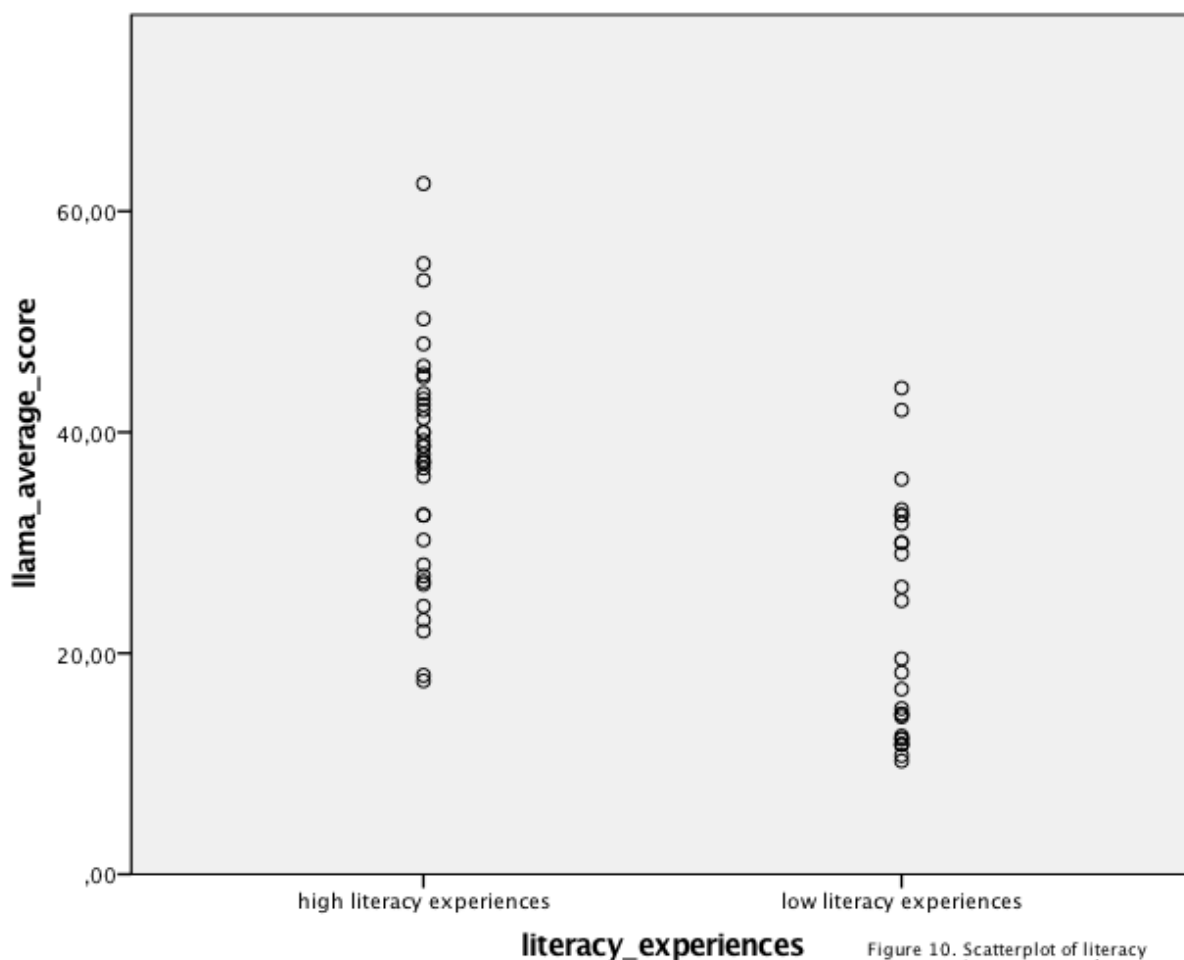


Figure 10. Scatterplot of literacy experiences reported

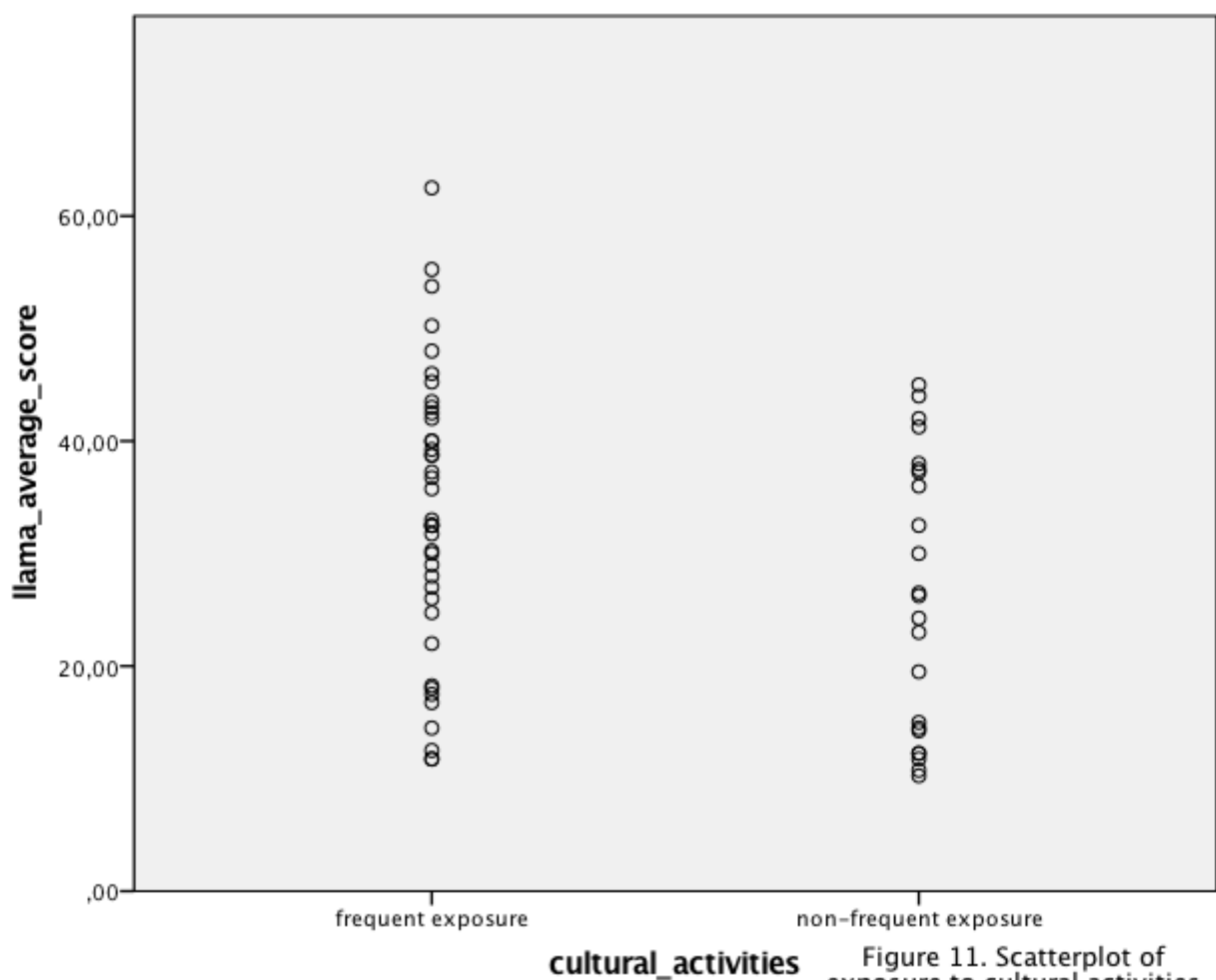
Thirdly, it was explored whether or not reported childhood home literacy experiences have an influence on language aptitude. The T-Test showed a mean of 37.3750 (SD 10.37760) for the group, $n=36$, reporting high frequency of quality literacy experiences in their childhood homes. The group reporting fewer such experiences, $n=27$, was established to have a mean score of 22.1204 (SD 10.45029). However, at $p=.348$, the results are not statistically significant. Interestingly, looking more closely at the results of the individual participants, the scatterplot, Figure 10, revealed that all participants scoring high in the Llana aptitude test also report a high literacy activity in their homes. Moreover, all participants with a particularly low language aptitude, report fewer quality literacy experiences.

Furthermore, the possible connection between language aptitude and a perceived supportive learning environment in the childhood homes was examined. The T-Test failed to produce a statistically significant result ($p=.788$) between individuals reporting a supportive learning environment ($n=35$) and subjects reporting a less supportive learning environment ($n=28$). A further analysis of the individual results of high and low scoring individuals by means of closer examination of the scatterplot also failed to produce additional relevant insights.

Additionally, the relationship between language aptitude scores and the childhood neighborhood was tested. A T-Test was conducted between the group reporting less urban neighborhoods, with fewer immigrants living in close proximity and closer contact to neighbors ($n=35$), and the group stating growing up in a more urban area, exposed to people from more diverse migrational backgrounds ($n=28$). A statistically significant difference between the two was established ($p=.011$). The mean for the first group lies at 33.8143 (SD 10.56116) and for the second group it lies at 27.1161 (SD 14.54089). An analysis of the scatterplot to examine individual results showed no significance between high and low aptitude individuals.

Lastly, the possible connection between language aptitude and the exposure to culturally significant activities during childhood was investigated. A T-Test failed to prove a statistically significant difference ($p=.820$) between the results of participants reporting frequent exposure to activities including visits to museums and theaters ($n=40$) and participants reporting little exposure to such activities ($n=23$). However, a closer analysis of individual subjects' results by means of a scatterplot showed the individuals with the highest language aptitude all report frequent exposure to culturally significant activities.

The results described in the next section will be discussed with regard to the theoretical framework of this thesis proposed in sections 3, 4, and 5.



9.2.4 Correlation Analysis

Korrelationen ^c									
Spearman-Rho	llama_average_score	llama_average_score	education_mother	single_parent	literacy_experiences	supportive_learning_environment	neighborhood	cultural_activities	
	Korrelationskoeffizient	1,000	-,286*	-,029	-,594**	-,233	-,238	-,264*	
	Sig. (2-seitig)	.	,023	,822	,000	,066	,060	,037	
	N	63	63	63	63	63	63	63	
	Korrelationskoeffizient	-,286*	1,000	-,108	,150	,101	,031	,067	
	Sig. (2-seitig)	,023	.	,398	,241	,433	,810	,600	
	N	63	63	63	63	63	63	63	
	Korrelationskoeffizient	-,029	-,108	1,000	,129	,100	,164	-,015	
	Sig. (2-seitig)	,822	,398	.	,313	,436	,198	,909	
	N	63	63	63	63	63	63	63	
	Korrelationskoeffizient	-,594**	,150	,129	1,000	,323**	,258*	,209	
	Sig. (2-seitig)	,000	,241	,313	.	,010	,041	,100	
	N	63	63	63	63	63	63	63	
	Korrelationskoeffizient	-,233	,101	,100	,323**	1,000	,357**	-,015	
	Sig. (2-seitig)	,066	,433	,436	,010	.	,004	,909	
	N	63	63	63	63	63	63	63	
	Korrelationskoeffizient	-,238	,031	,164	,258*	,357**	1,000	-,015	
	Sig. (2-seitig)	,060	,810	,198	,041	,004	.	,909	
	N	63	63	63	63	63	63	63	
	Korrelationskoeffizient	-,264*	,067	-,015	,209	-,015	-,015	1,000	
	Sig. (2-seitig)	,037	,600	,909	,100	,909	,909	.	
	N	63	63	63	63	63	63	63	

*. Die Korrelation ist auf dem 0,05 Niveau signifikant (zweiseitig).

** . Die Korrelation ist auf dem 0,01 Niveau signifikant (zweiseitig).

c. Table 1. Correlation Analysis – Llama average score and all influencing factors

As can be seen in Table 1, a correlation analysis between the Llama average score and all possible influencing factors was conducted. Not all factors can establish a statistically significant correlation. Having lived in a single-parent or single guardian home has no significant correlation with the Llama score ($p=.822$). Supportiveness of (learning) environment ($p=.066$) and neighborhood ($p=.060$) also fail to establish a significant correlation with language aptitude average score. Nevertheless, one cannot help but describe this correlation as a trend. Even though, the sample size is rather small, a correlation between the factors and the Llama score could almost be established.

Several factors could establish a statistically significant correlation between themselves and language aptitude. Namely, the exposure to cultural activities ($p=.037$), maternal education ($p=.023$), and literacy experiences ($p=.000$). All of these prove very strong correlations with the Llama score. For a closer analysis of these results see section 10.

10. Discussion

To establish a picture as broadly as possible for the purpose of analyzing the relationship between SES and language aptitude, not only SES was examined, but also other factors. Maternal education, single-parent households, literacy experiences, supportiveness of (learning) environment, neighborhood, and exposure to cultural activities, all notions related to the concept of SES, and their possible connection to language aptitude were explored. The results of the statistical analysis of the data accumulated by means of using a questionnaire and the Llama battery can be found in section 9. This section will focus on a discussion of the results in relation to each other and the theoretical framework built in sections 3, 4, and 5. Additionally, towards the end of this section a discussion of the shortcomings of this research can be found.

10.1 Discussion of Results

First and foremost, H_0 was surprisingly verified. A statistically significant relationship between SES and language aptitude could be confirmed. Additionally, H_1 , the question whether a higher variance of results could be uncovered in the lower SES category, was also verified. Even though the difference in language aptitude mean scores of the different SES categories is statistically significant, the individuals from the lower SES group actually produced the highest scores gathered. This result suggests, that besides SES, other factors in analysis must have a significant impact on language aptitude. After analyzing the general results, every influencing factor will briefly be discussed in this section.

As illustrated previously in section 9, Figure 4, the average Llama scores were normally distributed. As most persons possess an average level of language aptitude, this outcome was to be expected. Most participant's results fall into the average language aptitude category, only few participants were identified having a significantly higher or lower than average language aptitude. Nevertheless, the three individuals scoring highest on the language aptitude test, can be described as having significantly high language aptitude. Their results will occasionally be referred to, whenever they seem to deviate greatly from the norm, or might reveal provocative results in their analysis.

The corresponding language aptitude groups, namely high, average and low, were determined by referring to the Llama manual, rather than creating three groups of the same size. If the differing language aptitude groups had been established by means of putting the top 1/3 of participants, the average 1/3 and the lowest 1/3, the categories would have been arbitrary and, subsequently, meaningless. The same applies for the division into subsequent categories for analysis.

With regard to this sample size, the following factors failed to produce a statistically significant influence on language aptitude, namely, living in a single-parent, or single guardian home, home literacy experiences, a supportive learning environment, and exposure to cultural activities.

Even though, these factors have failed to provide a direct influence on language aptitude some of them might possess a mediating effect on the results with regard to language aptitude. As previously illustrated in Figure 8, the individuals with the highest language aptitude, do in fact, not come from the highest SES category, but rather, two come from the lowest and one from the mid-SES group. Interestingly, all three participants with the highest language aptitude report a high and positive exposure to home literacy experiences and cultural activities. As only three

individuals of 63 (4.76% of the overall sample size) possess a significantly higher than average language aptitude, one should be careful to make general assumptions based on these results alone. Nevertheless, this trend could be proven to be a connection and possible mediating factor by further research. For the purpose of examining the factors more closely a correlation analysis between language aptitude and all factors was conducted, which provided surprising insights.

Besides SES itself, maternal education and neighborhood proved to have a statistically significant effect on language aptitude. Unfortunately, the sample sizes regarding maternal education are not equal. However, as $p=0.016$, the link between maternal educational level and language aptitude cannot be denied. As for the category of neighborhood, one might advise to use caution when analyzing this result. Neighborhood seems to be an aspect very closely related to SES itself. One might argue, it should not be considered its own category all together. A person's occupation and income, defining factors for SES, might have a significantly high influence as well on where a person chooses to raise their children. Instead of arguing for the great influence of neighborhood on language aptitude, one would do wiser in arguing the strong relationship between neighborhood and language aptitude does rather support the hypothesis that SES has a significant influence on language aptitude.

The correlation analysis revealed that maternal education, literacy experiences and exposure to cultural activities all correlate strongly with language aptitude. Uncovering such results was hoped, but definitely not expected. The correlation between language aptitude and literacy experiences is extremely strong. Furthermore, exposure to cultural activities is not usually a factor measured in analyzing language skills. Nevertheless, a strong correlation between language aptitude and exposure to cultural activities was uncovered.

Before going into detail regarding the different categories gender related differences will be mentioned. Many researchers have claimed, that overall, women possess a gift for language as opposed to men. Frequently, women are recorded scoring higher on language skill tests, or similar testing situation. However, this study failed to establish a significant difference between the results of male and female participants regarding language aptitude. Possibly, if the sample size was increased, this result would be subjected to change, as one can describe the mean female score as slightly higher than the male average score. The difference between the genders for this sample, however, is not statistically significant. This analysis was not conducted as part of the examination of the research question, but as many studies are focused on this issue and data was available, a T-Test was conducted.

10.1.1 Language Aptitude and SES

The one-way ANOVA which compared the results of the different SES categories to their respective language aptitude score and could verify H_0 . Unexpectedly, a statistically significant difference between the three SES categories and the language aptitude average score of the individuals in the category could be established. The highest SES group proved to possess the highest language aptitude and the lowest SES group was found to possess the lowest language aptitude mean score. As the language aptitude scores were normally distributed, it was to be expected, that the statistically significant difference would only be realized between the highest and lowest SES categories, not between the highest and middle SES, and not between the middle and lowest SES categories.

Even though, Carroll (1964) and later Skehan (1998) have described language aptitude as innate and stable, at least for the sample size presented in this study,

surprisingly, a difference between the results of different SES groups could be uncovered. Environmental factors, such as SES and the defined influencing factors, have been proven to have an influence on language aptitude. If language aptitude is, in fact an innate and stable trait, environmental factors, such as SES, should only have limited impact on individuals' aptitudes, this impact would most likely not be observable, especially in such a limited sample. The results suggest that language aptitude can be influenced by the environmental factor SES.

Notably, however, the highest scoring participants do not come from the highest SES group, but rather from the low and mid-SES categories. This result suggests that SES and possibly other environmental factors have a significant impact on language aptitude. Nevertheless, the lack of a general definition of SES is problematic. If other criteria for its conceptualization in this study had been elicited, possibly the results could be different.

The results that could be established regarding language aptitude are similar to the findings of Simon & Chevrie-Muller (1975), even though, what is known about their research is unfortunately limited. They have uncovered a connection between SES and several language aptitude tests. The present research similarly demonstrates a connection between SES and the average language aptitude scores established by using the Llama battery.

10.1.2 Language Aptitude and Maternal Education

Besides SES itself, maternal education has proven to have a significant impact on language aptitude. $P=0.016$ proves the strong connection between the variables. Individuals reporting higher maternal education, *Matura* or higher, possess a higher language aptitude than individuals reporting maternal education lower than *Matura*.

This result was expected as maternal education is the single most defining factor of language development and general child development (Bee 1982; Ng'Andu & Ferron 1994; Brooks-Gunn, Klebanov & Duncan 1996; Barratt & Roach 1995; Brooks-Gunn & Morgan 1987). Maternal education is the key factor in child development. A high level of maternal education does not only support a more positive home environment and more engagement with children as Black, Peppé & Gibbon (2008: 260) suggest, furthermore, maternal education also has a positive influence on language aptitude.

Most notably, a strong correlation between maternal education and language aptitude could be uncovered ($p=.023$). Maternal education seems to impact language aptitude both directly and indirectly. These results were to be expected as maternal education is often described as the key factor in child development. Nevertheless, to uncover such a strong relationship comes as a great surprise.

Overall, maternal education seems to be directly related to language aptitude, it may not be the sole key factor in determining a child's abilities regarding language aptitude. However, it is a central one and these findings suggest, its influence should not be underestimated.

10.1.3 Language Aptitude and Single-Parent Households

Even though, Brooks-Gunn, Klebanov & Duncan (1996: 397) suggested that it is not poverty, but rather the characteristics related to poverty such as single parenthood and stress that impact children's development, for the reported sample size in this study no significant relationship between single-parent households and language aptitude could be established. The individuals reporting growing up in a single parent, or single guardian household do not show language aptitude scores differing from the individuals reporting living with two parents.

Moreover, a correlation analysis ($p=.822$) supports the notion that having lived in a single parent household as a minor does not impact an individual's language aptitude. It must be mentioned, that only few participants of the study reported having lived in a single parent household.

10.1.3 Language Aptitude and Home Literacy Experience

Initially it was assumed, home literacy experiences would have great influence on language aptitude, however, this could partially be verified. Bradley & Caldwell (1984) found that toys, books, and literacy experiences in children's lives correlated with IQ, unfortunately, similarly a statistically significant correlation between language aptitude and literacy skills could be presented.

The T-Test ($p=.348$) for home literacy experiences and language aptitude showed that no statistically significant difference between the individuals reporting a high degree of home literacy experiences and the individuals reporting a low degree of home literacy experiences could be established with regard to the overall language aptitude mean scores of the two groups. Notably, all participants showing very high language aptitude, nevertheless, report a high number and frequency of home literacy experiences.

Home literacy experiences have, overall, an impact on language skills, as reported by Gonzalez & Uhing (2008), Hammer, Miccion & Wagstaff (2003), Reese et al. (2000), and Roberts (2008). The great influence literacy experiences have on language aptitude was uncovered by a correlation analysis ($p=.000$). Literacy experiences, following this result, can be described as the greatest correlating factor for language aptitude. Most surprisingly, the correlation is even stronger than the correlation between maternal education and language aptitude.

10.1.4 Language Aptitude and Supportive (Learning) Environment

Hoff (2003) defines home environment as the strongest predictor of a child's language skills and development. Unfortunately, for language aptitude this notion could not be supported by the accumulated data. For this sample size, no statistically significant difference between individuals describing a positive home environment and individuals describing a less positive home environment could be revealed with regard to the language aptitude mean score of the two groups. Interestingly, most participants described their home environments as supportive. It would not be surprising, if further research uncovered a difference between supportive and less supportive home environments, as the sample in this study was rather homogenous in reporting the degree of supportiveness of home environments.

This finding was supported by the correlation analysis ($p=.066$). Even though, this result could be described as uncovering a trend, thus far, no statistically significant relationship between language aptitude and supportiveness of (learning) environment could be established.

10.1.5. Language Aptitude and Neighborhood

Neighborhood is a factor that has demonstrated a great statistical significance on language aptitude. Even though, the differences between more and less urban areas may not be as severe in Austria and Europe in general, as it is reported by Qi et al. (2006) for the U.S. and its African American population, still, a difference in language aptitude average scores of the individuals living in more urban and more rural areas could be revealed.

On the one hand, this difference is as statistically significant as it is ($p=0.011$), because of the close relation between the variables SES and neighborhood. On the one hand, most participants in the high-SES category reported living in less urban areas, with closer contact to neighbors and friends, and fewer exposure to immigration. On the other hand, almost all participants from the lower-SES categories reported living in more urban areas, fewer contacts to neighbors and friends and more exposure to immigration. Even in Austria, where people live is closely related to factors including their income and occupation.

The correlation analysis ($p=.066$) failed to establish a statistically significant relationship between language aptitude and neighborhood. Nevertheless, the result could be described as a trend. Possibly further research in this area with an increased sample size could prove the statistically significant relationship.

10.1.6 Language Aptitude and Exposure to Culture

Exposure to cultural activities as a variable, was included as a measure out of shier curiosity. Unfortunately, no significant relationship could be established between different language aptitude mean of participants reporting a higher degree of exposure to cultural activities and those reporting a lower degree of exposure to cultural activities.

Nevertheless, all participants with a significantly high language aptitude describe a very high degree of exposure to cultural activities. The correlation analysis established a strong correlation between language aptitude and exposure to cultural activities ($p=.037$). Even though, it was expected that a connection between language aptitude and exposure to culture could be uncovered, a correlation this high came surprisingly.

Except for Bourdieu, who argues cultural capital has a mediating effect of the academic success of low-SES children, there is no research relating his concepts to languages skills or language development. However, the results regarding language aptitude and exposure to culture could suggest a mediating effect of the notion exposure to cultural activities on language skills and language development, similarly to the mediating effect he argues ascribes to the notion in academia in general. To make assumptions regarding the results further research would be required emphasizing the possible connection between exposure to culture and other language skills.

In conclusion, it must be remembered that there is no single “magic bullet” in predicting individual’s IQ and language skills (Bee 1982: 1145). Similarly, it seems, there is not single “magic bullet” in predicting language aptitude. What should be noted, however, is the direct influence SES has on language aptitude. Moreover, the T-test comparing language aptitude and maternal education ($p=.016$), and language aptitude and neighborhood ($p=.011$) showed very strong results. Additionally, the correlation analysis between the factors maternal education ($p=.023$), literacy experiences ($p=.000$), and cultural activities ($p=.037$) uncovered very strong correlations.

Even though, it was hoped such results could be uncovered, the high probability levels of the correlation analysis come surprisingly. As the sample size was rather small such results are rather unexpected. They only show how little is thus far known about language aptitude and possible mediating factors. Future research will hopefully unearth even more.

Most importantly, H_0 and H_1 could be verified. SES has a statistically significant impact on language aptitude. Moreover, so do many environmental

mediating factors, including maternal education, literacy experiences, and exposure to cultural activities. These findings support the argument of Sidhu, Mahli & Jerath (2010: 391) who argue that “the most detrimental effects on language development are caused when multiple biological and environmental risk factors act on one single child.” The results presented in this section suggest the same is true for language aptitude. If several biological and environmental factors act on one child, language aptitude can be greatly impacted. This suffices as an explanation as to why the individuals with the highest language aptitude do not come from the highest SES category. Overall, SES has a great influence on language aptitude, but if some of the mediating factors positively influence one individual, language aptitude can be effected to a very significant degree. One ought to be careful in describing language aptitude as fixed and innate, these results suggest that language aptitude can be influenced by environmental factors.

10.2 Shortcomings

As part of the discussion of results of this study, its shortcomings and limitations must be discussed.

Firstly, one major issue encountered was the unequal numbers found in different categories, for instance the language aptitude or SES, high, mid, and low categories. Initially it was hoped that an equal number of males and females could be found to participate in the research, however, given the time and participant's commitment to the study, it was simply impossible to increase the number of male participants. Furthermore, the sample sizes for SES and language aptitude are not equal. Ideally, one would find 21 participants on the high, mid, and low language aptitude and the high, mid, and low SES categories. However, again this proved to

be an impossible task. Especially with regard to language aptitude, it was decided that the groups should be formed by comparing the language aptitude scores of all sub-tests to the categorizations of the Llama manual, rather than arbitrarily creating three groups of equal sample sizes. The latter was concluded to be the bigger corruption of the obtained results. If individuals were just divided into equally sized categories, regarding their Llama average scores and subsequent division into the different language aptitude categories, the results of the research would have been meaningless.

Additionally, even though, it was tried to create a diverse sample group, the study could be improved in this regard. A certain homogeneity of participants cannot be denied. Almost all participants have finished their education, either vocational training or *Matura*, many of the participants are currently enrolled in university, only very few individuals have not finished any kind of education. Almost all participants are of an intermediate educational level. Most participants are between the ages of 20 and 30. All of these aspects could be improved by providing more time and increasing the sample size.

Moreover, the small sample size impedes one from making general claims and assumptions. As also discussed in sections 4 and 5, for almost every study proving, for instance, the relationship between SES and linguistic skills, or maternal education and mathematics skills, another study fails to replicate the result for another sample group. Even though, for this sample, it could be established that certain environmental factors significantly influence language aptitude, further research in this area could prove that the claims brought forward in this regard are only true for the here presented sample. Especially the influencing and possibly even mediating factors would benefit from further research with an increased sample size. With only three participants possessing significantly higher language aptitude than the other

participants, it should be refrained from drawing general conclusions and making assumptions regarding language aptitude and the possible mediating factors. Nevertheless, it is remarkable, how even with a rather small sample size and only very few individuals possessing a significantly higher than average language aptitude statistically significant results could be presented.

10.3 Possible further Research

Since researchers do not yet know exactly which aspects have a crucial influence on language aptitude, biologically, neurologically, and environmentally, language aptitude research must be concerned with revealing more about the very concept of language aptitude. Not only the connection of SES and language aptitude are of importance, but also other relationships need to be uncovered. As SES has an impact on language aptitude, possibly other environmental factors might similarly influence language aptitude.

The very notion of language aptitude would profit from a re-conceptualization. Even though many of Carroll's initial ideas and definitions are still relevant, the possible influence of other factors, such as WM, should not be dismissed categorically, but rather objected to empirical research, and if necessary, language aptitude need to be re-conceptualized accordingly. It should not be assumed a stable and innate trait, if further research suggests an influence of environmental factors on language aptitude.

Additionally, the concept of SES would benefit from a more scientifically relevant definition, that can be applied to empirical research. Even though, using the Hollingshead Four Factor Index and the Home Index seems to be a wide spread practice, their application is not yet a scientific norm. They have unfortunately not

been updated in recent years, but are nevertheless central to many studies focusing on SES. Still, many researchers refrain from using them and rather employ similar concepts to define SES. A more widely acknowledged definition of SES would make results, as the ones presented in this study, possibly more widely acknowledged.

Especially the variables of home literacy experience and exposure to culture would benefit from further exploration. Both of them indicate a mediating, but not direct effect on language aptitude for the present sample size. However, as previously mentioned, general assumptions should be offered carefully due to the small sample. Nevertheless, a trend worth further exploring has been revealed. Especially the notion of exposure to cultural is not usually examined in linguistic research. Further exploration might uncover interesting results.

11. Conclusion

As part of the newest developments currently suggesting a re-conceptualization of language aptitude it is highly important not only to exam which intrinsic factors influence FL attainment, but similarly emphasize the investigation of possible environmental influences. As discussed in the thesis, there has been no recently conducted research concerned with the relationship between language aptitude and SES. This thesis and its findings will hopefully be a first step into a modern discussion regarding these issues.

Even though, the sample size of 63 individuals is quite small, the research conducted provided sufficient evidence of the relationship between SES and language aptitude. Most significantly, this result could be established with a small sample size. Participants from a higher SES background were established to have a language aptitude scores which are statistically significantly higher than the scores of their lower SES counterparts. Furthermore, it was revealed that, not all aspects of SES are of similar importance for a person's language aptitude. Maternal education, neighborhood, exposure to cultural activities and literacy experiences are shown to have an influence, possibly even mediating influence on the participants' language aptitude.

First and foremost, H_0 was verified. A statistically significant relationship between SES and language aptitude could be confirmed. Additionally, H_1 , the question whether a higher variance of results could be uncovered in the lower SES category, was also verified. Even though the difference in language aptitude mean scores of the different SES categories is statistically significant, the individuals from the lower SES group actually produced the highest scores gathered. This result suggests, that besides SES, other factors in analysis must have a significant impact

on language aptitude. Interestingly, only the influencing factors maternal education and neighborhood have a directly observable influence on language aptitude. Moreover, the correlation analysis revealed a strong connection between language aptitude and home literacy experiences, exposure to culture, and maternal education, suggesting a mediating effect on language aptitude, as all top scoring individuals have reported high literacy practices in their homes and a high degree of exposure to culture and cultural activities.

The initial idea to write a thesis focusing on the connection between SES and language aptitude comes from a rather personal motivation. Many studies concerned with the field of SES and academic success, cognitive skills, linguistic skills and many more, have shown, that, typically, individuals from a higher SES background achieve higher scores on IQ test, language tests and in testing their cognitive skills. Children from higher SES families usually do better in the academic system due to various reasons. I, personally, come from a lower SES background, with both parents having chosen vocational education, one might describe my class background as working class. Many of the children of the same neighborhood have eventually dropped out of the educational system, or gone into vocational training. I have always been interested as to which mediating factors in a person's upbringing shed light onto why some succeed in the academic system whereas others do not. I hope this paper could give some insight into this particular area of linguistic research.

As this study has established a connection between SES and language aptitude, it must support the attempt of re-conceptualizing the very notion of language aptitude. Possibly, it is not a stable, innate trait some individuals simply possess. This study suggests, that if several environmental factors positively impact one individual, its language aptitude average score seems to be influenced

accordingly. Further research in this area would be necessary to support this claim, as the results suggest in this study.

This research could only suffice as a first glimpse into the connection between SES and language aptitude. This glimpse, however, has revealed enough to hopefully encourage others to continue the linguistic research in this field.

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Appendix

Statistical Data

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
llama_average_score	63	10,25	62,50	30,8373	12,82577
Valid N (listwise)	63				

gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	21	33,3	33,3	33,3
	2	42	66,7	66,7	100,0
	Total	63	100,0	100,0	

age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20	1	1,6	1,6	1,6
	21	3	4,8	4,8	6,3
	22	4	6,3	6,3	12,7
	23	7	11,1	11,1	23,8
	24	13	20,6	20,6	44,4
	25	5	7,9	7,9	52,4
	26	3	4,8	4,8	57,1
	27	3	4,8	4,8	61,9
	28	3	4,8	4,8	66,7
	29	2	3,2	3,2	69,8
	30	1	1,6	1,6	71,4
	31	1	1,6	1,6	73,0
	32	1	1,6	1,6	74,6
	33	2	3,2	3,2	77,8
	34	2	3,2	3,2	81,0
	36	3	4,8	4,8	85,7
	37	2	3,2	3,2	88,9

40	2	3,2	3,2	92,1
42	1	1,6	1,6	93,7
43	1	1,6	1,6	95,2
44	1	1,6	1,6	96,8
48	1	1,6	1,6	98,4
50	1	1,6	1,6	100,0
Total	63	100,0	100,0	

Descriptives

			Statistic	Std. Error
age	Mean		28,35	,898
	95% Confidence Interval for Mean	Lower Bound	26,56	
		Upper Bound	30,14	
	5% Trimmed Mean		27,73	
	Median		25,00	
	Variance		50,747	
	Std. Deviation		7,124	
	Minimum		20	
	Maximum		50	
	Range		30	
	Interquartile Range		9	
	Skewness		1,314	,302
	Kurtosis		1,006	,595

llama_average_score

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10,25	1	1,6	1,6	1,6
	10,75	1	1,6	1,6	3,2
	11,75	3	4,8	4,8	7,9
	12,25	2	3,2	3,2	11,1
	12,50	1	1,6	1,6	12,7
	14,25	1	1,6	1,6	14,3
	14,50	2	3,2	3,2	17,5
	15,00	1	1,6	1,6	19,0
	16,75	1	1,6	1,6	20,6
	17,50	1	1,6	1,6	22,2
	18,00	1	1,6	1,6	23,8

	18,25	1	1,6	1,6	25,4
	19,50	1	1,6	1,6	27,0
	22,00	1	1,6	1,6	28,6
	23,00	1	1,6	1,6	30,2
	24,25	1	1,6	1,6	31,7
	24,75	1	1,6	1,6	33,3
	26,00	1	1,6	1,6	34,9
	26,25	1	1,6	1,6	36,5
	26,50	1	1,6	1,6	38,1
	27,00	1	1,6	1,6	39,7
	28,00	1	1,6	1,6	41,3
	29,00	1	1,6	1,6	42,9
	30,00	2	3,2	3,2	46,0
	30,25	1	1,6	1,6	47,6
	31,75	1	1,6	1,6	49,2
	32,50	4	6,3	6,3	55,6
	33,00	1	1,6	1,6	57,1
	35,75	1	1,6	1,6	58,7
	36,00	1	1,6	1,6	60,3
	36,75	1	1,6	1,6	61,9
	37,25	2	3,2	3,2	65,1
	37,50	1	1,6	1,6	66,7
	38,00	1	1,6	1,6	68,3
	38,75	2	3,2	3,2	71,4
	39,25	1	1,6	1,6	73,0
	40,00	2	3,2	3,2	76,2
	41,25	1	1,6	1,6	77,8
	42,00	2	3,2	3,2	81,0
	42,50	1	1,6	1,6	82,5
	43,00	1	1,6	1,6	84,1
	43,50	1	1,6	1,6	85,7
	44,00	1	1,6	1,6	87,3
	45,00	1	1,6	1,6	88,9
	45,25	1	1,6	1,6	90,5
	46,00	1	1,6	1,6	92,1
	48,00	1	1,6	1,6	93,7
	50,25	1	1,6	1,6	95,2
	53,75	1	1,6	1,6	96,8
	55,25	1	1,6	1,6	98,4
	62,50	1	1,6	1,6	100,0
Total		63	100,0	100,0	

language_apptitude_score

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	11	17,5	17,5	17,5
	2	39	61,9	61,9	79,4
	3	13	20,6	20,6	100,0
	Total	63	100,0	100,0	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
llama_average_score	63	10,25	62,50	30,8373	12,82577
Valid N (listwise)	63				

SES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	17	27,0	27,0	27,0
	2	26	41,3	41,3	68,3
	3	20	31,7	31,7	100,0
	Total	63	100,0	100,0	

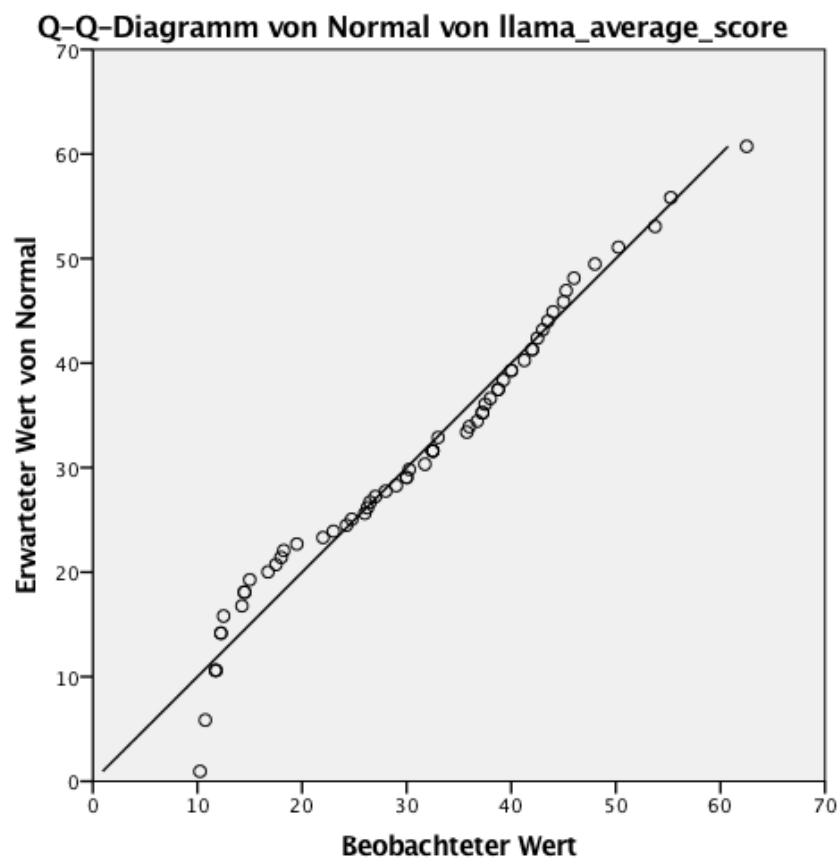
Kolmogorov-Smirnov-Anpassungstest

		llama_averagescore
N		63
Parameter der Normalverteilung ^{a,b}	Mittelwert	30,8373
	Standardabweichung	12,82577
Extremste Differenzen	Absolut	,091
	Positiv	,091
	Negativ	-,078
Statistik für Test		,091
Asymptotische Signifikanz (2-seitig)		,200 ^{c,d}

a. Die zu testende Verteilung ist eine Normalverteilung.

b. Aus den Daten berechnet.

- c. Signifikanzkorrektur nach Lilliefors.
- d. Dies ist eine untere Grenze der echten Signifikanz.



Reliabilitätsstatistiken

Cronbachs Alpha	Cronbachs Alpha für standardisierte Items	Anzahl der Items
,798	,802	8

Gruppenstatistiken

	gender	N	Mittelwert	Standardabweichung	Standardfehler des Mittelwertes
llama_average_score	1	21	27,8690	12,93267	2,82214
	2	42	32,3214	12,66492	1,95424

Test bei unabhängigen Stichproben

		Levene-Test der Varianzgleichheit		T-Test für die Mittelwertgleichheit					95% Konfidenzintervall der Differenz	
		F	Signifikanz	T	df	Sig. (2-seitig)	Mittlere Differenz	Standardfehler der Differenz	Untere	Obere
llama_average_score	Varianzen sind gleich	,147	,703	-1,306	61	,196	-4,45238	3,40847	-11,26804	2,36328
	Varianzen sind nicht gleich			-1,297	39,364	,202	-4,45238	3,43271	-11,39365	2,48889

ONEWAY deskriptive Statistiken

Abhängige Variable llama_average_score

	N	Mittelwert	Standardabweichung	Standardfehler	95%-Konfidenzintervall für den Mittelwert		Minimum	Maximum
					Untergrenze	Obergrenze		
1	17	37,3971	10,27172	2,49126	32,1158	42,6783	14,50	50,25
2	26	29,1250	11,12390	2,18158	24,6320	33,6180	10,25	53,75
3	20	27,4875	15,19208	3,39705	20,3774	34,5976	11,75	62,50
Gesamt	63	30,8373	12,82577	1,61589	27,6072	34,0674	10,25	62,50

Einfaktorielle ANOVA

llama_average_score

	Quadratsumme	df	Mittel der Quadrate	F	Signifikanz
Zwischen den Gruppen	1032,172	2	516,086	3,378	,041
Innerhalb der Gruppen	9166,848	60	152,781		
Gesamt	10199,020	62			

llama_average_score

Zwischen den Gruppen
Innerhalb der Gruppen
Gesamt

llama_average_score

Tukey-HSD^{a,b}

		Untergruppe für Alpha = 0.05.	
SES	N	1	2
3	20	27,4875	
2	26	29,1250	29,1250
1	17		37,3971
Signifikanz		,906	,091

Die Mittelwerte für die in homogenen Untergruppen befindlichen Gruppen werden angezeigt.

- a. Verwendet ein harmonisches Mittel für Stichprobengröße = 20,369.
- b. Die Gruppengrößen sind nicht identisch. Es wird das harmonische Mittel der Gruppengrößen verwendet. Fehlerniveaus des Typs I sind nicht garantiert.

T-Test

Statistik bei einer Stichprobe

	N	Mittelwert	Standardabweichung	Standardfehler des Mittelwertes
llama_average_score	63	30,8373	12,82577	1,61589
education_mother	63	1,70	,463	,058

Test bei einer Stichprobe

Testwert = 0

	T	df	Sig. (2-seitig)	Mittlere Differenz	95% Konfidenzintervall der Differenz	
					Untere	Obere
llama_average_score	19,084	62	,000	30,83730	27,6072	34,0674
education_mother	29,139	62	,000	1,698	1,58	1,81

Test bei unabhängigen Stichproben

		Levene-Test der Varianzgleichheit		T-Test für die Mittelwertgleichheit						95% Konfidenzintervall der Differenz	
		F	Signifikanz	T	df	Sig. (2-seitig)	Mittlere Differenz	Standardfehler der Differenz		Untere	Obere
llama_average_score	Varianzen sind gleich	6,124	,016	2,084	61	,041	7,14713	3,42963		,28916	14,00510
	Varianzen sind nicht gleich			2,489	52,711	,016	7,14713	2,87202		1,38584	12,90842

T-Test

Gruppenstatistiken

	single_parent	N	Mittelwert	Standardabweichung	Standardfehler des Mittelwertes
llama_average_score	1	35	31,3643	12,75380	2,15579
	2	28	30,1786	13,11873	2,47921

Test bei unabhängigen Stichproben

		Levene-Test der Varianzgleichheit		T-Test für die Mittelwertgleichheit						95% Konfidenzintervall der Differenz	
		F	Signifikanz	T	df	Sig. (2-seitig)	Mittlere Differenz	Standardfehler der Differenz		Untere	Obere
llama_average_score	Varianzen sind gleich	,355	,553	,362	61	,719	1,18571	3,27496		-5,36296	7,73439
	Varianzen sind nicht gleich			,361	57,267	,719	1,18571	3,28540		-5,39253	7,76396

T-Test

Gruppenstatistiken

	neighborhood	N	Mittelwert	Standardabweichung	Standardfehler des Mittelwertes
llama_average_score	1	35	33,8143	10,56116	1,78516
	2	28	27,1161	14,54089	2,74797

Test bei unabhängigen Stichproben

		Levene-Test der Varianzgleichheit		T-Test für die Mittelwertgleichheit						95% Konfidenzintervall der Differenz	
		F	Signifikanz	T	df	Sig. (2-seitig)	Mittlere Differenz	Standardfehler der Differenz		Untere	Obere
llama_average_score	Varianzen sind gleich	6,839	,011	2,117	61	,038	6,69821	3,16431		,37078	13,02565
	Varianzen sind nicht gleich			2,044	47,833	,046	6,69821	3,27691		,10895	13,28748

T-Test

Gruppenstatistiken

	supportive_learning_environment	N	Mittelwert	Standardabweichung	Standardfehler des Mittelwertes
llama_average_score	1	35	33,5643	12,58330	2,12697
	2	28	27,4286	12,51644	2,36539

Test bei unabhängigen Stichproben

		Levene-Test der Varianzgleichheit		T-Test für die Mittelwertgleichheit						95% Konfidenzintervall der Differenz	
		F	Signifikanz	T	df	Sig. (2-seitig)	Mittlere Differenz	Standardfehler der Differenz		Untere	Obere
llama_average_score	Varianzen sind gleich	,073	,788	1,928	61	,059	6,13571	3,18296		-,22900	12,50043
	Varianzen sind nicht gleich			1,929	58,133	,059	6,13571	3,18104		-,23152	12,50295

T-Test

Gruppenstatistiken

	literacy_experiences	N	Mittelwert	Standardabweichung	Standardfehler des Mittelwertes
llama_average_score	1	36	37,3750	10,37760	1,72960
	2	27	22,1204	10,45029	2,01116

Test bei unabhängigen Stichproben

		Levene-Test der Varianzgleichheit		T-Test für die Mittelwertgleichheit						95% Konfidenzintervall der Differenz	
		F	Signifikanz	T	df	Sig. (2-seitig)	Mittlere Differenz	Standardfehler der Differenz		Untere	Obere
llama_average_score	Varianzen sind gleich	,893	,348	5,757	61	,000	15,25463	2,64991		9,95580	20,55345
	Varianzen sind nicht gleich			5,751	55,947	,000	15,25463	2,65260		9,94073	20,56853

T-Test

Gruppenstatistiken

	cultural_activities	N	Mittelwert	Standardabweichung	Standardfehler des Mittelwertes
llama_average_score	1	40	33,4688	12,60802	1,99350
	2	23	26,2609	12,13711	2,53076

Test bei unabhängigen Stichproben

		Levene-Test der Varianzgleichheit		T-Test für die Mittelwertgleichheit						95% Konfidenzintervall der Differenz	
		F	Signifikanz	T	df	Sig. (2-seitig)	Mittlere Differenz	Standardfehler der Differenz		Untere	Obere
llama_average_score	Varianzen sind gleich	,052	,820	2,214	61	,031	7,20788	3,25541		,69829	13,71747
	Varianzen sind nicht gleich			2,237	47,463	,030	7,20788	3,22162		,72849	13,68727

Questionnaire

Sprachbegabung und sozio-ökonomischer Hintergrund

Seite 1

Der folgende Fragebogen wurde im Zuge meiner Diplomarbeit mit dem Titel „Socioeconomic Status and Language Aptitude“ zur Erlangung des Magistergrades erarbeitet. Die erhobenen Daten werden ausschließlich für eine Analyse und Bearbeitung in diesem Rahmen verwendet und anonymisiert in der Abschlussarbeit diskutiert. Manche Fragen behandeln sensible Themen, ihre vertrauliche Behandlung steht außer Frage.

Als zweiter Teil der Datenerhebung folgt eine genormte Testung Ihrer Sprachbegabung. Wenn Sie diesen Fragebogen ausgefüllt haben, bitte kontaktieren Sie mich (lisa.haslinger@gmail.com) um verbindlich einen Termin fest zu legen.

Danke für Ihre Unterstützung!

Dies ist ein Fragebogen und kein Test, es gibt keine richtigen oder falschen Antworten, keine Punkte, keine Bewertung, nur eine objektive Ausarbeitung der erhobenen Daten.

Seite 2

Name:

Seite 2

Name:

Alter: *

Geschlecht: *

Muttersprache: *

- ☐ Deutsch
- ☐ Englisch
- ☐ Spanisch
- ☐ Arabisch
- ☐ Französisch
- ☐

Sprechen Sie weitere Sprachen? Wenn ja, welche? *

Geben Sie, wenn möglich Ihr Kompetenzlevel von 1 (kaum) - 10 (ausgezeichnet) an

höchste abgeschlossene Schulausbildung *

- ☐ Hauptschulabschluss
- ☐ Lehre
- ☐ Matura (Abitur)
- ☐ Bachelor
- ☐ Master
- ☐ Magister
- ☐ PhD, Doktor
- ☐ keine der genannten
- ☐ andere:

derzeitiger Beruf *

höchste abgeschlossene Ausbildung der Mutter? *

- ☐ Hauptschulabschluss
- ☐ Lehre
- ☐ Matura (Abitur)
- ☐ Bachelor
- ☐ Master
- ☐ Magister
- ☐ PhD, Doktor
- ☐ keine der genannten
- ☐ andere:

Derzeitiger Beruf der Mutter *

höchste abgeschlossene Ausbildung des Vaters *

- ☐ Hauptschulabschluss
- ☐ Lehre
- ☐ Matura (Abitur)
- ☐ Bachelor
- ☐ Master
- ☐ Magister
- ☐ PhD, Doktor
- ☐ keine der genannten
- ☐ andere:

derzeitiger Beruf des Vaters *

Anzahl der Geschwister: *

Wurden Sie im Laufe Ihrer Kindheit (teilweise) in der Obhut eines alleinerziehenden Elternteiles/Erziehungsberechtigten erzogen? *

Wenn ja, bei welchem Elternteil bzw. Erziehungsberechtigten?

Können Sie Informationen über die schulischen und beruflichen Werdegänge Ihrer Großeltern oder Urgroßeltern geben? Bitte holen Sie so weit aus wie es Ihnen möglich ist! (Erwähnen Sie bitte die genaue familiäre Verbindung, z.B. meine Großmutter, die Mutter meines Vaters.)

Seite 3

Im folgenden werden Ihnen Statements präsentiert, deren Zutreffen auf Sie geben Sie bitte auf der angeführten Skala an.
1 (stimme nicht zu) - 10 (stimme sehr zu)

Seite 4

In meiner Familie wurde mir als Kind viel vorgelesen. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 5

Meine Mutter hat mich bei der Erledigung meiner Hausaufgaben regelmäßig unterstützt. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 6

In meiner Kindheit habe ich familiäre Diskussionen über finanzielle Engpässe mitbekommen. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 7

Ich komme aus einer eher ländlichen Gegend. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 8

Meine Erziehungsberechtigten haben mich selten bis nie in eine Bibliothek oder andere kulturelle Einrichtung mitgenommen. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 9

Schulische Probleme konnte ich zu Hause ansprechen um Unterstützung zu erfahren. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 10

Wenn ich als Kind ein Buch gelesen habe, haben meine Erziehungsberechtigten wenig Interesse an dieser Aktivität gezeigt. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 11

Meine Erziehungsberechtigten trennten sich während meiner Kindheit. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 12

In der Nachbarschaft in der ich aufgewachsen bin gibt es einen signifikanten Anteil von Migranten. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 13

Meine Erziehungsberechtigten haben in meiner Kindheit kaum mit mir gelesen. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 14

Ich habe meine Hausaufgaben nur ungerne erledigt. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 15

Meine Eltern haben in meiner Kindheit hin und wieder mit mir Ausflüge in Museen, oder ins Theater, oder ähnliches unternommen. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 16

Im meiner Familie gab es immer wieder Streit und manchmal auch körperliche Auseinandersetzungen zwischen Familienmitgliedern, die auf außenstehende Besorgnis erregend wirken könnten. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 17

In meiner Kindheit wurde immer wieder auch Einkommen für Urlaube und Reisen ausgegeben. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 18

Meine Mutter war primär mit der Erziehung der Kinder beauftragt und hat deshalb maximal Teilzeit gearbeitet. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 19

In meiner Nachbarschaft gab es primär Einfamilienhäuser. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 20

Bei der Gestaltung von Ausflügen wurde auf die Kindgerechtigkeit geachtet. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 21

Meine Erziehungsberechtigten hatten in meiner Kindheit öfter als einmal Besuch von Einrichtungen zum Schutz des Kindes (Jugendamt). *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 22

Im meiner Kindheit war es kein Problem für Nachbarn oder Freunde hie und da auf mich aufzupassen. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 23

Bei der Erledigung meiner Hausaufgaben wurde ich selten von Erwachsenen betreut. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 24

In meiner Kindheit war min. ein Erziehungsberechtigter über einen längeren Zeitraum arbeitssuchend. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 25

Unterhaltung fand bei uns eher durch Fernsehen als Lesen statt. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 26

Ich komme eher aus einer städtischen Gegend. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 27

In meiner Kindheit gab es immer ausreichend Bücher, für mein Alter/meine Lesestufe passend. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 28

Meine Mutter war über große Teile meiner Kindheit primär zu Hause tätig. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 29

In meiner Kindheit wurde selten teure Kleidung gekauft *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 30

Mein Vater hat mich bei der Erledigung meiner Hausaufgaben regelmäßig unterstützt. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 31

Meine Erziehungsberechtigten haben wenige bis keine Ausflüge mit mir unternommen. *

1 (stimme nicht zu) - 10 (stimme sehr zu)

1 10

Seite 32

Die Umfrage ist nun beendet. Danke für Ihre Teilnahme!

Falls Sie noch einen Kommentar, oder Ihre Kontaktdaten anfügen möchten:

» [Umleitung auf Schlussseite von Umfrage Online](#) (ändern)

Abstract

The purpose of this thesis was to investigate the relationship between socioeconomic status (SES) and language aptitude. Additionally, possible mediating factors have been examined, namely, maternal education, single-parent household, home literacy experiences, supportiveness of (learning) environment, neighborhood, and exposure to cultural activities.

63 participants were tested using the Llama battery to establish their language aptitude level. Furthermore, their SES background and possible influencing factors were characterized using a questionnaire. Statistical analysis was conducted to closely examine the data.

A statistically significant relationship between language aptitude and SES could be established ($p=.047$). Not all influencing factors could provide statistically significant results. Nevertheless, maternal education and neighborhood did provide statistically significant relationship with language aptitude. Moreover, a correlation analysis revealed a strong connection between exposure to cultural activities, literacy experiences reported, maternal education with language aptitude. They could be defined as mediating factors with regard to SES and language aptitude.

The results are rather surprising, as a high language aptitude has long been conceptualized as an innate and stable trait certain individuals simply possess. This research has proven, that specific environmental influences can impact language aptitude. The most compelling influences are achieved when several environmental factors, positively or negatively, effect one individual.

Abstract

Diese Arbeit wurde verfasst um eine mögliche Verbindung zwischen dem sozioökonomischen Hintergrund und (Fremd-)Sprachenbegabung zu untersuchen. Des Weiteren wurden mögliche beeinflussende Faktoren analysiert, mütterliche Bildung, Haushalte mit einem Elternteil, Leseerfahrungen, die Lebenswelt der Individuen in der Kindheit, Nachbarschaft und Erfahrungen mit kulturellem Aktivitäten.

63 TeilnehmerInnen wurden mit Hilfe des Llama Testes in ihrem Level der Sprachbegabung eingestuft und mit Hilfe eines Fragebogens wurden Informationen über den sozio-ökonomischen Hintergrund und die beeinflussenden Faktoren erhoben. Die gesammelten Daten wurden im Anschluss statistisch ausgewertet.

Eine statistisch signifikante Verbindung konnte zwischen Fremd-Sprachenbegabung und dem sozioökonomischen Hintergrund hergestellt werden ($p=.047$). Nicht alle beeinflussenden Faktoren konnten eine ähnliche Verbindung aufzeigen. Mütterliche Bildung und Nachbarschaft konnten auch eine direkte statistisch signifikante Verbindung zu Fremdsprachenbegabung aufweisen. Erfahrungen mit kulturellen Aktivitäten und Leseerfahrung und mütterliche Bildung können auf Grundlage einer Korrelationsanalyse als beeinflussende Faktoren beschrieben werden.

Dieses Resultat überrascht, da Fremdsprachenbegabung lange als angeborener, unveränderliche Begabung charakterisiert wurde. Diese Studie zeigt, dass Umweltfaktoren sehr wohl einen Einfluss auf die Fremdsprachenbegabung von Individuen haben, vor allem wenn mehrere positiv oder negativ beeinflussende Faktoren auf ein Individuum einwirken, ist der Einfluss deutlich erkennbar.