

**Contact Between Mexican Sign Language and American Sign  
Language in Two Texas Border Areas**

**by**

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Language in Two Texas Border Areas**

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## **Dedication**

To Mannie, who has been there every step of the way.

Also, to my parents, Gilbert and Gloria, for their undying love and support.

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Finally, I would like to express my heartfelt gratitude to my life partner, Mannie. His undying love, support, and encouragement have provided the motivation that I have needed to approach this project with a passion.

# **Contact Between Mexican Sign Language and American Sign Language in Two Texas Border Areas**

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Cities of the Southwest United States that lie along the border with Mexico are fertile areas for the study of language contact. Many studies have addressed contact between Spanish and English in these areas. However, these areas also contain Deaf communities where Mexican Sign Language, or *El Lenguaje de Signos Mexicano (LSM)* is used; this results in contact between LSM and American Sign Language (ASL). Unlike contact between spoken languages, contact between signed languages has not been studied extensively. This study describes contact between LSM and ASL in two Deaf communities in Texas.

Specifically, I describe the language production of eight Deaf individuals who participated in one-on-one interviews and group discussions. Drawing from video data, I document the sources of similarity between the meaningful elements used in LSM and ASL, the ways in which properties unique to either LSM or

ASL may have interfered with language production in the other language, and the strategies participants used to achieve clear communication.

Despite the fact that LSM and ASL are not mutually intelligible languages, the high percentage of similar meaningful elements produced by the participants is noteworthy. Among these elements were signs that are articulated similarly in the two languages and that share approximately the same meaning. Participants also frequently utilized gestures of the ambient hearing cultures and points for communication. Gestures and points are elements that are likely easily understood by users of other languages.

The data from this study also reveal instances of interference between the linguistic system of one language and the equivalent system of the other language. Specifically, interference is evident on the following levels: the phonological level (sign formation parameters), the prosodic level (non-manual signals), and the paralinguistic level (mouthing). Also, code-switching/code-mixing can be found in the contact between two sign languages.

Lastly, the participants also utilized various strategies for clarification in these LSM-ASL contact situations. These clarification strategies included code-switching, special ways of articulating double-digit numbers, and repetition.

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# **Chapter 1: Introduction**

## **1.1 OPENING REMARKS**

Contact between spoken languages has been studied extensively and many contact phenomena have been identified that describe various facets of such contact. However, the same is not true for contact between signed languages; there is little research in this area and, as a result, it has not been clear what forms such contact would take. This dissertation is concerned with contact between two signed languages; the descriptions contained herein are intended to compare signed language contact phenomena with those used to describe contact between spoken languages.

Cities of the Southwest United States that lie along the border with Mexico are fertile areas for the study of language contact. For example, many studies have addressed contact between Spanish and English in these areas. However, these cities also contain Deaf communities where Mexican Sign Language, or *El Lenguaje de Signos Mexicano<sup>1</sup> (LSM)* is used; this results in contact between LSM and American Sign Language (ASL). Unlike contact between the spoken languages of these areas, contact between LSM and ASL has been addressed only minimally.

This study describes contact between LSM and ASL in two Deaf communities in Texas. Specifically, I describe the language production of eight Deaf individuals who participated in one-on-one interviews and group discussions. Drawing from video data, I document three types of phenomena: sources of similarity between meaningful elements that are communicated in LSM and ASL, interference from a

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<sup>1</sup> Mexican Sign Language is also referred to by various other titles. Among them are *Lenguaje de Señas Mexicanas*, *Lenguaje de Señas Mexicano*, and *Lengua de Señas Mexicana*. Many Deaf people in Mexico simply refer to Mexican Sign Language as SEÑA ESPAÑOL ‘Spanish sign’.

unique item of one language on the production of the other language, and strategies that participants use to achieve clear communication.

This chapter will present background information regarding contact between LSM and ASL along the U.S.-Mexico border. Additionally, I will describe the motivation for this study and the research questions that guided the study. Finally, the last section of this chapter explains the organization of this dissertation.

## **1.2 BACKGROUND INFORMATION**

### **1.2.1 A brief look at border towns**

United States metropolitan areas along the U.S.-Mexico border tend to be areas with high percentages of inhabitants of Mexican descent. In some Texas cities that lie along the border, Latinos comprise more than 75% of the population (e.g., Brownsville: 91.3%; El Paso: 76.6%; McAllen: 80.3%; U.S. Census Bureau statistics, 2000). Part of the reason for such high numbers has to do with the descendants of Mexican individuals who have lived in these areas for several generations. For instance, many people of Mexican descent automatically became U.S. citizens after the current U.S.-Mexico border was set and others arrived in the U.S. before border crossing became highly regulated. Currently, there are strict U.S. laws prohibiting the entrance into the U.S. of Mexicans who are not already citizens or resident aliens of the U.S. It is difficult to legally cross the border from Mexico to the U.S. if one does not possess a resident alien identification card or a foreigner visa, but this fact has not prevented U.S. metropolitan areas along the border from having large percentages of documented and undocumented Mexicans. In these large communities of Mexicans, Spanish is spoken frequently and various facets of Mexican culture abound.

Not only hearing Mexicans but also Deaf Mexicans have immigrated to the U.S. and settled in these border towns—many in search of better jobs or American educational opportunities for their children. The existence of Mexican Deaf in the U.S. has become evident, over the last 10 years, to social service agencies along some parts of the U.S.-Mexico that provide services to Deaf individuals. For instance, in two Texas border cities (El Paso and McAllen), social service agencies that contract interpretation services for Deaf individuals have reported that Deaf Mexicans frequently request interpretation services. Sometimes, the social service agency is not aware that they are providing an interpreter for an event that involves a Deaf Mexican until the interpreter arrives at the designated site and finds a Deaf person whose language is unintelligible to the interpreter. In some cases, interpreters report that the Deaf consumer seems to only produce “home signs”—gestures that are often used for communication between a Deaf individual and her hearing family. In other cases, interpreters observe that the Deaf consumer does seem to possess language skills, but the signed language produced is unintelligible to the interpreter. It is likely that these Deaf consumers are in fact producing Mexican Sign Language (LSM) rather than American Sign Language (ASL), which is why the interpreter does not comprehend their language production.

It seems to be the case that most of the users of LSM are Mexican-born. Rough estimates of the numbers of Mexican Deaf individuals living in each of the two border areas mentioned above (El Paso and McAllen) range from 50 to approximately 150, which is perhaps about 10% of the Deaf signing population in these areas.<sup>2</sup> Of course, these numbers fluctuate regularly based on some people

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<sup>2</sup> These figures represent the estimates of social service agencies that provide services to Deaf individuals in these communities.

returning to Mexico and others arriving in these areas. Additionally, there are Mexican Deaf individuals who cross the border regularly (some on a daily basis) but live in Mexico. These individuals usually come to the U.S. to earn money or to shop for various goods.

### **1.2.2 Services for Deaf Mexicans in border communities**

In order to address the needs of Deaf Mexicans who enter the U.S. in search of better jobs, various agencies in these Texas border communities have established educational and social opportunities for Mexican Deaf individuals. For instance, in El Paso adult literacy classes for Deaf Mexicans, taught by a Deaf individual from the United States, have been offered for several years, and Deaf Mexicans with varying signing and literacy skills attend these classes. Some of the Deaf individuals who attend are reported to have little to no signing skills when beginning the classes, but despite that limitation they successfully acquire basic English reading and writing skills within a relatively short period of time. Other participants are not as successful. In addition to these classes, regular gatherings of the Mexican Deaf community in El Paso occur at El Paso Community College, where the Mexican Deaf individuals are given the opportunity to interact with other Deaf people and hearing signers from the El Paso community.

In the Texas Valley<sup>3</sup> there are also programs to support the Mexican Deaf community. For instance, there is a community agency that serves as a resource for Deaf Mexicans in regard to obtaining services such as interpreters and life skills

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<sup>3</sup> In this dissertation, I will use the term “Texas Valley” to refer to the area in south Texas that is commonly referred to by Texans as “The Rio Grande Valley” or simply “The Valley”. Larger cities in this area include the following: Brownsville, San Benito, Harlingen, Weslaco, San Juan, Pharr, McAllen, and Edinburg.

education and that also functions as a place to socialize with other Deaf individuals. The community agency also educates Mexican Deaf about their citizenship status, about social services that they may access regardless of their citizenship status, and about the steps necessary to become full citizens of the U.S. In some cases, advocates from the agency or other volunteers will help Mexican Deaf individuals to complete citizenship application forms.

At social gatherings of Deaf people in El Paso and the Texas Valley, Deaf people with various signed language skill levels can be found. Some are monolingual signers of ASL or LSM, others are bilingual signers of both languages, and others use home sign systems or gestures in addition to elements of LSM and ASL for communication. In some cases, hearing or Deaf users of ASL learn some LSM signs in order to communicate with Deaf individuals from Mexico, but it appears more generally to be the case that the Mexican Deaf learn ASL signs in order to facilitate communication in these U.S. settings.

### **1.2.3 Mexican Deaf elsewhere in the U.S.**

Mexican Deaf also reside in other parts of the U.S.—in some cases many miles from the border. It has been reported that pockets of Mexican Deaf communities exist in some larger metropolitan areas of Texas such as Dallas and Houston. The extent to which these Deaf Mexicans use LSM is not known, but I would presume that LSM is used in social gatherings by these Deaf Mexicans, especially among recent arrivals from Mexico.

In the summer of 1997, the existence of Deaf Mexicans far from the U.S.-Mexico border became a topic of national attention. The focus was on the exploitation of these Deaf individuals for purposes of financial gain. The first report

concerned a group of 37 Deaf from Mexico and other Latin American countries who were held against their will and forced to sell trinkets on the streets of New York City. But, it was soon learned that similar cases of the exploitation and abuse surfaced in parts of the Southwest and elsewhere. The headlines in the *New York Times* were clear; organized rings of exploitation, whose activity could be traced to North Carolina, Chicago, and parts of California, were taking advantage of Deaf Mexicans—many of whom had been smuggled into the U.S. to contribute to this \$1,000,000 per year venture (for a sample of the news stories, see *New York Times*, Aug. 21, 1997, at A1, col. 5; Oct. 24, 1997, at B5, col. 1; July 17, 1998, at B1, col. 2). After these stories broke, the nation turned its attention to the terrible accounts of the inhumane living conditions that these Mexican Deaf people were subjected to and the abuse (both physical and psychological) that they endured. National court cases followed where linguistic challenges for signed language interpreters (both hearing and deaf) opened the eyes of interpreting professionals across the country who likely had never imagined having to interpret for Deaf Mexicans who did not know ASL. In some cases, the Deaf Mexicans in these trials used LSM, and in other cases they used only home sign systems. After various trials, several individuals were indicted for their roles in cases of immigrant exploitation and abuse. These cases, while terrible, served to inform many people about the existence of Mexican Deaf in the U.S. They also forced many people to realize that LSM is being used in the U.S., and that ASL is not the only signed language that is found within these borders.

#### **1.2.4 Survey data as evidence of language contact**

The needs of Mexican Deaf who live in the U.S. have not only been the focus of border community agencies that provide services for the Deaf, but they have also

reached the attention of the Texas Commission for the Deaf and Hard of Hearing (TCDHH). Since the early to mid 1990's, this state agency has been concerned with interpreted situations in which consumers (whether deaf or hearing) use Spanish or use a language variety that is heavily influenced by Spanish.

#### ***1.2.4.1 A brief history of the TCDHH Hispanic Trilingual Task Force***

The involvement by TCDHH came about because of frequent reports of interpreted situations in which interpreters were required to have Spanish language skills in addition to skills in English and ASL. Specifically, agencies in El Paso and the Texas Valley that provided interpreter services to their communities were requesting more compensation for interpreters who worked in these trilingual (Spanish/English/ASL) settings. The argument that was presented by the agencies to TCDHH was that interpretation in these settings required language skills above and beyond what other interpreters in Texas needed and that the "trilingual interpreters" should therefore be compensated appropriately for their skills. These concerns were echoed by deaf and hearing consumers of interpreting services from these communities during town hall meetings that were held to inform TCDHH of the issues.

As a result, TCDHH established a task force in 1994 to address issues regarding these trilingual interpreting situations. That task force is known as the TCDHH Hispanic Trilingual Task Force.<sup>4</sup> The Task Force was charged by the Texas Legislature in 1999 to "develop guidelines for trilingual interpreter services; and provide training programs for persons who provide trilingual interpreter services"

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<sup>4</sup> I currently participate in this task force, and I was involved in the design of a survey that will be discussed in Section 1.2.4.2.

(Texas Legislature House Bill 1401, 1999). Through the course of obtaining information about trilingual situations via interpreter accounts of their experiences, this task force realized that not only do interpreters need to have Spanish skills for some situations, but they may also need to have LSM skills at times. This is especially true if the interpreter is working with a consumer who is from Mexico and who does not possess skills in ASL. Suddenly the profile of the alleged “trilingual interpreter” was questioned since some had claimed that LSM skills are also required for some interpreting jobs. Perhaps a more appropriate term for interpreters in these situations would be “quadrilingual interpreters”. In order to obtain a general idea of what interpreters encounter in these situations and whether or not they are called to use Spanish and LSM in addition to English and ASL, the task force devised a survey that was sent to all interpreters certified by the TCDHH Board for Evaluation of Interpreters (BEI).

#### ***1.2.4.2 The survey***

In this section, I will report the results of a survey that was sent to BEI-certified interpreters in Texas. I will focus on the responses of those interpreters who work in the two border areas that are the focus of this study: El Paso and the Texas Valley.

In December 2000, TCDHH sent a survey to each of the approximately 1300 BEI-certified interpreters. The entire survey can be found in Appendix A. By September 25, 2001, TCDHH had received 239 (approximately 18%) completed surveys. One question on the survey (#16) was as follows:

Have you ever been in a situation where your clients (deaf or hearing) used Spanish, Mexican Sign Language (LSM), or another type of language production that is influenced by either Spanish or LSM (such as signing ASL while mouthing Spanish words or signing LSM in a way that shows influence from MSL/LSM)?

yes\_\_\_\_ no\_\_\_\_ (if you answer no, please skip to question # 27)

If respondents answered this question in the affirmative, they were instructed to continue by replying to questions about their experiences in these situations. If, on the other hand, their response was “no” they were asked to skip to the end of the survey and answer three questions—two about compensation and one about training. Only the surveys with a “yes” answer to the above question were included in the responses that were tabulated; there were 102 (or approximately 43% of the 239 that were received) of those surveys.

Of the 102 surveys with responses to questions about multilingual interpreting situations, 29 were completed by interpreters who work in either El Paso or the Texas Valley. Of the 29, 3 claimed to find themselves in these situations “every day”, 9 reported that “an average of 1-4 times per week” was common for them, and 5 answered “an average of 1-4 times per month”. I will focus on the responses of these 17 interpreters who had experienced these situations on a monthly basis, and I will refer to them as the “border interpreters”.

The next question of the survey (#18) queried respondents about various types of elements that their deaf or hearing clients had produced in these situations. Here, I will focus on three of those elements: the mouthing of Spanish words, the fingerspelling of Spanish words, and the production of LSM signs. From the group of

17 surveys, 16 (94%) of the border interpreters reported that their deaf or hearing clients had mouthed Spanish words in these situations, 12 (70.5%) reported that their clients had fingerspelled Spanish words, and 14 (82.3%) reported that their clients had produced LSM signs. As will be seen in Chapters 4 and 6, these elements are those that were also produced by Deaf individuals who participated in the current dissertation study. According to the 17 border interpreters who claimed to have worked in these situations on at least a monthly basis, Spanish mouthing, fingerspelled Spanish words, and LSM signs are common in these situations. Spanish mouthing, fingerspelled Spanish words, and LSM signs are all features of LSM, which means that these data can be seen as an indication that Deaf users of LSM are accessing services in these border areas. The interaction of Deaf users of LSM with interpreters and perhaps other Deaf individuals of those communities who use ASL would likely lead to contact between LSM and ASL, which is the focus of this dissertation study.

### **1.3 COMPLEX LINGUISTIC COMMUNITIES**

The survey data presented in Section 1.2.4 hint at the idea that language use by Deaf people along the U.S.-Mexico border cannot be described by reference to a single language or language system. Rather, Deaf people in these areas communicate with each other and with hearing people by using ASL, LSM, gestures, and home signs, by mouthing words and parts of words from the ambient spoken languages, and perhaps by using other devices. Certainly, as mentioned in 1.2.2, Deaf individuals in these border communities can be characterized in various ways; some are fluent bilinguals in LSM and ASL, others are mostly monolingual signers of LSM or ASL, some use signs from invented signed systems (e.g., SEE II; Signing Essential

English) in conjunction with signs from LSM and/or ASL, and others frequently use home signs and gestures. Among the fluent signers of LSM and ASL, some are native signers (i.e., they acquired sign language early in their cognitive development) and some are not. Thus, there are many ways to characterize the linguistic repertoire of Deaf people who live along the border, and often a single individual will utilize one form of communication in one environment and a different form in another environment.

Despite the different languages and communication systems that are used in border towns, Deaf people from various backgrounds interact frequently in these areas. This is possible, in part, because Deaf Mexicans are living in U.S. border communities. In some cases, entire families that are comprised mostly of Mexican Deaf individuals have settled in these areas, and the children usually attend public school in the U.S. These communities are also homes for Mexican Deaf individuals who live alone. In many cases, the job opportunities for Mexican Deaf are better in the U.S. than in Mexico, which is one reason many Deaf Mexicans choose to live in the U.S. The interaction between Mexican Deaf and American Deaf in these border areas has created what appear to be stable language contact communities—at least for the moment. This is likely due, in part, to the continuous presence of Mexican Deaf among American Deaf in these areas. Of course, it is not clear how these communities will change over time and how such change would affect the language use of their members.

In Mexican Deaf families, the children and the parents utilize various systems and strategies for communication with each other. Further, these families often interact with other Deaf families and individuals from Mexico who live in these

border towns. For example in one city of the Texas Valley, several Mexican families, comprised mostly of Deaf parents and siblings, live in one neighborhood. This allows them to interact frequently with one another. Additionally, Mexican Deaf individuals interact with American Deaf individuals in these border towns. Sometimes this occurs at gatherings planned by social service providers, sometimes interaction occurs in religious settings, and sometimes it occurs at someone's home. While there are those Mexican Deaf individuals who cross the border regularly, the Mexican Deaf whose language I will describe reside on the U.S. side of the border, but the amount to which they travel back and forth between Mexico and the U.S. is unknown.

In some of areas of the U.S. border, Deaf members of contact communities use LSM, ASL, and various other devices for communication.<sup>5</sup> LSM may be the language that these Deaf families used in Mexico, but ASL is often learned quickly from other members of the Deaf community. Children also learn elements of ASL from their Deaf friends at school or English-based signed systems<sup>6</sup> (for a discussion of these signed systems see Supalla and McKee, *in press*) from their teachers and/or interpreters at school since signed systems still play a significant role in the education of the Deaf in Texas. The variety of communication codes, systems, and strategies that these Deaf individuals produce create complex linguistic communities. These

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<sup>5</sup> The same may not necessarily be true in Mexican border towns. Anecdotal accounts of the language use of Mexican Deaf in Mexican border towns suggest that ASL is used only minimally on the Mexican side of the border. Thus, if an American Deaf individual would travel to a Mexican border town, she would likely encounter much more LSM than ASL. However, gestures and home signs are also used by some Mexican Deaf individuals. This dissertation is primarily concerned with language use of Deaf people who reside on the U.S. side of the border.

<sup>6</sup> In the 1970's, English-based sign systems were developed for educational purposes. These systems are not natural languages, but they do use various elements of ASL to represent English visually.

complex communities cannot be described by reference to only LSM and ASL, as will be seen later in this dissertation.

#### **1.4 MOTIVATION FOR THIS STUDY & RESEARCH QUESTIONS**

The motivation for the current study is the following: a large number of studies of contact between two or more spoken languages have been conducted, and they have informed us of many forms that contact can take. Yet there remains a lack of description of contact between users of different signed languages. Such a description could further inform us about ways in which signed languages are similar to spoken languages and ways in which they differ from spoken languages. Then, we could more confidently make claims about language universals by presenting, as evidence, those ways in which language contact takes the same form regardless of the modality in which it is produced. On the other hand, the study of contact between signed languages could also inform us about unique characteristics of the contact between signed languages. Thus, study of the contact between signed languages is necessary from a theoretical perspective, since it would address a type of contact that has yet to be explored.

Further, study of contact between LSM and ASL would likely benefit social service agencies who provide services to Deaf individuals in communities where such contact exists. For example, signed language interpreters and interpreter educators would benefit from descriptions of contact between these two signed languages insofar as those descriptions would allow them to predict the types of language production that they would expect to encounter in contact situations. As a result, interpreter preparation for such situations could be enhanced because of descriptions of contact between LSM and ASL.

The main research question is the following: How can contact between signed languages be described? In order to address this question, I will discuss data that were collected in El Paso and the Texas Valley in 2001. The data will not be discussed in terms of language change or processes that each language has undergone over the years. Rather, I will discuss the language use of the participants in this study as a “snapshot” of what can occur when bilingual and monolingual users of LSM and ASL interact. There are other, more specific, questions that I will address. For example, can *interference* be identified in the contact between two signed languages? I will follow Lehiste (1988:1-2) in defining interference as “...deviations from the norms of either language that occur in the speech of bilinguals as a result of their familiarity with more than one language”. Another question is: Can spoken language contact phenomena such as code-switching/code-mixing and lexical borrowing be identified in the language production of the participants in this study? If so, what are the characteristics of these phenomena in the contact between LSM and ASL? Lastly, what types of strategies are used for effective communication in these contact situations?

These questions address various empirical issues. For example, do signed languages that are in contact exhibit characteristics of phonological and lexical interference? If so, how does such interference compare with interference as it has been described for spoken language contact? Additionally, what are the implications of signed language contact for Deaf bilinguals who live in these contact communities? More specifically, what unique insights into bilingualism do data on signed language contact situations have to add to theories of bilingualism? While this

dissertation cannot treat all of these topics in detail, the data do provide some preliminary suggestions.

### **1.5 ORGANIZATION OF THIS DISSERTATION**

In Chapter 2, I will present a review of the relevant literature, and that review takes two forms. First, I include a brief summary of what we know about LSM, since it is the less studied language of the two. Secondly, I discuss various topics regarding language contact and what we would expect to find when focusing on the contact between two signed languages. In Chapter 3, I detail the methods that I followed while conducting this study. The following three chapters (4, 5, and 6) address various characteristics of the language production of the participants that reflect contact between LSM and ASL. Finally, I conclude this dissertation in Chapter 7, in which I include a summary of findings and also recommendations for further research.

## **Chapter 2: Literature Review**

### **2.1 BRIEF COMMENTS ABOUT THE HISTORY OF LSM AND THE DEAF COMMUNITY IN MEXICO**

The History of LSM and of the Deaf community in Mexico can be traced to the arrival of a Deaf Frenchman (Eduardo Huet) in Mexico City in late 1860's. Upon his arrival, Huet established a school for deaf children in Mexico City (Currie, 1999). Since Huet was fluent in French Sign Language (*Langue de Signes Française*; LSF) of the 1800's, it is commonly believed that the development of LSM was influenced by LSF—creating a historical link between the two languages. ASL can also be linked to LSF, but by contact via another Deaf Frenchman (Laurent Clerc) who arrived in the United States in 1816. The two languages (ASL & LSM) have developed separately.

The number of Deaf users of LSM in Mexico is unclear. Some estimates place the number of monolingual signers between 87,000 and 100,000 (Smith-Stark, 1986), but other sources claim that the numbers are unknown (Ramsey, 1998). Although there are schools for deaf children in Mexico, the number of deaf children in the Mexican educational system is also unknown (Ramsey, 1998). Most schools, however, follow an oralist method of educating the deaf, which means that there is little to no signed language used by educators. There are likely also few, if any, sign language interpreters in these schools, so the classroom is not an environment for LSM use. However, it is sometimes the case that deaf children communicate with each other using sign language that they have learned at home or through associating with other deaf individuals who sign.

One environment for the interaction between deaf individuals who live in cities is religious in nature. That is, some churches in larger cities (Mexico City, Guadalajara, Monterrey, Morelia, etc.) have weekly religious services for the Deaf. In some cases, a sign language interpreter (frequently a family member of a deaf individual) will interpret the service, and in other cases a hearing or deaf individual who signs will conduct the service. Whatever the exact situation, many deaf persons are given the opportunity to learn and use LSM by interacting with other deaf individuals at church.

## **2.2 MEXICAN SIGN LANGUAGE (LSM)**

In comparison to the large body of research on ASL, there is little scholarly work on LSM, and most of that work has been published within the past 10 years. Eatough (1992) was the first to provide a descriptive grammar of LSM. While this grammar does not contain a phonetic or phonological treatment of the language, it describes various morphological and syntactic constructions that are possible in LSM.

### **2.2.1 A grammar of LSM**

In the first section of his work Eatough (1992) briefly described various morphological processes that occur in LSM, some of which are similar to ASL morphological processes and others which differ. Based on Eatough's descriptions, the verbal agreement morphology appears to be very similar across the two languages. Also, the use of deictic points in the LSM pronominal system seems to mirror the same in ASL.

One characteristic of LSM morphology that does not exist in ASL is the suffixal marking of some common nouns for feminine gender. Most of the nouns in this category have to do with occupation, but that is not always the case. For

example, the sign NIÑO ('male child') can be followed by the feminine suffix to denote a female child. The suffix resembles the ASL sign CHILD, which iconically represents the height of a person. Such a suffix does not exist in ASL; that signed language communicates the concepts of male and female child by using the signs BOY and GIRL. But, LSM does not have separate signs for 'boy' and 'girl', so communication of the concept 'female child' in that language requires the use of the feminine suffix.

With regard to the syntax of LSM, Eatough described word order as the following: subjects usually precede their verbs and direct objects normally follow their verbs. Generally, this applies to ASL as well. However, there are also other word orders possible in ASL, and these word orders have been commonly attributed to the topicalization of a constituent or to the use of the signing space to indicate subject and object (Fischer, 1974; Liddell, 1980). Eatough did not specifically address topicalization or the use of space to allow for SOV and OSV word orders. He did, however, claim that first and second person object pronouns normally precede the verb in LSM sentences, which is similar to Spanish. Essentially, Eatough analyzed these pronouns as clitics, and his claim was that the rules for these pronominal clitics were similar to those for pronominal clitics in Spanish and French. Perhaps the production of preverbal first and second person object pronouns is in fact an indicator that the signer is producing Signed Spanish rather than LSM. However, more thorough investigations of word order would be needed to make this definitive claim.

### **2.2.2 Word order in LSM**

In my own work (Quinto, 1999), I obtained some different results regarding

basic word order in LSM. In that study, I determined that the basic word order of LSM is SVO by analyzing judgments of acceptability and narratives produced by each of five native LSM signers. However, I also noted that other word orders are also possible, and the limiting factor appears to be the use of reversible or non-reversible NPs.<sup>7</sup> Non-reversible NPs allow for more word order possibilities than reversible NPs, which can only be used in SVO order in some cases. I also pointed out that transitive clauses with overt NP subjects did not appear to be very common in LSM based on data from the elicited narratives that I collected. Rather, instances of VO or OV ordering with no overt subject were much more common in LSM narrative structure. Because of this, I suggested that an account of ‘little pro’ needed to be thoroughly investigated for LSM. In that study, I also touched upon the lack of topicalization in LSM phrases, which differs significantly from ASL, for which researchers have claimed that several types of topicalization (object NP, VP, and subject NP) can occur.<sup>8</sup> In addition to my study, Faurot et al. (1992) has suggested that verb-subject sequences tend not to be accepted as grammatical in LSM. However, there was no mention of the object of the verb in such sequences. Clearly, more work is needed on the syntactic structure of LSM.

### **2.2.3 Non-manual Signals (NMS) in LSM**

In addition to word order, one clear difference between ASL and LSM, according to the description presented by Eatough, lies in the non-manual signals

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<sup>7</sup> ‘Reversible NP’s’, according to Fischer (1975:23), are “those which could be reversed without changing the semantic acceptability of a sentence.” For instance, *John likes Mary* and *Mary likes John* are reversible NP’s whereas *John likes coffee* and *\*Coffee likes John* are not reversible NP’s.

<sup>8</sup> Lack of topicalization is not unique to LSM, even though many signed languages utilize topicalization frequently. For instance, Chinese Sign Language (CSL) is purported to utilize topicalization infrequently. I thank Susan Fischer for pointing this out to me.

(NMS) used in the two languages for questions. We know that in ASL furrowed brows are obligatory markers of root wh-questions and raised eyebrows mark yes-no questions, whereas Eatough found that in LSM a backward head tilt is used for both yes-no and content questions. In Quinto (1999), I also reported that LSM utilizes a backward head tilt for the non-manual marking of content questions. Eatough (1992:38-42) also reported a variety of other NMS in addition to the backward head tilt for questions, and those behaviors can be described as the following: yes-no questions: “..the eyebrows may be slightly raised”, use of the sign WHICH-ONE:“...head tilted back a little further and the eyebrows drawn together”, content questions with interrogative pronouns: “the eyebrows may be raised”, and content questions without interrogative pronouns: “...the eyebrows are drawn together rather than raised.”

#### **2.2.4 LSM and ASL: The same language or different languages?**

One common myth about signed languages throughout the world is that they are all the same language, and a Deaf person who knows “sign language” should be able to communicate easily with any other Deaf person in any country of the world as long as she also uses “sign language”. This is simply not true. However, in the case of LSM and ASL, similar histories may have resulted in similarities between the modern day versions of the two languages. Faurot et al. (1999) addressed this very question.

Specifically, Faurot et al. conducted two tests to assess the degree of similarity between LSM and ASL: a lexical comparison and an intelligibility test. For the lexical comparison, the authors used 100 signs of “common words” from each

language excluding number signs and fingerspelling.<sup>9</sup> Semantically equivalent signs between the two languages that differed in articulation by more than one major parameter of sign formation (handshape, place, and movement) were rated as “0”. Signs that differed in articulation by only one major parameter were rated as “5”. Finally, signs that were identical in the two languages and exhibited no differences in the articulation of major parameters were rated as 10.<sup>10</sup> The authors did not mention whether other numbers between “0” and “10” were used for the similarity rating. The authors reported that of the 100 signs, 16 were identical and 13 were similar. Given their rating scheme, they claimed that 23% lexical similarity existed between LSM and ASL.<sup>11</sup> However, of the same 100 signs, they also found 17 signs in each language that could be matched to a similarly articulated sign in the other language with a different meaning. In other words, Faurot et al. found 17% “false cognates”, to use their terminology, between LSM and ASL within this 100 word list of signs. This figure appears rather high, and I will discuss why this is so in Section 5.2.2 with the presentation of the results of this dissertation study.

Faurot et al. also conducted an intelligibility test to assess the similarity of LSM and ASL. The test consisted of showing two videotapes of short LSM texts and two of short ASL texts to four American Deaf users of ASL. After viewing the tapes, the participants were asked 10 questions per tape relating to the stories that they had

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<sup>9</sup> The words used in the Faurot et al. (1992) study were not included in the description of the study. The authors reported that their list was based on a list used in Bickford’s (1991) study of variation in LSM. Bickford compiled his own list rather than follow a specific list of lexical items designed for elicitation of lexical data (e.g., a Swadesh list) in order to avoid vocabulary that would be communicated through pointing.

<sup>10</sup> Faurot et al. mentioned that signs with variants in one of the languages were rated identical to semantically equivalent signs in the other language as long as one of the variants was identical.

<sup>11</sup> Note that 16 and 13 add up to 29 rather than 23, which is the percentage that was reported by Faurot et al. Perhaps they used another method of calculation to obtain 23% lexical similarity, but such method was not explicitly stated.

seen. The answers were then scored as correct or incorrect, but the authors did not list the criteria for the scoring. For the results, Faurot et al. (1999:3) reported that

...there was an average comprehension of the LSM text of 14%. Only two of the ten questions received any correct answers. One of these questions revolved around a highly mimed section of the story. The answer to the second question relied on one sign which happens to be a direct cognate in the two languages. It is interesting to note that the other questions which also relied on direct cognates were missed, because they were in a context of non-cognate signs.

The Faurot et al. results point to the conclusion that ASL and LSM are different languages, which are mutually unintelligible. Yet, given the fact that at least one-fourth of the signs between ASL and LSM are articulated similarly, there might exist a basic level of understanding for monolingual users of either of the languages. However, we would expect that there would also be misunderstandings and general lack of understanding between monolingual signers because approximately three-fourths of the signs are articulated differently. If we add false cognates to the mix, it seems that there is a great potential for miscommunication between monolingual signers of LSM and ASL.

### **2.2.5 LSM: One language or several?**

In addition to comparative studies of LSM and ASL, other researchers have addressed variation in LSM at the lexical and phonological level. In this section, I will discuss three works on this topic: Bickford (1991), Currie (1999), and Faurot et al. (1999).

After an initial discussion of LSM as a single language, a cluster of closely-related languages, or something other than a language, Bickford (1991:244) posed the following three questions:

1. How much variation is there from one dialect of MSL (LSM) to the other?
2. Is it great enough to consider them to be different languages, or just dialects of the same language?
3. What sociological factors are important in defining dialect boundaries?

In order to begin to answer these questions, Bickford cited the opinions of several people with whom he spoke regarding the issue of whether variation within LSM impeded intelligibility. Based on these discussions, the major factors defining dialect boundaries were assumed to be location, age, and religion. For example, Mexico City was purported by one informant to have three dialects of LSM: “the traditional signing of people in their 40’s and above, the somewhat more innovative signing of young adults, and a ‘street slang’ which is used mostly by teenagers and is especially distinguished by its greater use of profanity.”(p. 245) Bickford also reported that there were dialectal differences between Catholics and Baptists in Mexico City, where there was only one Catholic parish and one Baptist Church with focused ministries for the Deaf. Furthermore, the variable of religion seemed to be linked to age inasmuch as the majority of the Baptist Deaf congregation consisted of young families and singles in their twenties whereas the Catholic Deaf congregation (about 200 people) was characterized by middle-aged or older individuals. It is not clear if Bickford considered the concept of register in his analyses. The “dialectal differences” that he noted may in fact be attributable to differences of register. An investigation of register versus dialectal differences would likely necessitate, among other things, the elicitation of signs (or words) from a language user in various contexts ranging from situations that call for “formal” language to situations that call for “informal” language. Then, the language use of that individual could be compared to language use of others in similar contexts in order to determine if

differences can be attributed to register or dialect.

On the basis of this preliminary information, Bickford made a lexical comparison of the signs of different users of LSM with special attention to the sociological variables of age and religion. There were two sources of data for this study: four published dictionaries of LSM and signs produced by five Deaf subjects.<sup>12</sup> Two of the five subjects were from Hermosillo, Sonora (approximately 1200 miles northwest of Mexico City), one from Cuernavaca (approximately 60 miles south of Mexico City), and two from Mexico City. A list of 100 words was used as stimuli, and the subjects in the study were shown the words written in Spanish and asked to produce signs for them.

The collected data were analyzed for differences across signers. Bickford established criteria for ‘similar’ vs. ‘identical’ for his analysis of signs. To be ‘similar’, the signs in question could not differ by more than two features (handshape and/or orientation, type or location of movement, point of contact, etc). If two signs met this criterion, they were labeled ‘cognates’. The process of analysis that yielded the label ‘identical’ is less clear. Bickford stated, “I assumed that signs from two sources were identical if the transcription was not clear enough to distinguish them” (1991:250). Therefore, it would seem that two signs could have been incorrectly coded as identical when, in fact, they were only similar. Recognition of this and other problems of analysis led Bickford to state that the percentages of identical signs may have been artificially raised, a possibility that must be borne in mind when interpreting the results.

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<sup>12</sup> Of the four dictionaries used by Bickford, one is reported to include signs from throughout Mexico, another the signing in Monterrey, and the remaining two were purported by Bickford to be representative of the signs used in Mexico City.

Bickford reported that the percentages of lexical similarity between the signs produced by the five subjects were all above 90%. This led to his claim that the different sources were dialects of the same language rather than separate languages. However, Bickford did not discuss this claim in detail. He reported that age was a significant factor in the dialect variation in LSM. Most of the variation was classified as phonological as opposed to lexical.

Using data collected in Mexico City and Aguascalientes<sup>13</sup>, Currie (1999) also claimed that LSM is a single language with individual and dialectal variation. However, by documenting and analyzing the specific sign formation parameter(s) involved in that variation, she was able to determine that variation tends to occur within some parameters more than others. Specifically, Currie showed that variation occurred more frequently in the parameters of handshape and movement than in place of articulation. Essentially, her basic claim was that handshape and movement tend to be sources for variation, whereas location is much more stable. Interestingly, Currie found this to be true regardless of the background of the signer (native vs. non-native signer) and regardless of the geographical location of residence (Mexico City vs. Aguascalientes).

The claim that LSM is one language is echoed in Faurot et al. (1999), based on the authors' experiences interacting with Deaf individuals in Guadalajara and Monterrey. They stated that there were two reasons why they addressed the question of the identity of LSM as an independent language from ASL:

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<sup>13</sup> Aguascalientes is a city about 300 miles northeast of Mexico City.

First, many of the sign languages in Latin America are products of either missionary efforts from the United States or the Deaf Peace Corps.<sup>14</sup> Although there is missionary influence in the Mexican sign near the US/Mexico border, there appears to be little significant influence in the interior (with the notable exception of religious vocabulary). As far as we know, there has been no Deaf Peace Corps influence in Mexico. (1)

It is not clear which signed languages Faurot et al. believe to be influenced by ASL because of missionary efforts. However, they do claim that LSM as used in the interior does not fall into that category of signed languages, but that LSM along the border is influenced by missionary efforts. Unfortunately, the authors do not specify which part(s) of the border they are referring to, and they do not specify the results of such influence. Nonetheless, the evidence given in Bickford (1991) and Currie (1999) allows me to confidently discuss contact between two separate languages—the type of contact that occurs along the U.S.-Mexico border in areas with high percentages of Mexican Deaf individuals.

### **2.3 STUDIES OF SPOKEN LANGUAGE CONTACT**

The study of contact is a multi-faceted specialization, and the approaches taken by various researchers can be as different as night and day. Some researchers focus on sociolinguistic variables such as age, gender and social class when addressing language contact data, while others focus primarily on the linguistic form that speakers' utterances take. Regarding the effect of contact on linguistic structure, I will present phenomena that have been documented for spoken language contact, and that presentation can be found in Section 2.3.1. Then, in Section 2.3.2, I will

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<sup>14</sup> Faurot et al. did not explain what they meant by the terms “Deaf Peace Corps”. To my knowledge, there is no separate branch of the Peace Corps comprised solely of Deaf individuals. However, there have been teams of Deaf individuals in the Peace Corps that have traveled to foreign countries to specifically address education and advocacy for Deaf people of those countries. The reference in this quote is likely to those teams of Deaf Peace Corps volunteers.

briefly describe a few reports that have addressed contact between two very similar spoken languages or language varieties. These reports may give us an idea of what to expect regarding the contact between LSM and ASL, which, based on the literature review in 2.2, share approximately 25% of their lexicon and show similar syntactic structures. As I will discuss in Section 5.1.1, the phonological differences between LSM and ASL appear to be minor. Thus, contact between these signed languages that share many characteristics may mirror contact between two spoken languages that also share many characteristics. The discussion of phonologically and structurally similar spoken languages that I present in this section is not intended to imply that contact between two signed languages should only be compared to two spoken languages that are historically related. After all, closely related spoken languages (such as French and Spanish) can differ structurally (e.g., French requires overt subjects while Spanish does not) and unrelated spoken languages can exhibit structural similarities.

### **2.3.1 Issues of language contact in the spoken language literature**

One topic that is central to the study of contact between languages is the concept of interference. As noted, interference, as defined in Lehiste (1988:1-2), constitutes the “...deviations from the norms of either language that occur in the speech of bilinguals as a result of their familiarity with more than one language.” Some researchers may consider realizations of interference as errors since the language user, in these cases, seems to be producing elements of one language with elements of the other. Others may have a different perspective and view interference as perhaps resulting in a third system called *interlanguage*. Interlanguage has been described as the highly structured system that results from a user of language learning

a second language (Selinker, 1969; 1992). In a general view of interlanguage, what others might view as errors are instead analyzed as systematic characteristics of a third system that differs somewhat from the other two languages. In the presentation of data from this dissertation study, I will use the term interference to refer to deviations from the norms of monolingual language production. Similar to some studies of interlanguage, I choose not to refer to cases of interference as errors, but rather as systematic examples of a code that results from the mixing of at least two other codes or languages.

Lehiste claimed that interference can occur at the phonetic or phonological level. For example, two languages that are in contact may have a phoneme that is defined identically across the languages, but the phonetic realization of that phoneme may be different across the two languages. Thus, in a contact situation, the pronunciation of a word that contains that phoneme may be influenced by the phonetic realization of the phoneme from the other language. Lehiste explained that this type of interference is often referred to as *sound substitution*, but in laymen's terms it might be called a "foreign accent". Lehiste (1988:2-3) presented the following example of sound substitution:

...the phoneme /t/ is found in Slavic languages as well as in English, but in Slavic languages /t/ is normally dental (articulated with the tip of the tongue against the inner surface of the upper front teeth), whereas in English /t/ is normally alveolar (articulated with the tip of the tongue against the alveolar ridge). In Slavic languages the phoneme /r/ is realized as a tongue-tip trill, whereas in American English /r/ is a retroflex continuant.

This means that a person whose native language is a Slavic language may systematically pronounce instances of /t/ in English words as dental consonants rather than alveolar consonants.

According to Lehiste, code-switching or code-mixing between two or more languages can also constitute instances of interference, although code-switching/code-mixing may not be viewed as interference by other authors. Code-switching is often defined as the inter-sentential switching from one language to another, while code-mixing often refers to intra-sentential switching between languages. Yet, some authors use these terms in different ways. For instance, regarding work on signed language use by interpreters, Davis (1990a, 1990b) chooses the term *code-mixing* to refer to the simultaneous mouthing of an English word with the production of a sign whereas he reserves *code-switching* for sequential switches from elements of one language to elements of the other. Other authors prefer the term *code-alternation* to refer, in general, to code-switching and code-mixing.

The functions of switching from one language (or code) to another have been described in many different ways. However, there are some typologies of switching that have been presented or discussed, such as the following from Auer (1995:120):

- (i) *reported speech*
- (ii) *change of participant constellation*, particularly addressee selection – this includes the use of code-switching in order to include/exclude/marginalise co-participants or bystanders
- (iii) *parenthesis or side-comments*
- (iv) *reiterations*, i.e., quasi-translations into the other language, for example for the purpose of putting emphasis on demands or requests, or for purposes of clarification, or for attracting attention, e.g., in the regulation of turn-taking (also called ‘translations’, ‘repetitions’, or ‘recycling’)

(v) *change of activity type*, also called ‘mode shift’ or ‘role shift’

(vi) *topic shift*

(vii) *puns, language play, shift of ‘key’*

(viii) *topicalisation, topic/comment structure*

Auer also suggests that typologies such as the one presented above can be problematic for reasons. For example, the categories may be ill-defined and the categories may be mixed: some are conversational structures, some are linguistic forms, and others are functions of code-alternation. Further, there are issues with using typologies for speaking to theories of code-alternation. Plus, these types of typologies, according to Auer, do not inform us about the directions of code-alternations and similarities or differences between various configurations of alternation. For example, does a code-switch from language A into language B mean the same thing as a similar switch from language B into language A? As one can see, code-switching and code-mixing are complex areas of study that require careful analysis and presentation.

Several authors have taken a structural approach to code-switching or code-mixing by focusing on the syntactic points at which people can alternate between two or more languages. For example, Poplack (1988) analyzed codeswitching with a focus on surface structure and the manner in which switches can occur at structures that are ‘equivalent’ in both languages. Myers-Scotton (1993a, 1993b), on the other hand, created a model of codeswitching, which focuses on a hierarchical structure between the two languages involved. Finally, other research (Belazi, Rubin, & Toribio, 1994; Toribio, 1998) has addressed codeswitching by utilizing a ‘constraint-based’ model that follows the tenets of the Government and Binding/Minimalism

theories of formal syntax. Approaches to the analysis of code-switching are varied and there is often disagreement by researchers regarding various points. Despite that, most researchers in this area agree that code-switching and code-mixing are bilingual rule-governed behaviors.

There are various other outcomes of language contact at the lexical level—some of which have been attributed to interference from one language on elements of the other. For instance, we can trace diachronic lexical change such as the development of loan shifts, loan translations or calques, and borrowings or loanwords to interference between two or more languages. Loan shift, as defined by Lehiste (1988:20) is “...the extension of a morpheme in Language A to include the meaning of the same morpheme in Language B.” A loan translation or calque is the direct translation of the meaning of a morpheme in Language A with the meaning of a morpheme in Language B. And, a borrowing or loanword is a word that originated in Language A but that has been partially or wholly integrated—phonologically and morphologically—into Language B. Some studies have discussed the use of borrowings/loanwords such as the Rodríguez González (1996) volume on Spanish loanwords in English.

We can also characterize language contact in terms of various outcomes such as: Foreigner Talk (FT), individual bilingualism, community or societal bilingualism, the development of pidgin and creole languages, and language maintenance, shift, and decline/death. Each of these topics is complex and requires careful description and analysis techniques. Brief descriptions of FT and bilingualism are presented below.

Foreigner Talk, as it has been described for the contact between spoken languages, is slow exaggerated speech, greater loudness, increased repetition, full

forms instead of contractions, increased use of standard forms, replacements, reduction of inflection, and greater use of feedback devices (Ferguson and De Bose, 1977; see Bingham, 1996 for a review of the literature on foreigner talk). Similar devices have been noted for FT in signed language (Myles-Zizter, 1990). In order to determine if a specific token of language production exhibits any of these features, one would need to determine what a standard would be. For example, to determine if a token exhibits “greater loudness”, one would have to know what “normal loudness” is and have a way to reliably measure loudness. This is just one example of the potential complexity of determining whether a particular token exhibits characteristics of FT as a result of the contact between two languages or language varieties.

Bilingualism, both at the level of the individual and the community, has been studied by many researchers (see Grosjean, (1982) and Lehiste, (1988) for surveys of the relevant literature). There are, of course, differing views on bilingualism and how to define it. For some authors, bilingualism is defined by level of fluency in the two languages. Haugen (1969:6-7) views it as the ability of a speaker of one language to “..produce complete, meaningful utterances in the other language.” For other authors, bilingualism refers to the regular use of two languages (Grosjean, 1982). In addition to debates about the definition of bilingualism, there are differing viewpoints about how to characterize a bilingual. One view is that the bilingual is the equivalent of two monolinguals in one person, whereas another view, such as the one expressed in Grosjean (1992:308) is that the bilingual is a:

..specific and competent speaker-hearer who has developed a communicative competence that is equal, but different in nature, to that of the monolingual. This competence makes use of one language, of the other, or of two together (in the form of mixed language) depending on the situation, the topic, the interlocutor, etc.

This latter view of bilingualism accounts for those individuals who alternate, sometimes within sentences or even lexical items, between elements of both languages.

For some authors, bilinguals who interact frequently with other bilinguals have the potential of developing “communicative norms” that govern the language use of the bilingual speaker (Haugen, 1977). This concept of the communicative norm of the bilingual takes into account the wide range of situations in which a bilingual speaker can find herself. For example, the bilingual could be communicating, in various settings, with other bilinguals of varying degrees of competency in the two languages, or she could be communicating with monolinguals. Despite the various language possibilities and settings, a bilingual language user, along with other bilinguals, can develop a “contact dialect”, or according to Haugen (1977:94), “..a dialect that differs from regional and social dialects by being characteristic of bilingual speakers who incorporate features from other dialects or languages.” Just as monolingual language use is governed by various social factors and linguistic rules, the contact dialect of the bilingual can be described according to certain norms. The challenge for researchers who work on contact dialects and bilingualism is to identify those norms.

In addition to addressing purely linguistic matters, sociolinguistic topics such as language identity, language attitudes, and language conflict can be explored in

language contact situations as well. Nelde (1995:82) paints a picture of the complexity of language contact as an area of study:

As an interdisciplinary branch of multilingual research, contact linguistics incorporates three areas of inquiry: language use, language user, and language sphere. The significant parameters of contact linguistics are linguistic levels (phonology, syntax, lexicon) as well as discourse analysis, stylistics, and pragmatics. In addition there are extra-linguistic factors such as nation, language community, language boundaries, migration, and many others.

It is evident in the account by Nelde that the study of language contact can encompass many different foci.

Many volumes have been devoted to contact phenomena. Some deal with language contact while considering cultural and social issues that inform the contact phenomena (Auer, 1998; Muysken, 1998; Pütz, 1994; Silva-Corvalán 1995). Some focus on specific linguistic outcomes of contact such as code-switching (Auer 1998) or bilingualism (Appel & Muysken, 1987). Others address language contact using various approaches and focusing on several contact phenomena (Jahr, 1992, Muysken, 1998; Nelde, 1983; Roca & Jensen, 1996; Silva-Corvalán, 1995). Without a doubt, language contact phenomena in spoken languages have been studied extensively.

### **2.3.2 Contact between structurally and phonologically similar spoken languages**

The vast majority of studies of the contact between two or more languages concern contact between two dissimilar languages. For example, there exist many studies of phenomena that result from contact between Spanish and English—two languages that differ significantly in terms of their phonologies and verb morphologies. However, there exist comparatively few studies that address contact

between two structurally or phonologically similar languages. These types of studies might, in fact, inform us about possible outcomes of contact between two signed languages, since it has been suggested that signed languages have similar phonologies (Lucas & Valli, 1992), and signed languages contain expressive forms that tend to be similar cross-linguistically (Pizzuto & Volterra, 2000). The purpose of this section is the following: to show types of phenomena that have described contact between two structurally and phonologically similar spoken languages. These spoken language studies can more appropriately be compared to the present study than studies that deal with phonologically and structurally different languages. As mentioned earlier in this chapter, contact between historically related spoken languages is not the only place to explore the manners in which languages with similar phonologies and grammatical structures interact. One could also look at contact between two unrelated languages that share phonological or grammatical characteristics. The studies presented in this section are examples of the types of contact between two or more phonologically and similar languages that share a geographical location, but they happen to be languages that are also historically related.

The first two studies that I will briefly discuss concern contact between users of Portuguese and Spanish in areas along the border between Uruguay and Brazil in South America. In the first study, Hensey (1993) described instances of phonological, morphological and syntactic, and lexical interference from Portuguese on the Spanish spoken by schoolchildren. The data were taken from survey responses of 131 primary school teachers to questions about "...‘problems’ or ‘deviant forms’ commonly used by their pupils in the areas of orthography, pronunciation, grammar, and vocabulary." (439) Phonological interference was described in terms of

influences from one language to the other in the production of vowels and consonants. For example, Hensey (1993:440) reported that the following occurred with vowels: monophthongization of standard Spanish diphthongs (*tempo*, *ferro*, *oco*, *ovo*, for *tiempo*, *fierro/hierro*, *hueco*, *huevo*); and diphthongization of standard Spanish simple vowels (*pierro*, *yelado*, *tuerta* for *perro*, *helado*, *torta*).” In terms of morphology and syntax, Hensey described the loss of plural markers, replacement of definite articles, and replacement of personal pronouns in the Spanish of the schoolchildren. Finally, Hensey listed many words from Portuguese that were used by the schoolchildren, as reported by the teachers. Among the Portuguese lexical items used in the schoolchildren’s Spanish were nouns, verbs, adverbs of time and space, and pronouns. Hensey also mentioned that some of the Portuguese forms reported by the teachers could be paired with homophonous Spanish forms that differ in meaning such as *brincar*, which means ‘to play’ in Portuguese and ‘to jump’ in Spanish. As can be seen, contact between Portuguese and Spanish is evident at various levels—from the phonology to the lexicon. Note that one form of contact between these very similar spoken languages concerns homophonous lexical items; I will refer back to this topic after presenting the data of the current study.

Elizaincín (1995) also discussed elements of Portuguese in Uruguayan Spanish, but he focused primarily on syntactic matters. Specifically, he described the use of third person pronouns as inanimate subjects in the Spanish of the northeast region of Uruguay. The use of third person pronouns in this fashion is common in Portuguese, but not normally in Spanish. Additionally, Elizaincín noted that several Portuguese words have been incorporated into the Spanish of this area. In his conclusion, Elizaincín (1995:129) noted the particular character of the contact

between very similar languages:

The phenomenon dealt with here is characteristic of contact between varieties of two languages that are genetically and historically very close, and structurally very similar. As it is well known, this is one of the situations of highest complexity in the study of languages/dialects in contact.

In another very interesting case of contact between Romance languages, specialized codes or lexicons are the focus of contact. In Argentina, a number of Italian-influenced words are used for communication between members of the underworld counterculture (Chamberlain, 1981). The words help to form a code known as Lunfardo. Several scholars have reported on the Italian influence on the words in this code, presumably caused by Italian immigrants to Argentina over the years (Chamberlain, 1981; Meo Zilio, 1985; Simón Casas, 1991). However, there also exists a form of this “underworld code” used in Brazil that resembles Portuguese more readily, and that code is known as Gíria. Chamberlain (1981) showed that there are many similarities between Lunfardo and Gíria. This is an interesting case of three romance languages coming into contact with each other: Spanish, Italian, and Portuguese. It appears that their similar phonologies allow for the development of two separate codes that resemble each other lexically. This suggests that phonologically similar (and, in this case, genetically- and historically-related) languages would likely share lexical items.

## **2.4 STUDIES OF SIGNED LANGUAGE CONTACT**

### **2.4.1 Contact between a signed and a spoken/written language**

Most of the work on the topic of contact with regard to signed languages has focused on contact between signed and spoken or written languages. In a synthesis of some of the research relevant to this topic, Lucas and Valli (1992) discussed various

possible outcomes of contact between a signed and a spoken language, but they made a distinction between those contact phenomena that have parallels in spoken language contact and those that are unique to contact between a signed and a spoken language. Regarding the former, the authors believed that code-switching and lexical borrowing phenomena could be described between a signed and a spoken language, and that would mirror work on contact between two spoken languages. But, they claimed that phenomena unique to contact between signed and spoken language are the following: fingerspelling, fingerspelling/sign combination, mouthing, CODA-speak, TTY conversations, code-switching, and contact signing (which they also termed code-mixing). I will present various studies that are concerned with some of the contact phenomena suggested by Lucas and Valli.

Lucas and Valli made the distinction between code-switching following spoken language contact criteria and code-switching as a unique phenomenon of the contact between a signed and a spoken language for one crucial reason: signed and spoken languages are produced in two different modalities, and this makes a difference regarding how these contact phenomena are discussed. For example, a discussion of code-switching between a signed and a spoken language according to contact language criteria would necessarily mean that the language user would need to completely change from one type of language production (e.g., signing) in order to make the “switch” to the other type of production (e.g., speaking). Lucas and Valli give various examples of these types of switches—usually performed by hearing users of both languages. This type of code-switching differs from an analysis where a signer is purported to alternate between linguistic elements of a signed and a spoken language, such as ASL and English, while continuously signing. Contact of this

nature can be witnessed frequently in the signing of many Deaf and hearing individuals, and most work on contact between a signed and a spoken language concerns this type of contact.

There are several works that have addressed fingerspelling as one result of the contact between a signed and a spoken or written language. One of the first works on the subject addressed the manner in which some fingerspelled words become lexicalized over time (Battison, 1978). Other works have looked at the manner in which fingerspelling items can form compounds with ASL signs (Brentari & Padden, 2001; Padden, 1998) and how fingerspelled words form “articulatory envelopes” that resemble signs in some ways (Akamatsu, 1985). Contact issues related to fingerspelling have also been discussed in the context of code-switching (Kuntze, 2000). Fingerspelling in a signed language has also been considered a form of borrowing (Miller, 2001). Lastly, a ideogram-based orthography and its influence on sign formation in signed languages is another way in which contact between a signed language and a written language is realized (Ann, 2001).

Another characteristic of contact between a signed and a spoken language is the mouthing of spoken words while producing signs. Several authors have addressed this characteristic with data from ASL and English (Davis, 1990a, 1990b), Swiss German Sign Language and German (Boyes Braem, 2001), and other European sign languages as well (see Ann, 2001 for a brief discussion of relevant works).

Code-switching and code-mixing between a signed and a spoken language have also been described by various authors. For instance, research has looked at the manner in which code-switching as a function of the language background and use of the interlocutor is performed by deaf adults (Hoffmeister & Moores, 1987; Lee, 1983)

and deaf children (Kachman, 1991). Other authors have explained the difficulty in determining whether a stretch of signed discourse can be labeled code-switching or borrowing (Lucas & Valli, 1992) and the difficulties of using these spoken language contact terms for cases where a signed language is in contact with a spoken language. Because of these difficulties, Lucas and Valli have claimed that contact between ASL and English results in a third system, which they term “contact signing”.

Language contact between English and ASL has also been used as arguments for the existence of a signed pidgin (Woodward, 1973b) and diglossia (Stokoe, 1969; Woodward, 1973a) in the American Deaf community. However, the designation of ASL-English contact as a pidgin has been challenged by Cokely (1983) in favor of an analysis that labels such language use as instances of foreigner talk, judgments of proficiency, and ASL learners’ attempts to master the target language. Fischer (1996) asserted that the alleged pidgin (Pidgin Sign English; PSE) that results from contact between ASL and English does indeed have many of the characteristics of pidgins. Yet, there is a major difference between PSE and most other pidgins, according to Fischer, and the difference is that the vocabulary of PSE comes from the substrate (ASL), whereas the grammar comes from the superstrate (English). This characteristic, Fischer (1996:2) asserts, is “...the opposite of what is typically found in pidgins.” In addition to discussions of signed pidgins in the context of contact between a spoken and a signed language, one author believes that we need to consider initialized signs as outcomes of such contact (Machabée, 1995).

#### **2.4.2 Contact between two or more signed languages**

The topic of this section mirrors the subject matter of this dissertation, but it is also the topic within this literature review with the least number of references.

Unfortunately, few studies have addressed the contact between two or more signed languages, and I know of no other studies that address contact in a border community. I am not suggesting that the topic of contact between two or more signed languages has been ignored in the literature. In fact, Lucas and Valli (1992) suggested various possible outcomes of contact of this type, some of which can be confirmed with the data from this study. But, linguistic data that describe contact between two signed languages are nearly nonexistent in the literature.

As I mentioned above, Lucas and Valli (1992) briefly discuss several possible outcomes of contact between two signed languages. Specifically, they are the following: lexical borrowing, foreigner talk, interference, and the creation of pidgins, creoles, and mixed systems.

Supalla and Webb (1995) discuss the topic of the creation of pidgin and Creole languages. In that work, the authors address the structure of the International Sign produced by two Deaf presenters at an international conference of Deaf individuals. International sign, according to the authors, is a "...type of signing used when deaf signers communicate across mutually unintelligible language boundaries."(334) In other words, Deaf individuals who interact with each other, primarily at international gatherings, despite the fact that they use different signed languages, use International Sign for communication. Based on this description, the authors claim that there would not exist native users of International Sign and it would be used only for restricted purposes. In these ways International Sign resembles spoken language pidgins, but Supalla and Webb suggest that it is much more structurally complex than spoken pidgins.

Based on linguistic analysis of signed texts from an international conference

for the Deaf, Supalla and Webb claim that verb agreement, word order, and negation in International Sign are systematic and rule-governed. In terms of verb agreement, they report that verbs are frequently and complexly inflected. The word order of International Sign is usually SVO, but it can also be described in terms of other structures in which pro-drop and object function account for the surface structure of the phrases. Regarding negation, Supalla and Webb (1995:346-347) claim that a signer of International Sign appears to use "...a limited number of negative devices similar in structure and form to those used in full signed languages." Thus, the proposal is that International Sign more closely resembles full signed languages than a pidgin, even though it exists in a language contact situation that would characterize pidgins in spoken languages. This suggests that there is likely something fundamentally different between languages in the visual/gestural and auditory/oral modalities. One would not expect to come across an international gathering of hearing people in which the presenters communicate with the participants in an international form of spoken language. The visual/gestural likely allows for more inter-lingual similarities than the auditory/oral modality.

In another study, Yoel (2001) addressed the attrition of Russian Sign Language (RSL) in several Russian individuals who had immigrated to Israel and subsequently learned Israeli Sign Language (ISL). The author found, through two lexical naming tests, that there was evidence of influence from ISL in elicited RSL forms. In some cases, phonological parameters from one language were substituted in a semantically equivalent sign from the other language. These substitutions occurred even though most of the participants claimed to be more comfortable producing RSL than ISL. Despite their claims, there were still cases of interference.

Some of the subjects also reported that they code-switched frequently between RSL and ISL. Yoel concluded that based on the tests of RSL lexical production, the subjects demonstrated evidence of attrition of RSL, and that attrition was attributed to influence from ISL. While this study did not address two signed languages that share a geographic border, it provides a look at language contact between users of two different signed languages—a topic that has been addressed only minimally in the literature.

## **2.5 STUDIES OF LEXICAL SIMILARITIES BETWEEN SIGNED LANGUAGES**

Several studies of the similarity between different signed languages have been conducted over the years. In general, these studies suggest that signed languages are lexically more similar to each other than spoken languages. This section will briefly review the literature in this area.

In an early work on the comparison of 20 lexical items across 12 signed languages, Woll (1984) showed that there is a high degree of lexical similarity between signed languages. Most of the signed languages about which Woll reported data were European, but Israeli Sign Language and Chinese Sign Language were also included in the study. By comparing pairs of those 12 signed languages to each other, she found that no pair of signed languages had a similarity score of less than 40%, and some pairs reached an 80% similarity score. Woll (1984:91) accounted for some of the similarities by appealing to historical relationships between the signed languages, but she also mentioned other possible scenarios such as: the borrowing of signs as a result of contact, accidental similarities of signs from one language with signs of another language, and similarities due to “..some specific cultural or universal propensities to label concepts in particular ways.” Based on these data,

Woll raised a question about the purported mutual unintelligibility of these different signed languages, and she suggested that signed languages lie somewhere on a continuum between being universal and mutually unintelligible.

Addressing signed languages on the North American continent, earlier in this chapter, I discussed a preliminary analysis of the lexical similarity between LSM and ASL that Faurot et al. (1999) conducted. It is interesting to compare this claim with other studies of lexical similarities between signed languages. For instance, Guerra Currie, Meier, and Walters (in press) suggest, as did Woll (1984), that there is a relatively high degree of judged similarity between signed language lexicons. In order to examine the degree of similarity between several signed language vocabularies, Guerra Currie et al. analyzed lexical data from four different languages: Mexican Sign Language (LSM), Spanish Sign Language (LSE), French Sign Language (LSF), and Japanese Sign Language or Nihon Syuwa (NS). After conducting pair-wise comparisons of samples drawn from the lexicons of these four languages, Guerra Currie et al. suggested that signed languages exhibit higher degrees of lexical similarity to each other than spoken languages do—likely as a result of the relatively high degree of iconicity present in signed languages. It is not surprising that this claim is made for those signed languages that have historical ties like LSM and LSF, but it is interesting that it also applies to comparisons of unrelated signed languages between which no known contact has occurred and which are embedded in hearing cultures that are very different (e.g., LSM and Japanese Sign Language). In fact, the authors found that 23% of the sign lexicons that they analyzed between LSM and NS were similarly articulated. Interestingly, this is the same figure that Faurot et al. (1999) obtained when conducting their comparison between LSM and ASL signs.

Guerra Currie et al. suggest, as have other writers, that there likely exists a base level of similarity between the lexicons of all signed languages regardless of any historical ties that they may or may not share. This base level of similarity likely lies at 20% or higher.

Pizzuto and Volterra (2000) suggested that there are likely universals across signed languages, and such universals may help users of signed languages comprehend other signed languages. This study was concerned with the comprehension of Italian Sign Language (LIS) signs by various groups of people: Italian non-signers, European (non-Italian) non-signers, and European (non-Italian) Deaf signers. The authors found that there were certain signs that were highly iconic—signs in which the meaning was transparent to all participants regardless of their language backgrounds or hearing status. They also found that another group of signs were understood by the Deaf participants (regardless of nationality and signed language background), but not the hearing participants. These results support earlier suggestions that signed languages contain expressive elements that can be categorized in at least three ways: 1) highly iconic or pantomimic elements that tend to be understood by signers and non-signers alike, 2) elements that appear to be more linguistically based than those in category 1, which include classifier elements; these tend to be understood by Deaf signers regardless of their language backgrounds, and 3) language-specific elements that differ from language to language and which tend to be understood only by signers of that particular language (Boyes Braem, 1981, 1984, as cited in Pizzuto & Volterra, 2000; Corazza & Volterra, 1988).

The studies summarized in this section point to one conclusion: the degree of lexical similarity between signed languages is relatively high in comparison to spoken

languages, and this is also true for signed languages that have no known historical links. This fact suggests that users of different signed languages would likely understand each other more easily than users of different spoken languages. In Chapter 5, I will present data from the current study that speak to the sources of similarity between the production of LSM and ASL. Those data highlight several ways in which signers produce some types of meaningful elements, some of which can be labeled as signs and others whose labels are not as clear, that are relatively transparent to the interlocutor regardless of her signed language ability.

## **2.6 WHAT WE MIGHT EXPECT TO FIND IN THE CONTACT BETWEEN TWO SIGNED LANGUAGES**

Lucas and Valli (1992) suggested several outcomes of language contact between two signed languages. Their major categories were the following: lexical borrowing, foreigner talk, interference, and pidgins, creoles, and mixed systems.

In terms of lexical borrowing, the authors caution that it would be difficult to determine the difference between an instance of lexical borrowing and code-switching (or code-mixing) in signed languages. The issue is that borrowings, in spoken language work, have been traditionally characterized by phonological integration of the borrowed word into the phonology of the other language, but this integration may not be evident in signed languages. This is because, the authors note, signed language phonologies share many basic components with each other. Thus, in an environment in which two signed languages are frequently used, it might be difficult to definitively determine which phonology (e.g., Language A or Language B) the signer is using in some instances. Because of this, the authors claim that using terms like *borrowing* and *code-switching* may be problematic when looking at signed

language contact situations. Lucas and Valli also added that other lexical phenomena such as loan blends, nonce borrowing, and loan shifts or loan translations are possible in the contact between signed languages.

I briefly discussed foreigner talk as it has been described for spoken language contact in Section 2.3.1, but characteristics of foreigner talk have also been described for the visual-gestural modality. For example, Myles-Zitzer (1990) examined the foreigner talk characteristics of narratives produced by a native Deaf user of ASL to three individuals: another native Deaf signer, a non-native intermediate signer, and a non-native novice signer. The elements of foreigner talk that she focused on were divided into two areas: those which could be measured perceptually and those which required linguistic analysis. For example, characteristics that she measured perceptually included the production of slow exaggerated signs, the production of larger and wider signs, the increased use of repetition, and the use of full forms instead of contractions. Those characteristics, on the other hand, requiring linguistic analysis included increased use of standard forms, use of replacements, reduction of inflection, and greater use of feedback devices. Many of these items mirror those discussed for foreigner talk in spoken languages.

Some instances of interference may be evident in the phonological parameters of sign formation. Lucas and Valli (1992:35) refer to this type of interference in the following extract: "...it might be precisely the lack of phonological integration that might signal interference—for example, the involuntary use of a handshape, location, palm orientation, movement, or facial expression from one sign language in the discourse of the other." Interference may also be evident at other levels of language structure, such as the morphology or syntax of one or both of the signed languages.

Finally, Lucas and Valli referred to the possibility of the creation of pidgins, creoles, or mixed systems, as a result of the contact between two signed languages. It seems that treatment of these topics would necessitate presentation of information about the contexts in which these systems arise as well as language data from those contexts. Presently, there continue to be works written about current language varieties that exist in the U.S. and whether or not they are pidgins, creoles, or mixed systems. These topics require further attention, and perhaps work on contact between two signed languages will shed light on some of the issues.

Based on the contact between similar spoken languages (Section 2.4.2) and brief descriptions of lexical comprehension tests, we might predict certain results of contact between two signed languages. First, there may likely be interference where articulatory or structural elements of the two languages differ. This would be akin to the interference found in the pronunciation of Uruguayan Spanish in places where it comes into contact with Portuguese. Additionally, there are likely to be a significant number of shared lexical items between two signed languages in contact, and this is predicted by several cross-linguistics studies of signs (see Section 2.5) as well as the manner in which similar spoken languages (e.g., Spanish, Italian, and Portuguese) can come together to develop inventories of words that are shared across the three languages (see Section 2.3.2). Also, in the contact between two signed languages there are likely to be other items that are more pantomimic in nature, as suggested by Pizzuto and Voltera (2000).

## **Chapter 3: Methodology**

In this chapter, I will explain what I did to collect language samples and document them for analysis. In Section 3.1, I will discuss the basic design of the study. Section 3.2 will address selection of the participants, and Section 3.3 covers the protocols that I used for language elicitation. In Section 3.5, I explain the process of data collection that I followed, and Section 3.6 contains the steps that were taken for documenting the language samples for subsequent analysis.

### **3.1 DESIGN OF THIS STUDY**

I designed this study to collect language data from two settings: one-on-one interviews and group discussions. The same individuals participated in both settings. Identical data collection procedures were used with two different sets of participants at two sites: El Paso and the Texas Valley. At each site, interviews and group discussions were led by a Deaf bilingual (LSM-ASL) signer. In addition, at least one other bilingual signer and two largely monolingual signers—one whose primary language is ASL and the other whose primary language is LSM—also participated. Thus, there were four participants at each site. Detailed criteria for involvement in this study as well as profiles of the participants are given in Section 3.2.

This design was employed in order to simulate a contact situation in which several people from various language backgrounds and abilities engage in conversation. My hypothesis was that the language production of the participants during the group discussion would resemble the language use of LSM and ASL users who interact in these sites regularly. Specifically, I predicted that language mixing

would occur in the group discussions because of the interaction of bilingual and mostly monolingual users of LSM and ASL. However, I also speculated that the one-on-one interview portions of the data collection might produce different results because the bilingual deaf interviewers would be able to match more closely the language use of the monolingual interviewees rather than trying to adapt to the language use of several signers as in the group discussions.

### **3.2 PARTICIPANTS**

There were several criteria for participant involvement in this study. First, each participant needed to self identify as Deaf or hard of hearing. Second, each participant needed to reside in the area in which those particular data were collected. For instance, the El Paso participants lived in El Paso while the Texas Valley participants could have lived in any of the cities of that area: Brownsville, San Benito, Harlingen, Weslaco, San Juan, Pharr, McAllen, or Edinburg. Partially as a result of living in a U.S. border community, each participant had the opportunity to interact with Mexican and American Deaf individuals. Third, each participant needed to be at least 18 years of age when the data collection occurred.

There were also language considerations for the selection of participants. As mentioned above, there were bilingual and monolingual signers in each set of participants. At each site, a Deaf interviewer was chosen based on a high level of fluency in both LSM and ASL, an ability to communicate with monolingual signers of either language, and frequent interaction with members of the Deaf community. In both cases, the interviewer was recognized by other members of the Deaf community as someone who was very competent in both LSM and ASL. The other bilingual participant for each site and the two monolinguals were chosen based on their own

claims about language use as well as suggestions from other Deaf members of their communities. In other words, other Deaf individuals who did not participate in this study helped to identify who was monolingual and who was bilingual.

Finally, one other variable was considered for participant selection. Specifically, I made an effort to include both females and males in the sets of participants. There was no literacy requirement for inclusion in this study nor was there a requirement regarding length of time in which a participant had lived in either of the areas in which the data were collected. In most cases, the participants at each site knew each other and had interacted previously. Also, in each set of participants, there were Deaf parents who have Deaf children; those children attend public school in the U.S.

Tables 3.1 and 3.2 minimally describe the participants for both data collection sites. More thorough descriptions of each participant are provided in Appendix C, which details participant responses to the interview questions.

Table 3.1: El Paso (EP) participants

Participant code	Sex	Reported language proficiency <sup>15</sup>	Age
EP1 (interviewer)	Male	LSM and ASL	42
EP2	Male	LSM and ASL	39
EP3	Female	primarily LSM	42
EP4	Male	primarily ASL	21

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<sup>15</sup> The language proficiencies recorded in this table are those that were reported by the participants themselves or other Deaf members of their communities prior to data collection. These classifications do not match with some of the responses given during the interview portion of the data collection.

Table 3.2: Texas Valley (TV) participants

Participant code	Sex	Reported language proficiency	Age
TV1 (interviewer)	Female	LSM and ASL	55
TV2	Female	LSM and ASL	24
TV3	Male	primarily LSM	46
TV4	Male	primarily ASL	46

### 3.3 QUESTIONS POSED TO PARTICIPANTS

The data collection consisted of questions that were asked by the bilingual Deaf interviewer. The questions were of two types: interview questions that sought to obtain the background and language use of each participant and group discussion questions aimed at comparing the participants' perceptions of various aspects of life in Mexico and in the United States. These two categories of questions are discussed in the following two sections. Finally, at both sites, I interviewed the deaf bilingual interviewer in order to obtain his/her responses to the interview questions. The language production from these two interviews that I conducted, one in El Paso and one in The Valley, were not included in the data analyzed for this study. The reason these data were not included is that I, as a hearing non-native user of LSM and ASL, was the interviewer for these sessions rather than a Deaf bilingual user of LSM and ASL. This study was designed to only analyze the language use of Deaf individuals with other Deaf individuals.

#### 3.3.1 Interview Questions

During the interviews, each participant was asked questions that can be described in terms of two main categories: personal history questions including

information about education and literacy and self-reported language fluency and use. All the interview questions can be found in Appendix B.

The questions about personal history were designed to determine each participant's age, place of birth, movement history, current place of residence, and occupation. The questions regarding place of residence (both past and current) would likely produce information about what signed and written language(s) each participant had been exposed to over the years. Further, each participant was asked questions about her audiological degree of deafness and the hearing status of members of her immediate and extended families. Answers to these questions could provide further clues to the various types of language use—either signed, spoken, or written—of each participant. The questions about education and literacy were designed to account for any potential use of English and/or Spanish elements, such as fingerspelling, in a participant's language production.

As mentioned above, questions about language fluency were also posed to each participant by a Deaf interviewer. Included in these questions were items about the language(s) that are used frequently by each participant. Additionally, each participant was asked to report a comfort level, on a scale of one (uncomfortable) to five (very comfortable), of each language that she uses. Each participant was then asked about the approximate length of time she had known each language that she uses and from whom she had learned those languages. Answers to these questions would be compared with each participant's actual language use as demonstrated in the interview and group discussion. Other questions about language fluency and use included queries about the language use of those with whom the participant interacts on a regular basis, the language that is used most often by the participant, and normal

language use in various environments such as in the home, at school, work, church, and with friends (regardless of location). The goal of these questions was to obtain a profile of each participant's language repertoire.

Each participant was also asked questions about the importance of the language(s) that she uses and about any desire to become more fluent in any of them. These questions were designed to obtain information about how each participant values the languages that she uses. Finally, each participant was asked if there had been specific times when she felt that it was inappropriate to use any of the language(s) that she knows and if there had been times when she could not communicate with another Deaf person because she did not understand her language use. These questions were included to gather more information about each participant's self-reported language use.

### **3.3.2 Group Discussion Questions**

In order to create an environment where all the participants could participate in discussions about various aspects of their lives in Mexico and the United States, a set of questions were carefully designed. See Appendix D for a list of these questions. With these questions as a guide, the Deaf interviewer asked the participants to compare various aspects of life in Mexico and the U.S., for example food and its cost, candy, transportation systems, clothing and its cost, and Christmas and birthday traditions. As mentioned above, these questions were designed to encourage natural conversation about everyday matters. Most adults have opinions about food and candy preferences, and they know the cost of food and clothing—at least in their immediate areas. Additionally, most people who venture out of their homes, regardless of the reason, know about the different transportation options that

they have and the various issues that encourage their decisions to use specific transportation systems. Finally, most adults can easily respond to questions about their birthday and Christmas traditions because those are events that occur annually. Thus, the rationale for the use of the aforementioned questions was to provide participants with topics about which they would have enough familiarity so that they could easily discuss their opinions and traditions. It is likely that most people would not need to think much about their responses to these questions; the answers would almost come instantly.

This design was implemented in hopes of mitigating the observer's paradox that many researchers have tried to avoid while collecting naturalistic data. As Labov (1972:43) put it, "...the investigator may wonder if the responses in a tape-recorded interview are not a special product of the interaction between the interviewer and the subject." Thus, in order to create as natural an environment as possible, I probed everyday concerns about which most people would have already formed opinions. Additionally, at both data collection sites, I recruited members of the Deaf communities from those areas in hopes that their familiarity with each other would allow them to interact naturally without drastically changing their language production because they were being videotaped. The effects on participants' responses by the necessary use of a video camera to capture language production is a common concern in signed language research.

### **3.4 VENUES FOR DATA COLLECTION**

At both sites, I chose venues for data collection based on several factors. First, the location needed to have at least two rooms: one in which the videotaping would take place and the other to be used as a waiting room for the participants not

being interviewed. The second room also needed to serve as a waiting room for family members of some of the participants. Second, the videotaping room needed to be large enough for the setup described in Section 3.5. Finally, I tried to secure venues that the Deaf participants were familiar with, which perhaps would allow them to be more comfortable during the videotaping process. An uncomfortable or unfamiliar environment would likely influence the participants' signing styles—possibly causing language production to be rigid and formal, which differs from everyday language production. At both locations, I believe that I secured venues that were familiar to the participants since both venues were used often for social events for those Deaf communities.

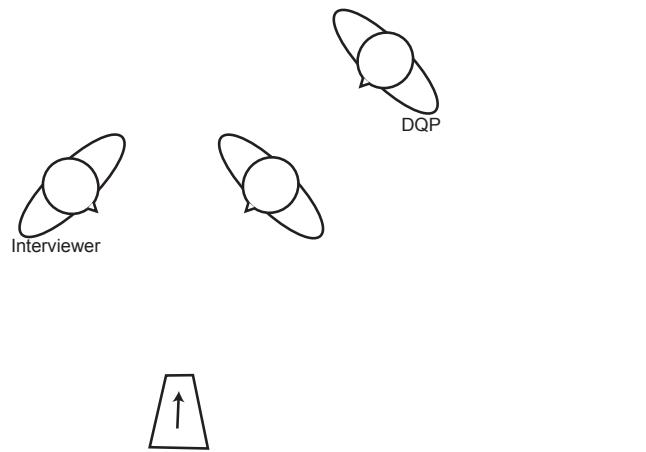
### **3.5 PROCESS FOR DATA COLLECTION**

The one-on-one interview portion of the study occurred first at each location, and this portion was followed by a group discussion with all four participants. This section describes this process in detail.

Prior to the interviews, I explained the interview questions to the Deaf interviewer, and I explained that he/she would be interviewing three other participants—one at a time. A Deaf interviewer was selected so that the participants would not necessarily change their signing style to accommodate my signing skills as a hearing non-native signer of ASL and LSM. I also explained that I would be sitting in the corner of the room behind the participant being interviewed in order to sign each question to the interviewer. The interviewer would, after watching me, sign the question to the interviewee. The interviewer was instructed to use whatever language production—ASL, LSM, or gestures—that he/she felt necessary to conduct the interview with each participant.

The interviews were recorded using a single video camera. Figure 3.1 is a visual depiction of this arrangement.<sup>16</sup>

Figure 3.1 Room arrangement for one-on-one interviews

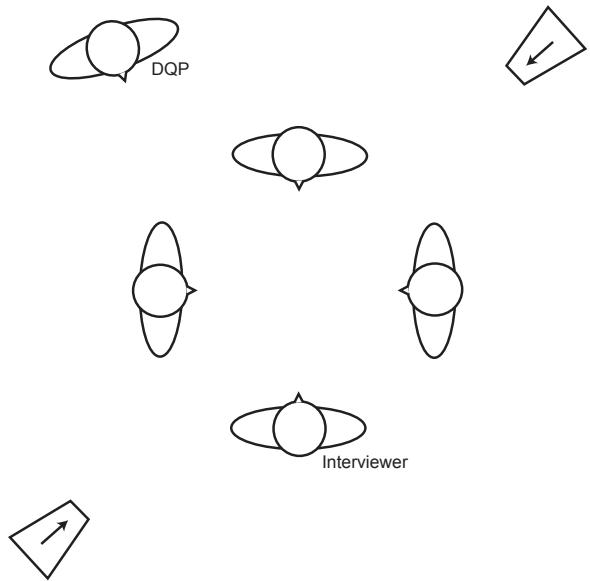


The group discussion session at each site was conducted upon completion of the three interviews. For this portion of the data collection, all participants sat facing each other in a circle. These sessions were recorded using two cameras, each of which was set up to capture the language production of two of the participants. Figure 3.2 shows the arrangement of the participants and me for this portion of the data collection. During these sessions, one camera recorded the language production of the interviewer and one of the participants while the other camera recorded the language production of the other two participants. As with the interview data collection, I was situated behind one of the participants who could not see me, but the other two participants could if they gazed in my direction.

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<sup>16</sup> In figures 3.1 and 3.2, the cameras are depicted by cone-shaped objects. Further, “DQP” refers to the approximate location where I was seated. All participants were seated for these data collection settings.

Figure 3.2 Room arrangements for group discussions



Once again I signed questions to the interviewer that he/she, in turn, would pose to the group. After other participants had responded and group discussion had ensued about a question, the interviewer at each site would often participate by answering the question himself/herself. Frequently, another participant would direct a question back at the interviewer as well. Thus, all participants had an opportunity to answer the questions and give their opinions.

### 3.6 CODING THE COLLECTED DATA

At each site the group discussion session lasted approximately 20 minutes, and 14 of those minutes were coded. The complete sessions were not coded because I did not begin coding until four minutes of discussion had taken place. This was done in an effort to obtain language samples after the participants had “warmed up” to the setting. Additionally, during the last two minutes or so of group discussion at both

sites, several indications were evident that the participants were becoming tired. For example, some participants yawned frequently during those last segments while others started looking around the room as if they were bored. For these reasons, I only coded 14 minutes of the group discussion. The length of the one-on-one interviews varied depending on the amount of detail that the interviewees would use for their responses, but the average time of each session was also approximately 20 minutes. I coded six minutes of each interview session. As with the group discussions, I began the coding four minutes into the interview. Fewer minutes of the interview data were coded because the interviews provided optimal opportunities for each participant to produce language samples because of the question and answer format. However, in the group discussions, it was possible that one or two of the participants would maintain the floor and not allow all the participants to give their input. In an attempt to obtain language samples from each participant, more of the group discussion data were coded. The data from both sites that are presented in Chapters 4, 5, and 6 represent 28 minutes of group discussions and 36 minutes of interviews (The breakdown for the interviews is as follows: six minutes per participant for six participants. As previously noted, my interviews of the Deaf interviewers were not coded because I was the interviewer during those sessions.) In order to code the data, I devised a flowchart that would lead me through various options until the appropriate choice for each element was made. The following decision process was used to code the data, which is also presented in a flowchart format in Appendix E.

I evaluated each instance of a participant using her hands and/or arms to create a meaningful articulation, and I considered each meaningful articulation an

element. If a participant used her hands to perform such functional actions as scratching, shielding a cough, or rubbing her eyes, I did not include these functional hand and arm movements in the coded elements. However, every sign, instance of fingerspelling, deictic point, classifier, or gesture was recorded as an element. Articulations that were difficult to identify as meaningful elements such as false starts or partial articulations of a sign were also coded, and these were scrutinized at a later date with the aid of language consultants.

### **3.6.1 Signs**

The first step in coding was to determine if the element produced by a participant was an accepted ASL sign. If I recognized the element as an ASL sign, I would then attempt to identify a semantic equivalent LSM sign. In addition to my knowledge of LSM signs, I used five LSM dictionaries, one of which was a video dictionary, to aid in the identification of semantically equivalent LSM signs. (See Appendix F for a full description of each dictionary employed in this task.) If a semantically equivalent sign was identified, I would then proceed to determine if that sign was articulated similarly to the ASL sign. I used the criteria in Currie (1999:51) for the determination of similarly articulated signs, namely that the signs "...share at least two of the three parameters of handshape, movement, and place of articulation." If ASL and LSM signs for that concept were articulated similarly, I would record the sign with an English gloss to represent the ASL sign and a Spanish gloss to represent the LSM sign, and then the element would be labeled a similarly articulated (SA) sign. In some cases, the same Spanish gloss was represented by different signs across the dictionaries. If this was the case, only one similarly articulated LSM sign was sufficient for me to code that element as a SA sign. Additionally, if the ASL and

LSM SA signs differed along any parameters, I would note the specific parameter value that was produced by the participant. As an example, one participant produced the ASL sign BOAT, which is articulated similarly in LSM. Both signs have similar handshapes, are articulated in the signing space in front of the signer, and have a forward path movement. However, in the ASL sign BOAT, the two hands contact each other on the pinky sides of the palms (as if to demonstrate the shape of the lower one-half of a boat), whereas in one variant of the LSM sign BARCO, the two hands contact each other on the fingertips of the middle and fourth fingers (as if to demonstrate the bow of a boat). In this case, I recorded BOAT and BARCO as SA signs and noted the different locations of contact between the hands.

If, however, a sign that I recognized as an ASL sign did not have a similarly articulated LSM equivalent, I would investigate if there existed a similarly articulated LSM sign with an unrelated meaning. During the coding process, I identified several similarly articulated but semantically unrelated (SASU) signs between LSM and ASL. One example is the ASL sign ENGLISH, which is homophonous with (i.e., has exactly the same formation parameters as) the LSM sign AMIGO ('friend'). I have compiled an example list of SASU signs for LSM and ASL, which is by no means comprehensive, and that list can be found in Appendix I. Unlike the SA signs, a criterion for SASU sign designation is that all formation parameters need to be equivalent. If I would come upon a SASU sign as I was coding, I would attempt to determine the intended meaning of the sign from the context of the discussion. Then, I would record the appropriate gloss—either in Spanish or in English—and specify the language in which the sign is normally used. Additionally, I would note that this sign was a SASU sign between the two languages.

However, some LSM and ASL homophonous signs appear to be semantically related and do not fit the definition of SASU signs. These signs were not coded as SASU signs; they were treated differently. If either of the meanings of the sign (LSM or ASL) would be appropriate in the context of the discourse, I would record both glosses and note that it was unclear whether or not the signer intended to communicate the ASL meaning of the sign or the LSM meaning of the sign. For example, one participant produced the homophonous sign BRING/LLEGAR('arrive') when discussing the differences between candy in Mexico and the U.S. Based on the context, it was not clear to me which meaning the signer intended. That sign would be recorded as "unclear" and left for in-depth analysis based on the context and specific language use of that participant. Finally, I coded elements that appeared to be name signs (based on context) as "unclear" signs as well; this allowed me to avoid labeling these signs as belonging to either LSM or ASL and incorrectly inflating the numbers of signs in those categories.

If the sign that I initially recognized as an ASL sign did not have a similarly articulated LSM equivalent and also was determined not to be a SASU sign, I would record it as an ASL sign. Then, I would note if any parameter employed in the articulation of that sign is normally found in LSM. For instance, in a case of producing a sign from one language with a distinct handshape from the other language, one participant produced the ASL sign FAMILY with the LSM F-handshape (see section 5.1 for a description of the handshape differences between LSM and ASL). This element was coded as an ASL sign, but as one that was produced with an LSM handshape. This use of the handshape of one language with a sign from the other language that has a different handshape will be discussed in the

results in Section 5.1.2.

If the element was not initially recognized as an ASL sign, but it was recognized as an LSM sign, it would be coded as such and glossed with a Spanish word that approximated the meaning of the sign.

If for any reason I was not sure of the specific production of a sign (in either ASL or LSM), I would document that information in order to consult with fluent users of the signed languages at a later date. Likewise, if I was not able to identify a semantically equivalent sign to the one that was produced, I would note that information in order to investigate a semantically equivalent sign at a later date. If, after consulting with Deaf users of LSM or ASL, I could not determine the form(s) of a semantic equivalent sign I would label the element as a “sign” of the category “unclear”.

### **3.6.2 Fingerspelling**

Another possibility is that the element was an instance of fingerspelling. As with the signs, I would record the fingerspelled item in capital letters, but the letters would be separated by hyphens in order to distinguish the recorded item from a sign. Next, I would attempt to determine if the intended fingerspelled item was a Spanish word, an English word, or a word that is spelled the same in both languages (this was usually the case with place names) and recorded this information. Then, I noted if the participant used ASL handshapes, LSM handshapes, handshapes that are similar in both signed languages, or a mixture of ASL and LSM handshapes. For instance, one participant fingerspelled the place name “Acapulco”. In this case, I recorded it as A-C-A-P-U-L-C-O and noted that the element was a fingerspelled item from Spanish even though English has adopted the same spelling for that place name. Further, I

also noted that the participant used at least one LSM fingerspelled letter (LSM P) in the fingerspelled element along with other fingerspelled letters that are similar in both languages. Specifically, the participant produced {A, C, U, L, O}, which are the same in LSM and ASL and one fingerspelled letter (LSM P) that is articulated differently in the two languages. See Section 5.1.1.1 for a description of differences between LSM and ASL fingerspelled letters.

### **3.6.3 Classifiers**

If the element was not identified as a sign or as an instance of fingerspelling, I would determine if it could be identified as a classifier structure. In order to determine this, I used the categorization of ASL classifiers found in Supalla (1986) to make decisions about elements in the data. I coded classifiers that were used in verbs of location, motion, and existence according to the five types of classifiers described by Supalla: size-and-shape-specifiers, semantic classifiers, body classifiers, body part classifiers, and instrument classifiers. For instance, in one instance of a size-and-shape-specifier, a participant articulated—with both hands—the B-handshape, which is the same in LSM and ASL, to depict an object that has two flat surfaces. She then showed how the two surfaces are joined by bringing the hands together with the palms of the two hands in contact with each other. This element was used to describe how a quesadilla is assembled. This element was coded as a classifier structure of the type size-and-shape-specifier. Unlike the elements that were coded as signs, I made no attempt to distinguish between ASL and LSM classifier structures during the coding stage. Preliminary cross-linguistic work on signed language classifiers suggests that some types of classifiers are very similar cross-linguistically (see Aronoff et al., in press for a discussion of classifiers in Israeli Sign Language and

American Sign Language).

The categorization of classifiers according to the Supalla system (five types of classifiers) allows pantomimic elements to be recorded as linguistic items. Specifically, some of the instrument and body classifiers have pantomimic qualities, which serve to depict particular actions. For instance, one participant pantomimed the act of taking a bite of a candy and tasting it while trying to determine if she liked it or not. During this production, there was no sign produced, but rather an enactment of the type of arm/hand and face/mouth movements involved in holding an imaginary candy with one hand, bringing it to the mouth area, taking a bite, and chewing the contents as if paying particular attention to the taste of that candy. I glossed elements that involved the hand manipulating an object (e.g., holding a candy bar) as instrument classifiers according to Supalla (1986), but I also noted that the pantomimic character of these constructions was quite salient. For these types of items, I recorded the specific action that each pantomimic string was intended to communicate. As an example of a body classifier in this coding system, a participant during one of the group discussions used her body posture, arms, and hands to depict the action of waving down a taxi cab. I coded this element as a body classifier but also noted the pantomimic quality of the action.

### **3.6.4 Points**

If the element was not recognized as a sign, fingerspelling, or a classifier structure, I would determine if it was a point. If so, I would label it as such and note the direction to which the point was directed. If the point was directed at another participant who was present—either in the group discussion or the one-on-one interviews—I would note that information as well. Most of the points were

articulated with a participant’s index finger and directed at a single location. However, participants also produced points with the thumb (usually to locations to the left or right of where they were seated) instead of the index finger, and that information was recorded as well. Finally, I also recorded if the participant produced a point that was not directed at one location but rather articulated in a circular or arc-like fashion.

### **3.6.5 Gestures**

If the element produced by the participant was not identified as an accepted sign (i.e., I did not recognize that element as a sign and I could not locate that element in either a dictionary of ASL or LSM) or an element from any of the other categories presented above, I would attempt to determine if it was an accepted gesture that is commonly used by hearing people in Mexico, the United States, or both countries. If that was the case, I would record its meaning and form and label it as a gesture. See Section 4.2 for a description of this category of gestures and the various types of gestures that were observed in these data.

### **3.6.6 Unsure**

Finally, any element that did not fit into any of the categories described above would be recorded as “unsure” and left to be investigated at a later date. In Section 3.7, I will describe the measures that I took to clarify these elements that were coded as unsure and establish a level of reliability for the coded data. The “unsure” category also contained elements that were later determined to be production errors or false starts.

### **3.6.7 Other considerations**

I also recorded other information for each element in the data. If a sign in one language was followed by a semantically equivalent but articulatorily different sign in the other language, I would record that information. If the participant produced noticeable mouth movements that corresponded to English or Spanish words during the production of an element, those mouth movements were recorded. In most instances of mouthing, there was no question about the specific word that was mouthed—even in the case of cognates. This was the true, presumably, because vowel qualities are somewhat different for the two languages and vowel production could be determined by lip rounding. If there was any doubt about the language of a mouthed word or part of a word, I would only indicate what the mouthed item looked like, and I would not specify a language.

Additionally, if articulation of a sign was repeated, I would record the number of repetition cycles of that sign. I did not, however, record contrastive uses of repetition that are specified in the lexicons of ASL grammar or LSM grammar. For example, some ASL verbs are articulated with a single movement whereas the derived noun is articulated with two cycles of movement (Supalla & Newport, 1978). Additionally, ASL verbs that are inflected for temporal aspect are produced with repeated cyclical movements (Fischer, 1973; Klima and Bellugi, 1979). I did not code repeated movements that distinguish between noun and verb pairs or that signal aspectual modification of a sign. Also, I did not include the repetition of elements for pluralization. Regarding the repetition of parts of LSM signs, I did not record instances of repetition that, according to Eatough (1992), signal changes of meaning

for time signs (such as “DAY DAY” in LSM to mean ‘day after day’), or for certain verbs related to ingesting something (e.g., EAT EAT EAT in LSM to mean ‘eat gluttonously’) or for verbs related to taking something in (e.g., LEARN LEARN LEARN in LSM to mean ‘learn voraciously’).

Lastly, any language production by the interviewers that was directed at me for the purpose of clarification of a question to be asked was not coded. Thus, the language data that are discussed in Chapters 5, 6, and 7 of this dissertation only reflect discussions between the Deaf participants and not the Deaf participants and me.

### **3.7 RELIABILITY MEASURES**

As was discussed in the coding section, I maintained an inventory of all elements that were unclear to me during the coding process. On a weekly basis, I met with two hearing colleagues who are also expert in ASL and linguistic research. Additionally, I consulted, on a weekly basis, with a highly educated Deaf user of ASL who has moderate fluency in LSM. This consultant is in a profession in which she interacts frequently with users of LSM and other Deaf individuals from Mexico who use LSM in addition to home signs and other communication devices. This experience makes the Deaf consultant an invaluable resource to this project. She helped to clarify many instances of elements that were unclear to me during the initial coding. Additionally, I consulted with various Deaf users of ASL and LSM on trips to El Paso and the Texas Valley about LSM signs that are semantically equivalent to ASL signs.

## **Chapter 4: Sources of similarity**

This chapter focuses on types of elements within the data that highlight similarities between LSM and ASL communicative devices. Some of the similarities are lexical; this characteristic of signed languages has been addressed by several cross-linguistic studies of signed language lexicons (see Section 2.5). Additionally, the data from this study reveal many similarities between users of LSM and ASL regarding the use of gesture. Users of spoken language frequently produce non-linguistic gestures as they speak, and, as the data from this study show, users of signed language frequently produce non-linguistic gestures in alternation with their signs. Thus, gestural devices that are similar across Mexican and American cultures and lexical similarities between LSM and ASL will be addressed in this chapter.

The categories of elements that I will focus on in this chapter are the following: similarly articulated (SA) signs between LSM and ASL, gestural elements, and points. Section 4.1 will cover SA signs, while gestural elements that were produced by the participants will be presented in Section 4.2. Some of the gestural elements that will be discussed are quite similar in Mexico and the United States. This category of gesture contains various types of elements, and each type has its unique characteristics. In Section 4.3, I will discuss the deictic points that were used in the various data collection sessions. Presumably, elements discussed in this chapter are mostly transparent to the monolingual user of LSM or ASL, which would

likely encourage effective communication in language contact situations where language production consists of elements of LSM and ASL.

#### **4.1 SIMILARLY ARTICULATED SIGNS**

In Section 3.6 of this dissertation, which describes my coding methodology, I noted that a sign was listed as a SA sign if a semantically equivalent sign from the other language is articulated similarly in two of the major parameters of sign formation (handshape, place of articulation, and movement). Of course, some SA sign pairs between LSM and ASL are articulated exactly the same; such is the case in the SA sign in (4.1). In this example from the Texas Valley discussion session, TV4 is describing the importance that Christmas Day holds for the (Mexican) family.

(4.1) [GD 6-8 .28]

TV4: attention-getter VEINTICINCO PARA/FOR FAMILY<sup>17</sup>

“The 25<sup>th</sup> is for the family.”

The sign PARA/FOR is articulated similarly along all parameters of sign formation. This differs from examples (4.2) and (4.3), which contain SA signs that differ by one parameter of sign formation. In (4.2), the sign TREN/TRAIN is used, but the V-hs that is used to articulate TREN differs from the U-hs (or H-hs, depending on the

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<sup>17</sup> Transcription conventions are as follows: Upper case letters denote LSM or ASL signs; LSM signs are in Spanish and ASL signs are in English. Dashes between upper case letters denote fingerspelled items. Lower case letters denote several items: points, descriptions of classifiers, and gestures. “CL” denotes the use of one of the classifier types described in Supalla (1986). A “+” denotes a single cycle of repetition in the movement parameter of sign formation. Brackets “[ ]” contain information for the author about the location of that language sample in the videotaped data. Any non-manual signal

analysis) for articulating TRAIN.<sup>18</sup> Therefore, these SA sign signs differ only in handshape.

(4.2) [GD 8-10 1.16]

EP1: point-forward TREN/TRAIN SAME TREN/TRAIN

CL:vehicle entering descending into tunnel MEXICO(LSM) point-upward

“In Mexico, it (the subway) is just like a train that goes underground.”

In (4.2), EP1 is describing the subway system in Mexico and how the train goes underground. This discussion ensued after EP1 produced the sign METRO in LSM in a segment that appeared before (4.2), and EP4 seemed to be confused—as if he did not understand that sign. So, EP1 is describing what the METRO means by referring to a train that goes underground. In some SA signs that differ only in handshape, the LSM sign is initialized such as in the sign GUSTAR (produced with an LSM G-hs, which looks like the ASL and LSM L-hs with the palm facing the signer), which is articulated similarly to ENJOY. Other examples are the signs DAR (‘to give’) and DECIR (‘to say’), which are articulated similarly to GIVE and SAY with the D-hs.

Some SA signs differ in place of articulation such as in (4.3). Specifically, the sign WAIT is produced with both hands on either side of the signing space, whereas the sign ESPERAR (‘to wait’) is articulated with the dominant hand resting on the palm of the non-dominant hand—a difference in place of articulation (and point of

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(NMS) is shown on a line above the element(s) that it accompanies, but a NMS is only included in the transcription when it is relevant to the discussion.

contact between the articulators, but only the three major parameters of sign formation were used as criteria for sign classification). In this example, TV2 is explaining why she thinks city bus service in Mexico is better than the service in the United States.

(4.3) [GD 16-18 1.43]

1 TV2: MEXICO(LSM) MEJOR MEXICO(LSM) BUS(ASL) VENIR MUCHO  
2        VENIR MORE SOMETIMES TIME CL:dial going around clock face  
3        WAIT/ESPERAR CL:dial going around clock face BUS  
4        WAIT/ESPERAR LARGO/LONG...

“It is better in Mexico. In Mexico, buses run more often. (Here), sometimes you wait for the bus for a long time, sometimes for hours.”

In line 3, WAIT/ESPERAR is signed using the ASL place of articulation, whereas in line 4, the LSM place of articulation is utilized.

In the data from this study, I was unable to find a SA sign that differed only in the movement parameter. Perhaps examples of such SA signs exist, but there are no examples in the segments that I coded. In a work that addressed lexical variation within LSM and parameter variation for SA signs of LSM in comparison with three other signed languages, Currie (1999) showed that the movement parameter of sign formation can be a source of variation. In that study, the movement parameter did not

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<sup>18</sup> Throughout this dissertation, the abbreviation “-hs” refers to the term handshape. This abbreviation is used in conjunction with specific handshape values that comprise a phonological parameter of sign formation.

exhibit as much variation as the handshape parameter, but it displayed variation consistently—within LSM as well as in the cross-linguistic lexical comparisons. Thus, Currie’s work suggests that the movement parameter is likely to be a source of variation between LSM and ASL SA signs, even though examples were not evident in these data.

In Table 4.1 and Table 4.2, the numbers and percentages of SA signs that were used by the participants in this study are given.<sup>19</sup> The first row of data in Table 4.1 shows SA sign use by all participants during the El Paso group discussion, whereas the other rows show information about the use of SA signs in each of the three interviews that were conducted by a Deaf bilingual interviewer. The same format is used for Table 4.2, but that table reports data from the Texas Valley data collection sessions.

Table 4.1: Use of similarly articulated (SA) signs during the El Paso data collection sessions

Session	Total elements	# of SA signs	% of total
Group discussion	1573	280	17.8%
Interview: EP2	386	83	21.5%
Interview: EP3	579	112	19.3%
Interview: EP4	553	108	19.5%

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<sup>19</sup> See Appendix G and Appendix H for complete listings of the data that were coded. In total, 6,477 elements comprise the data that will be discussed in this dissertation.

Table 4.2: Use of similarly articulated (SA) signs during the Texas Valley data collection sessions

Session	Total elements	# of SA signs	% of total
Group discussion	1748	268	15.3%
Interview: TV2	587	146	24.9%
Interview: TV3	503	117	23.3%
Interview: TV4	548	95	17.3%

As can be seen in Table 4.2, the data collection session with the lowest percentage of SA sign production was the Texas Valley group discussion. The session with the highest percentage of SA sign production was the interview with TV2. Thus, the range of SA sign production that includes data from both El Paso and the Texas Valley is 15.3% - 24.9%. Based on these figures, we might assume that, on average, approximately 20% of the elements produced in these contact situations would be recognized by even monolingual signers of LSM or ASL. In Section 2.5, I reported the percentage of lexical similarity that Faurot et al. (1999) claimed for ASL and LSM, and that figure was 23%. That percentage was obtained by comparing 100 LSM signs to the same number of semantically equivalent ASL signs. That study was simply a comparison of vocabularies. The percentages of SA signs from the current study speak to the frequency of SA signs in signed discourse. Interestingly, the figure for lexical similarity reached by Faurot et al. falls within the range of SA sign use in the border data collection sessions of this study. et al. (in press), however, obtained higher percentages of lexical similarity between historically

related signed languages. As noted in Section 2.5, LSM and ASL are related through their common link to French Sign Language (LSF) as it existed in the 1800's. Perhaps we should expect higher percentages of SA signs in the border communities' signed discourse because of this relationship. However, keep in mind that the studies of lexical similarities that have been conducted have only addressed signs in isolation, and not the use of signs in discourse. There are likely other elements that lead to lexical similarity between LSM and ASL.

#### **4.2 GESTURAL ELEMENTS IN THE DATA**

As noted in the section that described the coding methodology of this study (specifically, Section 3.6.5), some meaningful elements that were produced by participants were not identifiable as accepted signs of LSM or ASL, and they could not be found in various dictionaries of these languages. These gestures alternated with identifiable signs and other elements (such as fingerspelling, points, etc.) within the sign stream—sometimes occurring in isolation and other times in strings with other gestures. Generally, these gestures resemble *emblems* that are used by hearing users of Spanish and English in Mexico and the United States. The concept of the emblem will be described below. One characteristic that these gestures have in common is that their general meanings tend to be understood by Deaf and hearing people even outside of a specific context.

However, prior to discussing the use of gestures in the data an issue must be addressed. Specifically, how can one know if a commonly used gesture can also be designated as a sign of a signed language? Emmorey (1999:147) noted the same concern: "...it is not a simple matter to determine whether a given manual expression is a gesture or a sign." Simply because a gesture is not listed in any dictionary of a particular signed language does not mean that it is not a sign of that language. One would have to scrutinize a gesture to determine if it exhibits linguistic characteristics within the sign stream in order to make a ruling about the lexical status of that gesture. For example, does a particular gesture behave as an item from a certain lexical category (e.g., noun, verb, conjunction, etc.)? However, some gestures, referred to as "Language-like gestures" in McNeill (1992), can be produced in alternation with spoken words and appear to be grammatically integrated into a sentence. But, we likely would not claim that those gestures are words. So, determining whether or not a gesture can behave as an item from a certain lexical category may not be sufficient to make a claim about the lexical status of a gesture. Another question might be the following: Can the gesture be inflected according to the morphological rules of the signed language(s) with which it is used? Perhaps after scrutinizing a gesture with questions such as these in mind, one could determine if it could also be labeled as a sign.

For the purposes of the present study, I relied on LSM and ASL dictionary entries to make judgments about the categorization of commonly used gestures. If the

commonly used manual gesture was found in a dictionary, I would label it as a sign. Unlike the strict scrutiny that I advocated above, this method may not have yielded the most appropriate result in all cases, but it was the method that was followed throughout the coding.

Some commonly used manual gestures, if tested, would likely meet criteria such as those that I mentioned above for the designation of “sign” status. We might expect that some of those gestures would be found in dictionaries. For example, the LSM sign DINERO, as listed in several dictionaries, appears to be the same gesture used by hearing members of Mexican society to refer to money. The same is true for the sign POCO and the equivalent Mexican and American gesture for ‘little bit’. As noted, in cases where a gesture was listed as a sign in at least one dictionary (e.g., DINERO and POCO), I labeled the element as a sign. Examples of commonly known gestures that were listed as signs were few, whereas examples of gestures that are not found in dictionaries were plentiful. Commonly used gestures that were not found in dictionaries were coded as gestures.

Throughout this section I will describe various gestures used by participants in this study. As noted, these elements could not be clearly labeled as signs of either LSM or ASL, and the meanings of these elements often do not require a specific context to be understood. In some ways, these gestures can be compared to other mimetic devices used in signed languages. For instance, some of the elements that I coded as classifiers, specifically instrument and body classifiers (Supalla, 1986), are

also quite transparent in meaning to the observer. Like the gestures that I will discuss in this section, some classifiers resembled pantomimic demonstrations of various actions, and such demonstrations were also difficult to ascribe to either LSM or ASL. In this analysis of gesture, I will show that these classifier elements can be categorized with other gestural elements discussed in this section.

#### **4.2.1 Emblematic gestures**

The terms “emblem” and “emblematic gesture” have been used by several authors (Efron, 1941; Ekman & Friesen, 1969; Kendon, 1981, 1988; Morris et al., 1979; McNeill, 1992) to refer to gestures that are specific to a particular culture (or cultures). Many examples of this type of gesture can be found in Italy, where there exist dozens of gestures with specific meanings (see de Jorio, 2000, for a description and listing of many of these Italian emblems as they were used in the 18<sup>th</sup> century). Characteristics of emblems, according to McNeill (1992:56), are that they “...have names or standard paraphrases, are learned as specific symbols, and can be used as if they were spoken words.” McNeill also asserts that emblems have standards of well-formedness. For example, the commonly used emblem “thumbs-up” must be articulated with a particular handshape (LSM/ASL A-hs), a particular place of articulation (neutral space), a particular value for the movement parameter (in this case, no movement). This emblem also calls for a particular palm orientation (facing the midline). Thus, this emblem must be articulated with the thumb pointing toward the ceiling (or the sky). If one would attempt to articulate that emblem with a different palm/thumb orientation (e.g. the thumb pointed horizontally) or with a

different handshape (e.g., LSM/ASL S-hs), the meaning would likely not be clear.<sup>20</sup> In this way, emblems resemble signs: both have standards of well-formedness with specific values for certain articulatory parameters.

Several emblems that appear to be shared by the United States and Mexico and that are used frequently in those countries were produced by participants in this study. They were all produced in alternation with accepted signs. Some of these emblems might have functioned grammatically as signs, but their non-existence in dictionaries that I used urged me to label them as gestures and not as signs of LSM and ASL. Further analyses of these gestures would be required before they could definitively be designated as signs. In addition to the use of SA signs (Section 4.1), the use of emblems in the sessions of this study presumably provides participants with another opportunity to comprehend another participant's language and gestural production without the need for language-specific knowledge.

Several different emblematic gestures were used by the participants in this study. On average, emblems constituted 11% of the coded elements produced by the participants in the group discussions. Table 4.3 lists several of the elements that I coded as emblems and the approximate meaning(s) of each emblem.

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<sup>20</sup> In this particular emblem ("thumbs-up"), values for the parameters place of articulation and movement may be variable, but obligatory parameters are handshape and palm (or thumb) orientation. For instance, one could imagine a "thumbs-up" emblem being articulated just beside the neck area if the intended viewer is positioned behind the producer or "thumbs-up" sweeping across the sign space if the intended viewers are located throughout a large area.

Table 4.3: Examples of emblems produced by the participants (both sites)

Gloss	Form	Meaning(s)
OK	1h; ASL F-hs; palm facing outward; no path movement <sup>21</sup>	“OK”, “perfect”, “good”
so-so	1h/2h; 5-hs; palm facing downward or sideways; twisting of the forearm	“more or less”, “not so good”
thumbs up	1h/2h; A-hs, palm facing toward midline & thumb pointing upward; no path movement, occasional shaking of hand(s)	“good job”, “great”, “all-set”
Yes!	1/h; S-hs; palm facing midline; arm is bent at elbow; movement is from the shoulder in a downward fashion	“a great thing!”, “yah!” “wonderful”
wow	1h/2h; lax 5-hs; palm facing signer; rotation of forearm for back and forth movement of the hand	“wow”, “really cool”
well	1h/2h; lax 5-hs; neutral space; palms upward; no movement;	“well”, “what”, “what am I to do?”
that's it	1h/2h; 5-hs; neutral space; palms downward; movement away from midline	“that's-all”, “there's no more”
no-no	1h; 1-hs; palm facing outward; side to side movement of the index finger or entire hand	“don't do that”, “that isn't the case”
attention-getter	1h; 5-hs, palm facing outward and downward; waving of the hand (usually in the vertical plane)	“I have something to add.”, “pay attention to me”

A few of the items listed in Table 4.3 were produced frequently by participants in this study. For instance, the emblem that I have labeled “attention-getter” was articulated 13 times in the El Paso group discussion and 41 times in the Texas Valley group discussions, which constitutes 6.5% and 25% respectively of all the gestural elements in those sessions. This emblem can be described as a

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<sup>21</sup> In these descriptions of form, “1h” refers to one-handed gestures and “2h” refers to two-handed gestures.

conversation regulator, since its function is to get another person's attention in order to begin a turn. Emmorey (1999:155) referred to these types of emblems as interactive gestures which "...help coordinate turn-taking during a dialogue." Additionally, the emblems "well" and "that's-it" constituted approximately 54.5% of the El Paso gestural elements and 33% of the Texas Valley gestural elements—both percentages referring to only the group discussions. In some ways, these last two emblematic elements resembled discourse markers in the discussions.

Discourse markers in spoken language help to provide structure for a text, and the same appears to be true in signed languages. Yet, there appears to be little work on the topic of discourse markers in signed languages. According to Norrick (2001), examples of two typical English discourse markers are well and but. The emblem that I glossed as "well" is likely to have similar functions as the English discourse marker of the same name. For instance, the emblem "well" was used frequently at the start of a turn, much like the English discourse marker. It was, however, also used within a phrase, and at the end of a phrase or turn. Emmorey (1999) also reported that a gesture that she labeled "/well-what/" could occur within a series of other gestures. A syntactic analysis of "well" as a gesture in the data is beyond the scope of this study, but its occurrence in the sessions is noteworthy. Some examples of the use of "well" are given in (4.4) and (4.5). Example (4.4) shows "attention-getter" and "well" as they were produced by TV4 within the same turn.<sup>22</sup>

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<sup>22</sup> In this example, "nhs" denotes a "negative head shake" that occurred simultaneously with the sign.

(4.4) [GD 810 .371]

TV4: gesture: “attention-getter-TV1” CHILDREN FOR/PARA point-arc-lf-to-rt

CHILDREN  $\xrightarrow{\text{nhS}}$  point-TV4 gesture: “well”

“...(the celebration of birthdays) are for the children, not for me (as an adult).”

In this example, TV4 is explaining that birthday celebrations, in his opinion, are really for children and not for adults. He uses two gestures during this production: the “attention-getter” gesture that functions as a conversation regulator, and the gesture “well” that ends the turn. The gesture “well” was used frequently by several of the participants at the end of the turn as if to denote that the signer had completed her thought or comment. Another example of this is given in (4.5).

(4.5) [GD 68 1.30]

EP1: gesture: “well” point-downward ESTADOS-UNIDOS SABER

point-EP3 BECOME-FAT gesture: “well”

(Directed to EP3): “Here in the United-States, you know that, it’s easy to get fat”

EP3: SABER point-EP3 gesture: “well”

“I know. (What am I to do?)”

As noted, in (4.5), both participants use “well” to end a turn. Additionally, EP1 uses well to begin a turn. As can be seen in these two examples, “well” seemed to function as a discourse marker—either indicating the beginning or the end of a turn.

Also in this category of emblematic gestures are those that appear to be iconically or mimetically motivated. By this I mean that the gesture resembles, in some way, the human action involved in something. Table 4.4 presents some examples of these type of emblematic gestures.

Table 4.4: Examples of iconically or mimetically motivated gestures produced by the participants (both sites)

spicy hot	1h/2h; 5-hs/B-hs; palm facing downward; repeated fanning of the mouth area with the hand	"This is spicy!"
wait/stop	1h/2h; 5-hs; palm facing outward; no movement	"wait a minute", "stop"
calm down	1h/2h; 5-hs; palm facing outward; repeated and slight movement toward and away from the body	"calm down"
move aside	1h/2h; 5-hs; palm facing sideways, forward, or downward; movement as if pushing something or someone away	"move aside"; "get out of the way"

An example of an iconically motivated gesture ("calm down") is given in (4.6) along with another gesture and a body classifier that is very mimetic ("tear-open gift"). Mimetically motivated elements that were not classified as gestures will be discussed in the next section (4.2.2).

(4.6) [GD 16-18]

EP3: TIME ONE/UNO CL: "tear-open gift" gesture: "my goodness!"

gesture: "calm down"...

"At one o'clock the kids tear open their gifts. My goodness, (what an event!). I have to tell them to calm down."

As can be seen by the transcription conventions, the only elements that I identified as signs in this brief segment were the first two: TIME and ONE/UNO. Segments such as these that contained the frequent use of gesture were common in some of the segments of the discussions.

Even though these gestures have mimetic properties, there still appear to be standards of well-formedness, a trait that characterizes all emblems. For instance, the emblem “spicy hot” is produced with a 5-hs or a B-hs and not a 1-hs or S-hs, which are handshapes that appear in other emblems. Additionally, this emblem is articulated in front of the mouth area, and not generally in another location. The repeated movement of the hand through the signing space in “spicy hot” generally follows a vertical path rather than movement in a horizontal plane in front of the mouth. Regarding the iconic or mimetic motivation of this gesture, this vertical movement suggests the action of a fan moving up and down in front of the mouth in order to reduce the spicy taste. Actually, movement in a horizontal fashion toward and away from the mouth, in either a 5-hs or a B-hs, would likely be more effective in actually cooling down the mouth, but despite this fact the emblem “spicy hot” is not produced with horizontal path movement of the hand in front of the mouth area. Thus, well-formedness conditions (i.e., the correct use of articulatory parameters) seem to dictate the manner in which this iconic/mimetic emblem is produced.

The relatively frequent production of these emblematic gestures by participants in this study presumably gives the participants, regardless of language ability, a tool for understanding each other. Since these emblems are not language specific, I propose that most people along the U.S-Mexico border would be able to comprehend their meanings—regardless of their hearing status or use of sign language. I am not, however, suggesting that emblematic gestures always aid in the comprehension of strings of signs. Research on the comprehension of emblems within strings of signs is needed before this claim can be made.

#### **4.2.2 Mimetically motivated elements**

Another type of gestural resource that participants in this study used to communicate with others can be described in terms of its pantomimic qualities. Similar to iconically and mimetically motivated emblems are those instances in which signers seem to mimic the movements, including head and body postures and facial expressions, of people and things to which they are referring. The difference between the iconically or mimetically motivated emblems and these gestures is that the emblems tend to be gestures that are used somewhat frequently by hearing people who do not use sign language. In this category of mimetically motivated elements, I refer to types of classifier constructions that have been described by other authors. For instance, Supalla (1986) uses the term “instrument classifier” and Schick (1990) uses “HANDLE” in conjunction with the “IMIT morpheme” to refer to the same communicative device: usually the hand in a configuration in which it is manipulating an object. Additionally, when a signer imitates, without the use of signs, an action to which she is referring, Supalla would likely label this a “body classifier”, whereas Schick might appeal to her definition of the “IMIT morpheme”. As I described in Section 3.6.3, I coded these elements according to the Supalla (1986) classification of gestures. There were several instances of these types of classifier structures in the border sessions of this study, and I will discuss them here. However, for this discussion I have chosen to refer to those elements that would have been designated “body classifiers” under the Supalla (1986) system as mimetic elements instead. I will not make a case regarding the linguistic status of these elements, whereas I will point out how easily they can be understood by other signers and non-signers alike.

Approximately 2.5% of all tokens in each of the group discussions can be described as the participants using these mimetically motivated segments to communicate ideas. An example is the following: in an explanation of the manner in which a certain food item is prepared in Mexico, TV2 used two types of instrument classifiers (“instrumental hand classifier” and “tool classifier”, Supalla 1986) to show the manner in which the food preparation takes place.

(4.7) [GD 12-14 1.273]

1 TV2: LIMÓN instrument CL: “squeeze lemon on food in circular fashion”

2 instrument CL: “mix up food with a spoon” PORK TOMATE

3 CL: 5-hs to cut-up food MIX CL: flat circular object—move to mouth

4 gesture: “there you have it”

“You take the lime and squeeze it over the food and then you mix the food up with a spoon. In there you have pork and sliced tomato. You have to mix it up and then you put it on a tortilla and eat it. There you have it!”

In lines 1 and 2 of (4.7), TV2 used classifiers (specifically, instrumental hand classifiers) to show the actions involved with certain parts of this food preparation process. Specifically, these classifiers showed the precise movement of the hands as they mimicked the squeezing of a lemon and the manipulation of a utensil to mix food in a bowl. In line 3, however, she used other classifiers (specifically, tool classifiers) to show two other processes: the cutting up of the food and the way in which one would lift the prepared tortilla with toppings to the mouth. She did not, however, pantomime the act of taking a bite of the completed tortilla with toppings.

In the second half of line 3, TV2 utilized other classifier handshapes (specifically, size-and-shape specifiers) to denote a thin, circular object, and she moved those handshapes to her mouth area mimicking the movement of the tortilla to her mouth.

In this analysis, TV2 used various types of classifiers in (4.7)—some of which have mimetic properties—to describe a process. Other than the food signs that are specific to one language or the other (LIMÓN-LSM, PORK-ASL, TOMATE-LSM), the elements of this segment are iconically and mimetically motivated. Segments such as this would likely facilitate clear communication, as opposed to segments in which signs from one language or the other are utilized exclusively. For instance, a monolingual user of LSM would likely understand the process and the fact that lime and tomato is combined, along with another ingredient, and added to the tortilla, whereas a monolingual user of ASL would probably understand that pork and other ingredients are combined and placed on a tortilla. All signers would likely understand the process because of the iconic and pantomimic nature of several of the elements. Perhaps hearing non-signers would also comprehend these mimetically motivated elements, just as was suggested in Pizzuto and Volterra (2000). Regardless, these types of elements support the claim that signed languages have different types of expressive elements: some that are highly iconic or pantomimic in nature and others that are more lexically based and differ from language to language (Boyes Braem, 1981, 1984, as cited in Pizzuto & Volterra, 2000; Corazza & Volterra, 1988).

Another example of the use of mimetic elements by the participants is given in (4.8). In this example from one of the group discussions, the mimetic elements are

of two types: a handle classifier (as in (4.7)) and non-manual movement of the head and eyegaze.<sup>23</sup>

(4.8) [GD 1618 .12]

TV4: instrument CL: “holding steering wheel” point-backward (with the thumb)  
body CL: “looking around as if to see if others are watching” mime: “lean  
forward and hit driver” MANY point-arc rt to lf TROUBLE  
“The person (cab driver) is driving along and the person in the back looks around to  
see if someone anyone is watching. Then the person in the back hits the driver.  
There are lots of cases of this type of trouble/danger (in Mexico).”

In this example, TV4 is explaining that it can be dangerous to be a taxi cab driver in Mexico because they are sometimes assaulted by passengers. This comment was made in response to a more general discussion of the safety of public transportation in Mexico versus the United States. I suggest that the classifier element in the first line can be described as mimetic because it shows the actual hand configuration/movement of a the taxi cab driver in addition to other mimetic elements such as posture, head and eyegaze orientation. The elements that describe the passenger in the back seat are also very mimetic, but they do not require the hand to be in a particular configuration or handshape as if holding an object. Thus, these mimetic elements are sometimes instrument classifiers (according to Supalla, 1986) and sometimes body classifiers (such as the head and body postures and facial expressions of the person or thing to which is being referred).

The gestural elements discussed in Section 5.2.1 and the mimetically motivated elements discussed in this section constituted more than 10% of the

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<sup>23</sup> Both of these elements might be considered examples of *constructed action*, according to Liddell and Metzger (1998).

elements in each of the group discussions. Table 4.5 shows the percentages of gestural elements (emblems) and mimetically motivated elements (instrument and body classifiers) produced in the group discussions.

Table 4.5: Percentages of gestural and mimetically motivated elements in the group discussion sessions

	Total elements	gestural	% gestural	mimetic	% mimetic
EP	1573	198	12.6%	37	2.4%
TV	1748	164	9.4%	41	2.3%

As can be seen, gestures constituted 12.6% of the elements in the El Paso group session and 9.4% of the elements in the Texas Valley group session. Additionally, more than 2% of the elements in each group discussion were mimetic classifiers. Note that these figures do not include the interview sessions, but the average gestural and pantomimic use from those sessions approximates that for the group sessions. The purpose of this section was to show that at least 11% of the elements from each group discussion were relatively transparent to the other participants because these types of elements appear not to be language specific, but rather gestural and pantomimic in nature. These are likely the types of elements that Pizzuto and Volterra (2000) claimed could be understood by signers and non-signers alike, and they are perhaps common to various signed languages.

### 4.3 POINTS

Another relatively transparent element that was used frequently by the participants in this study is the point (an extended index finger directed at various things, as will be explained below). In order to discuss the various points that were

articulated, I first present the percentages of all points for all the sessions; these data are given in Table 4.6 and Table 4.7.

Table 4.6: Use of points during the El Paso data collection sessions

Session	Total elements	# of points	% of total
Group discussion	1573	279	17.7%
Interview: EP2	386	79	20.5%
Interview: EP3	579	169	29.2%
Interview: EP4	553	123	22.2%

Table 4.7: Use of points during the Texas Valley data collection sessions

Session	Total elements	# of points	% of total
Group discussion	1748	330	18.9%
Interview: TV2	587	89	15.2%
Interview: TV3	503	114	22.7%
Interview: TV4	548	93	17.0%

The points captured in Table 4.6 and Table 4.7 served several functions. Some acted as pronouns: specifically, points articulated by the signer to herself or to the other participants in a particular session. Additionally, references to locations (such as Mexico or the United States) and other non-present individuals were achieved by pointing. Finally, points made to fingers of the non-dominant hand to specify degrees of language ability or elements of a list comprised the remainder of the deictic points in these data.

#### **4.3.1 Points used to refer to individuals involved in the discussion**

The majority of the deictic points that were produced in both the group discussions and the interviews were points by the signer to herself or to other participants in the study.<sup>24</sup> In the case of the group discussions, the other participants could be any one of the three other individuals who were involved in that discussion. In the interviews, the other participant refers to whomever is not signing. Table 4.8 and 4.9 show the percentages of these types of points in the data.

Table 4.8: Percentages of points to present individuals in the El Paso sessions

Direction of point	Group (n=155)	Interview: EP2 (n=34)	Interview: EP3 (n=69)	Interview: EP4 (n=60)
Herself/himself	29.4%	18.3%	12.8%	20.7%
Other participant	32.1%	29.6%	29.7%	28.9%
Session total	61.5%	47.9%	42.1%	49.6%

Table 4.9: Percentages of points to present individuals in the Texas Valley sessions

Direction of point	Group (n=193)	Interview:TV2 (n=64)	Interview:TV3 (n=80)	Interview:TV4 (n=73)
Herself/himself	17.5%	4.5%	13.4%	32.3%
Other participant	41.7%	67.4%	58.0%	46.2%
Session total	59.2%	71.9%	71.4%	78.5

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<sup>24</sup> The form of this type of point is much like the gestural points that are produced by hearing, sighted individuals when they are attempting to make reference to an individual or a thing; the index finger is extended in the direction of the referenced individual or item, and the thumb and remaining fingers tend to be bent. There does not appear to be any difference between a monolingual user of LSM articulating this point and a monolingual user of ASL articulating this point.

As can be seen in Tables 4.8 and 4.9, at least 42% (EP3 interview) of the deictic points in any given session served a pronominal function, and that number could reach as high as 78% (TV4 interview). Note that percentages for the El Paso and Texas Valley group discussion sessions are very similar to each other, and these pronominal points comprise approximately 60% of all deictic points in those sessions. Since there are so many of this type of deictic points in the discourse, and since they are presumably quite transparent to the interlocutor(s), even monolingual users of a signed language would likely be able to understand who is being referred to in segments that contain these points. This is likely the case even if parts of the conversation are in one language and parts in the other. An example of a pronominal deictic point from the data is given in (4.9).

(4.9) [GD 6-8 1.47]

TV4: point-TV1 THINK GUSTAR/ENJOY TAMAL point-TV1 T-A-M-A-L

“Do you like tamales?”

Notice that in this example, TV4 points to TV1 two times within the same turn. Repetition of pronominal points within a single sentence or turn occurred regularly in the sessions. Within certain syntactic positions, some authors have called this phenomenon “pronoun copy” (Bos, 1995; Padden, 1988)

#### **4.3.2 Points used to refer to locations and non-present participants**

Points not directed at other participants present in the discussion were coded for the general location to which they were directed—from the signer’s perspective. Most of these points functioned as references to geographical locations, whereas a small number had pronominal functions because they referred to other individuals who were being discussed in the discourse, but who were not present. The form of these points resembles that of the pronominal points with the exception that the index finger in these points is not directed at another individual who is present for the discussion. In Tables 4.10 and 4.11, I have separated the data according to the various directions in which the points were directed: downward, upward/rightward/leftward,<sup>25</sup> and forward. Also presented in this set of data are those points that were held as the hand moved through the signing space in an arc-like or circular fashion. These latter points were normally used for reference to more than one non-present individual.

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<sup>25</sup> These three directions were lumped together because they seemed to serve the same function: reference to a geographical location. It is common for leftward or rightward points to serve pronominal functions in signed languages when referring to non-present animate entities, but the points in this group did not tend to serve that function.

Table 4.10: Percentages of points that reference locations and non-present individuals in the El Paso sessions

Direction of point	Group session (n=109)	Interviews		
		EP2 (n=4)	EP3 (n=53)	EP4 (n=29)
Downward	7.5%	0%	9.8%	0.8%
Upward/leftward/rightward	16.3%	2.8%	6.7%	6.6%
Forward	14.7%	1.4%	12.8%	13.2%
Arcing/circular	0.8%	1.4%	3.0%	3.3%
Session total	39.3%	5.6%	32.3%	24.0%

Table 4.11: Percentages of points that reference locations and non-present individuals in the Texas Valley sessions

Direction of point	Group session (n=128)	Interviews		
		TV2 (n=13)	TV3 (n=13)	TV4 (n=15)
Downward	12.0%	5.6%	1.8%	2.2%
Upward/leftward/rightward	22.7%	5.6%	5.4%	7.5%
Forward	3.4%	3.4%	4.5%	3.2%
Arcing/circular	1.2%	0%	0%	3.2%
Session total	39.2%	14.6%	11.6%	16.1%

The first thing to note in the first column of data in Tables 4.10 and 4.11 is that these points comprise approximately 40% of the deictic points in the group discussion sessions. While this is not as high as the approximately 60% pronominal points that were produced in the group sessions, it is still a significant amount. The referents of these points to location and non-present individuals, however, may not be as transparent as the pronominal points discussed in the last section. The pronominal points were only directed at individuals who participated in the discussion and

interview sessions; the intended referents of those points were particularly transparent. The points presented in Table 4.10 and Table 4.11, however are directed at various locations, and their meanings must be based on context.

I will first address the downward points. Note that the percentages of downward points are low for several of the interview sessions, but relatively high for two of the sessions; I propose a reason for this difference. The LSM sign that is glossed as AQUÍ ('here') is articulated with a downward pointing of the index finger. In my coding, I did not want to misrepresent downward points that may not have been the sign AQUÍ, so I coded all downward points as "downward points" (rather than assuming that the sign AQUÍ was being articulated) and did not attempt to determine if they were LSM signs or not. There were two interviews in which the participants produced comparatively more deictic points than the participants in the other interviews. The numbers of downward deictic points seems to be consistent with the fact that the interviewees in those sessions produced significantly more LSM signs in the group discussion than the other participants.<sup>26</sup> Because this is the case, perhaps those two participants (EP3 & TV2) and the interviewers (EP1 & TV1) were really articulating the LSM sign AQUÍ. The downward point that a monolingual ASL signer might produce is different from the sign HERE, which is produced with two hands in the 5-hs, palms facing upward, and back and forth horizontal movement of the hands in the signing space. However, a downward point in ASL also communicates the concept that the signer is referring to a specific immediate location (a city, a building, a room, or a specific place in a room), but it is not clear if that point is a gesture or a sign. In LSM, there is no other sign for the concept "here"; a

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<sup>26</sup> Data regarding the relative use of LSM and ASL by participants will be presented in Chapter 6.

downward point is needed to communicate that concept. Further, the downward point in ASL for reference to a present location is usually articulated with two hands rather than just one, the LSM sign AQUÍ is usually articulated with one hand. As a result, I suggest that the downward points that were communicated frequently by some participants (EP3, TV2, EP1, and TV1) were really instances of the LSM sign AQUÍ.

An example of a participant using the downward point within a string of discourse is given in (4.10). In this segment, EP3 is commenting on the year in which she began to learn English in the United States after having moved from Mexico.

(4.10) [I 6-8 1.22]

1 EP3: ANTES/PAST NOVENTA-Y-OCHO ANTES/PAST

2 MOVE/MUDARSE SCHOOL STUDY point-downward

3 INGLÉS point-downward

“In the past, in ’98, I moved here and studied English in school.”

Note that the first instance of the downward point (line 2) is preceded by the ASL sign STUDY. But, the second instance of the downward point (line 3) is preceded by the LSM sign INGLÉS. It is not clear if these downward points are non-linguistic gestures or if they are signs from LSM (such as AQUÍ) or ASL (to mean ‘here’). Nonetheless, the meaning appears to be the same. The only consequence is how this element is labeled for purposes of this study. I have chosen to label it as a deictic point keeping in mind that this category of deictic points may also include a few tokens of the LSM sign AQUÍ.

Tables 4.10 and 4.11 also show the usage of “upward/rightward/leftward” and “forward” points, respectively. These results represent points that tend to refer to

places (such as Mexico, Acapulco, or California) or individuals not present (such as TV4 referring to his wife who is not in the room). I have chosen to separate these points from those that are directed at other participants in the discussion because these points (“upward/rightward/leftward/forward”) can be ambiguous. Additionally, in some cases the signing participant pointed in a forward direction, but the point did not appear to be directed at one of the other participants who were involved with that session. I coded those tokens as “forward points”. Some of these tokens may also be points that function as pronouns, which would add to the already large percentages of those types of points. Careful analysis of the text would have to be made before I could make a decision about whether such points are have pronominal functions or if they simply are referencing locations.

An example of reference to a location is given in (4.11) and an example of reference to a non-present individual is given in (4.12).

(4.11) [GD 10-12 .19]

EP2: CALIFORNIA point-upward BOAT/BARCO SMALL/CHICO  
SOUTH/SUR BOAT/BARCO BIG NOT-YET

“(I’ve been on) a small boat in southern California, but I’ve not been on a big one.”

(4.12) [GD 6-8 1.54]

TV4: point-TV4 WIFE/ESPOSA point-forward...

“My wife, she...”

In (4.11), EP2 is referring to California when he points in an upward manner. In (4.12), TV4 is referring to his wife when he points in a forward direction. The first

point in that line may have been an attention getting device. Even though TV3 is seated in the general direction of the forward point, he appears not to be the individual to whom TV4 is referring in this example.

Finally, as also reported in Table 4.10 and Table 4.11, a small number of points were made in arc-like or circular manners, which tended to refer to a number of individuals who were being discussed, but who were not present. In these types of pronominal points, the participants used arm movements that appear to be similar in LSM and ASL. An example is given in (4.13), and the arc-like point is in bold.

(4.13) [I 4-6 .13]

EP4: BUT point-EP4 MOST MOTHER SPANISH **point-arc** MOST  
TOUGH/DURO COMMUNICATION/COMUNICACIÓN UNDERSTAND  
EASY KNOW HOME SIGN/SEÑA GESTURE HOME  
SIGN/SEÑA THAT emblem: “well”

“But, (I communicate with) my mother mostly, because the others mostly speak Spanish, which is tough to communicate with. Do you understand what I mean? It’s easy to know (and use) home signs and gestures.”

In this segment, EP4 is commenting on the use of gesture and home signs with his family because it is difficult to communicate otherwise, especially when they use Spanish. Although, he mentions that he can communicate with his mother somewhat easily.

#### **4.3.3 Deictic points used for listing purposes or to specify degrees of language ability**

The last type of deictic point that was produced by the participants in this study does not have a pronominal function, and it also does not reference particular places. Rather, this deictic point was used to reference items of a list or to specify degrees of language ability by pointing to fingers of the non-dominant hand that represented a range of levels. Essentially, extended fingers of the non-dominant hand were used as a five-point scale. This use of the deictic point by some participants, mostly during the interview sessions, is largely an artifact of some of the interview questions that were asked of each subject. The specific questions are contained in Appendix B, and I will not reproduce them here. However, there were two types of questions that tended to elicit these types of points from participants: a question about whether or not other family members were also Deaf and questions designed to elicit opinions from the participants about their language ability (in ASL, LSM, English, and Spanish). In order to obtain responses from each participant that could be compared to the other participants, for the questions about language ability I urged the interviewer to use a system that would indicate degrees or levels of language ability on the fingers of the non-dominant hand. The interviewee would be asked to indicate which level of language ability she felt she had for each of the four languages. The interviewer would set-up the question by pointing to her thumb with her dominant hand and explaining that that digit represented lack of ability or awkwardness with a language, whereas the pinky represented a strong ability or fluency in that language. The other three fingers indicated degrees of knowledge or ability between the least amount (indicated by the thumb) and the most (indicated by

the pinky). Because these questions were asked during the interview portion of the study, most of the tokens of this type of deictic point can be found in those data. However, there are also some instances of pointing to fingers of the non-dominant hand for listing purposes during portions of the group discussions. The percentages of these types of deictic points are given in Table 4.12 and Table 4.13.

Table 4.12: Percentages of deictic points for listing or specifying degree of language ability in the El Paso sessions

Direction of point	EP group session (n=12)	Interviews		
		EP2 (n=33)	EP3 (n=38)	EP4 (n=32)
a digit of non-dominant hand	4.8%	46.5%	23.2%	26.4%

Table 4.13: Percentages of deictic points for listing or specifying degree of language ability in the Texas Valley sessions

Direction of point	TV group session (n=5)	Interviews		
		TV2 (n=12)	TV3 (n=19)	TV4 (5)
a digit of non-dominant hand	1.5%	13.48%	16.96%	5.37%

As can be seen in Table 4.12, this type of point was very prevalent in the El Paso interview sessions. For one subject (EP2), this type of point comprised nearly half of the entire deictic points produced by this individual. The percentages were also high for the other two El Paso participants. However, the Texas Valley data, as seen in Table 4.13, are somewhat different. In those data, we can see that TV3 produced the highest percentage of these points, whereas TV4 does not seem to have produced many at all. I should note that, for the coded discourse of TV4's interview, TV1 had not yet established this system of indicating degree of language ability.

Thus, the number of these types of points by him were low. Additionally, TV1 had not established this system for TV2 in the data of that session that were coded, but TV2 used this type of point several times when listing other members of her family who are Deaf. Thus, this type of point as a listing mechanism was used somewhat in the interviews. The low percentages of these types of points in the group discussions show that there was not the type of pointing used in those sessions to indicate language ability, but there were few instances of pointing to fingers of the non-dominant hand for listing purposes.

As can be seen from the data in this section, a significant number of points were produced by all the participants in this study, and these points were produced both in the group discussions and the one-on-one interviews. I have addressed the different types of points in detail because points constituted such a high percentage of the total elements for each session—almost one-fifth of all elements in most sessions, and more than that amount in four of the interview sessions. This frequent use of an element that is mostly transparent to the viewer is one reason that I believe conversations between users of LSM and ASL, even monolingual signers, can be successful.

#### **4.4 SUMMARY**

The information presented in the three major sections of this chapter suggests that, on average, slightly more than 50% of all elements in the group and interview sessions could be understood by monolingual users of either LSM or ASL. The average percentage of SA signs throughout all sessions was 20%. Gestural and pantomimic elements totaled more than 13% of the group discussion elements. Further, points averaged slightly more than 20% for all the sessions. If we combine

these three types of elements, we can see that slightly more than 50% of the elements are transparent to even monolingual signers. Perhaps these sources of similarity are aids for monolingual signers when they interact with monolingual users of other sign languages. However, despite these similarities, LSM and ASL have been reported to be mutually unintelligible (Faurot et al., 1999). There may be factors yet to be addressed that would influence this claim.

## **Chapter 5: Results of differences between LSM and ASL**

In this chapter, I describe the manner in which differences between LSM and ASL result in at least two phenomena: the mixing of the two languages to produce elements that are not fully well-formed in either language, and the production of elements or segments that are potentially difficult to comprehend. The discussion in Section 5.1 focuses on the mixing of phonological parameters of sign formation. Section 5.2 addresses two categories of lexical signs that may cause comprehension difficulties in this language contact situation: cardinal numbers and similarly articulated but semantically unrelated (SASU) signs.<sup>27</sup> Section 5.3 describes the mixing of non-manual signals (NMS) from one language with lexical items of the other language. Finally, Section 5.4 describes the mouthing of a spoken language while simultaneously producing signs.

### **5.1 PHONOLOGICAL MATTERS**

This section contains two types of information: a description of differences between LSM and ASL with regard to the form of fingerspelled letters, and data from this study that describe ways in which phonological parameters from one language are used for production of signs from the other language.

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<sup>27</sup> The term *SASU sign* is employed because *false cognate*, like the term cognate, implies a historical connection between the languages from which the lexical items are taken. This study is not concerned with historical analysis of LSM and whether or not certain LSM and ASL signs can be considered true cognates or false cognates. Thus, I will use SASU sign to simply denote two signs, one from LSM and one from ASL, that are “similarly articulated but semantically unrelated.”

## **5.1.1 Preliminary information: Phonological descriptions not elsewhere in the literature.**

### **5.1.1.1 Fingerspelled letter differences between LSM and ASL.**

Prior to reporting the results from the data collection in El Paso and the Texas Valley, I will describe phonetic/phonological differences between ASL and LSM that have not been reported elsewhere.

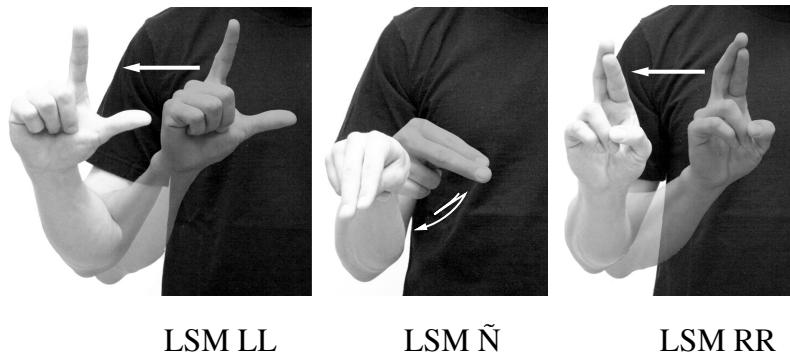
Most of the handshapes and movements used for fingerspelling letters in LSM are similar to those used in ASL. However, there are some differences. In Spanish orthography, the letter ll is used to denote the phoneme /y/, and this letter appears as a single segment in Spanish dictionaries. Additionally, the distinction between a flap in words like *pero* ('but') and a trilled consonant in words like *perro* ('dog'), is represented by a distinction between a single letter (r) and a double letter (rr). Users of LSM have adopted special movements for the fingerspelling of ll and rr. Essentially, the handshape used for these double letters is the same for LSM L and LSM R respectively with one difference: the hand moves away from the mid-line<sup>28</sup> in the signing space. Incidentally, LSM L is the same as ASL L and LSM R is the same as ASL R. One digraph that is represented in some Spanish dictionaries but that does not exist in English orthography is *ch*. In LSM this digraph does not seem to be produced with a special movement. Essentially, this digraph is produced by articulating LSM C followed by articulation of LSM H. Like the letters discussed above, LSM C and ASL C are the same. However, LSM H and ASL H differ minimally; this difference will be explained below. One other letter exists in Spanish

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<sup>28</sup> The midline (or mid-sagittal plane) has been described as an imaginary vertical line that divides the signer's body into two equal halves with one set of limbs on one side of the line and other set on the other side. Thus, in the fingerspelled letter *ll*, a right-handed signer would move the hand to the right while a left-handed signer would move the hand to the left.

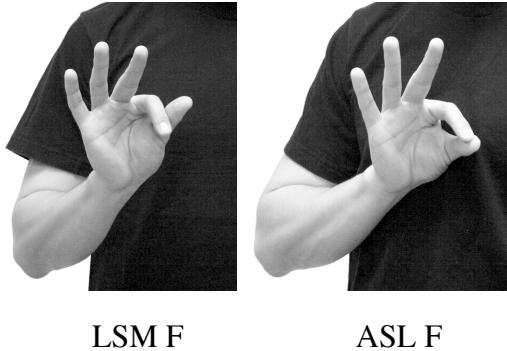
orthography but not in English orthography, and that letter is *ñ*. Similar to ll and rr, this letter has a special hand movement associated with it: rotation of the forearm results in a back and forth movement of the hand while simultaneously articulating LSM N. See Figure 5.1 for a photographs of LSM LL, LSM *N*, and LSM RR.

Figure 5.1 LSM LL and LSM *N*



Regarding letters that exist in both Spanish and English orthographies, several letters in LSM are articulated differently from their ASL equivalents, albeit with only minimal differences. LSM F is similar to ASL F, but the tips of the index finger and thumb do not contact each other as in ASL F. Rather, the palm side of the thumb contacts the radial side of the index finger approximately at the proximal interphalangeal joint (mid-way between the tip of the finger and the distal knuckle joint). The remaining three fingers are approximately in the same configuration as in ASL F. See Figure 5.2 for a visual rendering of LSM F and ASL F.

Figure 5.2 LSM F and ASL F



Additionally, LSM G and LSM H differ from common variants of ASL G and ASL H in one way: in the LSM versions, the thumb points upward at approximately a 45 degree angle from the extended index finger, while in two of the ASL versions the thumb points in the same direction as the index finger. There happen to be at least three variants of the ASL G: one with the thumb and index finger pointing toward the midline (represented here as ASL G<sub>a</sub>), another with those same digits pointing forward (represented here as ASL G<sub>b</sub>), and another that resembles the LSM G (represented here as ASL G<sub>c</sub>) with the thumb extended upward. It is not clear if ASL H has a variant with an extended thumb like LSM H. Some Deaf consultants reject this variant of ASL H. See Figure 5.3 for a visual depiction of LSM G and the three variants of ASL G. See Figure 5.4 for LSM H and the two variants of ASL H.

Figure 5.3 LSM G, ASL G<sub>a</sub>, ASL G<sub>b</sub>, and ASL G<sub>c</sub>

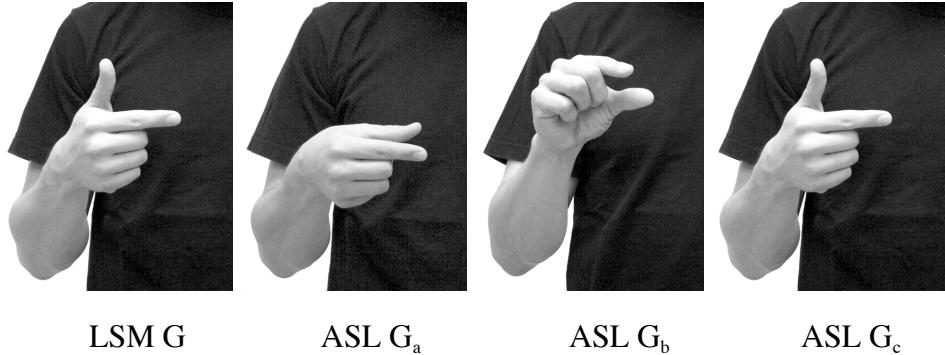
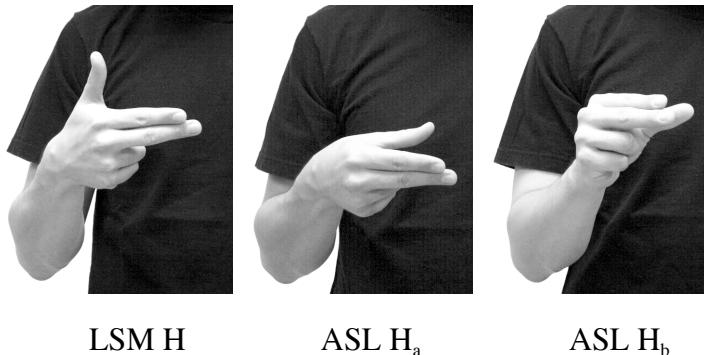


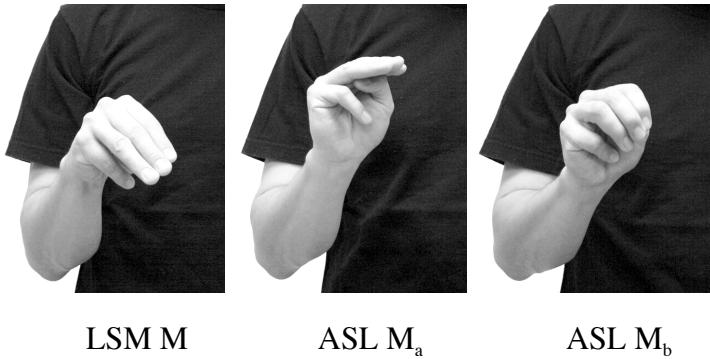
Figure 5.4 LSM H, ASL H<sub>a</sub>, and ASL H<sub>b</sub>



LSM M and N differ only slightly from ASL M and N, but the difference is two-fold. The first difference concerns palm orientation. The hand is bent forward at the wrist more in the LSM versions of these letters than in the ASL versions, such that the wrist is straight or the hand bends forward at the wrist to create approximately a 225 degree angle between the back of the hand and the forearm.

Essentially, this means that the palm faces downward in LSM M and LSM N.<sup>29</sup> However, in the ASL letters, the wrist bends slightly backward so that there is approximately a 120 degree angle between the back of the hand and the forearm. Thus, in ASL M and ASL N the palms are facing forward. Another difference is that the digits that are extended in the articulation of LSM M (the index, middle and ring finger) and LSM N (the index, middle and ring fingers) seem to always be extended. In the ASL versions of these letters, there is a variant with those digits bent at the proximal interphalangeal joint and another variant with the digits extended as in the LSM versions. See Figure 5.5 for a visual depiction of LSM M and two variants of ASL M. Figure 5.6 contains LSM N and two variants ASL N.

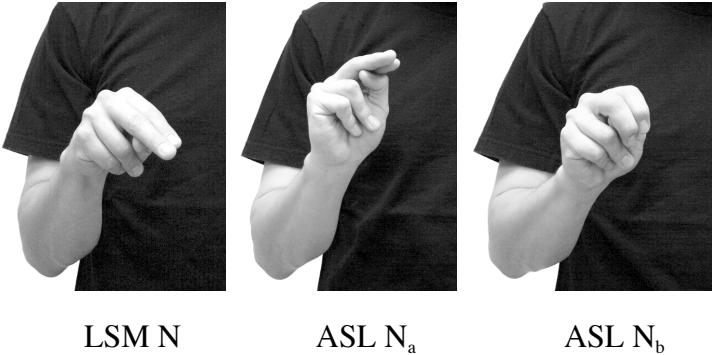
Figure 5.5 LSM M, ASL M<sub>a</sub> and ASL M<sub>b</sub>



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<sup>29</sup> Some ASL signers, especially older users of the language, also produce ASL M and N with this palm orientation, but it appears to be much less prevalent than the versions with the palm oriented outward.

Figure 5.6 LSM N, ASL  $N_a$ , and ASL  $N_b$



There are quite noticeable differences between the LSM and ASL manners of articulating the letters “p” and “k”. There is one similarity, however, and that is handshape: these letters in both languages are articulated with the same handshape. However, the differences lie in the parameters of movement and palm orientation. ASL K and ASL P differ only in palm orientation: in ASL P, the palm is oriented downward whereas in ASL K, it faces outward. LSM K and LSM P differ in movement and an initial value for palm orientation. The articulation of LSM P is exactly the same as that of ASL K. LSM K, however, has a movement component that causes it to differ from LSM P, ASL K, and ASL P. Articulation of LSM K requires that the hand bend at the wrist joint from approximately a 225 degree angle between the back of the hand and the forearm to approximately a 135 degree angle between the back of the hand and the forearm. Thus, at the start of the articulation of LSM K the palm is oriented downward and at the end it is faces outward. Figure 5.7 shows LSM K and ASL K and Figure 5.8 shows LSM P and ASL P.

Figure 5.7 LSM K and ASL K

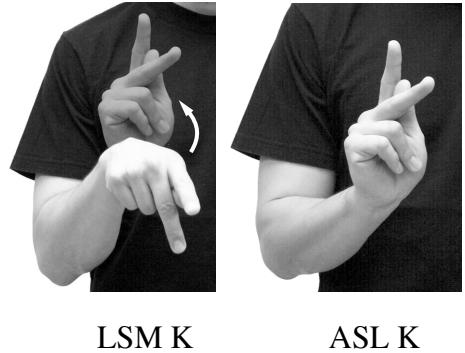
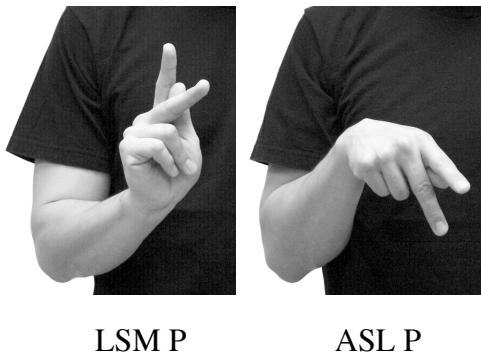


Figure 5.8 LSM P and ASL P

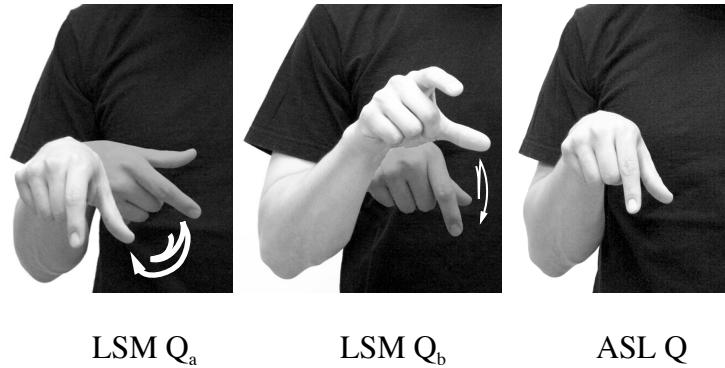


Other LSM fingerspelled letters that differ from their ASL equivalents are LSM Q, LSM X, and LSM Y. In LSM Q, the thumb and index finger are further away from each other than in ASL Q. Also, LSM Q may have at least two variants.<sup>30</sup> In LSM Q<sub>a</sub>, there is a back-and-forth movement of the hand achieved by twisting the forearm. In LSM Q<sub>b</sub>, the hand moves in an up and down motion. LSM Q<sub>a</sub>, LSM Q<sub>b</sub> and ASL Q are shown in Figure 5.9.

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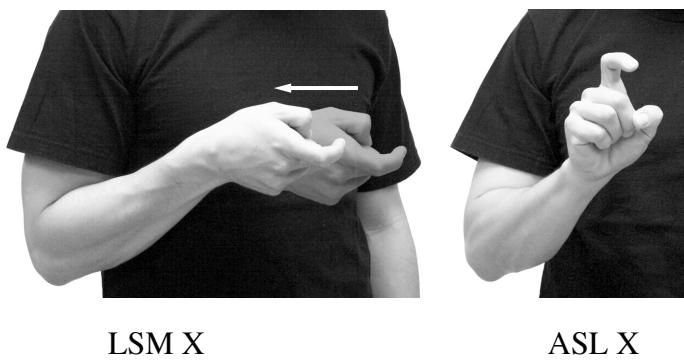
<sup>30</sup> I have witnessed Deaf signers produce only LSM Q<sub>a</sub>. LSM Q<sub>b</sub> was represented in one of the LSM dictionaries that I used during the coding process.

Figure 5.9 LSM Q<sub>a</sub>, LSM Q<sub>b</sub> and ASL Q



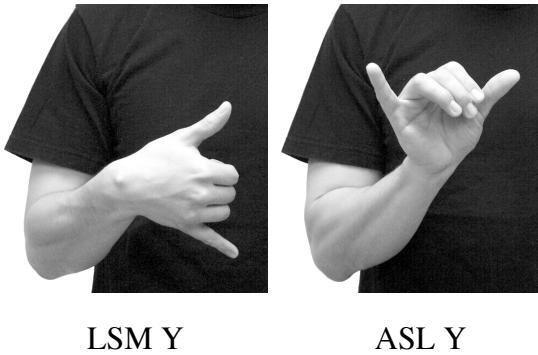
LSM X, on the other hand, exhibits the same handshape as ASL X, but the palm orientation is toward the midline rather than the away from the signer as in ASL X. Also, LSM X has a movement from a more distal area of the signing space in relation to the signer to a more proximal area of the signing space. Essentially, this means that the signer moves her hand toward her torso in LSM X, whereas there is no movement of this type in ASL X. See Figure 5.10 for visual depictions of LSM X and ASL X.

Figure 5.10 LSM X and ASL X



Finally, LSM Y is made with the same handshape as ASL Y, but the palm orientation is toward the signer rather than away from the signer as in ASL Y. The thumb points upward in LSM Y.<sup>31</sup> ASL Y and LSM Y are shown in Figure 5.11.

Figure 5.11 LSM Y and ASL Y



In summary, articulation of the following LSM letters differs from their ASL counterparts: F, G, H, K, M, N, P, Q, X, and Y. Handshapes that differ between the ASL letter and its LSM counterpart are the following: F, G, H, and Q. Movements that differ between the ASL letter and its LSM counterpart are in the following letters: K, Q, and X. Palm orientations that differ between the ASL letter and its LSM counterpart can be found in the following letters: K, M, N, P, X, and Y. Finally, letters that exist in LSM but not in ASL are the following: LSM LL, RR, and Ņ.

These fingerspelled letter differences between LSM and ASL are noteworthy for at least a couple reasons. First, if a signer is fingerspelling a word that contains one or more of the letters that are fingerspelled differently in the two languages, the particular handshapes, orientations, and movements of those letters would likely

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<sup>31</sup> Incidentally, I have seen a variant in one dictionary that lists LSM Y with both the thumb and pinky facing downward. I have never seen this variant articulated by users of LSM.

signal which fingerspelling system the signer is using. Additionally, there are many signs that are “initialized” in both LSM and ASL, and use of a particular handshape might signal which phonological system a signer is accessing for sign formation. Initialized signs are those that are articulated with a fingerspelled handshape that usually corresponds with the first letter of a written word that is semantically equivalent to that sign. For example, the sign FAMILY in ASL is formed with an ASL F and the sign MAMÁ in LSM is articulated with an LSM M. Some authors have claimed that there is a higher degree of initialization in LSM signs than ASL signs (Faurot et al., 1999). Initialized signs are one locus that we can look for phonological interference between two signed languages.

#### ***5.1.1.2 Handshape differences between LSM and ASL.***

Some signs in LSM utilize handshapes that are not found in ASL. The LSM sign MIÉRCOLES ('Wednesday') utilizes a closed 5-hs with the pinky bent at the proximal interphalangeal joint. The independent bending of the pinky does not seem to occur in ASL handshapes. See Figure 5.12 for the handshape used in the sign MIÉRCOLES.

Figure 5.12 LSM handshape for MIÉRCOLES



Additionally, the ASL handshape inventory does not contain the handshape used in some initialized LSM signs that correspond to Spanish words that begin with the letter “t”. This variant of LSM T used primarily for initialized signs in LSM is likely a remnant of LSF, since the current LSF T is articulated in the same manner (see Moody et al., 1998 for a list of the LSF handshapes used to articulate French letters). Therefore, I will refer to this handshape as LSM/LSF T. See Figure 5.13 for a depiction of this LSM handshape. Some examples of signs that this handshape appears in are TRABAJO ('work'), TÍO ('uncle'), MUCHO-TIEMPO ('long-time'), and TAMAL ('tamal'). This handshape is articulated like ASL T, but the middle finger, ring finger, and pinky are extended; these fingers are all bent or closed in LSM T and ASL T.

Figure 5.13 LSM/LSF T



### ***5.1.1.3 Hand internal movement in LSM not found in ASL***

In LSM, at least one sign is articulated with hand internal movement that does not occur in ASL signs. Specifically, the LSM sign SÍ ('yes') is articulated with an LSM I-hs and hand internal movement of the pinky. In this sign, the pinky bends at the proximal and distal interphalangeal joints and then extends again. This cycle repeats itself once or several times—depending on the amount of time that the hand is held in neutral position to articulate this sign. See Figure 5.14 for the LSM sign SÍ.

Figure 5.14 LSM SÍ



### 5.1.2 Phonological evidence of contact

In the following presentation and discussion of data from this study, I will describe instances in which participants articulated signs with unexpected values for various phonological parameters. In several instances, participants produced signs in one language with a phonological parameter value from the other language. In some cases, we can refer to specific phonological differences between LSM and ASL for explanations of these ill-formed signs. In other cases, however, the issue of normal language variation surfaces, and it is not entirely clear if the signs are truly ill-formed or the result of variation in the production of various phonological parameters.

#### 5.1.2.1 Handshape: LSM F versus ASL F

As described in Section 5.1.1.1, the handshapes used to articulate LSM F and ASL F differ by a small degree, but that difference is often significant enough to be observed when a signer uses the F-hs for the production of a sign. The articulatory differences in these handshapes may be different phonetic realizations of a single phoneme. In Section 2.3.1, I discussed *sound substitution*, or a “foreign accent”, a phenomenon that can result from the contact between two languages that have an identically defined phoneme but with different phonetic realizations of that phoneme in the two languages. In some cases of the phenomenon of foreign accent, a speaker

will articulate a word from the foreign language with an allophone from her native language. Handshapes have been considered allophones (or “allochers”) of a single phoneme (or “chereme”) by some authors (Stokoe, Casterline, & Croneberg, 1965). Thus, I suggest that the use of LSM F in place of ASL F in an ASL sign (or ASL F in place of an LSM F in an LSM sign) is comparable to sound substitution or foreign accent in spoken language contact situations.

In several instances, participants utilized an LSM F-hs to articulate an ASL sign or an ASL F-hs to articulate an LSM sign. This was done by at least five of the eight participants in this study. The other three participants may have produced signs with the F-hs of the other language, but they could not be observed clearly because of limitations of the videotaping. As I mentioned in Section 3.5 of this dissertation, I utilized one camera for the interviews and two cameras for the group discussions. Despite my attempt to capture as much of each signer as possible, the specific handshape of a sign was sometimes difficult to determine because something (e.g., a hand, an arm, a forward lean by another participant) obstructed the camera’s view.

In the data, there are several tokens of the use of a handshape from one language with a sign from the other language. One example of the use of an LSM handshape with an ASL sign is the lexical item FAMILY. Two of the EP participants (EP1 and EP3) and one TV participant (TV2) articulated an LSM F-hs while producing this ASL sign. Examples (5.1), (5.2), and (5.3) come from group discussions. Each token of FAMILY in these examples was produced with an LSM F-hs.

(5.1) [GD 1214 .40]

EP1: FAMILY GO-TO-forward EAT/COMER point-forward FAMILY  
TWENTY-FOUR DAY EAT/COMER FAMILY WHAT  
point-forward

“On the 24<sup>th</sup> (of December), where does your family eat and what do they eat?”

(5.2) [GD 1214 .26]

EP3: point-EP3 GO-TO-left++ CHRISTMAS/NAVIDAD<sup>32</sup> GO-TO-left++  
FAMILY point-left point downward <sup>—negative head shake</sup> gesture: “well”  
“As for me, for Christmas I go regularly (to Mexico) because my family is there; they  
are not here. What am I to do?”

(5.3) [GD 68 .40]

TV2: TIME TWELVE FAMILY ABRAZAR/HUG

“...at 12 o’clock (midnight), the family members hug each other...”

As mentioned above, in examples (5.1), (5.2), and (5.3), the participants articulated FAMILY with the LSM F-hs rather than the ASL F-hs. Note that the other signs in these segments are all ASL signs or similarly articulated signs. Thus, it isn’t the case that the participants produced LSM F-handshapes in these ASL signs because there were LSM signs produced shortly before or after the sign FAMILY that might have influenced the signer to use an LSM handshape. Interestingly, EP1, who

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<sup>32</sup> This is the variant of CHRISTMAS/NAVIDAD that indicates a long beard (as if referring to the beard of Santa Claus). This is not the variant that is initialized in ASL with a C-hs or in LSM with an N-hs. Those two variants are articulated in different places and with different movements.

produced the three tokens of FAMILY with an LSM F-hs in (5.1) produced FAMILY with an ASL F-hs in other contexts.

In Section 2.6, I noted that Lucas and Valli (1992) suggested that borrowings might be one of the results of contact between two signed languages. With this in mind, another possibility is that the sign FAMILY with the LSM F-hs, as produced in the examples above, is articulated frequently in LSM along the border and can be considered a “borrowing” from ASL into LSM—having taken on the phonology of LSM (specifically, handshape) as it has become incorporated into that language. After all, each token of FAMILY in the examples above, including the three produced by EP1 in (5.1), is articulated with the LSM F-hs. Yet, in the these examples there are also few tokens of signs unique to LSM, which would suggest that the signers are producing ASL and not LSM. If the participants were producing more LSM than ASL in these examples, perhaps we could propose that FAMILY with LSM F-handshapes is indeed an instance of a borrowing from ASL to LSM. But, there is not enough data to make this suggestion. Additionally, since FAMILIA—a semantically similar lexical item—exists in LSM, it is unclear why FAMILY would be borrowed from ASL. Despite these points, it might be the case that FAMILY with LSM F-handshapes is used frequently by monolingual signers along the border, and that fact would provide stronger evidence for the status of this element as a borrowing from ASL to LSM. More fieldwork is required to explore this possibility.

Another example of an LSM F-hs being used with an ASL sign was produced by EP1 in one of the interviews that he conducted. Specifically, he produced an LSM F-hs with the ASL sign EVERY-FRIDAY. This can be found in (5.4), and the token of EVERY-FRIDAY with an LSM F-hs is in bold.

(5.4) [I 810 1.47]

EP4: SPANISH SIGN/SEÑA ONLY SOMETIMES++ EVERY-SATURDAY

“I use Spanish sign (LSM) only sometimes, like on Saturdays...”

EP1: SOMETIMES EVERY-SATURDAY

“Oh, sometimes on Saturdays...”

EP4: SOMETIMES EVERY-FRIDAY

“...sometimes on Fridays...”

EP1: SOMETIMES EVERY-FRIDAY

“...sometimes on Fridays...”

Note that during the interview session shown in (5.4), the ASL sign EVERY-FRIDAY was first signed by EP4 with an ASL F-hs, and then signed by EP1 with an LSM F-hs. As was the case in other examples from the interviews or group discussions, the interviewer was repeating some of the signs that were produced by the interviewee. This act of copying another participant’s signs seems to be a feedback mechanism. Despite having just seen EP4 produce an ASL sign with the ASL F-hs, EP1 articulated that same ASL sign with the LSM F-hs. I should note that EP1 grew up in Mexico using LSM and learned ASL as an adult. Perhaps this is why he tends to use the LSM F-hs in place of the ASL F-hs in this ASL sign. Yet, as noted above, there are also several examples of EP1 articulating an ASL F-hs with ASL signs that require such a handshape.

Additionally, there is at least one example in the data of a participant producing an ASL F-hs with an LSM sign. Specifically, TV1 signed FEBRERO

(‘February’) with an ASL F-hs during the EP group discussion. See (5.5) for this example; the token of FEBRERO with an ASL F-hs is in bold.

(5.5) [GD 810 .00]

TV1: CUMPLEAÑOS HACER point-TV3-TV2-TV1(arc) point-TV2

“What do you (usually) do for your birthday?”

TV2: point-TV2 **FEBRERO** VEINTITRÉS

“My birthday is February 23<sup>rd</sup>. ”

TV1: **FEBRERO** VEINTITRÉS

“...February 23<sup>rd</sup>...”

As with example (5.4), the interviewer in (5.5) is repeating signs that another participant just produced. Yet, the interviewer uses an ASL-hs with an LSM sign even after TV2 used the LSM F-hs when articulating FEBRERO. TV1 grew up signing ASL rather than LSM, so her tendency might be to use ASL F-handshapes in signs that require LSM F-handshapes. Yet, like EP1, she appropriately uses the LSM F-hs in other instances. It is not clear from these data if the variation in F-hs production by EP1 and TV1 is systematic or not.

As reported in Section 5.1.1.2, there exist several signs in LSM that are articulated with a particular handshape that likely descended from LSF, and I have chosen to refer to this handshape as LSM/LSF T. This handshape does not exist in ASL. While LSM/LSF T resembles LSM F and ASL F, there is one difference: contact between the thumb and index finger in LSM/LSF T is made on the back or nail side of the thumb and the side of the index finger that is adjacent to the middle finger (see Figure 5.13). Contact between the thumb and index finger in ASL F, however, is on the pads of those fingers and on the palm side of the thumb in LSM F

(see Figure 5.2). Since LSM/LSF T is similar to ASL F, one might expect that a monolingual signer of ASL would produce an ASL F-hs rather than an LSM/LSF T-hs in those LSM signs are normally articulated with the LSM/LSF T-hs. One participant in the study did exactly that. Specifically, EP4 articulated an ASL F-hs when producing the LSM initialized sign TAMAL. Production of this sign was preceded and followed by ASL signs.

The articulation of a phonological parameter from one language with a lexical item from another language is not only evident in signs, but also in fingerspelling. In these data there are examples of a participant articulating the LSM F-hs during the production of an English fingerspelled word. As an example, TV4 twice fingerspelled the English word F-A-I-R with an LSM F-hs as part of his response to an interview question about his Spanish reading and writing skills. There are also examples of the reverse in the data: the ASL F-hs being used in the production of a Spanish fingerspelled item. For example, in several instances during her interview, TV2 articulated the Spanish abbreviation D-F (*Districto Federal*) with an ASL F-hs.

Several examples of phonological interference in the parameter of handshape are evident in the data from this study. This is consistent with studies of phonological variation in LSM (Currie, 1999) and dialect variation in LSM (Bickford, 1991). In these studies, phonological parameters were found to be a source of variation among lexical signs in Mexico, and handshape was frequently the parameter that exhibited the most variation.

### **5.1.2.2 Handshape: Thumb extension**

As presented earlier, LSM H differs from ASL H due to the upward extension of the thumb in the LSM handshape and not the ASL handshape (see Figures 5.3 and

5.4). One participant (EP1) articulated an LSM H-hs in the ASL sign INCREASE. This sign is normally produced in ASL with an H-hs or a U-hs—both of which do not extend the thumb in the same manner as the LSM H-hs. The same thumb extension was produced by another participant in English fingerspelled words with the letters “G” and “H”. Specifically, in the fingerspelled word W-H-E-A-T , TV4 articulated the LSM H-hs instead of the ASL H-hs. While one variant of the ASL G-hs displays an extended thumb, ASL H-hs does not appear to contain a variant with the thumb extended. The thumb extension during the articulation of the letter “h” in “wheat” as articulated by TV4 may be a result of contact between LSM and ASL.

The extension of the thumb by some participants in this study also appears in other lexical items that don’t normally have a G-hs or an H-hs. For instance, EP1 extended his thumb (as in LSM-G and LSM-H) while articulating a B-hs for the ASL sign BIOLOGY. In other words, this participant articulated this sign with a 5-hs rather than a B-hs, which is the standard handshape used for this ASL initialized sign.

#### ***5.1.2.3 Place of articulation***

In the data that were coded there was only one instance of a sign that seemed not to be well-formed with respect to the phonological parameter place of articulation. The ASL sign LIGHT is articulated with an ASL 8-hs and a flick of the middle finger off the thumb to contact the chin. However, the LSM sign LUZ (‘light’) is articulated with an L-hs, the tip of the thumb is just in front of the mouth, the index finger points upward, and there is slight circular movement in the mid-sagittal plane. EP1 articulated LIGHT with the ASL handshape for that sign, but production of the sign occurred in front of his lips rather than at the chin. Thus, this is an example of an ASL sign being articulated at the place of articulation of its LSM

semantic equivalent. One could imagine the reverse to also occur as a result of interference. Specifically, a signer could articulate LUZ on the chin (the ASL place of articulation for LIGHT) rather than on the lips. However, it may also be the case that this example of articulation of LIGHT on the lips is simply an error of production equivalent to a “slip of the tongue” in spoken language (see Klima & Bellugi, 1979; and Hohenberger, Happ, & Leuninger, *in press*; for a discussion of this phenomenon in signed language). Additionally, in a study of geographical variation in the phonological parameters of LSM signs, Currie (1999) showed that place of articulation was the most stable of the parameters. That is, signers tended to articulated variants of signs that differed in handshape and movement more often than in place of articulation. The stability of the place parameter might suggest that the example of LIGHT being produced on the lips truly was a production error. However, the fact that LIGHT was produced on the place of articulation that is used to articulate the semantically equivalent LSM sign (LUZ) hints at the suggestion that phonological interference may have been at work in that example.

#### ***5.1.2.4 Movement***

In the data that I coded, I did not encounter any sign that appeared ill-formed based on the movement used with that sign. That is, there were no instances of a particular movement that is specific to a sign in one language being used with a semantically equivalent sign in the other language. This type of interference in the contact between two signed languages, however, has been shown to exist in the signing of Russian Deaf immigrants in Israel (Yoel, 2001).

### ***5.1.2.5 Palm orientation: LSM P versus ASL P***

At least two of the participants in this study articulated the LSM P-orientation rather than the ASL P-orientation while fingerspelling English words. TV3, while fingerspelling P-E-N utilized the LSM P-orientation, which corresponds exactly to the manner in which ASL K is articulated. Also, EP1, while fingerspelling A-C-A-P-U-L-C-O, which happens to be spelled the same in both Spanish and English, also articulated the LSM P-orientation rather than the ASL P-orientation. This, of course, would have been fine for users of LSM and those literate in Spanish. However, this might pose a problem for someone who only knows ASL and English spellings of things. That person might incorrectly assume that the word ‘Acapulco’ has a “K” rather than a “P” in it.

### ***5.1.2.6 Palm orientation: Not the regular orientation for a sign***

In one case, EP3 articulated the ASL sign NOW with both hands and the correct Y-hs, but with an incorrect palm orientation. Her hands were held in the orientation that is used to fingerspell the letter “Y” in LSM, and that orientation is with the thumb facing upward and the pinky facing downward. The other parameters were correct for the sign NOW as articulated by EP3, but the palm orientation was incorrect: In the ASL sign NOW both the thumb and the pinky fingers are facing upward. However, it is not clear if interference from LSM Y was the source of this production “error”, since both LSM and ASL have signs that are made with the Y-hs and the palm orientation used for NOW by EP3. However, the orientation of LSM Y (as a letter) could be one of the sources of interference. Despite this seemingly ill-formed sign, the interviewer appeared to understand EP3’s intent.

### ***5.1.3 Summary of phonological evidence of contact***

In this section, I have described several instances of contact between two signed languages and the manner in which that contact can be found at the phonological level. I suggest that these are examples of phonological interference. That is, in these examples the signers deviated from the articulatory norms of either LSM or ASL and presumably did so because of influence from the other sign language. In other words, these are likely examples of signers producing particular signs with “foreign accents”. This contact phenomenon is paralleled, as reported in Section 2.3.2, in cases of spoken language contact where the phonology of one language influences the production of lexical items in the other language (Hensey, 1993).

At no time during the data collection did production of forms that exhibit phonological interference cause the participants to suspend their discussions in favor of discussions of the appropriateness or “correctness” of the forms. Rather, conversations among the participants appeared to continue to flow smoothly and the participants understood each other during the production of these forms. It may be the case that production of these types of forms is commonplace in the contact environments that I have focused on as well as in other contact environments between LSM and ASL.

These cases confirm the suggestion in Lucas and Valli (1992:35) that interference may occur in situations of contact between two signed languages: “...it might be precisely the lack of phonological integration that might signal interference—for example, the involuntary use of a handshape, location, palm orientation, movement, or facial expression from one sign language in the discourse

of another.” Yoel (2001), in her study of the attrition of Russian Sign Language among Russian Deaf immigrants in Israel, also showed that signers substitute phonological parameters from one signed language in the production of signs from the other signed language. In that work, Yoel suggested that phonological interference can occur with all parameters of sign formation (handshape, place of articulation, movement, and palm orientation). The present study of contact between LSM and ASL confirms that signed language contact phenomena can exhibit characteristics of spoken language contact.

Also, as noted in Section 5.1.2.1, it is possible that some of these forms that I have described as being cases of interference (such as FAMILY being articulated with LSM F-handshapes rather than ASL F-handshapes) may be evolving (or have evolved) and on their way to becoming borrowings into LSM from ASL. Further work is needed to determine if these are truly examples of borrowings.

## **5.2 LEXICAL MATTERS**

This section contains discussion of two types of lexical signs: cardinal numbers and SASU signs (see footnote 1 in this chapter for a definition of “SASU” sign). In Section 5.2.1, I begin with descriptions of a small set of cardinal number signs that differ between LSM and ASL and strategies that the participants in this study utilized to communicate numbers to each other. Next, in Section 5.2.2 I address SASU signs in LSM and ASL and examples of participants in this study clarifying the meaning of SASU signs in some contexts and not clarifying the meaning in other contexts.

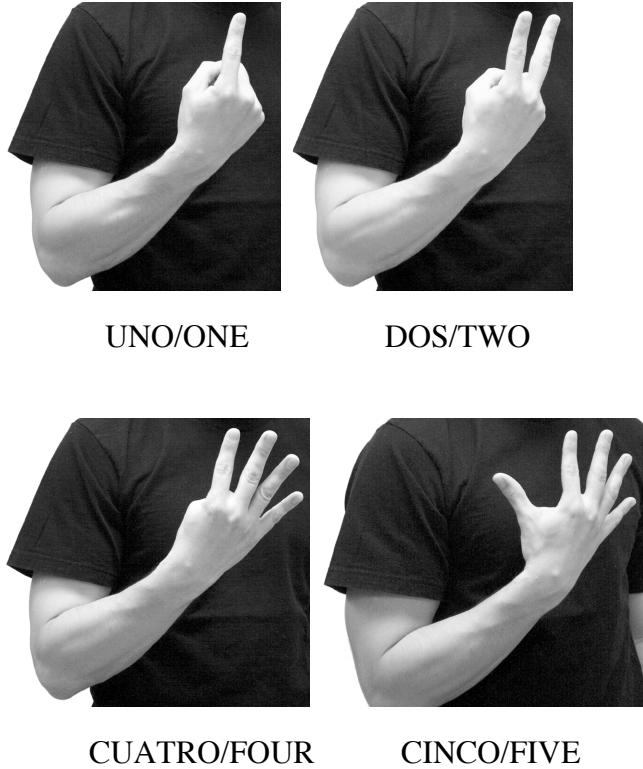
## **5.2.1 Numbers**

### ***5.2.1.1 A description of differences in the production of LSM and ASL 1- 25***

With the exception of a few signs, most signs used for cardinal numbers in LSM differ from those used in ASL. Those number signs that are similar between the two languages also tend to be gestures that are used by hearing persons in Mexico and the United States to indicate cardinal numbers. The following section describes differences and similarities between LSM and ASL cardinal numbers. Then, I will describe instances of communication difficulties related to numbers that appear in the El Paso and Texas Valley data. Perhaps number signs are truly one of the more difficult parts of a foreign signed language to learn, which is what I have been told anecdotally by many deaf and hearing individuals. For this reason, I chose to discuss them first among the lexical matters to be highlighted from this study.

Most of the similarities between LSM and ASL cardinal numbers lie in the numbers 1-5. Figure 5.15 contains the signs used for the numbers 1, 2, 4, and 5 in ASL and LSM.

Figure 5.15 LSM and ASL signs for the numbers 1, 2, 4, and 5

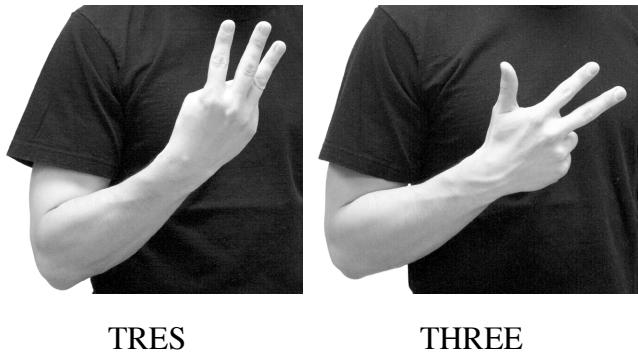


However, TRES and THREE are articulated with different handshapes in the two languages. TRES is articulated similarly to ASL W, which is also a gesture used by the hearing cultures in both Mexico and the United States to denote the number three.<sup>33</sup> THREE, however, happens to be similarly articulated to OCHO ('eight') because it is produced with the same handshape and place of articulation (neutral space), although the extended fingers point upward in the ASL sign and toward the midline (sideways) in the LSM sign. Figure 5.16 contains TRES and THREE.

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<sup>33</sup> In ASL W the pad of the thumb is placed over the nail of the pinky. In the sign SIX and the hearing gesture for 'three', however, the pads of the thumb and the index finger contact each other. Despite this difference, the hand configurations for ASL W and LSM TRES are very similar.

Figure 5.16 LSM TRES and ASL THREE



The place of articulation for the numbers 1-5 in both languages appears to be the same: the neutral space in front of the signer. There also appear to be no differences in the phonological parameter of movement (including path movement and hand-internal movement) in the numbers 1-5 in the two languages because there is no movement; the signs are held in neutral space. Finally, it appears that the palm usually faces the signer for the numbers 1-5 in both LSM and ASL, yet I believe that there may be some variation of palm orientation such that the palm may face away from the signer for the cardinal numbers 1-5 in both languages.<sup>34</sup> Such variation is beyond the scope of this study.

The LSM signs for 6-9, however, differ in both handshape and palm orientation from the corresponding ASL signs. The palm is oriented toward the signer in the LSM signs and away from the signer in the ASL signs. There are several similarly articulated and semantically related signs within this group of

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<sup>34</sup> For instance, when counting or specifying a distance such as TWO MILE, the palm can face away from the signer. I thank Christian Rathmann for pointing this out to me. It is not clear if the numbers 1-5 in LSM are articulated with the palm orientation toward the signer for numbers in the same contexts (counting and specifying distance). Further fieldwork is needed to determine if LSM and ASL numbers signs for 1, 2, 4, and 5 are similar in these respects.

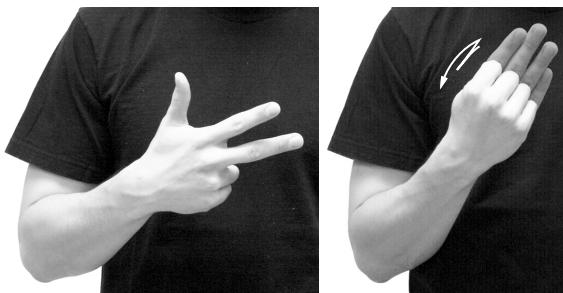
numbers signs in LSM and ASL: SIX resembles TRES and the Mexico and United States hearing gesture for three, NINE is similar to CUARENTA ('forty') without the index finger movement that contacts the thumb in CUARENTA, SEIS ('six') is similar to TEN without the wiggling movement, and OCHO ('eight') homophonous with ASL THREE. Figure 5.17 shows LSM 6-9 and Figure 5.18 shows ASL 6-9.

Figure 5.17 LSM SEIS, SIETE, OCHO, NUEVE



SEIS

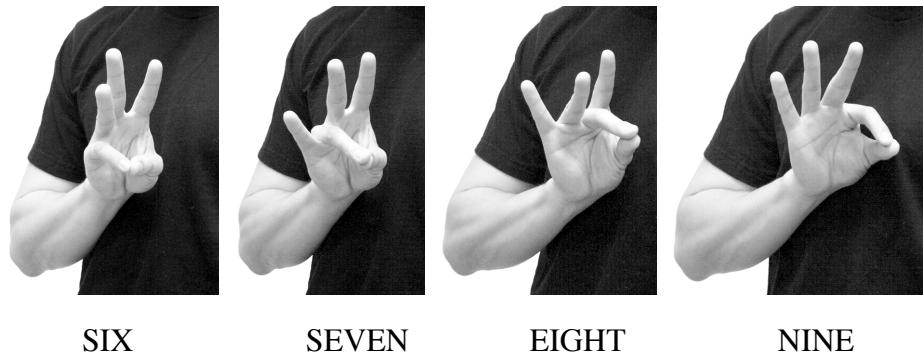
SIETE



OCHO

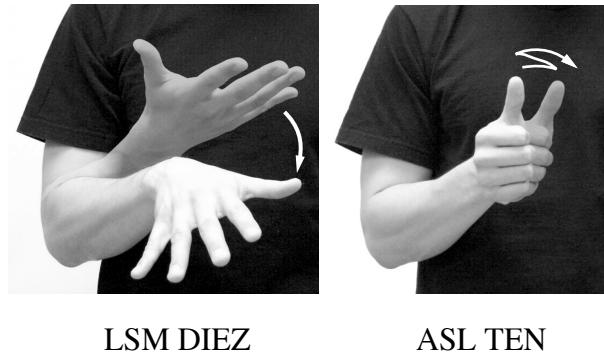
NUEVE

Figure 5.18 ASL SIX, SEVEN, EIGHT, NINE



Both DIEZ ('ten') and TEN are articulated with movement, but the movements differ from each other. Additionally, the handshapes used for DIEZ and TEN differ. In DIEZ, the signer uses the same handshape for CINCO ('five'), which is also the same handshape used in FIVE and in the hearing gesture used for the number five in both countries. The sign begins with the palm oriented upward or sideways toward the mid-saggital plane and then a twisting of the forearm joint occurs so that the palm is turned to face downwards. In TEN, alternatively, the signer does not change her palm orientation (toward the midline) while articulating the A-handshape, but the handshape is wiggled slightly and quickly back and forth as result of a slight forearm rotation. See Figure 5.19 for a visual depiction of DIEZ and TEN.

Figure 5.19 LSM DIEZ and ASL TEN



The LSM signs for 11-15 and the ASL signs for 11-15 appear to be quite different from each other despite some phonological parameter similarities. In both languages, these numbers are articulated with the palm facing the signer, but the fingers (with the exception of the thumb), when extended, point toward the midline in LSM and upward in ASL. Other differences include the handshapes for 11 and 12 and movements for all five numbers in both languages. In LSM, these five number signs are articulated with an up-and-down path movement immediately in front of the signer. In ASL, the movement is hand-internal. That is, the arm does not move from one place to another, but the fingers of the hand open and close to varying degrees for articulation of these signs. These differences in movement, handshape, and the direction in which extended fingers point cause these signs to appear quite different from each other. See Figures 5.20 and 5.21 for visual depictions of numbers 11-15 in LSM and ASL.

Figure 5.20 LSM ONCE, DOCE, TRECE, CATORCE, and QUINCE

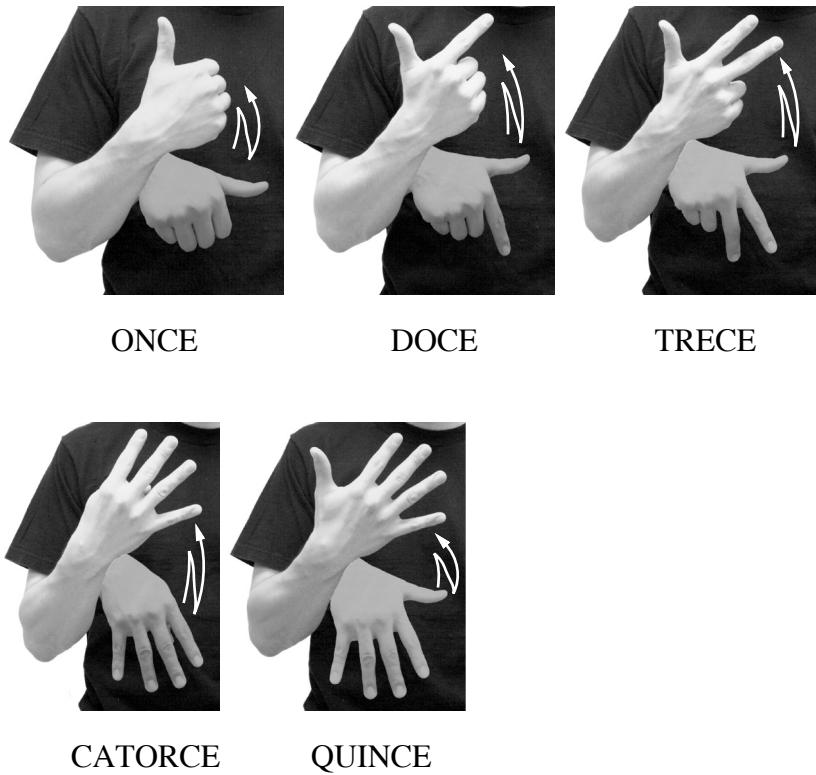
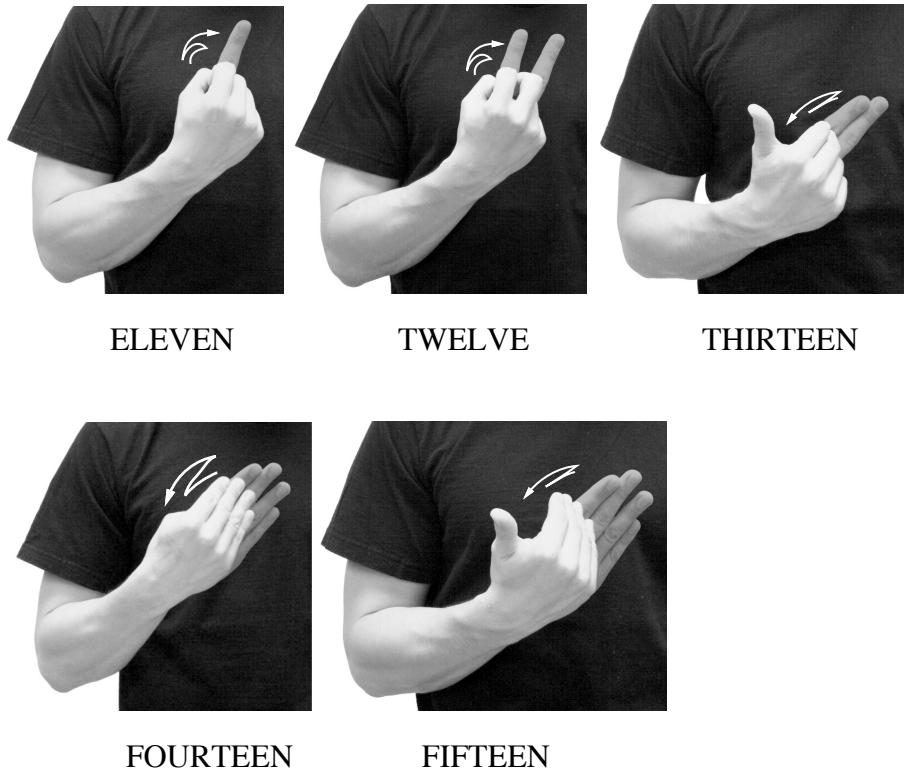


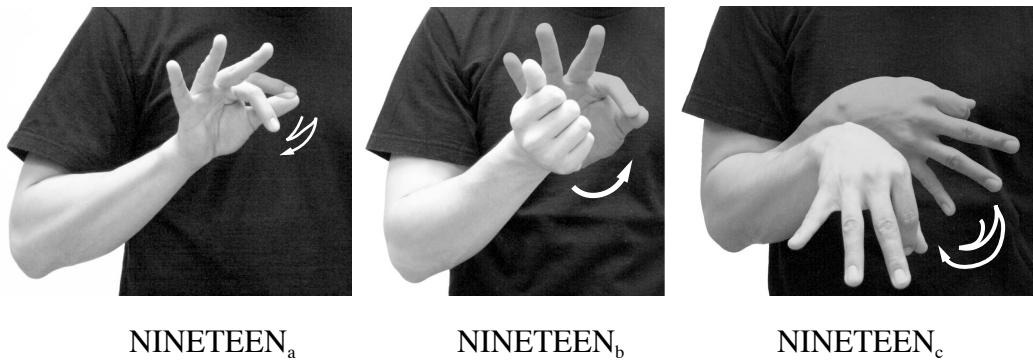
Figure 5.21 ASL ELEVEN, TWELVE, THIRTEEN, FOURTEEN, and FIFTEEN



Number signs for 16-19 are also articulated differently between LSM and ASL. I will describe the ASL versions of these number signs first. Regarding the handshape parameter, ASL signs for 16-19 are articulated with the same handshapes that are used for the ASL signs for 6-9. However, articulation of the ASL signs for 16-19 requires movement of some type (e.g., forearm rotation or movement of specific digits of the hand), whereas there is usually no movement in the ASL signs for 6-9. Actually, there are at least three variants of the ASL signs for 16-19: one which displays a rubbing of pad of the thumb and the pad of another finger depending

on the number being articulated (e.g., NINETEEN<sub>a</sub> in Figure 5.22), another which is a compound sign of TEN plus the single digit number (e.g., NINETEEN<sub>b</sub> in Figure 5.22), and another that is articulated with the ASL number signs for 6-9 with the palm facing downward and a back-and-forth twisting of the forearm (e.g., NINETEEN<sub>c</sub> in Figure 5.22). Figure 5.22 contains the three variants of ASL NINETEEN.

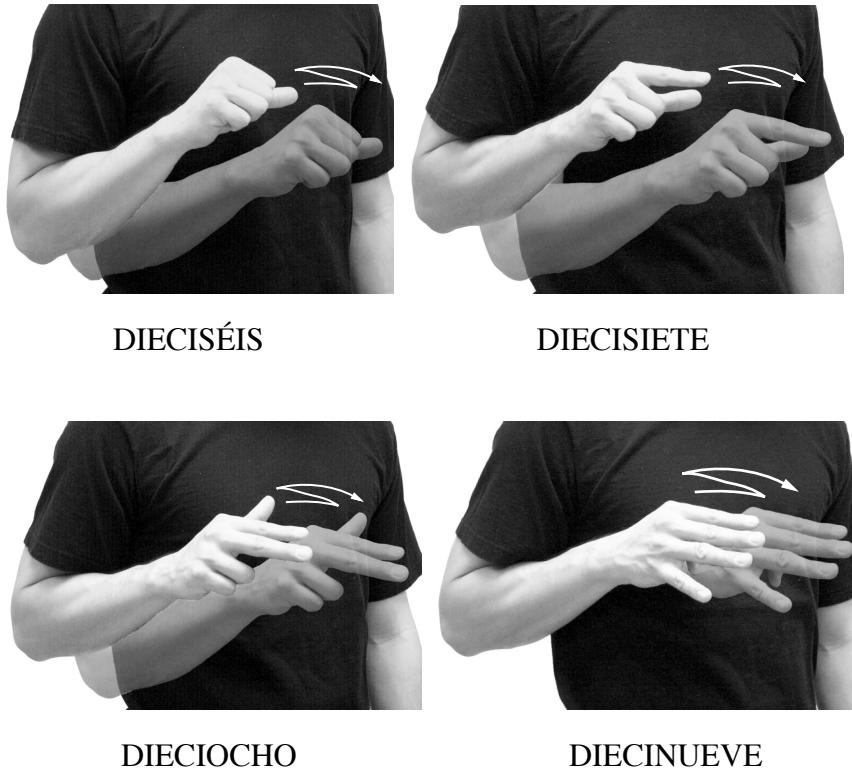
Figure 5.22 Three variants of ASL NINETEEN



The ASL numbers for 16-18 are articulated similarly to NINETEEN, but the only difference is use of the handshapes SIX, SEVEN, and EIGHT rather than the handshape used for NINE.

As mentioned above, LSM number signs for 16-19 differ from those used in ASL. Similar to ASL, LSM 16-19 are articulated with the same handshapes that are used for the LSM signs for 6-9. However, in the LSM signs for 16-19, the palm is oriented downward, whereas it is oriented outward in the corresponding ASL signs. In terms of movement, the LSM signs for 16-19 display forward and backward path movement. LSM signs for the cardinal numbers 16-19 are shown in Figure 5.23.

Figure 5.23 LSM number signs for 16-19



VEINTE ('twenty') and TWENTY are very similar to each other: both have the same place of articulation, type of movement, and palm orientation. However, the handshapes differ minimally. In VEINTE, the tips of the thumb and index finger contact each other repeatedly, but those fingers are bent thus forming a circular shape when contact is achieved. TWENTY, however, is articulated with the thumb and index finger extended, and contact is between the pads of the thumb and index finger. Such contact in ASL does not form an "O" shape as in the LSM version. Actually, it appears that TWENTY is similar to SETENTA ('seventy'), with the exception that the pads of the thumb and index finger contact each other in TWENTY, whereas the

thumb pad contacts the index finger at the distal interphalangeal joint (the joint of the index finger furthest from the wrist) in SETENTA. See Figure 5.24 for a depiction of VEINTE and TWENTY.

Figure 5.24 LSM VEINTE and ASL TWENTY

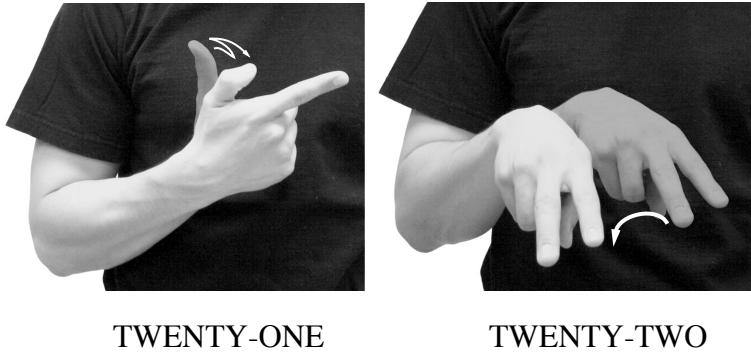


The LSM and ASL numbers signs for 21-25 are also articulated differently with regard to handshape, movement, and palm orientation.<sup>35</sup> ASL TWENTY-ONE is articulated with the LSM handshape for SIETE ('seven'), but with repeated bending of the thumb at the interphalangeal joint. TWENTY-TWO is signed with the handshape for TWO facing downward, and with a single bouncing movement away from the mid-sagittal plane. Figure 5.25 shows TWENTY-ONE and TWENTY-TWO.

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<sup>35</sup> I will not discuss the articulation of cardinal number signs above 25 because signs for those numbers do not appear in the data from this study. Clearly, a thorough description of all number signs in LSM is needed for future work on contact between LSM and ASL.

Figure 5.25 ASL TWENTY-ONE and TWENTY-TWO

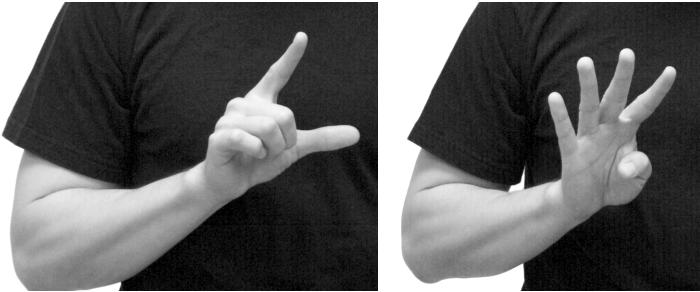


The ASL signs for 23 - 25 have at least two variants each: one in which the L-hs is followed by the number THREE, FOUR or FIVE, and one in which the sign TWO is followed by THREE, FOUR, or FIVE.<sup>36</sup> In these signs, THREE, FOUR, and FIVE are articulated with the palm orientation away from the signer rather than the single digits THREE, FOUR and FIVE with the palm facing the signer. As an example of one of the variants of these number signs, TWENTY-FOUR<sub>a</sub> is comprised of the serial production of the two handshapes in Figure 5.26: the L-hs followed by the single digit FOUR.

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<sup>36</sup> Not all signers feel that the variants of ASL numbers for 23-25 with the sign TWO + THREE/FOUR/FIVE are acceptable. Yet, some signers do produce these variants.

Figure 5.26 ASL TWENTY-FOUR<sub>a</sub>



TWENTY-THREE and TWENTY-FIVE, however, have an additional variant: one in which the middle finger is wiggled (and, in the case of TWENTY-FIVE, also the ring finger) away from the signer. See Figure 5.27 for the variants of TWENTY-THREE and TWENTY-FIVE that are articulated by wiggling the middle finger.

Figure 5.27 TWENTY-THREE<sub>c</sub> and TWENTY-FIVE<sub>c</sub>



TWENTY-THREE<sub>c</sub>

TWENTY-FIVE<sub>c</sub>

In LSM, the signs for 21-24 are compounds of the LSM sign for 20 plus the single digit number. In these signs, the palm is oriented outward for VEINTE and then is turned to face the signer for the single digit number. VEINTICINCO

(‘twenty-five’), however, does not follow this compound pattern.<sup>37</sup> Rather, in VEINTICINCO the index finger and middle finger wiggle in an alternating fashion while appearing to rub against each other while the palm faces toward the signer. The LSM sign for 25 is shown in Figure 5.28. It is clear that all variants of number signs 21-25 in LSM differ from the signs for the same numbers in ASL.

Figure 5.28 LSM VEINTICINCO



#### ***5.2.1.2 Results of lexical differences between LSM and ASL numbers***

Because of the differences between LSM and ASL number signs described in the previous section, one would expect that there would be comprehension difficulties for a deaf person not fluent in the number signs of the other signed language. Or, in the case of signs that are articulated similarly but have different meanings, participants in a conversation may find it necessary to make it clear which numbers are being articulated. The example below will illustrate a clarification technique used in the discussions of this study.

One strategy for the clarification of numbers that some participants in this study used was to clarify a number by producing the number sign in the other signed

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<sup>37</sup> There may be a variant of VEINTICINCO that follows the pattern of LSM 21-24, but I have only seen LSM signers produce the sign shown in Figure 5.28.

language.<sup>38</sup> This method seems to be particularly applicable to those number signs that are articulated similarly to other number signs in the other signed language. For example, in one of the interviews conducted in the Texas Valley, a sign produced by the interviewee could have been understood as SIX or TRES, since those signs are articulated similarly. The values six and three are close to each other, and determining the intended meaning from context may be a difficult task.<sup>39</sup> Rather than depending on context to disambiguate the identity of the number sign, the interviewer produced SIX followed by SEIS. The interviewee then responded with SEIS, thus confirming the number six as the correct number of years to which reference was made. Recall that SEIS is also produced similarly to TEN (without the wiggle) and can be recognized as the hearing and deaf emblem referred to as “thumbs-up” (‘good’, ‘great’, ‘OK’, etc.). But, after the interviewer responded with SEIS, the interviewee likely knew that the interviewer understood that the intended number of years was six rather than ten, and “thumbs-up” did not fit semantically with an appropriate response to a question about the amount of time that the interviewee had spent living in different areas. See (5.6) for the text of this signed segment; the sign used for clarification is bolded.<sup>40</sup> Also, notice that both the interviewer and interviewee are using ASL for the first portion of the segment, but then they switch to

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<sup>38</sup> This phenomenon will also be discussed in Section 6.4 in a presentation of the code-switching of single signs.

<sup>39</sup> However, if a signer would articulate a number sign in one language whose value is very different from the similarly articulated number sign in the other signed language, then there would likely be less confusion about the intended number. This might be true, for instance, if a signer articulates TWENTY, which closely resembles SETENTA (‘seventy’) in the context of describing the age of a new mother.

<sup>40</sup> For the examples in this chapter, the following abbreviations are used for NMS: “bht”=backward head tilt, “fht”=forward head tilt, “fb”=furrowed brows, “rb”=raised brows, “ahs”=affirmative head shake, “m:’ \_\_\_\_”=mouthing (the mouthed element is in quotes.).

LSM for a brief period after the interviewer seeks clarification of an ASL number using the LSM equivalent.

(5.6) [I 6-8 .07]

TV2: GO-TO-right UNITED STATES  
“I (then) went to the United States.”

TV1: point-TV2 MOVE/MUDARSE-center HERE  
“You moved here.”

TV2: HERE  
“Yes, here.”

TV1: UNITED-STATES  
“(You moved to) the United States.”

TV2: UNITED-STATES  
“Yes, to the United States.”

TV1: OH-I-SEE  
“Oh, I see.”

TV2: SIX YEAR/AÑO  
“(I’ve been here) six years.”

TV1: SIX **SEIS** YEAR/AÑO  
rb & bht  
“...six (LSM), as in six (ASL) years.”

TV2: SEIS YEAR/AÑO  
“Yes, six years.”

TV1: ESTADOS-UNIDOS fht  
“(In the) United States.”

TV2: ESTADOS-UNIDOS ahs  
“Yes, (in the) United States.

TV1: OH-I-SEE  
“Oh, I see.”

Another example of the use of a number sign from the other language to clarify the number sign from the first language is given in (5.7); the number sign used for clarification is bolded. In this example, the El Paso participants are discussing the date and time that Christmas gifts are opened in each of their homes. EP3 mentions that gifts are opened at midnight on the 24<sup>th</sup> of December, but she really means to say midnight on the morning of the 25<sup>th</sup>. Then, EP1 is confused by her statement of midnight on the 24<sup>th</sup> and signs TWENTY-FIVE to suggest that EP3 really means the 25<sup>th</sup> instead of the 24<sup>th</sup>.

(5.7) [GD 1416 1.52]

EP1: point-EP3 TWENTY-FOUR TWELVE TWENTY-FOUR +++

“You (open gifts on the) 24<sup>th</sup> at twelve? The twenty-fourth?”

EP3: TWELVE **DOCE** TWELVE VEINTICUATRO

“(Ya), at twelve on the 24th.”

EP1: TWENTY-FIVE

“The 25<sup>th</sup>...”

In EP3’s turn, she uses both ASL and LSM signs for the number 12, and she signs the number 12 three times (twice in ASL and once in LSM). As is evident in (5.7), participants could go back and forth between signing numbers in LSM and ASL within single turns.

Another strategy for the clear communication of numbers that was used by participants in this study concerns double-digit numbers. In the data, there are several examples of participants articulating each digit of a double digit number even though the double digit number may have a sign of its own that differs from the consecutive articulation of signs for the two digits. For example, TV3, in response to a question from the interviewer regarding whether or not he attended school while growing up in Mexico, intended to communicate the number 16 by signing a string of numbers: the individual numbers UNO/ONE (which is articulated similarly in both languages and exists as a hearing culture gesture in both countries) and SIX in ASL, followed by the LSM sign for 16, and then followed by ASL signs for 10 (with an atypical articulation—hand orientation and thumb extension were not well-formed) and 6. One account for this string is that TV3 did not know the ASL sign SIXTEEN, although he did know the sign SIX, which he used in combination with ONE/UNO and a partially well-formed TEN. Interestingly, I detected mouthing of the Spanish word *seis* on both instances of the sign SIX, even though they were ASL signs. Mouthing will be discussed in Section 5.4. The entire string just described is shown in (5.8).

(5.8) [I 4-6 .392]

TV3: point-TV3 GROW-UP point-TV3 YEAR/AÑO STOP

“When I was growing up, I stopped (after/when I was)…”

ONE/UNO SIX ONE/UNO SIX DIECISÉIS

“...one, six, one, six, sixteen...”

TEN (not articulated correctly) SIX gesture: “that’s-all”

“...ten, six; that’s about it.”

Two of the El Paso participants, during that group discussion, also used the strategy of signing one digit at a time rather than using a single sign for a two-digit number. In this example (the same context presented in (5.7)), the group was discussing Christmas traditions and the date and time that gifts are opened. As noted, there was some confusion about which day EP3 opened gifts at her home, and EP2 tried to clarify by signing TWO/DOS FOUR/CUATRO and TWO/DOS FIVE/CINCO to get a correct answer. Both 24 and 25 have distinct signs in ASL and LSM, which differ from the consecutive articulation of the signs for two and four or two and five.<sup>41</sup> In response to EP2, EP3 also signed TWO/DOS FOUR/CUATRO. Thus, both participants used the strategy of signing double digit numbers one at a time in order to be understood. This example is particularly interesting because both participants used number signs that are common to LSM and ASL, even though strings of those signs are not well-formed in LSM.

The example just discussed highlights the manner in which the numbers 1-5 seem to be easily communicated; this is probably because they are signed similarly

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<sup>41</sup> Recall that I noted in Section 5.2.1.1 that some signers reject the number signs for 23, 24, and 25 that are produced with consecutive articulation of the single digit numbers. However, some signers likely accept this articulation of these number signs.

across ASL and LSM (with the exception of the signs for three) and are also gestured by Mexican and American hearing cultures similarly. Because of these similarities, we could hypothesize that ONE/UNO, TWO/DOS, FOUR/CUATRO, and FIVE/CINCO may often function to clarify double digit numbers that contain those single numbers.

Perhaps the articulation of signs for numbers 1-5 may be similar across many signed languages, which means that they could be utilized for the communication and clarification of other numbers that contain them. However, I should note that not all signed languages sign these numbers in the same way. In French Sign Language (LSF), for example, numbers 1, 2 and 4 are articulated differently than in ASL. LSF UN ('one') is articulated with the thumb extended, and DEUX ('two') is articulated with the thumb and index finger extended. The sign QUATRE ('four') has been described in at least two ways: all fingers except the thumb extended with the palm facing the signer (Moody, 1998) and extension of all fingers except the pinky with the palm facing the signer (Fischer, 1996). Despite the differences between the numbers 1-5 in LSF, ASL, and LSM, the degree of arbitrariness of these numbers is quite low. That is, despite differences in palm orientation and in the specific digits that are extended, most sighted people (deaf or hearing) who see extended fingers as if to denote numbers can likely understand the number that is being referred to when it is five or less. In the study of contact between two signed languages, we might expect to see the numbers 1-5 being used as signs or gestures to negotiate other numbers that contain these numbers.

Number production by the participants in this study also resulted in several false starts and in incorrect number signs. Regarding the false starts, both EP1 and

TV1, in more than one example, produced the handshape for VEINTE (the form of a circle with the index finger and thumb as they contact each other on the fingertips) prior to articulating VEINTICINCO (see Figure 5.28), but they did not articulate the full sign VEINTICINCO. Perhaps they were about to articulate VEINTICINCO in these instances, but their production was interrupted in order to produce TWENTY-FIVE instead. As mentioned above, TV3 was partially incorrect in his articulation of TEN in (5.8), and in another example TV4 was partially incorrect in his articulation of SEVENTEEN. Also, in an example of a phonological-parameter error, EP1 signed THIRD with the LSM handshape for TRES rather than the ASL handshape for THREE. The handshape that he used caused that sign to look like SIXTH. TERCERO ('third') is articulated in a different fashion with use of both hands, the dominant hand in the form of a TRES handshape, and hand internal movement of the three extended fingers. Thus, it is clear that EP1 was not trying to sign TERCERO, but rather THIRD—even though he used an incorrect handshape for that sign.

In summary, it appears that number production and reception were particularly difficult for participants in this study, which may have encouraged the number clarification strategies that I discussed in this section. For instance, participants sometimes articulated a number and then followed it with the semantically equivalent sign from the other signed language. Also, participants utilized the strategy of producing a sequence of two single number signs in attempts to communicate two-digit numbers.

### **5.2.2 SASU signs**

As I mentioned in Section 2.2.4, Faurot et al. (1999) reported that out of 100 common words from LSM and ASL, 29 were classified by the authors to be either

similarly articulated (differing in no more than one major phonological parameter) or articulated identically in the two languages. While this figure hints at the amount of lexical similarity between the two languages, it does not speak to the degree to which these similarly articulated (SA) signs are used in conversation. In the present study, the participants used similarly articulated signs (referred to as “cognates” in Faurot et al. 2000) between 13% and 22% of the time.<sup>42</sup> Perhaps the use of similarly articulated signs at least 13% of the time would aid in the understanding of a conversation—especially if the interlocutor is not fluent in both languages. Yet, as Faurot et al. (1999) reported, the monolingual ASL participants in their intelligibility test failed to answer some questions correctly despite the fact that the answer could be found in a string of text with an LSM/ASL SA sign. They attributed this lack of comprehension to the fact that the “cognate,” to use their terminology, was within the context of “non-cognate” signs. From this account, we can imagine how difficult it could be to comprehend a foreign signed language even though there exists a base level of lexical similarity that could function as an aid for non-users of that foreign language.

One category of signs that can certainly cause difficulties with comprehension for monolingual signers is similarly articulated but semantically unrelated (SASU) signs (see footnote 1 in this chapter for a definition of this term). Faurot et al. (1999) reported that 17% of the commonly used words that they investigated in LSM and ASL were false cognate signs. As noted in the literature review, this figure seems to be extraordinarily high, since I have only been able to develop a list of fewer than 50

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<sup>42</sup> These figures represent the range (the lower and upper limits) of the use of similarly articulated (SA) signs by all participants in the group discussions and both participants in each of the interviews. They do not, however, reflect the percentages of similarly articulated (SA) signs used by individual participants in either the group discussions or the interviews.

SASU signs between LSM and ASL; this list can be found in Appendix I. However, I have separated SASU signs from similarly articulated and semantically related signs, which I include in Appendix J. Perhaps the Faurot et al. analysis of “false cognates” grouped SASU signs with similarly articulated and semantically related signs. Yet I am sure that there are other LSM/ASL SASU sign pairs, but not all LSM signs are documented in the dictionaries from which I searched for LSM sign equivalents for ASL signs. Additionally, they are likely not signs that I have been exposed to in my limited experience with users of LSM.

In most cases, the intended meaning of the sign that can be described as a SASU sign was clear. In these situations, there appeared to be no indication of misunderstanding or lack of understanding. For example, several times LESBIAN/INGLÉS ('English') was signed, but it never elicited a clarification response nor any indication that the interlocutor(s) failed to understand what was being communicated. An example of the use of the SASU sign LESBIAN/INGLÉS comes from one of the interview sessions and is shown bolded in (5.9).

(5.9) [I 46 .00]

EP1: point-EP3 CUAL+ point-EP3 **INGLÉS** ESPAÑOL point-EP3

SIEMPRE/EVERYDAY PLATICAR SIEMPRE/EVERYDAY

“Which language do you use (more) everyday for conversing with others, English or Spanish?”

In this example, EP3 responded to EP1 regarding her use of Spanish versus English. She did not hesitate or clarify the intended meaning of the SASU sign LESBIAN/INGLÉS. Perhaps this is because the two meanings are quite distinct from

each other and also because production of this sign mainly occurred during discussions of other languages (such as Spanish, LSM, and ASL).

Sometimes the production of signs that can be considered SASU signs between LSM and ASL did cause difficulties with comprehension. In one example of a brief moment of confusion brought about by the use of a SASU sign, a bilingual signer took steps to determine which of the two meanings of a SASU sign the other bilingual signer intended to communicate. In that segment from the interview portion of this study, TV1 asked TV2 about her English literacy skills. TV2 responded that her friend was helping to teach her English. The text is given in (5.10) below, and the SASU signs are in bold.

(5.10) [I 8-10 .49]

- 1 TV1: PODER BIEN/GOOD LEER/READ  
“(You) can read and write well...”
- 2 COMPRENDER ESCRIBIR/WRITE COMPRENDER  
“...and understand the written word?”
- 3 TV2: SI COMPRENDER BIEN/GOOD  
“Yes, I understand it well.”
- 4 TV1: point-TV2 INGLÉS BIEN/GOOD  
“You understand English well?”
- 5 TV2: SI  
“Yes.”
- 6 TV1: SI  
“Yes.”
- 7 TV2: AMBOS/BOTH point-TV2 UNO/ONE **AMIGO**  
“(Actually), both. I (have) a friend...”
- 8 ENSEÑAR/TEACH-TV2  
“...who teaches me (English).”

- 9 TV1: **AMIGO/ENGLISH**  
“(A) friend/English...?”
- 10 TV2: **UNO/ONE AMIGO**  
“..a friend..”
- 11 TV1: **AMIGO**  
“..(a) friend...”
- 12 TV2: **ENSEÑAR/TEACH-TV2 ESCRIBIR/WRITE**  
“...(who) teaches me how to write...”
- 13 TV1: gesture:“oh-I-see” (finger raised) FRIEND TEACH/ENSEÑAR-TV2  
“Oh, I see. (You have a) friend (who) teaches you...”
- 14 TV2: point-TV2 FRIEND TEACH/ENSEÑAR-TV2 UNITED-STATES  
“(Yes), I (have) a friend (who) teaches me in the United States.”

The brief confusion is expressed by TV1 in line 9 because the ASL sign ENGLISH is articulated similarly to the LSM sign AMIGO ('friend'). In fact, the two signs are identical in form. TV1 must have quickly realized that ENGLISH did not fit semantically in the syntactic location after the modifier UNO/ONE (line 7) in which TV2 produced it. After hesitating for a moment, she displayed an expression (line 13) seeming to indicate that comprehension did indeed occur (a backward head tilt and brow raise accompanied by a opened mouth, perhaps in the shape of the English word “though”) and she followed that expression with the ASL sign FRIEND—presumably to reinforce the clarification.

Some pairs of signs that are not semantically equivalent but are articulated in the same way in LSM and ASL cannot be included in the group of SASU signs because they appear to be somewhat similar in meaning. These signs may have historically begun as similarly articulated signs between LSM and ASL (i.e.,

cognates), but the meaning(s) of one or both of the signs has changed through the course of time. Or perhaps some of the signs of this type have always differed minimally in meaning. Whatever the historical account may be, these pairs of signs are currently similar enough in meaning that one would not necessarily realize that the meaning that is understood is not the meaning that the signer intended to communicate. For example, the signs NADA ('nothing') and NOT are semantically similar, even though there are differences in meaning (at least with regard to the spoken language glosses that describe them). One participant (EP3) in one of the group discussions articulated NADA/NOT, but the other participants did not question which meaning she intended to convey. She used this sign when responding to a question about when Christmas gifts tend to be exchanged and unwrapped at her home. The string of signs is shown in (5.11).

(5.11) [GD 16-18 .091]

EP3: gesture: next-one(day) NADA/NOT DOS/TWO CUATRO/FOUR

Translation A: "(We do it) on the following day. There is nothing on the 24<sup>th</sup>."

Translation B: "(We do it) on the following day, not on the 24<sup>th</sup>."

As can be seen in translations A & B, there are only slight differences in meaning between the two translations, thereby precluding the need to question which meaning was intended. In the group discussion in which this phrase was produced no one questioned the signer, and the conversation continued uninterrupted. Other examples of this type of sign that appeared in this study are BRING/LLEGAR ('to arrive') and BEAT/TEMPRANO ('early'). None of these signs elicited clarification responses from the other participants in those sessions. Other examples of this type

of LSM/ASL signs can be found in Appendix J. Like the SASU signs, these signs are similarly articulated, but they differ insofar as they appear to be semantically related; some of the meaning pairs are closely related while others seem more distantly related.

In this section, I have discussed homophonous lexical items between LSM and ASL. The existence of these types of signs in LSM and ASL is similar to the existence of homophonous lexical items in two similar spoken languages. As reported in Section 2.3.2, Hensey (1993) noted that the schoolchildren in his study used homophonous lexical items between Spanish and Portuguese in the contact dialect.

### **5.3 NON-MANUAL SIGNALS**

In this section, I will describe ways in which grammatical NMS from one signed language can be articulated with a lexical item from the other language. In Section 2.2.3 of this dissertation, I discussed the claim that content questions in LSM require the use of a specific NMS that differs from that used in ASL for content questions. Specifically, content questions in LSM are realized with an obligatory backward head tilt that is produced simultaneously with the lexical question sign.<sup>43</sup> Without a backward head tilt, the signed phrase would be a statement rather than a question. In ASL, content question signs are also obligatorily accompanied by a specific NMS—furrowed brows. There is no backward head tilt NMS that accompanies question signs in ASL.

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<sup>43</sup> In the account of NMS for content questions given in Eatough (1992), a syntactic analysis of the spread of the NMS is not presented. However, in each of his examples, the author shows that the non-manual backward head tilt co-occurs with the content question sign, and in some cases it accompanies other signs in the phrase as well. For the present study, I also do not conduct syntactic analyses of the spread of the NMS in the examples that I provide.

In the data from this study, there are several instances of the articulation of a content question sign from one language with the NMS from the other language. For instance, in the Texas Valley group discussion, TV4 produced the phrase given in (5.12) during a conversation about family Christmas traditions in Mexico versus those in the United States.

(5.12) [GD 4-6 .562]

TV4: \_\_\_\_\_<sup>bht</sup>  
point-TV1 FAMILY WHERE point-TV1  
“Where is your family?”

In the phrase given in (5.12), TV4 did not furrow his brows at any time, but rather articulated the LSM content question NMS (a backward head tilt) while producing ASL signs. In fact, TV4 leaned his torso toward TV1 while asking the question, but his backward head tilt remained in place for the duration of the phrase. This is an example of the production of an ASL sign with an LSM NMS, whereas the reverse also occurred in the data. An example is given in (5.13) below, in which TV1 articulated the LSM sign CUANDO twice within a phrase of other signs LSM signs.

(5.13) [TV3 I 8-10 .26]

TV1: \_\_\_\_\_<sup>fb</sup>  
CUANDO point-TV3 COMENZAR/START APRENDER SEÑA/SIGN  
MEXICO(LSM sign) point-TV3 \_\_\_\_\_<sup>fb</sup>  
CUANDO point-TV3  
“When did you begin to learn LSM?”

In the case of the phrase in (5.13), TV1 furrowed her brows, which is the ASL NMS for content questions, during the two instances of signing the LSM sign CUANDO ('when') followed by a deictic point.

Additionally, because the production of a backward head tilt and furrowed brows involves different and independent muscles of the face and neck, one could posit that both of these articulations could take place simultaneously. This occurs in at least one production of the LSM sign QUÉ by TV1. In this example, TV1 has asked TV2 about her favorite food. TV2 responds with the question: "Do you mean favorite Mexican food or favorite American food?". TV1's response is given in (5.14).

(5.14) [GD 1012 1.31]

TV1: NOT-MATTER point-TV2 bht & fb  
gesture: "come-on" point-TV2 QUÉ  
point-TV2 gesture: "so-exciting" LOVE/AMAR CL:F-hs "take food to  
mouth" EAT/COMER DELICIOSO point-TV2  
"It doesn't matter (Mexican or American food). Tell me what food you really love  
and get excited about. You know, food that you just can't get enough of because it's  
so tasty."

The onset of the backward head tilt (bht) and the furrowed brows (fb) in (5.13) occur before the LSM sign QUÉ. Specifically, those non-manual signals co-occur with a gesture that I have labeled "come-on" and continue as the signer points to TV2 and then signs QUÉ. The gesture "come-on", in this case, is produced in neutral space with the handshape of ONE/UNO, the palm facing the signer, and hand-internal movement of the index finger toward and away from the signer. Despite the

simultaneous articulation of WH-question NMS from both LSM and ASL, the interlocutor (in this case, TV2) seems to understand TV1 perfectly; TV2 does not hesitate with her response. In fact, this was also the case with the mixing of NMS from one language with signs from the other as presented in (5.11) and (5.12). Thus, whereas this aspect of language contact (the mixing of NMS from one language with lexical items of the other) does not appear to result in miscomprehension of a lexical item or phrase, it is noteworthy because it describes another way in which elements from one language can be used with elements of the other language.

Based on the data from this section, it is clear that NMS, which have grammatical functions, can also be a source of interference in the contact between two signed languages.

#### **5.4 PARALINGUISTIC MATTERS: MOUTHING**

As reported in the literature review, studies of contact between ASL and English in the United States have shown that one feature of the contact between a sign language and a spoken language are the mouth configurations that signal the voiceless articulation of words. These configurations, or “mouthing,” occur simultaneously with signs. In most cases, the mouthed element is a spoken language word that is a semantic equivalent to the sign being produced. For instance, Deaf signers in the United States sometimes mouth English words while producing ASL signs, whereas Deaf signers in Mexico sometimes mouth Spanish words while producing LSM signs. In the present study, participants sometimes followed this pattern of mouthing. However, the participants sometimes mouthed an English word while producing an LSM sign, a Spanish word while producing an ASL sign, or an English or Spanish word while producing a similarly articulated (SA) sign. Examples

of each of these are given below beginning with a segment from the Texas Valley group discussion in which TV2 is explaining how one may flag down a taxi in big cities like Mexico City or New York.

(5.15) [GD 16-18 .342]

1 TV2: READY/LISTO(R-hs) SELF CL:vehicle approach from left TENER  
\_\_\_\_\_m: “ready” \_\_\_\_\_m: “have”

“You have to be ready when the taxi approaches. You see if it has space.”

2 body CL: “wave down driver” FULL/LLENO CL: “wave down driver”

“Then you wave down the driver. But, it may be full and you’ll have to wave down another cab.”

3 CL: vehicle approach from left READY/LISTO(R-hs) CL:person get in car

“When another cab drives up, you’ll be ready to get in the car.”

In line one of (5.15), we can see that TV2 mouthed two words in English—one in conjunction with a SA sign and the other in conjunction with an LSM sign. The English word “ready” was mouthed while she signed the SA sign READY/LISTO with the R-hs, which is the standard handshape for the sign in ASL. The LSM sign LISTO is signed with the L-hs, but because these two signs only differ by one parameter, this element was coded as a similarly articulated (SA) sign. Later in the segment and also in line one of this example, TV2 mouthed the English word “have” while signing the LSM sign TENER (‘have’). This is an interesting case of the mixing of a sign from one language with a mouthed articulation that corresponds to a word from the ambient spoken language in which the other sign language exists. To my knowledge, mouthing of Spanish words is not obligatory while producing certain

LSM signs, but mouthing may function to emphasize or clarify the sign that is produced. Note that TV2 uses both LSM and ASL signs in this segment as well as classifiers (some of which are pantomimic in nature), which are elements of language production that were discussed in Section 4.2.2.

The mouthing that is described in (5.15) is reminiscent of data from another study of language contact—a work that focused on the use of ASL and English in an interpreted situation. Davis (1990a, 1990b) addressed the manner in which signed language interpreters frequently mouth English words while simultaneously producing ASL signs. He referred to this type of language contact as code-mixing. However, Davis also showed that a signer can produce various types of mouthed items, some that resemble the full lip movements of the spoken word and some that are reduced; he termed the reduced mouth movements lexicalized lip movements (LLM). Some LLMs, such as the mouthing that accompanies the ASL sign HAVE, may occur frequently in ASL discourse; Davis referred to this phenomenon as lexical borrowing. The argument is that the English lexical item is borrowed and represented orally (adhering to ASL rules for mouth movements) while simultaneously producing ASL with manual articulators (the hands and arms). Interestingly, the English word ‘have’ was mouthed by TV2, as presented in (5.15), while simultaneously articulating the LSM sign TENER (‘have’).

There are likely various ways to analyze contact phenomena like those presented in (5.15). First, Davis (1990a, 1990b) might view the reduced mouthing of “have” to be a case of lexical borrowing from English into ASL. A LLM, according to Davis, is common with production of the ASL sign HAVE. Following this analysis, the mouthing of “have” in (5.15) might be a case of borrowing from English

into LSM. However, it is not clear if the LLM that has resulted from partial mouthing of the word “have” is common in LSM. If it is, then LSM may have also borrowed the LLM corresponding to the English word “have”, and that LLM co-occurs with the LSM sign TENER. That borrowing would likely have been the result of contact between users of LSM and ASL.

Another way to analyze the mouthing of “have” in (5.15) is to suggest that it is a case of code-mixing. As previously noted, Davis (1990a, 1990b) suggested that code-mixing can be described as the simultaneous articulation of a manual sign with lip movements that correspond to a spoken word that is semantically equivalent to the sign. For example, if an interpreter in his study mouthed an English word while signing an ASL sign, Davis would likely label that as an instance of code-mixing. In this case, the mouthing of the English “have” would be one code and the LSM sign TENER would be the other code.

In contrast to examples of mouthing English words as in (5.15), EP3 provided an example of the production of an ASL sign with the simultaneous mouthing of a Spanish word. Specifically, EP3 mouthed the Spanish word *igual* (‘same’), while signing the ASL sign SAME during a discussion of prices of the food items in Mexico versus food prices in the United States. That example of mouthing is given in (5.16).

(5.16) [GD 46 .14]

- EP1:          m: “igual”  
        SAME           point-downward/rightward & downward/leftward  
        SAME gesture: “well”  
        “It’s the same (price) in both countries.”

Unlike the LLM associated with “have”, it is not clear if a LLM movement association with “igual” exists in LSM. Nonetheless, this example of mouthing is similar to that given in (5.15) with the exception that here the sign is an ASL sign and the mouthing seems to come from a Spanish word. As was the case with (5.14), following Davis (1990a, 1990b), we might analyze this mouthing as a case of borrowing, but it also fits with the description of code-mixing established earlier in this section.

These examples of mouthing are consistent with the results of the TCDHH signed language interpreter survey that I presented in Section 1.2.4.2. In that investigation, 72% of interpreters who had been in a situation influenced by Spanish and/or LSM claimed that they have seen their clients mouth Spanish words. The degree to which mouthing accompanies sign production is not the focus of this study, but it is clear that mouthing words from a spoken language while simultaneously articulating signs is one characteristic of contact between LSM and ASL.

## 5.5 SUMMARY

In this chapter, I have described the manner in which phonological and differences between LSM and ASL and different non-manual signals in the two languages can result in the use of elements of one language with elements of the other language. This mixing of elements from one language in the production of the other language, as I have noted, can be described as interference. Further, I have demonstrated that specific strategies can be used to facilitate communication in those instances in which lexical differences between LSM and ASL, such as cardinal number signs and SASU signs, could potentially hamper clear communication. Lastly, I have described how mouthing, a paralinguistic element used during signed

language production, can reveal evidence of contact between LSM, ASL, Spanish, and English.

## **Chapter 6: Lexical evidence of contact**

In this chapter, I will discuss the extent to which participants used LSM and ASL signs during the group discussions and interviews. For the purposes of this discussion, I will use the terms “LSM sign” and “ASL sign” to refer to signs that are unique to LSM and ASL respectively; these signs differ from similarly articulated (SA) signs where the form of the LSM sign and the ASL sign are nearly identical. The relative percentages of LSM and ASL signs provide the clues to extent to which each participant used LSM and ASL in the sessions and to the amount of language mixing that occurred in the different sessions.

As discussed in Chapter 2, the small body of work on the grammar of LSM suggests that LSM and ASL are grammatically similar. While there are a few differences between the two languages with regard to the articulation of fingerspelled letters and other handshapes used for sign production, LSM and ASL also appear to be phonologically very similar to each other. Thus, one way of determining if a participant is signing LSM or ASL at any given moment would be to focus on the lexical element that is being produced. However, if a sign is a SA sign, it may be difficult to determine if the participant is signing LSM or ASL, unless of course the LSM and ASL SA signs differ in the production of one phonological parameter. If this is the case, the language can be determined by focusing on the articulation of that particular parameter. However, if a sign is unique to LSM or ASL, it is relatively easy to specify which language is being produced or, said in another way, to specify which lexicon is being accessed by the signer. Thus, the data presented here focus on contact phenomena at the lexical level. Such phenomena are among those suggested

by Lucas and Valli (1992) as they theorized about the outcomes of contact between two signed languages.

The structure of this chapter is as follows: Section 6.1 will address the use of LSM and ASL signs in the group discussions. In Section 6.2, I will focus on individual participants and their use of LSM and ASL signs in the interviews as compared to the group discussions. Then, in Section 6.3, I will discuss the use of repetition by the participants. Finally, Section 6.4 will treat another linguistic strategy used by participants: the code-switching of single lexical items—presumably for purposes of clarification.

## **6.1 PERCENTAGES OF LSM AND ASL SIGNS IN THE GROUP DISCUSSIONS**

There is a general trend that can be identified in the group discussion data regarding the average percentages of LSM and ASL signs used by participants. Specifically, more ASL signs than LSM signs were used, on average, by participants in both group discussions. This is reflected in Table 6.1.

Table 6.1: Percentages of LSM and ASL signs in the group discussions

	Total elements	LSM signs	% LSM signs	ASL signs	% ASL signs
EP	1573	121	7.7%	558	35.5%
TV	1748	299	17.1%	437	25.0%

Further, if we look at individual percentages of LSM and ASL sign production during the group discussions, all but one participant (TV1) articulated more ASL signs than LSM signs. This is shown in Table 6.2.

Table 6.2: Individual participant percentages of LSM and ASL signs in the group discussions

	Total elements	LSM signs	% LSM signs	ASL signs	% ASL signs
EP1	519	55	10.6%	154	29.7%
EP2	245	9	3.7%	103	42.0%
EP3	502	45	9.0%	134	26.7%
EP4	307	12	3.9%	167	54.4%
TV1	555	136	24.5%	61	11.0%
TV2	610	117	19.2%	168	27.5%
TV3	191	31	16.2%	50	26.2%
TV4	392	15	3.8%	158	40.3%

Not only did TV1 produce more LSM signs (24.5% of the elements articulated by her) than ASL signs (11.0% of the elements articulated by her) in the Texas Valley group discussion, she produced more than twice as many. Recall that TV1 functioned as the interviewer in the Texas Valley sessions, which suggests that LSM signs were used for many of the questions to the group, even though percentages of LSM signs from the other participants show that LSM was not necessarily produced in the participant responses. Other than TV1, all other participants at both sites produced more ASL signs than LSM signs during the group discussions. The interview data, on the other hand, do not necessarily follow this same pattern; I will discuss those data and compare them to the discussion data in Section 6.2.

There are likely several reasons for the higher numbers of ASL signs than LSM signs for all but one of the participants. Certainly, we would predict that the essentially monolingual signers of ASL (EP4 and TV4) would produce more ASL signs than LSM signs. This indeed is the case, but note that they also produced some

LSM signs as well. In fact, EP4, the self-identified monolingual user of ASL in the El Paso pool, produced more LSM signs than EP2, the self-identified bilingual signer of LSM and ASL. It is clear that self-identification of language use is not a reliable predictor of actual language use.

Another possible account for the high numbers of ASL signs used is that the participants who were fluent in LSM may have preferred to use ASL signs during the group discussions because of the settings in which the languages were produced. As described in Chapter 2, data collection took place in sites on the U.S. side of the border. If data collection had taken place on the Mexico side of the border, perhaps more LSM signs would have been used. This assumes, of course, that LSM is used more frequently in the Mexico side of these border communities than in the American side. Another possibility is that, in these border communities, groups that include LSM signers tend largely to use ASL signs, perhaps as a result of the perceived status of ASL as compared to LSM. In other words, there may be prestige factors at work here; ASL is likely the more prestigious language in these encounters since it is the language of the majority Deaf culture in the United States and it is used in many different settings. The topic of prestige (i.e., perceived status of a language) will also be discussed in Section 6.2, as I compare participant language production with responses to a question about the importance of being fluent in LSM and ASL (see Question 18 in Appendix B). Yet another possibility is that I, as a more fluent user of ASL than LSM, influenced the participants' language production based on my interaction with the participants before the data collection took place. Investigation of these factors is beyond the scope of this study, but future studies would clearly benefit from trying to control for these possible influences on language use.

The participant (TV1) who used more LSM signs than ASL signs may have done so for various reasons. Since she had previously interacted with the other participants in the Texas Valley sessions, perhaps she was aware that all of them had lived in Mexico for part of their lives before immigrating to the United States. One assumption on the part of TV1 could have been that those participants signed LSM in Mexico, and then they had to learn ASL, at least minimally, upon entering the U.S. in order to communicate with other deaf individuals. She may have further assumed that the participants would likely be more comfortable if asked questions in LSM rather than ASL. Her bilingual ability in LSM and ASL would likely allow her to carefully craft her questions using signs from either language. Another reason she might have been inclined to use more LSM than ASL sign would be that she is a native signer of ASL and LSM is her second signed language. Many learners of a another language are very enthusiastic about using the studied language with fluent users—the goal often being to become more proficient in the language while also learning about cultural elements. Perhaps this was partially the case with the signed production of TV1; she used more LSM signs in an effort to continue to learn LSM and about elements of Mexican Deaf Culture (an example of this is found in Section 6.3 as TV1 asks for the sign DULCE ‘candy’). Interestingly, despite participant responses that included higher percentages of ASL signs than LSM signs, TV1 seems to have continued to use more LSM signs than ASL signs for the questioning that she led. Utilizing a Grosjean (1992) view of bilingualism in the Deaf community, TV1 may have unconsciously chosen a “base language”, in this case LSM, to interact with some of the other participants in the group discussion and in some of the interviews. Then, she used other strategies, such as the production of ASL signs, fingerspelling,

and mouthing, to communicate certain points based on, as Grosjean (1992:312) put it, “...various momentary needs.” TV1, as a bilingual (or multilingual) Deaf person, used various strategies to communicate with her participants.

Regarding the relative use of LSM signs versus ASL signs by the participants, note that the production of LSM signs occurred more frequently in the Texas Valley group discussion than in the El Paso group discussion. Perhaps this can be attributed to the backgrounds of the participants. In the Texas Valley data collection, all participants but the interviewer had grown up in Mexico and learned LSM as their first signed language while living there. In the El Paso data collection, two of the participants had grown up in El Paso, and their first language was ASL. This may have influenced the group discussion in El Paso to be more ASL-like.

The primary point of Section 6.1 is that, generally, ASL signs were used more in the group discussions than LSM signs. This lexical trend suggests that ASL was more prominent than LSM in the group discussions. Interestingly, the same is not necessarily the case for the interviews, as will be seen in Section 6.2.

## **6.2 LANGUAGE USE OF INDIVIDUAL PARTICIPANTS IN THE INTERVIEWS VIS-À-VIS THE GROUP DISCUSSIONS**

The group discussion trend of using more ASL signs than LSM signs did not hold for all the interviews. Rather, during some of the interviews, a few participants produced more LSM signs than ASL signs. Additionally, whereas some participants produced more ASL signs than LSM signs in the group discussions and in the interviews, other participants’ sign production differed across the two settings. In order to address these differences between the group discussions and the interviews, I

will identify trends in the interview sessions and then compare specific sessions with data from the group discussions.

### 6.2.1 ASL signers and ASL interview sessions

The character of some of the interview sessions was clearly ASL in nature, which is suggested by the sign production of the interviewees and interviewers. These are clear cases of the interviewer choosing to sign mostly ASL with the participants. In turn, these participants signed mostly ASL signs with the interviewer. Examples of these “ASL sessions” are given in Table 6.3.

Table 6.3: Interview sessions in which mostly ASL signs were produced by interviewer and interviewee

Interview session	Participant	Total elements	LSM	%LSM	ASL	%ASL
EP2/EP1	EP2	189	1	0.5%	65	34.4%
	EP1	197	1	0.5%	82	41.6%
EP4/EP1	EP4	296	0	0.0%	153	51.7%
	EP1	257	3	1.2%	103	40.1%
TV4/TV1	TV4	297	14	4.7%	127	42.8%
	TV1	251	8	3.2%	100	39.8%

The language production of these three interviewees during their interview sessions matches their language production during their particular group session. In other words, EP2, EP4, and TV4 did not seem to change their language production from the interview to the group discussion. Additionally, the interviewer in these cases seemed to match the language production of the interviewee. That is, the interviewer did not produce many LSM signs during these sessions, but rather used many ASL signs with these particular participants.

The tendency of these interviewees (EP2, EP4 and TV4) to produce ASL signs can likely be attributed to several factors. First, in these interview sessions, the interviewer (either EP1 or TV1) produced significantly more ASL than LSM signs. Perhaps, the interviewees were simply responding to questions posed to them with sign production from the same language that the interviewer used. However, there are other possibilities for the interviewees' language use, and perhaps their backgrounds can provide specific clues regarding predicted language use. As I mentioned above, EP4 noted that he was born and raised in El Paso and used English-like signing while growing up. When he was a sophomore in high school, he began to learn ASL from friends. He only began to learn LSM 1.5-2 years prior to the data collection session. EP4 also reported that, on a scale of one to five ("one" = not fluent, "five" = very fluent), he was a "two" with regard to LSM and his ASL ability was a "four". These responses together suggest that EP4's comfort and fluency in ASL would predict that he would use more ASL than LSM—even in a group setting with some LSM use.

EP2 and TV4, on the other hand, reported that their fluency in LSM was rather good. EP2 noted that his fluency in LSM was a "four", and TV2 claimed that his was a "five". They were both born in Mexico, but they both moved to the U.S. in their early- to mid-teens. They both believed that ASL is more important than LSM—at least in the U.S. Perhaps their view of ASL as the more important language would influence their language production and cause them to sign more ASL than LSM.

Regardless of the reason (language production of the interviewer and/or language background), EP2, EP4, and TV4 produced more ASL than LSM signs

throughout the interviews and group discussion. This, however, was not the case for other participants in this study.

### **6.2.2 Bilingual signers and LSM interview sessions**

Both participants discussed in this section (TV2 & TV3) produced more ASL than LSM signs in the group discussions, but their interviews can be characterized somewhat differently. For example, TV2’s sign production for her interview was the opposite of the group interview: more LSM than ASL. TV3’s sign production for his interview was approximately half LSM and half ASL. In both interviews, the interviewer (TV1) produced many more LSM signs than ASL signs. If we take into account both interviewer and interviewee sign production, the character of TV2’s and TV3’s interviews were clearly more LSM-like than ASL-like. These two interviews and the sign production of the participants will be discussed in this section.

Based on their sign production and responses to interview questions, TV2 and TV3 are characteristically more bilingual than all other participants with the exception of the two interviewers (EP1 & TV1), whose sign production will be addressed in Section 6.2.4. TV2 and TV3 both claimed to have a level “three” fluency in ASL and a higher level of fluency in LSM. Yet, as mentioned in Section 6.1, they both produced more ASL than LSM signs in the group discussions. Their sign production in the group discussion hints at a moderate fluency with the production of signs in ASL, even though they may only feel that their fluency is level “three” (mid-way between the best and the worst level of fluency). Additionally, both signers reported that they had a level “five” (or, in the case of TV3, “four/five”) fluency in LSM. This classification is consistent with the numbers of LSM signs that they produced in the interview portions of the exam. Yet another factor that would

support the LSM fluency of these participants is their movement history: they both had lived in several Mexican cities for several years before moving to the United States. Presumably LSM was used regularly by these participants when they lived in Mexico. Regarding TV2, this is likely the case because she reported having many deaf family members (including her parents), so her acquisition of LSM would likely have followed regular patterns of other Deaf children with Deaf parents who use sign language, which would support a high level of fluency in that language.

Additionally, the bilingual ability of TV2 and TV3 would likely allow them to change their sign production based on the situation or their interlocutors, and this is likely what occurred during their interviews. In the interviews with TV2 and TV3, TV1 used many more LSM than ASL signs. Specifically, she produced 13.5% more LSM than ASL signs with TV2 and 18% more with TV3. Perhaps TV2 and TV3, as demonstrated bilinguals in the production of LSM and ASL signs, were matching, or accommodating to, the sign usage of the interviewer in these sessions. This would explain why TV3 produced more LSM signs in his interview session than in the group discussion. However, TV1 produced approximately 14% more LSM signs than ASL signs in the group discussion as well. We may wonder why TV2 and TV3 did not produce more LSM signs in the group discussion since they produced substantial numbers of LSM signs in their interviews. The answer to this might lie in the fourth participant in the group discussion: TV4. As I discussed in the previous section (6.2.2), TV4 was one of the subjects that consistently produced more ASL than LSM signs—throughout his interview and the group discussion. His presence and the high percentage of ASL signs that he produced could have led TV2 and TV3 to accommodate to his language use, which would have caused them to sign more ASL

than LSM signs. Regarding the TV2 and TV3 interview sessions, the interviewer's sign production in conjunction with the interviewees' backgrounds (they each had lived in Mexico for several years before traveling to the U.S.) likely influenced their sign productions.

### **6.2.3 A mostly ASL signer and gesturer in mixed sessions**

The last interviewee to be discussed (EP3) produced higher percentages of ASL than LSM signs despite the fact that the interviewer (EP1) produced approximately 27.5% more LSM than ASL signs. Thus, it appears that she did not accommodate to her interviewer who was conducting the interview mostly in LSM. Keep in mind that EP3 was the El Paso participant who was purported to be a fluent LSM signer by other Deaf members of her community. Yet, she did not, comparatively, produce many LSM signs. She did, however, produce a relatively large number of gestures (22.5% of her total elements in the group discussion and 15.8% in her interview).<sup>44</sup> Her responses to questions about her background might provide clues that would explain her language use. First, she became deaf at six years of age as a result of a severe blow to her head, and she remained at home (in Mexico) with her hearing family for all of her childhood because her parents did not allow her to go to school. It is likely that her lack of interaction with other deaf individuals in Mexico did not allow her to become fluent in LSM, but she may have become proficient in the use of gesture to communicate with her hearing family. She did mention during her interview that she had previously interacted with deaf individuals in Mexico, but the extent of that interaction is unclear. Unfortunately, she did not specify how long she had known LSM, and that information might have provided

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<sup>44</sup> Gestures were discussed in Section 5.2.

information regarding her fluency in LSM. Finally, she noted that ASL is more important than LSM and that she uses ASL more frequently at school, at church, and with friends. It appears that, despite the way in which she was characterized by other deaf members of the signing community in El Paso, EP3 does not use as much LSM as ASL. However, she does use LSM minimally, and that was exemplified by her group discussion and interview percentages of LSM sign use (9.0% and 9.8% respectively). The data from EP3 are evidence of the linguistic range of diversity of Deaf communities along the border. She used various strategies for communication, including the use of LSM signs, ASL signs, SA signs, and gestures.

#### **6.2.4 The interviewers: A broad range of language use**

Both interviewers (EP1 and TV1) produced the greatest range of language use compared with the other six participants in this study. They both had sessions where they used many more ASL than LSM signs (the interviews discussed in Section 6.2.1) and sessions where the reverse was true (the interviews discussed in Section 6.2.2 and 6.2.3). For some of the interview sessions, it appears that the interviewers and interviewees produced similar types of elements. One account for those sessions is that the interviewers' sign usage heavily influenced the interviewees' sign production. For instance, if the interviewer primarily used ASL signs, then the interviewee would respond mostly with ASL signs. Yet, this was not the case in EP1's interview with EP3 (as discussed in Section 6.2.3). In that interview, EP1 mostly produced LSM signs, but EP3 responded with mostly ASL signs. Thus, there must be factors, other than accommodation, that could account for the language use of participants.

One factor may be related to the bilingual abilities of EP1 and TV1. Both EP1 and TV1 are highly fluent users of LSM and ASL, and their responses to interview

questions support this suggestion. They were both born deaf to hearing parents, but they had deaf siblings and other extended family members from whom they learned signed language. EP1 was born in Mexico and acquired LSM as a child while TV1 was born in the U.S. and acquired ASL as a child. They both learned the other signed language as adults, but their ability in their first signed language likely gave them the tools to learn the second rather easily. They each reported very high levels of fluency in both signed languages, which is evident in their ability to produce signs from either language—perhaps in an attempt to accommodate to their interlocutors. Yet, as noted, the interviewees did not necessarily produce signs from the language that the interviewer used with them; this was the case in the Texas Valley group discussion and EP1’s interview with EP3.

It appears that the two interviewers may have made decisions, whether conscious or unconscious, about the language preferences of the other participants. Then, those decisions were translated into default modes of communication that were used with each of the participants. For instance, TV1 may have chosen LSM as the default or “base language”, in Grosjean (1992) terminology, for the interviews with TV2 and TV3. The same may have been true for EP1 and his interview with EP3. Even though the interviewees in each of these cases may not have responded with equal amounts of LSM sign usage, the interviewers continued with their use of signs from that language. The decisions that EP1 and TV1 made could have been based on previous interactions with the other participants and knowledge of their backgrounds. But, other factors such as the function of the interactions, the topics of discussion, and the fact that they were being videotaped in their language use may have also

contributed to the language use of each of the participants—including that of the interviewers.

The ability to assess a situation that contains interlocutors from different language backgrounds and create segments of language production that are appropriate for that situation is a characteristic of a bilingual individual. As Grosjean (1992) might suggest, the interviewers and the bilingual signers discussed in 6.2.2 (and perhaps 6.2.3) have likely developed communication competencies that allow them to use LSM, ASL, a mixture of both languages, and other gestural means for communication. The use of any particular system of communication depends on the situation, but the use of multiple communication systems and devices is part of the “communication norm”, as Haugen (1977) might suggest, of each of these signers. Furthermore, the language use of these bilinguals might be considered a “contact dialect”, using terminology also proposed by Haugen. Thus, language production, in these cases, is not concerned with keeping two or more languages “separate” from each other, but rather using languages and other communication devices in complex ways to achieve communication based on various factors. The combination, therefore, of languages and communication devices becomes the contact dialect that is complex and carefully crafted.

In this Section (6.2.4), I have compared each participant’s language production in the group discussion versus the one-on-one interview. In some cases, participants produced signs from one language consistently in both settings. In other cases, participants articulated signs from one language in the group discussion and signs from the other language in the interview. Based on responses given by each

participant to the interview questions, I have suggested possible accounts for profiles of language production.

### **6.3 ONE CHARACTERISTIC OF SIGN PRODUCTION: REPETITION OF MOVEMENT**

Some of the coded elements exhibited a repetitive quality. That is, signers would repeat the movement parameter of a sign. Repetition in these cases was not contrastive with the same sign without repetition. In other words, repetition seemed to be used for clarification or emphasis in these examples rather than for the grammatical purposes that I will explain below. In this section, I will describe the use of repetition as a clarification strategy by the participants.

As explained in Section 3.6.7, I coded repeated elements as those that contained cyclical repetitions of the movement parameter of sign formation. As noted in Section 3.6.7, I did not record contrastive uses of repetition (or reduplication) that are specified in the lexicon of ASL grammar or in the lexicon of LSM grammar. Although there is little work on this topic in LSM, the functions of repetition suggested in Eatough (1992) mirror similar functions of repetition in ASL. Therefore, I did not record instances of repetition in LSM signs that would be contrastive in ASL sign production.

I found that, in the group discussions and interviews, participants occasionally repeated the movement parameter of a sign or an emblem. In some instances the repetition appeared to serve the function of demonstrating a sign that another participant may not have known, and in other instances it appeared that a participant repeated an element or part of an element because another participant was not paying attention to the signer, so the signer would continue to repeat the element until the other participant looked at the signer. Repetitions of this type are consistent with the

cyclical repetitions of sign production that Deaf parents produce when signing to a Deaf child in order to attract that child's attention (Holzrichter & Meier, 2000). In child-directed signing, repetition may serve an accommodating function, and the same is likely true for some of the instances of repetition in this dissertation study. There were likely other functions that repetition served as well, but I will only briefly discuss one example of repetition from the data. In (6.1), the movement parameter of sign formation was repeated in elements produced by two different signers. The repeated elements are in bold:

(6.1) [GD 10-12 .11]

TV1: attention getter-TV2 ESPAÑOL SEÑA/SIGN CANDY

TV2: **DULCE** (8 repetitions of hand internal movement)

TV3: point-TV2 **DULCE** (2 repetitions of hand internal movement)

TV1: "What is the LSM sign for candy?"

TV2: "Candy—like this."

TV1: "Oh, candy, like that."

As can be seen in (6.1), TV2 produced many (eight) repetitions of the movement parameter when she was demonstrating the sign DULCE for TV1. In this example, the participants seem to be negotiating sign usage as they are conversing.

The number of repeated elements that were produced in the group discussions and interviews are reported in Tables 6.4 and 6.5. In both group discussions, the participants repeated the movement parameter of sign formation approximately 4.5% of the time. Interestingly, the percentages of repeated elements were higher for the El

Paso interviews (average = 5.78%) than the Texas Valley interviews (average = 2.14%). If we look at the numbers of repeated elements produced by the interviewers, however, we see that EP1 produced comparatively more repeated elements than TV1. This accounts for part of the higher percentages of repeated elements in the El Paso interviews. See Table 6.6 for numbers of repeated elements articulated by the interviewers (EP1 and TV1). Clearly, EP1 repeated elements more than TV1, but the reasons for this are not apparent.

Table 6.4: Repeated elements in the El Paso sessions

	EP group session	Interviews		
		EP2	EP3	EP4
# of elements	70	24	31	32
% of session	4.5%	6.2%	5.4%	5.8%

Table 6.5: Repeated elements in the Texas Valley sessions

	TV group session	Interviews		
		TV2	TV3	TV4
# of elements	80	12	13	10
% of session	4.6%	2.0%	2.6%	1.8%

Table 6.6: Tokens of repeated elements by the interviewers for the one-on-one interviews

Interviewer	EP1			TV1		
Interview session	EP2	EP3	EP4	TV2	TV3	TV4
# of repeated elements	11	19	12	2	3	5

As noted above, EP1 repeated the movement parameter of elements more frequently than TV1, which may account for the higher percentages of repetition in

the El Paso interviews. One example of such repetition was presented in Section 5.2.2, example (5.8), in which EP1 repeated the LSM sign CUAL ('which'). Another example is shown in (6.2), and the element that displays repetition is in bold. In that example, EP1 is asking EP3 about her language fluency in various languages. He does this by establishing a five-point scale with the digits of his non-dominant hand and pointing to those digits as references to the various levels. In this example, he not only repeats the movement parameter of the point that to the thumb of his non-dominant hand (which represents the lowest level of language ability), he also repeats several signs in the string. The strings of repeated signs were not included as tokens of repetition in this section; only repeated movements of a single sign were recorded and described.

(6.2) [I 46 .57]

EP1: **point-thumb of non-dominant hand** (three repetitions of movement)<sup>45</sup> NO  
COMPRENDER NO COMPRENDER NO point-thumb of non-dominant hand

"This level means that you don't understand."

Another example of repetition, this time from one of the group discussions, comes from the language production of TV1. In this example, she repeats the sign NOMBRE ('name'), which, in this instance, is used to ask about the name of a certain type of ground meat.

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<sup>45</sup> The movement that is repeated in this example is movement of the dominant hand to establish contact between the index finger of the dominant hand and the thumb of the non-dominant hand.

(6.3) [GD 1214 .56]

TV1: gesture: “attention-getter” CL: “meat coming out of grinder”

**NOMBRE** (two repetitions of movement)

“What kind of meat are you talking about—the kind that you grind up?”

It may be the case that this type of repetition might be used in monolingual signing as well—perhaps for emphasis. Thus, even though Tables 6.4, 6.5, and 6.6 show that repetition was used, at least to a small degree, by the participants in this study, it is not clear that the reported percentages are unique to this contact situation. Perhaps similar percentages of repetition would be found in monolingual discourse settings. Studies of repetition as used by monolingual signers in monolingual discussions or narratives might provide benchmarks from which to compare the frequencies of repetition in this study. However, in order to compare data from monolingual studies to data from this study, such studies would have to look at the functions of repetition in monolingual discussions and determine whether or not they are similar to the functions of repetition in these contact language situations.

As I reported in Chapter 2, one result of contact between two signed languages that was predicted by Lucas and Valli (1992) is foreigner talk (FT). Several researchers have described the FT nature of communication between Deaf and hearing users of a signed language (Cokely, 1983; Myles Zitzer, 1990). For example, in her dissertation study, Myles Zitzer described the existence of FT in a native Deaf signer’s narratives to a non-native intermediate signer and a non-native novice signer. According to the author, one type of FT that characterized the interaction between a native Deaf signer and non-native signers was the use of increased repetition. Repetition of words has also been claimed to be a characteristic

of FT in spoken language contact (Ferguson and DeBose, 1977). Perhaps some of the tokens of repetition that I have presented in this section could be described in terms of the phenomenon of FT. However, repetition as instances of FT need to be separated from repetition that serves other functions.

#### **6.4 THE CODE-SWITCHING OF SINGLE SIGNS**

This section focuses on the code-switching of single signs by participants.<sup>46</sup> The tokens of code-switching discussed here share at least one characteristic: each code-switched element was produced after articulating a semantically equivalent (SA) sign from the other language. A similar type of code-switching in spoken language contact situations has been termed *reiteration* (Auer, 1995; Eldridge, 1996; Pakir, 1989; Tay, 1989). This is the phenomenon of a message in one code being repeated in another code. Analyses of reiterative code-switching have described various functions of this phenomenon: negotiation of a collective social identity (Pakir, 1989), accommodation (Pakir, 1989), amplification of a message (Tay, 1989), emphasis (Auer, 1995; Eldridge, 1996; Tay, 1989), reinforcement or clarification of a message (Auer, 1995; Eldridge, 1996), and attention-getting, as in the regulation of turn-taking (Auer, 1995).

The reiterative code-switching that the participants in this study performed can be described in at least two ways: by describing the code-switched items themselves and by exploring the possible functions of this code-switching. Regarding the code-switched items, the code-switching includes signs that can be assigned to

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<sup>46</sup> The term “code-switching” will be used in this section to refer to intra-sentential switched elements even though many authors use the term to refer to inter-sentential switching. The term “code-mixing” is often used in the literature to refer to intra-sentential switching, but following Davis (1990a, 1990b), I have used “code-mixing” to refer to the simultaneous mouthing of an element from one language and production of a signed element from another language.

various word classes such as nouns, verbs, pronouns, adjectives, and adverbs. In terms of the pragmatic nature of the switches, the code-switching seems to serve various functions such as emphasis, clarification, accommodation, and reinforcement. There are also cases where the functions of switching are not as clear. These topics are addressed in this section.

The code-switched signs were of various types. Throughout the group discussions and interviews, 40 reiterative code-switches occurred that followed the criterion of single lexical item switches from a sign in one language to a semantically equivalent sign in the other language. The 40 code-switched signs included: 23 nouns, 8 verbs, 5 adjectives, 2 pronouns, and 2 adverbs. Nouns tend to be code-switched frequently in spoken language contact situations, a result which is echoed by the signed language data of this study.

Code-switching occurred several times in both the group discussions and interviews, as shown in Table 6.7 and Table 6.8.

Table 6.7: The production of single code-switched signs after a semantically equivalent sign from the other language: El Paso sessions

EP group session	Interviews		
	EP2	EP3	EP4
9	0	5	1

Table 6.8: The production of single code-switched signs after a semantically equivalent sign from the other language: Texas Valley sessions

TV group session	Interviews		
	TV2	TV3	TV4
11	8	5	1

Note that among the interviews, the sessions with EP3, TV2 and TV3 contain the highest numbers of this type of code-switching. Earlier in this chapter, I showed that these sessions contained high percentages of LSM signs—at times higher than the percentages of ASL signs. Also notice that the interview sessions that were mostly ASL in nature (EP2, EP4, and TV4) netted only minimal numbers of these code-switched signs. In those sessions, the participants were primarily producing ASL signs, which means that there was likely little or no need to clarify a sign with a semantically equivalent sign from the other language. It appears that this type of reiterative code-switching can be predicted to occur in discussions where LSM and ASL are both used regularly.

Some examples of general code-switching (not necessarily reiterative switching), seem to serve what Appel and Muysken (1987:119) call a directive function—the desire to “...include a person more by using her or his language.” This directive function that Appel and Muysken describe is not unlike the concept of accommodation that Pakir (1990) described as a function of reiterative code-switching. An example can be seen in (6.4), where the code-switched sign is bolded.

(6.4) [GD 12-14 1.441]

TV1: point-middle finger **TOMATO** **TOMATE** ADD-INGREDIENTS

MIX gesture: “thumbs-up”

“(...and then you take) tomatoes and you add them to the other ingredients and mix everything together. It’s great.”

In this brief segment, TV1 was mostly looking in the direction of TV2 and TV3 while recapping cooking instructions that were presented earlier by TV2. TV2 and TV3 frequently produced LSM signs, which is why TV1 may have made a conscious

decision to add the LSM sign TOMATE after the ASL sign TOMATO. There was a very brief pause between the sign TOMATO and TOMATE, which gives the code-switched item a degree of emphasis. In some respects, the code-switched item could also be viewed as a clarification—a sign used to clarify an ASL sign that might not be entirely familiar to at least one of the other participants. The ASL sign TOMATO had been signed by TV2 earlier in this segment, but TV1 may have assumed that TV3, who used many LSM signs, was not familiar with the ASL sign TOMATO, which is why she may have chosen to clarify that sign with the LSM sign TOMATE. As noted, TV1 was gazing in the direction of TV3 (and TV2) during the production of this code-switched sign.

In Section 5.2.1.2, I discussed strategies for number production that were used by the participants. One of the strategies was the articulation of a semantically equivalent number sign from the other language immediately after signing a number sign from one language. The examples given in Section 5.2.1.2 are instances of code-switching according to the manner in which I have defined code-switching for the data of the dissertation. The number examples provide further evidence that one function of code-switching by participants is clarification.

In another example of code-switching from a group discussion, TV1 code-switched a verb while asking a question about what TV2 regularly does for her birthday. This example can be found in (6.5); the code-switched item is in bold.

(6.5) [GD 810 .10]

TV1: point-TV2 CUMPLEAÑOS point-TV2 HACER FORM-GROUP INVITE  
**INVITAR** SELF-TV2 point-TV2 INVITAR

“For your birthday, do you usually invite people to get together? Do you do that yourself?”

In contrast to the example of code-switching in (6.4), in this instance the signer did not pause, even briefly, before the code-switched item. Thus, this example does not exhibit the emphasis that characterized the code-switching in (6.4). Yet, this example might still function as accommodation or even identification with the other signer. Recall that TV2, as reported in Section 6.2.2, was one of the participants who produced the most LSM. Further, the interview session with TV2 was characterized by relatively large amounts of LSM production. Like that interview session, TV1, during this example from the group discussion, may have presumed that TV2 preferred LSM and thus made an effort to produce LSM signs. This type of code-switching can also be described as serving a reinforcing function, which is one of the roles that reiterative code-switching has been claimed to perform.

In the last example of code-switching presented here, it is not clear what function the code-switched element served. This is also true of other examples of reiterative code-switching that occurred the group discussions and interviews. During a discussion of whether or not participants’ families are Deaf or hearing (and how the participants communicate with their families), EP3 is commenting on the fact that most of her family is hearing. The example is given in (6.6), and the code-switched item is in bold.

(6.6) [GD 1214 1.15]

EP3: NO ME NO++ ME gesture: “shake-finger” DEAF/SORDO  
gesture: “wave hand to negate” ME FAMILY **FAMILIA** <sup>nhs</sup> MY/MI  
gesture: “well”

“As for me, my family is not Deaf. Oh well.”

In (6.6), there was no pause between FAMILY and FAMILIA. Further, the sign FAMILIA was not stressed and no other means were used to draw attention to this sign. This does not seem to be a clear case of emphasis. Further, while she signed FAMILIA, EP3 was looking at EP2, who signed mostly ASL during the group discussion and interviews. Thus, this code-switch does not seem to be a case of accommodation either. Perhaps this instance of code-switching was intended to display an identification with the interlocutor, but there are no explicit features (such as emphasis of the sign, a pause, change of eyegaze, etc.) that would suggest what the signer’s intent was when she produced this code-switch.

As can be seen from the most recent example, the reason(s) for using code-switching are not always clear. Sometimes there are no explicit features (such as pauses, eyegaze to a particular interlocutor, or emphasis of the sign) that would suggest that the code-switch was deliberately produced for a specific reason(s). Thus, lists of code-switching functions, such as those given earlier in this section, may not account for all instances of code-switching. This is true even when describing specific types of code-switching such as switches that are reiterative in nature. One characteristic that was clear in examples from the data such as (6.6) is this: there were, at times, no explicit features of the code-switched item that would draw attention to it in any way.

In general, the examples of reiterative code-switching described in this section fit with accounts of the same type of code-switching in spoken languages. Specifically, the reiterative switches in these data seem to have served various functions such as emphasis, clarification, and accommodation to another signer. These results mirror an earlier study of the use of signed language. Siple (1995) looked at the function of repetition in samples of transliteration. She also found that repetition of a sign was used for clarification of a message and for emphasis. Even though Siple was not addressing code-switching specifically, her results are consistent with those reported here.

There are certainly many more examples of the code-switching of single signs in the group discussions and interviews, but those did not fit the criterion of being produced after a semantically equivalent sign from the other language—a necessary criterion for inclusion in the set described here. Most other instances of code-switching in the data of this study are likely not examples of reiteration, unless the reiteration is of a sign string of two or more signs. In order to analyze the linguistic structures of other instances of code-switching, a syntactic analysis would be needed.

The code-switching described in this section might also fit with descriptions of lexical borrowings, but more work is required to determine if this set contains signs that originated in one language, but are now used frequently in the other language. Clearly, more work is needed on the topics of code-mixing, code-switching, and lexical borrowing between two signed languages.

This section on code-switching has shown that participants in this study utilized bilingual strategies to achieve clear communication. At times when they likely wanted to make sure that they were being understood, they would sign a

semantically equivalent sign from the other language immediately after articulating the first sign. Code-switching is clearly possible between two signed languages, and the data reported in this section attest to that fact.

## **6.5 SUMMARY**

In this chapter, I have shown that contact, on the lexical level, does exist between LSM and ASL as they are used along the border. This is reflected in the percentages of LSM and ASL signs produced by the participants. The backgrounds of the participants can sometimes give us clues to their language production, but this is not always the case. There are certainly many factors that determine the form that language production takes. I also demonstrated that repetition, a strategy for clarification or emphasis, can be seen in the data from this study. It is not clear, however, to what degree repetition is a result of language contact along the border. Finally, the code-switching described in Section 6.4 shows that bilingual users of two signed languages, in addition to producing monolingual signed segments, can use this strategy for various purposes.

## **Chapter 7: Conclusion**

In this dissertation, I have described the language production of several Deaf individuals who live in communities where multilingual language use is frequently the norm. In U.S. cities that lie along the Mexican border LSM and ASL are often used interchangeably; Deaf signers may also use elements of Spanish and English and other gestural-based strategies for communication. The language use in these multilingual communities and the interaction among members of these communities appear to be stable—at least for the moment. For instance, there are areas where Deaf individuals who use LSM, ASL, and other communication devices interact frequently. That is the case in the two border areas, El Paso and the Texas Valley, that were the focus of this study. Participant interactions in one-on-one interviews and four-person group discussions were settings for the collection of language samples. The language production by participants in these samples can be described as fluid and natural despite the fact that signers mixed elements of LSM, ASL, Spanish, English, and gesture. Descriptions of the various facets of this language production provide the substance of this dissertation. From these descriptions, we can compare signed language contact phenomena with spoken language contact phenomena.

In this chapter, I will summarize the findings of this study and discuss the implications of the data for the continued study of contact between languages. I will also offer suggestions for future research as I examine the limitations of this study. The layout of this chapter is the following: Section 7.1 reviews the major findings of this study. Contact between LSM and ASL reveals several sources of similarity

between the two languages and between the gestural devices used with these languages. Some signed language contact phenomena parallel those described for spoken language contact. The results also revealed various strategies that bilingual signers use for clarification in contact situations. In Section 7.2, I will discuss the implications of this study. Then, I address limitations of this study and make suggestions for future research in Section 7.3.

## **7.1 MAJOR FINDINGS OF THIS STUDY**

In Chapter 4, I showed that there are several sources of similarity between LSM and ASL communicative devices, and these similarities may aid in language comprehension for monolingual and bilingual users of LSM and ASL. The sources of similarity are reviewed in Section 7.1.1. In Section 7.1.2, I will discuss several ways in which contact between LSM and ASL parallels contact between two spoken languages. Some of the contact phenomena can be described as clarification strategies.

### **7.1.1 Contact between two signed languages: Sources of similarity**

In Chapter 4, I discussed three sources of similarity between LSM and ASL language production. These similarities presumably foster comprehension across the languages by monolingual users of either language. The similarities can be described as similarly articulated (SA) signs, gestural elements, and points.

#### ***7.1.1.1 Similarly articulated signs***

On average, SA signs constituted 20% of the elements produced in the sessions. The range of SA sign production for the various sessions (both group discussions and all six interviews) was 15 - 25%. Since these signs that are shared by

LSM and ASL can differ in at most one phonological parameter, they would likely be recognized by even monolingual signers of LSM or ASL. Studies of SA signs between related signed languages (Currie, 1999; Guerra Currie, Meier, & Walters, in press; Woll, 1984) have found even higher percentages of lexical similarity than those obtained in this study. It should be noted again that those studies focused on signs in isolation, while the current study addresses the percentage of SA signs in discourse. Further, the studies of signs in isolation excluded pointing signs, whereas points comprised approximately 20% of the elements in the various sessions of this study.

The average percentage of SA signs in the various sessions of this study pales in comparison with high percentages of shared vocabularies for spoken languages that are closely related. For example, by some accounts Spanish and Portuguese share nearly 70% of their vocabularies. Yet, like the studies of lexical comparisons of signed languages, this figure does not address the use of cognates in discourse. Further, it is difficult to know how a percentage of cognates between very similar spoken languages would compare to the criteria established for SA signs in the present study.

#### ***7.1.1.2 Gestural elements***

Two types of gestural elements were evident in the language production of the participants in this study: emblems and mimetically motivated gestures. The emblems were produced in alternation with signs and other elements (e.g., fingerspelling, points, etc.). Emblems and mimetically motivated gestures constituted, on average, between 11.7 - 15% of all elements in the group discussions. Like the SA signs discussed above, these gestural elements would likely be understood by monolingual signers of LSM and ASL. In fact, these gestural elements

might be understood by hearing non-signers, since emblems are often used by many hearing people who do not use sign language and the meanings of mimetically motivated gestures are highly transparent.

Emblems constituted between 9.4 - 12.6% of the group discussion elements. These emblems were gestural devices with specific meanings that are used by hearing people in Mexico and the U.S. Like signs, articulation of these emblems follows standards of well-formedness. In Section 4.2.1, I described various emblems that were used frequently by participants in this study, some of which functioned as conversation regulators and others that functioned as discourse markers. Some of the emblems produced were particularly mimetic in quality. For instance, the emblem labeled “move aside” seemed to mimic the act of someone pushing other individuals away from a particular area. Like SA signs, these emblems could likely be understood by most signers of LSM and ASL—from the fluent bilingual to the monolingual.

Mimetically motivated elements constituted approximately 2.3% of each group discussion. These elements are similar to iconically and mimetically motivated emblems, but they tend not to be used as frequently by hearing non-signers. More specifically, in these elements, signers seem to mimic the movements, including head postures and facial expressions, of people and things to which they are referring. Some classifier constructions—body classifiers and instrument classifiers (Supalla 1986)—are included in this set because of their mimetic qualities. The inclusion of these classifiers, however, is not intended to designate them as non-linguistic elements. A thorough analysis of these classifiers, including their formation properties and syntactic functions, would be necessary to determine their status as

linguistic or non-linguistic elements. Nonetheless, the intended meanings of these mimetic elements are likely to be easily understood by monolingual signers and by many non-signers. These types of elements are perhaps the elements that Pizzuto and Volterra (2000) referred to in their claim that some elements produced by signers can be easily understood by users of different signed languages, and some can be understood by hearing non-signers as well.

#### **7.1.1.3 Points**

Points constituted between 15 - 29% of all elements produced in each session; the average figure for all sessions was 20%. The points served several functions. Some acted as pronouns: specifically, points articulated by the signer to herself or to the other participants in a particular session. Others were references to locations (such as Mexico or the United States) or to non-present individuals; this latter set of points also functioned as pronouns. The remainder of the points in these data consisted of points made to fingers of the non-dominant hand to specify degrees of language ability or elements of a list. The intended referents of most of these points were perhaps quite clear, since the majority of points were directed to present individuals or to the fingers of the non-dominant hand. As with the SA signs and gestural elements discussed above, I suggest that the intended meanings of these points were mostly understandable to even monolingual signers of LSM and ASL.

It is tempting to hypothesize that participants in this study produced high numbers of points because the intended meanings of points are likely to be clear in most contexts. However, it may also be the case that monolingual signers would produce similar numbers of points in normal discourse, and the contact settings created for the present study are not atypical. More work is needed on this topic.

#### **7.1.1.4 Summary of sources of similarity**

Similarly articulated (SA) signs, gestural elements, and points constituted slightly more than 50% of all elements in the group and interview sessions. The average percentage of SA signs throughout all sessions was 20%. Gestural and pantomimic elements totaled at least 11.7% of the group discussion elements. Across sessions, points averaged slightly more than 20% of the elements produced. Presumably these types of elements can be understood by monolingual users of either LSM or ASL. If we combine these three categories of elements, we can see that slightly more than 50% of the elements were transparent to even monolingual signers of LSM or ASL.

The high percentages of elements used by the participants that are similar between LSM and ASL and that are potentially meaningful for the users of those languages, regardless of their bilingual skills, are noteworthy. Studies of lexical similarities between different signed languages have suggested that there tends to be a base level of lexical similarity (approximately 20%) between signed languages regardless of the languages used for comparison (see Section 2.5 for a discussion of this line of research). The figure of lexical similarity is even higher for signed languages that are historically related. However, researchers have tended to focus on signs in isolation for these studies rather than describing the frequencies of signs and other elements that may be articulated similarly across signed languages. This dissertation study shows that the frequency of elements that are articulated similarly across signed languages is relatively high within a discussion among two to four Deaf individuals. This suggests that Deaf individuals have at their disposal various communication strategies (such as the production of gestural elements, mimetic

elements, or points) that can be used with other Deaf individuals in order to achieve successful communication, and that these strategies are used frequently. Perhaps these sources of similarity are aids for monolingual signers when they interact with monolingual users of other sign languages.

### **7.1.2 Ways in which contact between LSM and ASL parallels contact between two spoken languages: Sources of difference**

There are several ways in which contact between LSM and ASL exhibits the same types of features that have been noted for contact between two spoken languages. In Chapters 5 and 6, I discussed those similarities by comparing the data from this study to accounts of contact phenomena in the spoken language literature. Additionally, I discussed various clarification strategies that were utilized by participants in this study. This section summarizes those results.

#### ***7.1.2.1 Interference***

First, the concept of interference is clearly applicable on several levels: the phonological level (sign formation parameters), the prosodic level (NMS), and the paralinguistic level (mouthing). Interference allows us to examine differences between LSM and ASL and ways in which those differences influence language production in contact situations. Additionally, code-switching/code-mixing can be found in the contact between two sign languages. Finally, sign language contact can perhaps be described in terms of repetition—presumably a strategy for clarification or emphasis.

In several instances, participants from this study articulated a phonological value from one language with a sign from the other language. Examples of this type of phonological interference could be found for several major phonological

parameters of sign formation (e.g., handshape and place of articulation) as well as a minor parameter (palm orientation). Phonological interference was not found, however, for the parameter of movement. The phenomenon of phonological interference in the contact between LSM and ASL is one example of ways in which signed language contact phenomena can exhibit characteristics previously identified in studies of spoken language contact.

In another type of interference, participants produced lexical items from one signed language with NMS from the other signed language. This interference can be described more specifically as the following: NMS from LSM being used with ASL signs and NMS from ASL being used with LSM signs.

The mouthing patterns that participants used in accompaniment to particular lexical items also exhibited interference in the contact between LSM and ASL. Specifically, participants sometimes mouthed an English word while producing an LSM sign, a Spanish word while producing an ASL sign, or an English or Spanish word while producing a SA sign. Following an analysis that Davis (1990a, 1990b) proposes for the simultaneous mouthing of a word while producing a sign, I have suggested that the instances of mouthing described in Section 5.4 are examples of code-mixing. On this account, the signed language is one of the mixed “codes” while the spoken language (English or Spanish) would be the other “code.” Elements from these two codes are displayed simultaneously in this type of code-mixing. However, according to Davis (1990a, 1990b), the simultaneous production of a specific mouthing and the articulation of a sign can also be analyzed in terms of the concept of borrowing. Further work is needed to determine if borrowing, in this sense of the word, can be claimed to occur in the contact between LSM and ASL. The existence

of mouthing data in this study is consistent with the results of the TCDHH Hispanic Trilingual Task Force survey (see Section 1.2.4.2 for a description of the survey) of the communication devices used by Deaf individuals along the border.

### ***7.1.2.2 Code-switching***

Another feature of spoken language contact that was evident in the data from this study was code-switching. The existence of code-switching is suggested by the relative percentages of LSM and ASL signs that were produced in the various sessions. Some participants consistently produced signs from one of the signed languages, whereas other participants varied their use of LSM & ASL signs based on the situation (group discussion or one-on-one interview). In some cases, a participant's background provided clues to her language use, but that was not always true.

In other examples from the data, participants utilized reiterative code-switching for various functions such as accommodation to another signer, emphasis, and clarification. This type of code-switching involves the production of a sign in one language immediately following a semantically equivalent sign from the other language. The existence of reiterative code-switching in the contact between two signed languages is similar to the same kind of code-switching in contact between two spoken languages.

### ***7.1.2.3 Other clarification strategies***

Participants utilized other types of clarification strategies when producing numbers and similarly articulated but semantically unrelated (SASU) signs. First, it appears that number production and reception were particularly difficult for participants in this study; this may have encouraged the use of clarification strategies.

In one strategy, participants articulated a number and then followed it with the semantically equivalent sign from the other signed language. This is the same type of reiterative code-switching that was reported in Section 6.4. In another strategy, participants produced a sequence of two single number signs in attempts to communicate two-digit numbers. These strategies were presumably used to enable clear communication of the numbers. Also, confusions about SASU signs were cleared up by confirming the SASU sign with a sign that is unique to one of the languages. Strategies for clarification used by participants in this study may not be unique to signed language contact situations; there are likely examples from spoken language contact situations that mirror these results.

Finally, the data from this study contain examples of repetition. Specifically, the movement parameter of signs and other elements were occasionally repeated by participants. In the group discussions, participants repeated the movement parameter for approximately 4.5% of the elements that were produced, whereas percentages for the interview sessions range from 2 - 6%. Presumably, these instances of repetition served the purpose of clarifying or emphasizing certain elements. While repetition is one element of Foreigner Talk (FT), I suggest that these instances of repetition do not necessarily imply that the communication between participants in this study resembled FT. The data would need to be examined systematically for other characteristics of FT before claims of the existence of FT could be made.

## **7.2 IMPLICATIONS OF THIS STUDY**

Results from the present study carry various implications for linguistic research as well as for the provision of services to Deaf individuals who use LSM along the U.S.-Mexico border. First, this dissertation addresses a signed language,

LSM, that has been studied only very minimally. Further, this work adds to the body of knowledge on signed languages in general by providing another perspective (language contact) from which to view signed languages. Additionally, this study contributes to knowledge of contact between all languages since it compares findings from signed language contact with those from studies of spoken language contact. Finally, providers of social services (interpreters, social workers, etc.) can benefit from descriptions of contact between LSM and ASL that are contained in this work.

As I mentioned in the literature review, the body of literature that addresses LSM is quite small compared with research on ASL and some European signed languages. This work adds to that body of literature in at least two ways. In Chapter 5, I present information about LSM fingerspelling handshapes and numbers that is not provided elsewhere. This information will aid in continued analysis of the LSM phonological and lexical systems. Further, information about LSM-ASL similarly articulated but semantically unrelated (SASU) signs is also beneficial to future works that focus on contact between these two languages.

This dissertation adds to knowledge of signed languages in general insofar as it looks at contact between two signed languages, which is a linguistic phenomenon that has been addressed minimally in the sign literature. As I reported in the literature review, there have been several studies of the contact between a signed language and a spoken or written language, but contact between two signed languages has been mostly neglected by researchers. This work provides a first glance at the issues and topics that surface when users of two signed languages come into contact on a regular basis—a much needed addition to the field of sign linguistics.

One theme that has been pervasive in the sign literature over the years is the following: How are signed languages similar to spoken languages and how do they differ? This dissertation, by addressing language use in contact situations, suggests some new answers to these questions. One of the similarities is that the phonological systems of two signed languages in contact reveal evidence of phonological interference—just as the phonologies of spoken languages in contact do. The degree to which this type of interference occurs in signed languages may differ from spoken languages in contact because of the apparent similarities of signed language phonologies, but this type of interference exists nonetheless.

Phonological interference between two signed languages that are in contact attests to the internal structure of signs. Several authors have claimed that the signs of signed languages contain distinct formation parameters such as handshape, place of articulation, and movement (e.g., Klima & Bellugi, 1979; Stokoe, Casterline & Croneberg, 1965). This internal structure of signs has been confirmed with studies of production errors in aphasic signing (see Corina, 2000 for a brief summary of this work) and “slips of the hand” in ASL (Klima & Bellugi, 1979) and German Sign Language (Hohenberger, Happ & Leuninger, in press). The current dissertation provides further evidence from language contact that there are parameters of sign formation that constitute the building blocks for signs of signed languages. If a signer learns a second signed language that may differ phonologically from her first, interference from her first signed language to her second signed language will likely be noted in the phonological parameters of sign formation.

This study also shows that interactions and mixing at the lexical level occurs in the contact between two signed languages, which is also a feature of spoken

language contact. The data from this study show that code-switching and code-mixing occur in signed language contact situations, as in contact between spoken languages. But, in order to examine the applicability of theories of spoken language code-switching and code-mixing to the data of this study, a syntactic analysis would be necessary.

This study also suggests that there might also exist modality-influenced differences between spoken language contact and signed language contact. For example, the efficient use of gestural and mimetic devices for communication in signed language contact situations, as evidenced by the data from this study, may not necessarily be paralleled in spoken language contact situations. Certainly, many users of spoken language also gesture while they speak, but the functions and characteristics of that type of manual gesturing in spoken language contact situations, to my knowledge, have been mostly neglected. Additionally, that type of gesturing, or gesticulation, differs from the production of gestures that alternate with words in the speech stream. In the data of this study, emblems frequently alternated with signs and other meaningful elements. This difference between signed languages and spoken languages is noteworthy: manual gestures can accompany speech, but manual gestures normally alternate with the elements in a sign stream. Recall that the articulation of emblems by the participants followed well-formedness conditions. I would presume that, if tested, some of these gestures might satisfy other criteria for sign status.

Because of the similarity of these gestures to signs (both in articulation and perhaps in the manner that they alternate with signs and other meaningful elements), and the similarity of mimetic devices across signed languages, I suggest that the data

from this study reveal interesting phenomena that differ from spoken language contact phenomena. Specifically, these data suggest that users of signed languages, as a result of language production in the visual-gestural modality, often utilize unique strategies for communication in signed language contact situations. The unique strategies are the use of emblems and mimetic devices for fostering comprehension. It may be the case that spoken language contact studies have focused on elements of the speech stream and ignored these types of devices. But, that may be for good reason: the functions and characteristics of gesture in signed language likely differs from the functions and characteristics of gesticulation that accompanies spoken language production. Further work on contact between users of signed languages is needed to explore contact phenomena that may be unique to signed languages.

This work also has implications for theories of bilingualism. For instance, as reported in Section 2.3.1, there are differing viewpoints about how to characterize a bilingual. One view is that the bilingual is the equivalent of two monolinguals in one person, whereas another perspective views a bilingual person as different from two (or more) monolinguals. On the latter view, the bilingual has the communicative competence of a monolingual in each of the languages, but the bilingual is able to use various strategies (such as production of one language, of the other language, or of a mixture of the two languages) to communicate with others (Grosjean, 1992). This perspective is consistent with the data from the present study. Several participants (e.g., EP1, EP3, TV1, TV2, and TV3) made use of several strategies that may be unique to bilinguals in order to communicate with other participants. A preliminary account of the data from this study would likely support the characterization of bilingualism advanced by Grosjean and other authors. Further study of individuals

from these border contact communities would allow us to continue to explore the characteristics and abilities of the bilingual person.

Finally, as noted above, this work may be beneficial to service providers who work with LSM users along the U.S.-Mexico border and elsewhere. For instance, the descriptions of LSM and contact phenomena between LSM and ASL provided in this dissertation could provide resources from which training curricula could be designed for sign language interpreters and other professionals who interact with users of LSM. Previously, there have been few resources from which to understand signed language contact along the U.S.-Mexico border. This dissertation may provide a starting point for linguistic work on the topic.

### **7.3 DIRECTIONS FOR FUTURE RESEARCH**

So little work has been done on the contact between two signed languages, and syntactic analyses of such contact would be a valuable contribution to the literature. However, before such analyses can occur, we must understand the various elements (signs, classifiers, deictic points, gestural devices, etc.) that are produced by signers, and we must know how to categorize them. For instance, some elements can be considered exclusive to one language, but other elements may be used cross-linguistically. Within the category of cross-linguistic elements, there are likely those that are shared by historically-related signed languages and those that are similar across signed languages with no known historical relationships. These issues need to be addressed before syntactic analysis of contact can take place.

Further, because I focused on individual elements and did not perform syntactic analyses of the data, the sources of similarity between LSM and ASL presented in Chapter 4 would suggest that LSM and ASL could be mutually

intelligible languages. However, this is not necessarily the case. Simply because there exist relatively high numbers of items that I believe could be understood by monolingual users of LSM or ASL does not imply that the two languages are mutually intelligible. Once again, syntactic analyses might inform us of the extent to which sentences would be transparent or non-transparent to the monolingual signer based on the types of elements that are used. Perhaps psycholinguistic studies of the comprehension of utterances with varying amounts of language-specific (non-transparent) and cross-linguistic elements (such as points and gestural devices) would inform us of the mutually intelligibility of different signed languages. And, sociolinguistic studies of how bilinguals interact in non-experimental situations would allow us to also look at syntactic phenomena that occur in naturalistic conversations.

Beyond understanding the linguistic structure of contact, I feel that it is beneficial to explore sociolinguistic variables that may influence the linguistic structure of a message. The present study only briefly addresses sociolinguistic topics by discussing background information received from the participants during the interviews. Future studies could address sociolinguistic variables in more systematic and in-depth ways in order to explore the extent to which such variables influence language use. This information could also help us to understand the concept of bilingualism as it applies to users of more than one signed language. And, sociolinguistic studies might, if designed appropriately, provide us with more “naturalistic” data than what have been presented in this dissertation.

This study addressed the language use of eight participants from two different locations along the U.S.-Mexico border. The inclusion of more participants in a study

would likely allow for statistical analyses of trends in the language data and not simply presentation of percentages—as was the primary method of data presentation in the present study. Additionally, focusing on other U.S.-Mexico border areas (e.g., populated border areas in New Mexico, Arizona, and California) might provide us with information about contact characteristics that are specific to one or two areas versus trends that can describe all areas of contact along the border.

Finally, the present study addresses language contact based on samples of synchronic data. Diachronic data could provide important clues to language change. Further work on contact is important to address issues of language change and to see the results of continued contact between LSM and ASL users along the border.

## **Appendices**

### **APPENDIX A: TCDHH HISPANIC TRILINGUAL TASK FORCE SURVEY**

#### **Texas Commission for the Deaf and Hard of Hearing Hispanic Trilingual Survey**

**Please fill in the appropriate information** (you may add more pages if necessary):

1. Female        Male
2. Age:        below 18        18-29        30-39        40-49        50-65        over 65
3. Deaf        Hard of Hearing        Hearing
4. How do you describe yourself?  
    African American                          Hispanic                           
    Anglo    Native American                           
    Asian American    Other (please indicate)
5. Do you have deaf parents, siblings, or family members from whom you may have learned sign language? yes        no         
If yes, what relation are they to you? \_\_\_\_\_
6. Please indicate the city in which you live: \_\_\_\_\_
7. Please indicate the city (or area) in which you interpret most: \_\_\_\_\_
8. How many years have you interpreted in this city (or area)? \_\_\_\_\_
9. How many years total have you worked as a paid sign language interpreter? \_\_\_\_\_
10. How many hours per week do you currently work as a paid sign language interpreter?  
0        1-10        11-20        21-30        31-40        40+
11. In what type of situations do you interpret? Rank in order from 1=most often to 6=least often  
       General                                 Legal                                 Educational  
       Medical                                         Social                                         Religious
12. Please indicate all of the following that you have completed:  
high school diploma or GED                           
certificate from a vocational program                          area of certificate: \_\_\_\_\_  
AA/AS degree                          area of degree: \_\_\_\_\_  
BA/BS degree                          area of degree: \_\_\_\_\_  
MA/MS degree                          area of degree: \_\_\_\_\_  
Doctoral degree                          area of degree: \_\_\_\_\_

13. Do you currently hold certification as an interpreter from:  
BEI\_\_\_\_\_, RID\_\_\_\_\_, NAD\_\_\_\_\_, Other\_\_\_\_\_. Check all that apply.
14. If you answered yes, please list the BEI or NAD level of certification and/or the RID title of your certification: BEI or NAD level or RID title\_\_\_\_\_ year obtained\_\_\_\_\_
15. Using the following criteria, list each spoken or signed languages that you know and how you would classify your fluency in each language.

**'A-language'**

This is your first language or mother tongue (you can have more than one 'A-language' if you were raised in a multilingual environment). You can comprehend and produce this language as a native or near native user. Also, you have the language skills to interpret into or from this language.

**'B-language'**

This is not your first language or mother tongue. However, you can clearly comprehend and produce this language. Furthermore, you can clearly interpret into and from this language.

**'C-language'**

This is a language in which you may have some fluency, but you do not have the comprehension or production skills that are present with an 'A' or 'B-language'. In fact, it is common that you will have better comprehension than production skills in this language, which *might* allow you to interpret from this language but not into this language.

Language: \_\_\_\_\_

classification: A B C

16. Have you ever been in a situation where your clients (deaf or hearing) used Spanish, Mexican Sign Language (LSM), or another type of language production that is influenced by either Spanish or LSM (such as signing ASL while mouthing Spanish words or signing ASL in a way that shows influence from MSL/LSM)?

yes\_\_\_\_ no\_\_\_\_ (if you answer no, please skip to question # 27)

17. If so, how often does this occur in your interpreting assignments?
- everyday \_\_\_\_\_  
an average of 1-4 times per week \_\_\_\_\_  
an average of 1-4 times per month \_\_\_\_\_  
an average of 1-6 times per year \_\_\_\_\_
18. Based on your experience in these situations, which of the following elements of communication have your deaf or hearing clients produced? (checked all that apply).
- Mouthing of Spanish words \_\_\_\_\_  
Spoken Spanish \_\_\_\_\_  
Fingerspelling Spanish words \_\_\_\_\_  
MSL/LSM signs \_\_\_\_\_  
Signs from another foreign sign language (not ASL & not MSL/LSM) \_\_\_\_\_  
Other \_\_\_\_\_ please describe \_\_\_\_\_
19. What elements of communication have you used in these situations in an attempt to be successful in creating an interpretation that your client(s) will understand? (check all that apply).
- mouthing of Spanish words \_\_\_\_\_  
spoken Spanish \_\_\_\_\_  
fingerspelling Spanish words \_\_\_\_\_  
MSL/LSM signs \_\_\_\_\_  
signs from another foreign sign language (not ASL & not MSL/LSM) \_\_\_\_\_  
other \_\_\_\_\_ please describe \_\_\_\_\_
20. On the average, how successful have you been in the type of situations described above?  
(1= not successful at all and 5= very successful)
- 1                  2                  3                  4                  5
21. On the average, how frustrated have you felt when these situations have arisen?  
(1= not frustrated at all and 5= very frustrated)
- 1                  2                  3                  4                  5
22. If you had a choice, would you interpret in this type of situation again?
- yes \_\_\_\_\_      no \_\_\_\_\_
23. Based on your past experience, how would you attempt to handle a similar situation in the future? You may attach another sheet with comments if you wish.
- 
- 
-

24. What types of issues influenced any communication problems that may have occurred in these situations: (check all that apply)

- I do not know MSL/LSM \_\_\_\_\_
- I do not speak Spanish \_\_\_\_\_
- I cannot read or write Spanish \_\_\_\_\_
- I have little experience with or knowledge of Hispanic/Mexican culture \_\_\_\_\_
- other \_\_\_\_\_

25. What types of training do you feel you need in order to better prepare yourself for these types of situations?

- MSL/LSM \_\_\_\_\_
- Spanish: \_\_\_\_\_ speaking \_\_\_\_\_ reading \_\_\_\_\_ writing
- Deaf culture in Mexico \_\_\_\_\_
- Mexican culture in the U.S. \_\_\_\_\_
- other \_\_\_\_\_

26. Rank the following interpreting skills in terms of how important they are for being a successful interpreter where you work (1=most important & 8=least important)

- Spanish to ASL
- ASL to Spanish
- Spanish to English
- English to Spanish
- English to Mexican Sign Language (LSM)
- MSL/LSM to English
- Spanish to MSL/LSM
- MSL/LSM to Spanish

27. If you could become certified in the interpreting skills listed in question # 25, would you expect to be paid more for interpreting assignments that involved the use of either Spanish or MSL/LSM?

yes \_\_\_\_\_ no \_\_\_\_\_

28. If you could become certified in the interpreting skills listed in question #25, would you expect to be paid more all the time (not only for interpreting assignments that involved the use of either Spanish or MSL/LSM)?

yes \_\_\_\_\_ no \_\_\_\_\_

29. If training/workshops were to be offered in your geographic area that would focus on improving spoken Spanish skills for interpreters, Spanish to ASL and vise versa, MSL/LSM, would you attend the workshops?

yes \_\_\_\_\_ no \_\_\_\_\_

Additional comments are welcome. **Thank you for taking the time to complete this survey.**

## **APPENDIX B: INTERVIEW QUESTIONS.**

### *General background information*

- 1 How old are you?
- 2 Do you know the amount of your hearing loss? Do you consider yourself Deaf or hard of hearing?
- 3 When did you become deaf?
- 4 How did you become deaf?
- 5 Do you have any deaf family members (both immediate and extended)?
- 6 Where were you born? Where have you lived? Where do you live now?
- 7 What do you do to earn a living?

### *Education*

- 8 Did you go to school? If so, for how many years? Do you have a diploma?
- 9 Do you read and write Spanish?
- 10 Do you read and write English?

### *Self-reported language competency*

- 11 What language(s) do you know and use regularly?
- 12 How comfortable are you with using those languages (on a scale of 1 [not comfortable at all] to 5 [very comfortable])
- 13 How long have you known the various languages that you use?
- 14 From whom did you learn the various languages that you use?

### *Self-reported language use*

- 15 With whom do you interact on a regular basis to use the languages that you know?
- 16 What signed language do you use most frequently?
- 17 Do you feel that there are times when you shouldn't use one of the languages that you know? If so, when does this tend to happen?
- 18 Is one (or more) of the languages that you know more important to know than the others? If so, why do you think this?
- 19 Is there a language that you wish you knew (or knew better)? If so, why?
- 20 What language(s) do you use at home?
- 21 What language(s) do you use at school?
- 22 What language(s) do you use at work?
- 23 What language(s) do you use at church?
- 24 What language(s) do you use with friends?
- 25 What language(s) do you use in any other environments not already mentioned?
- 26 Have you ever been in a situation where you couldn't communicate with someone because you didn't know their language? What did you do?

## **APPENDIX C: PARTICIPANT RESPONSES TO INTERVIEW QUESTIONS**

Note: “-“ indicates no response from participant on that question and any pertinent researcher comments are in italics

#		EP1	EP2	EP3	EP4	TV1	TV2	TV3	TV4
1	age	42	39	42	21	55	24	46	46
2a	Deaf /HoH	Deaf	Deaf	Deaf	Deaf	Deaf	Deaf	Deaf	HoH
2b	% hearing loss	99%	-	-	-	95db	rt: 10 lf: 20	rt > lf	full loss
3	age of onset of deafness	birth	birth	6 yrs.	birth	birth	2-3 mo.	5 yrs.	birth

4. How did you become deaf?

EP1: -

EP2: illness: influenza and infection in the ear

EP3: sudden illness

EP4: premature birth (7 months)

TV1: -

TV2: illness

TV3: -

TV4: -

5. Do you have any deaf family members (both immediate and extended)?

EP1: yes; two siblings

EP2: yes; two sisters, one niece

EP3: no

EP4: no

TV1: yes; one sister, many relatives

TV2: yes; mother, father, brother, aunt, uncle, male cousin

TV3: no

TV4: yes; four siblings, one deaf uncle who passed away

6a. Where were you born?

- EP1: México, D.F.
- EP2: Ciudad Juarez
- EP3: Monterrey
- EP4: El Paso
- TV1: South Carolina
- TV2: México, D.F.
- TV3: Guatemala
- TV4: Monterrey

6b. Where have you lived?

- EP1: México D.F., Ciudad Juarez
- EP2: Ciudad Juarez, El Paso
- EP3: Monterrey, Ciudad Juarez
- EP4: El Paso
- TV1: South Carolina, Washington, D.C., Los Angeles, CA
- TV2: Mexico, D.F., Cuerna Vaca, Guadalajara
- TV3: Guatemala, Oaxaca, México D.F., Guadalajara
- TV4: Monterrey, San Nicolas de Los Garla?, various U.S. cities (one in California)

6c. Where do you live now?

- EP1: El Paso
- EP2: El Paso
- EP3: El Paso
- EP4: El Paso
- TV1: McAllen
- TV2: Pharr
- TV3: Pharr
- TV4: San Juan

7. What do you do to earn a living?

- EP1: work at airport
- EP2: tutor/teach at community college
- EP3: -
- EP4: child care for deaf children
- TV1: teach
- TV2: work in a restaurant
- TV3: sell pens in restaurants
- TV4: various things

8. Did you go to school? If so, how many years? Do you have a diploma?

EP1: yes, 7 years, diploma from *primaria* ('elementary/middle school')

EP2: yes, 12+ years, yes

EP3: no

EP4: yes, 12+ years, yes

TV1: yes, 12 years, yes

TV2: yes, 10 years, yes

TV3: yes, *number of years unclear, stopped at age 16, no response about diploma*

TV4: yes, 7 years, *no response about diploma*

9. Do you read and write Spanish?

EP1: yes

EP2: a little bit

EP3: no

EP4: no

TV1: a little bit

TV2: good

TV3: yes

TV4: fair, so-so

10. Do you read and write English?

EP1: so-so

EP2: yes

EP3: yes

EP4: not perfectly, but good, big words are difficult

TV1: very well

TV2: yes

TV3: a little bit

TV4: almost same as Spanish (fair)

11. What language(s) do you know and use regularly?

EP1: all four (LSM, ASL, English, Spanish)

EP2: prefer to read any book, *EP2 seems to have misunderstood the question*

EP3: -

EP4: ASL with friends, home signs at home, a little Spanish, I learn a little when I meet Deaf people from Mexico

TV1: ASL

TV2: "both, but mostly LSM", *presumably "both" means LSM and ASL*

TV3: "more LSM than ASL, little ASL"

TV4: "written English"

12. How comfortable are you with those languages?  
 (on a scale of 1 [not comfortable at all] to 5 [very comfortable])  
 13. How long have your known the various languages that you use?

#		EP1	EP2	EP3	EP4	TV1	TV2	TV3	TV4
12	ASL comfort level	5	5	-	4	-	3	3	3/4
	LSM comfort level	5	5	5	2	-	5	5/4	4/5
	English comfort level	3	4	4/5	5	-	1/2	not very good	moderate
	Spanish comfort level	4	1	1/2	2/1	-	2/3	very good	moderate
13	years known ASL	9 yrs.	16 yrs.	3 yrs	5 yrs	entire life	16 yrs.	6-7 yrs.	29
	years known LSM	27-28 yrs.	2.5 yrs.	-	1.5-2 yrs.	-	entire life	25 yrs.	29
	years known English	9 yrs.	20 yrs.	3 yrs.	16?	-	4 mo.	-	22 yrs.
	years known Spanish	27-28 yrs.	2 yrs.	none	?	-	16 yrs.	-	never learned

- 14a. From whom did you learn ASL?
- EP1: President of the (Deaf?) World Olympics in Washington, D.C. in 1977  
 EP2: here at the community college by meeting different deaf from the community  
 EP3: a woman in Ciudad Juarez  
 EP4: friends who attend the Deaf school  
 TV1: sister  
 TV2: Deaf woman and others in Texas Valley  
 TV3: Deaf friend in Houston  
 TV4: one person helped a lot; *from this response, it is not clear if that person was a Deaf user of ASL or a hearing user of ASL*

14b. From whom did you learn LSM?

- EP1: people at school in Mexico D.F.
- EP2: from a Deaf man in El Paso
- EP3: from group discussions with Deaf people
- EP4: from a Deaf man in El Paso and others
- TV1: -
- TV2: from my family at home
- TV3: from a deaf friend
- TV4: from many friends and acquaintances

14c. From whom did you learn Spanish?

- EP1: from communicating with Deaf friends; *It seems as though EP1 responded as if the question were about "Spanish sign".*
- EP2: -
- EP3: -
- EP4: -
- TV1: -
- TV2: -
- TV3: -
- TV4: -

14d. From whom did you learn English?

- EP1: a deaf friend in Washington D.C.
- EP2: -
- EP3: -
- EP4: from people at school when growing up
- TV1: -
- TV2: from deaf woman in the Valley
- TV3: -
- TV4: -

15. With whom do you interact on a regular basis to use the languages that you know?

EP1: -

EP2: I interact with many deaf who use ASL.

EP3: -

EP4: ...all deaf, Mexican deaf only occasionally (Fridays and Saturdays), sometimes with deaf who used (Signed) English—mostly at school; I can go back and forth between different types of signing

TV1: students and staff in ASL

TV2: with family and others trying to learn LSM, also with others here in the Valley who use ASL

TV3: ASL users here in the Valley

TV4: LSM users here in the Valley

16. What signed language do you use most frequently?

EP1: both LSM and ASL—it depends on who I am interacting with. *Later he said that he probably uses LSM more.*

EP2: ASL

EP3: English sign (ASL?), *later she said “both”*

EP4: -

TV1: ASL

TV2: LSM

TV3: LSM (ESPAÑOL SENA)

TV4: both LSM and ASL

17. Do you feel that there are times when you shouldn't use one of the languages that you know? If so, when does this tend to happen?

EP1: In Mexico, it seems LSM is more appropriate. In other places, ASL is OK. Some deaf people have only “basic” sign skills, and it wouldn’t be possible to communicate in ASL with them.

EP2: SEE (*an invented sign system*) is oppressive. I signed SEE before.

EP3: -

EP4: -

TV1: -

TV2: You should sign ASL with ASL users and LSM with LSM users.

TV3: -

TV4: no

18 Is one (or more) of the languages that you know more important to know than the others? If so, why do you think this?

EP1: -

EP2: ASL is most important.

EP3: English sign is most important because I followed the example of a deaf woman.

EP4: ASL is most important.

TV1: ASL is important in the U.S. LSM is important in Mexico.

TV2: LSM and ASL are equally important.

TV3: ASL is more important because it signals that you are smart. LSM is less important.

TV4: ASL is more important here in the U.S., and LSM is more important in Mexico.

19. Is there a language that you wish you knew (or knew better)? If so, why?

EP1: -

EP2: LSM (*although, the question may not have been asked correctly*)

EP3: English sign

EP4: I know ASL best, then English, then LSM, then Spanish

TV1: LSM—to communicate better and faster

TV2: ASL

TV3: ASL

TV4: ASL or English, but I'm too old to be learning that.

20-25. What language(s) do you use: at home, at school, at work, at church, with friends, and in another environments?

	EP1	EP2	EP3	EP4	TV1	TV2	TV3	TV4
home	English sign	ASL	-	***	ASL	LSM	LSM	****
school	ASL	ASL	English sign	2	ASL	written comm..	-	-
work	ASL	ASL	-	5	ASL	written comm..	LSM & ASL	ASL
church	ASL & LSM	ASL	English sign	2/1	ASL & LSM	ASL interp.	N/a	LSM & ASL
with friends	-	ASL	all	5 yrs	ASL & LSM	LSM & ASL	LSM	LSM & ASL
other	*	**	-	1.5-2 yrs.	-	-	-	-

25. P1 (other): Mexico: LSM (at religious camp, too, but there are some people who sign ASL there, too). At ASSOCIATION in Mexico, I sign LSM, but there is not one/that here. I go back and forth between the two languages, and serve as an interpreter when someone doesn't understand something. My family understands English (sign), but my wife TOUGH, so I interpret.

\*\* EP2 (other): At parties, half LSM and half ASL, and home signs, too.

\*\*\* EP4 (home): gesture, home signs, written English

\*\*\*\* TV4 (home) LSM & ASL mixed

26. Have you ever been in a situation where you couldn't communicate with someone because you didn't know their language? What did you do?

EP1: Yes. I got a book in ASL, learned signs, and then communicated with that person better. Once I tried to fingerspell, but that person forgot how to fingerspell.

EP2: -

EP3: Yes. I asked him/her to slow down or to get an interpreter. Then I understood.

EP4: Yes. I would ask other(s) what they meant, then I'd figure it out. It would go slow.

TV1: Yes. No problem, I just used International Sign and gestures.

TV2: Yes. I would gesture.

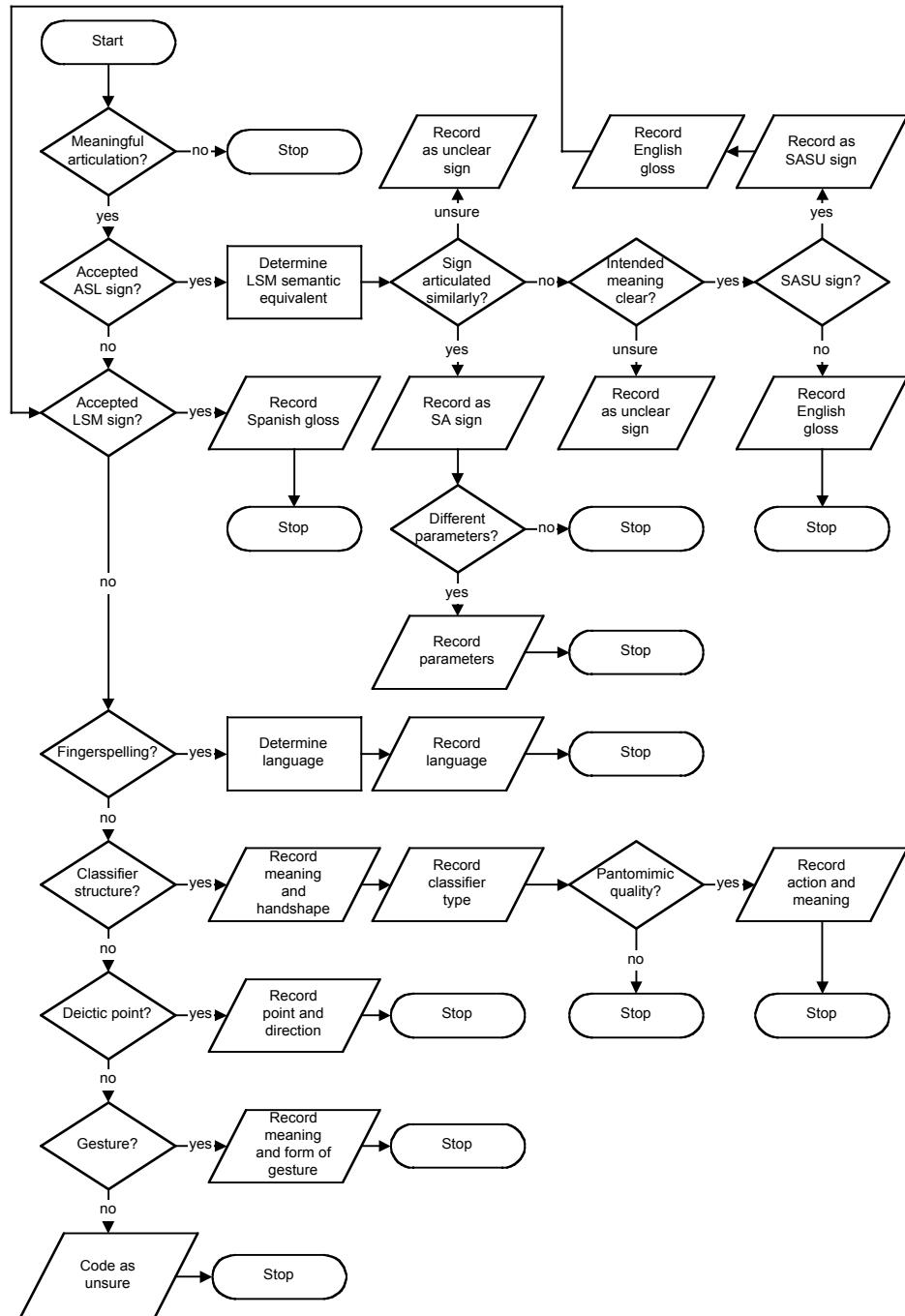
TV3: Yes. I would gesture.

TV4: Yes. I would gesture and use home sign.

#### **APPENDIX D: GROUP DISCUSSION QUESTIONS**

1. Do you prefer corn or flour tortillas? Why?
2. Do you prefer Mexican candy to American candy? Why or why not? What are your favorite types/brands of candy?
3. What is your favorite food and why?
4. What do you think about the transportation system (city buses, city taxis, long-distance buses) in Mexico vs. USA? Which system do you think is better? Why?
5. What do you think about the cost of food in Mexico vs. USA? Where is it cheaper and where do you usually shop for your groceries?
6. Where do you usually buy your clothes and why?
7. Do you open gifts on Christmas Eve or Christmas Day? Does this differ based on where you are (Mexico or the U.S.)?
8. How do you tend to celebrate your birthday? Does this differ based on where you are (Mexico or the U.S.)?

## APPENDIX E: CODING FLOWCHART



**APPENDIX F: LSM DICTIONARIES USED FOR DATA CODING**

#	<i>title</i>	<i>author/illustrator</i>	<i>year</i>	<i>location</i>	<i># of signs</i>
1	Mexico: Lenguaje de Señas Mexicano	Victor Manuel Palma	2000	El Paso, TX	1,608
2	Lenguaje de Señas de México	Dis. Juan Carlos Miranda	2000?	Mexico, D.F.	1,531
3	Sign Language from Mexico City, Mexico	?	?	Mexico, D.F.?	approx. 190
4	Manual de Interpretación para Uso General: Principal Simbolos Para Sordomudos; México	Leonel Mosqueira Matute	1997	Published in the United States, but likely produced in Mexico, D.F.	approx. 880
5	Mexican Sign Language/American Sign Language Translator (video dictionary)	Institute for Disabilities Research and Training Inc	2000?	Produced and distributed in Silver Spring, MD	approx. 600

## APPENDIX G: TOTAL DATA FOR THE EL PASO (EP) PARTICIPANTS

	signs				FS	CL	points	gestures	unsure	total elements
	LSM	ASL	SA	unclear						
<b>Group discussion</b>										
all participants	121	558	280	12	49	67	279	198	9	1573
EP1	55	154	85	2	30	38	117	35	3	519
EP2	9	103	55	2	14	8	33	21	0	245
EP3	45	134	98	8	0	12	86	113	6	502
EP4	12	167	42	0	5	9	43	29	0	307
<b>Interview: EP2</b>										
both participants	2	147	83	3	34	0	79	36	2	386
EP2	1	65	46	2	16	0	29	30	0	189
Interviewer	1	82	37	1	18	0	50	6	2	197
<b>Interview: EP3</b>										
both participants	120	74	112	13	1	21	169	55	14	579
EP3	31	57	59	5	0	19	87	50	9	317
Interviewer	89	17	53	8	1	2	82	5	5	262
<b>Interview: EP4</b>										
both participants	3	256	108	7	27	2	123	27	0	553
EP4	0	153	70	7	6	1	40	19	0	296
interviewer	3	103	38	0	21	1	83	8	0	257

## APPENDIX H: TOTAL DATA FOR THE TEXAS VALLEY (TV) PARTICIPANTS

	signs				FS	CL	points	gestures	unsure	total elements
	LSM	ASL	SA	unclear						
<b>Group discussion</b>										
all participants	299	437	268	24	62	131	330	164	33	1748
TV1	136	61	80	8	24	39	141	56	10	555
TV2	117	168	112	8	17	58	84	33	13	610
TV3	31	50	22	3	8	14	27	30	6	191
TV4	15	158	54	5	13	20	78	45	4	392
<b>Interview: TV2</b>										
both participants	183	99	148	2	26	0	89	25	15	587
TV2	94	53	84	2	16	0	14	7	5	271
interviewer	89	46	64	0	10	0	75	18	10	316
<b>Interview: TV3</b>										
both participants	108	63	117	4	23	13	114	54	7	503
TV3	37	45	41	4	10	6	39	23	6	211
interviewer	71	18	76	0	13	7	75	31	1	292
<b>Interview: TV4</b>										
both participants	22	227	95	1	37	24	93	42	7	548
TV4	14	127	53	1	7	10	48	32	5	297
interviewer	8	100	42	0	30	14	45	10	2	251

**APPENDIX I: LSM AND ASL SIMILARLY ARTICULATED BUT SEMANTICALLY UNRELATED (SASU) SIGNS**

#	ASL sign	LSM sign	LSM sign translation
1	LESBIAN	INGLÉS	'English'
2	LOOK-FOR	MÚSICA	'music'
3	FAMILY	FORMA	'form'
4	RICH	ENVIAR	'to send'
5	LATE	PUES	'well'
6	ENTER	DEBAJO/FRACASAR	'under, to fail'
7	GAY	NIÑO	'child'
8	SHY/PROSTITUTE	QUERER	'to want'
9	COPULATE	DIECICEÍS	'sixteen'
10	CL: cylinder into hole	GASOLINA	'gasoline'
11	FRENCH	FEDERACIÓN	'federation'
12	INTERVIEW	INTÉRPRETE	'interpreter'
13	LIST	MENOS	'less'
14	ENGLISH	AMIGO	'friend'
15	QUESTION	AGUA	'water'
16	COMPLAIN/COUGH	CACA	'excrement'
17	CIGARETTE	CL: square object	'semantic classifier'
18	WEDNESDAY	NOSOTROS-TRES	'three-of-us'
19	FINE	HAY	'there is/are'
20	FROM-NOW-ON	AUMENTAR	'to increase'
21	PHYSICS	GOMA	'rubber'
22	CHAT	YA	completive marker
23	WHAT	HACER	'to do'
24	SELFISH	SALVAR/GUARDAR	'to save'
25	WILLINGESS	ASCO	'disgust'
26	STAMP	CAPITAL	'capital'
27	ELECTRIC	COOPERAR	'to cooperate'
28	REPLACE	CUMPLIR	'to complete'
29	DECIDE	FUNDAR	'to build/to raise'
30	ALONE	QUÉ	'what'
31	DRUNK/HIGH	SERIO	'serious'
32	FINISH	DIEZ	'ten'
33	CL: vehicle	OCHO	'eight'

**APPENDIX J: LSM AND ASL SIMILARLY ARTICULATED AND SEMANTICALLY RELATED SIGNS**

#	ASL sign	LSM sign	LSM sign translation
1	BRING	LLEGAR	'arrive'
2	DOUBLE	OTRA-VEZ	'again'
3	WINE	WISKY	'whisky'
4	UPSET/ANGRY	CONTENUTO	'happy'
5	NOT	NADA	'nothing'
6	DON'T-KNOW	SABER	'to know'
7	FORGET	NO-SABER	'to not know'
8	WRONG	PERDÓN	'excuse-me'
9	KNOW	CONOCER	'to know'
10	CAR	MANEJAR	'to drive'
11	BEAT	TEMPRANO	'early'
12	ASSOCIATE-WITH	TENER-RELACIONES	'sexual relations'
13	ARRIVE/PROVE	CAER	'to fall'
14	TRAVEL	PESERO	' <i>peso</i> transportation'
15	CITY	CASA	'house'
16	BERRY (CHERRY)	FRIJOL	'bean'
17	TOGETHER	CONECTAR	'to connect'
18	STORY/MESSAGE	EXPLICAR	'to explain'
19	HORSE	CONEJO	'rabbit'
20	CUTE/SWEET	DULCE	'candy'
21	THANK-YOU/GOOD	BIEN	'good'

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## **Vita**

David Gilbert Quinto-Pozos was born in Embudo, New Mexico on October 15, 1969, the son of Gilbert and Gloria Quinto. After graduating from Taos High School in 1987, David entered the University of New Mexico in Albuquerque, New Mexico. He received the degree of Bachelor of Science in Sign Language Interpretation and Religious Studies in May, 1992. During the next four years he worked as a sign language interpreter; first at Española Public Schools in Española, New Mexico, and then at Rochester Institute of Technology/National Technical Institute for the Deaf in Rochester, New York. In September, 1996, David entered The Graduate School at the University of Texas in Austin, Texas. He earned his Master of Arts degree in December, 1998. He also began teaching in the Interpreter Preparation Program at Austin Community College in August, 1998. David is certified by the Registry of Interpreters for the Deaf as a sign language interpreter.

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