

Sociolinguistic Survey Report of the Deaf Community of Peru

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Abstract:

A sociolinguistic survey of the sign language among the deaf communities of Peru was conducted in November and December of 2007. Over eight weeks, our survey team visited six deaf communities in the cities of Lima, Arequipa, Cusco, Trujillo, Chiclayo, and Iquitos. Using sociolinguistic questionnaires and recorded text testing (RTT) tools, our investigation explored the general social situation of the deaf communities as well as sociolinguistic topics such as ethnolinguistic identity, language vitality and stability, and language attitudes of deaf people toward their local sign variety. We also probed sign language standardization and variation within Peru. During background research, we had heard reports that sign language of Peru was similar to American Sign Language (ASL), but questionnaire participant responses and comprehension testing of an ASL text among various deaf communities in Peru seemed to indicate that ASL was quite different from the sign language of Peru.

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1 Introduction

This report describes a sociolinguistic survey of the deaf community in Peru and their sign languages. Peru is located on the western coast of South America, surrounded by Ecuador to the north, Colombia to the northeast, Brazil to the east, Bolivia to the southeast, and Chile to the south. The land mass is roughly 1.3 million square kilometers. Lima, Peru's capital, is the largest city with approximately eight million people. Other large cities include Arequipa (760,000) and Cusco (300,000) in the south, Trujillo (768,000) and Chiclayo (592,000) along the northern coast, and Iquitos (430,000) in the Amazon Basin in the east (See Figure 1).

Figure 1: Peru map



Over a period of eight weeks, from October through December of 2007, we conducted a sociolinguistic survey of the status of sign languages in Peru. We investigated the following research questions (RQ1 and RQ2) through participant observation, questionnaires, and recorded text testing (RTT):

RQ1: What is the sociolinguistic situation of the deaf community in Peru?

To determine the sociolinguistic situation, participant observation and questionnaires were used in each deaf community to investigate issues such as ethnolinguistic identity, language stability, and language attitudes toward their local sign variety, American Sign Language (ASL), and Spanish.

RQ2: How intelligible is the Lima variety of Peruvian sign language in other Peruvian deaf communities?

To determine language standardization, a RTT was conducted to determine the level of intelligibility of Lima's sign language variety in other large Peruvian deaf communities.

Before leaving for Peru, we gathered any available information related to deaf and disability issues in Peru. Based on this library research, we had access to contact information for individuals, associations, and organizations that work with the Peruvian deaf community. We e-mailed or called these to set up meetings for our visit. In addition to library research, we prepared a number of research tools for use on the field, including sociolinguistic questionnaires and an ASL text for use in RTTs (see appendices A and B).

2 The Peruvian deaf community and sign language

The total population of Peru is approximately twenty-eight million people, with roughly 72 percent of that number living in urban centers. Although much linguistic variation exists in the country, only Spanish and Quechua are considered official languages by the government. 2004 estimates indicate that 12.3 percent of the population over age fifteen is illiterate (CIA World Factbook 2007). Although 40 percent of the population is reported to live in extreme poverty, Peru has a number of organizations and schools serving people with disabilities, including deaf people.

According to a 1993 government census, 13.1 percent of the Peruvian population was disabled, with 1.3 percent of the population labeled as having a “severe disability” (Mbogoni 2002). In 2002, the national disability organization, Consejo Nacional de Integración de la Persona con Discapacidad (CONADIS), performed a study with a five hundred-person sample comprised of those commonly labeled as disabled. This study found that 20 percent of that sample had a disability related to “auditory and speech” (Dudzik et. al. 2000). The figures above would suggest an estimated population of roughly 728,000 deaf people, while the Ethnologue estimates a population of 1.4 million deaf people (Gordon 2005) and an official 1994 census reported 42,000 deaf people in Peru (Garcia 2007).

A few researchers have begun to investigate the linguistic classification of LSP, but at the point of this study there had been no in-depth research of the sociolinguistic situation of the sign language of Peru or deaf Peruvian’s placement in society. Names given to the sign language native to Peru include “Lenguaje de Señas Peruanas”, “Lenguaje de Señas Peruano”, and “Lengua de Signos Peruana”. Each is abbreviated as “LSP”, so this convention will be used in the remainder of this report to refer to the sign varieties that deaf Peruvians call their own. The ISO 639-3 code for LSP is prl (SIL International 2009).

According to Farfan (1994), LSP is a blend of conventional and isolated signing. Deaf people from any place in the country can negotiate meaning from each other’s signs, but there is no standardized form of the language. The Peruvian deaf community believes that their sign language’s original roots are in Spanish Sign Language both because of their spoken language ties to Spain and that their first deaf school was founded by educators from Spain. Although it is possible that Spanish Sign Language was used during the early years of deaf education in Peru, most deaf Peruvians feel disconnected from Spanish deaf people, both socially and linguistically.

3 The social situation of the Peruvian deaf community

The Peruvian deaf community is concentrated in several urban areas in Peru. Social factors that affect their linguistic situation may both overlap with and be unique to those that affect the Peruvian spoken language communities surrounding them. This section discusses the following social dynamics that influence language use in the Peruvian deaf community: education, organized social groups for and by deaf people, religion, mobility, and social services.

Unless otherwise indicated, this information was gathered through questionnaires, interviews, and participant observation with deaf and hearing Peruvians. A maximum of sixty-six people were asked any single question. See table 1 for demographics that apply to these sixty-six participants:

Table 1: Demographics of sixty-six questionnaire participants

Deaf	76%	Female	52%	Age 36 or lower	58%	No Deaf family	76%
Hearing	24%	Male	47%	Age 37 or higher	23%	Deaf family	21%
		NA	1%	NA	19%	NA	3%

Another important factor to mention about the participants in this study is that their educational level was much higher than the general deaf community's. Of the fifty-four questionnaire participants whose education level was recorded, all had had at least some formal education: 24.1 percent had some primary education, 35.2 percent had some secondary education, and a staggering 40.7 percent had some college or higher education. In this report, reported questionnaire responses include both deaf and hearing participants, unless specified as targeting deaf participants only.

3.1 Education

Although primary education is mandatory for all deaf children in Peru, it is not enforced and many deaf people have received no formal education at all. Families that are economically underprivileged may not be able to afford to send all of their children to school and will choose to send their hearing instead of their deaf children. In addition, because secondary education is not mandatory, deaf students have very few secondary education options (Berke 2007) and many do not receive any type of secondary schooling.

In the 1960s, a deaf couple moved from the USA to Peru and established Efata, a deaf school in a southern district of Lima. Although they initially tried to use LSP, some Peruvian deaf people informed them that LSP was not developed enough to be used in school or church. Based on this information, they began to mix ASL with the LSP signs they had learned, leading to the development of a new sign variety that is now used primarily with Efata deaf students and staff. People associated with Efata call this sign variety both LSP and "church signs", while those not connected with Efata usually refer to it as ASL.

In the last couple of decades, the government's perspective of the best way to educate students with disabilities has changed dramatically. In 1972, the "Law 19326" mandated education through age 14 for all special students, including deaf students (Garcia 2007). The Office of Special Education was created at this time to oversee its implementation. According to a 1993 survey, 0.3 percent (19,600 students) of the Peruvian school age population was attending special education schools. According to Hegarty (1995), 80 percent of special education services were provided by the public education system, 18 percent by voluntary agencies, and 2 percent by other government agencies as of 1995.

The Ministry of Education, along with other religious ministries and national institutes, is currently responsible for all special education in Peru. One special education policy, aimed at providing vocational education for young people with special needs, also endeavors to integrate students into mainstreamed educational programs. Regular schools, where these integration projects are found, do not have the resources needed to successfully include students with special needs, and there are currently few links between special schools and regular schools (Hegarty 1995). Hearing teachers report that they not only need more language resources and sign language linguistic research to more successfully teach, but that they do not have enough time or resources to use what is already available to become trained to effectively work with the deaf community.

At the time of this research, there are a total of twenty-six schools serving the deaf population in the six surveyed cities and eleven of these are deaf-only schools. There were nine schools in Lima, five schools in Iquitos, five schools in Arequipa, and two schools each in Chiclayo, Cusco, and Trujillo (see table 2). Only three schools in Lima and one school in Chiclayo offer secondary school options for deaf students in non-mainstreamed settings. Only two schools, both in Lima, educate through an oral philosophy that forbids the use of sign language. Of the forty-two questionnaire participants that were asked, 73.8 percent

indicated that their school used their native variety of sign language in the classroom and only 26.2 percent indicated the opposite.

Table 2: Deaf schools

Arequipa	Instituto de Rehabilitación de Discapacidades Instituto de Ciegos Institución Educativa Básica Especial Señora del Pilar Unámonos
Chiclayo	Harvest Deaf School La Purísima Niño Jesús de Prago
Cusco	Chaskawasy Don José de San Martín San Francisco de Asís (Hogar San Francisco)
Iquitos	CEBE Centro de Educación Básica Especial, Iquitos CEBE Clavero School (Centro Educativo Básico Especial Tnte. M Clavero) CEBE Fanning School CEBE Centro de Educación Básica Especial, PJ 9 de Octubre Efata
Lima	C.D.D. Manual Duato C.E.E No. 14 La Sagrada Familia C.E.E. Perú Holanda CEPAEE Efata Fernando Wiese Eslava de la Asociación (CPAL) I.E.P. Bilingüe Inmaculada Concepción La Asociación de Sordos Ciegos del Perú La Inmaculada Niños Sordos (CPEEED)
Trujillo	Prolongación Renato Descartes (PSJE) Santo Toribio

As of 2007, a new law requires every student who is able to be integrated into mainstream programs. From this, it is expected that, in 2008, the majority of deaf students will have been placed into hearing schools without interpreters or language access. A few special education teachers have been assigned to help these students adjust to their new environment, but these teachers are supposed to take on this task in addition to their current responsibilities and pay any related expenses out of pocket. Deaf adults are concerned for the deaf youth who will now be surrounded by hearing people who do not speak their language or share their cultural experiences. The need for strong deaf associations is viewed as being greater than ever (Personal correspondence, Chiclayo, December 2007).

3.2 Organized social groups for and by deaf people

When in concentrated numbers, deaf people find ways to gather together, whether or not a formal meeting is available. They may meet informally on street corners, in restaurants, or at people's houses with no governing body or specific agenda. While more formal associations tend to take on the task of improving employment opportunities, developing interpreter training programs, or other types of community advocacy, informal groups meet simply to enjoy playing games together or to catch up on the latest news. These places give freedom for deaf people to lead and interact with no need to adapt to hearing norms.

This section will address two types of social groups created for and by deaf people. First, it will describe a number of disability organizations that work for and represent people labeled by society to have disabilities, including deaf people. Although many deaf people will not participate in these organizations, others have decided to become involved to represent a deaf perspective in decisions that will impact their community. Second, this section will provide a description of other meeting places solely for deaf people, including both formal government sanctioned associations, organizations, clubs, and more informal but consistent gatherings.

3.2.1 Disability organizations

There are a number of organizations working toward the provision of social services to deaf Peruvians. These include such organizations as the national disability umbrella organization “La Federación Nacional Impedidos” which is in charge of representing all organizations of disabled persons to the government, the national coordinating committee “Congreso Nacional para la Integración del Impedido”, responsible to consult with the Ministry of Health and Council of Ministries about policy development involving people with disabilities, and Consejo Nacional para la Integración de la Persona con Discapacidad (CONADIS). CONADIS has offices in the larger cities of Peru and works in conjunction with deaf associations in Lima, Arequipa, and possibly other cities.

The Asociación Pro Desarrollo de la Persona con Discapacidad (APPRODIS) is a Peruvian non-governmental organization for people with disabilities. Their goal is to promote the economic and social development of disabled Peruvians. They began a project called *Manos Que Hablan* (“Hands that Talk”) with the objectives to study the linguistics and sociolinguistics of LSP, develop training programs for LSP interpreters, develop a dictionary of LSP, unify the deaf community and standardize LSP, and eventually incorporate LSP materials into deaf education (Stiglich 2001). To date, they have established a nationwide network of volunteers made up of deaf people, teachers of deaf schools, and hearing people who know sign language. These people travel across Peru to conduct on-site research and support the deaf community. *Manos Que Hablan* is also supported by the Peruvian Association of the Deaf, various deaf schools, and the Unión Bíblica del Perú.

The Confederación de Discapacitados del Perú (CONFENADIP) is a national assembly member of Disability Peoples’ International (DPI), advocating for equal opportunities for people with disabilities in all aspects of life. Although not formally a part of *Manos Que Hablan*, the vice president L. Miguel de Aguila, participated as a consultant. He is well respected by Peruvian disability organizations and is considered a crucial part of the project’s success. The *Manos Que Hablan* project has influenced two radio messages (in conjunction with APRODDIS and the Defensoría del Pueblo) to address the voting rights of disabled citizens and provide a sign-language interpreter for election night national broadcasts (Elections Today 2007).

Other associations connected with the deaf community include the Asociación Educativa de Especialización y Capacitación Profesional (AECAP) (*Manos Que Hablan* 2007), El Centro Peruano de Audición y Lenguaje, an oral-aural deaf school CPAL who provides information to families (Asociación de Sordos del Perú 2007), the Asociación de Sordos y Ciegos del Perú, which specializes in helping blind and deaf people, and the Asociación de SordoCiegos del Perú (ASOCIP), which focuses on increasing societal sensitivity toward deaf-blind people, and is a member of the World Federation of the Deaf-Blind.

3.2.2 Deaf social gatherings

In the six surveyed cities, there were a total of eighteen deaf associations and clubs. Over half of these were found in Lima, two each in Chiclayo, Cusco, and Iquitos, and one each in Arequipa and Trujillo. The largest deaf association in Peru is located in Lima: the Asociación de Sordos del Perú (ASP). The Peruvian government primarily works on deaf-related issues with the ASP. The ASP has been given financial aid by the government to create a new dictionary of LSP and to unite all of the deaf associations

in the country. See table 3 for a list of deaf associations, organizations, and clubs that were identified in the six targeted cities.

Table 3: Deaf associations and clubs

Arequipa	Asociación de Sordos Arequipa (ASA)
Chiclayo	Asociación de Sordos de Lambayeque Deaf Sports Club
Cusco	Asociación de Sordos Cusco (ASC) Deaf Sports Association
Iquitos	Asociación de Jóvenes Especiales con Fe y Esperanza (AJEFE) Asociación de Sordos de Lorentano (ASODAL)
Lima	APAS Asociación de Sordos del Perú (ASP) Asociación Peruana de Promoción e Integración del Sordo (APPIS) Barranco Sports Federation Deaf Association of Lima (ASSOLI) Federación Deportiva de Sordos de Perú La Asociación de Sordos Ciegos del Perú Trébol Unión Bíblica Unión Deportiva Silenciosa del Perú
Trujillo	Asociación de Sordos de la Libertad (ASDELL)

Although almost every deaf person we talked with insisted that it is important for the deaf community in Peru to become more unified, there is dissension about how best to accomplish this. Typically, if there is more than one association in a city, these associations will not willingly work together. Some deaf associations have linked arms with the ASP in order to strengthen the influence of the national deaf community while others have chosen not, primarily because they want to be a part of a coalition of associations that function as equals and not under the authority of a single association that may not be able to represent them well.

In addition to formal deaf meetings, Peruvian deaf people also gather together at other consistent but more informal times. In Lima, for example, one can find hundreds of deaf people gathering at the Barranco school on particular Sunday afternoons to play sports and interact with each other. This particular meeting also becomes a place of contact between groups that would not normally meet. Many generational deaf families (some of whom can trace deaf family members three or more generations back) who are not otherwise connected with any one association or organization can be found here. In Arequipa, there is a group of ladies aged 20 to 60 years old that try to get together as often as possible. Although the older and younger generations of deaf people in Arequipa do not often meet together, they are choosing to break with this trend. In Cusco, deaf people meet at the Plaza de Armas around 10 o'clock in the morning and then transition over the Coliseum in Parque Zonal at 3 o'clock in the afternoon to play sports and mingle. In Trujillo, around fifty deaf people meet every Saturday and Sunday at 3 o'clock in the afternoon. Although older deaf Peruvians do not attend these meetings, there are many youth that join in the soccer games and chatting. In Iquitos, both young and old deaf people meet at the Parque Zonal at 6 o'clock in the evening to talk together. These are just a few of the gatherings that were identified by the researchers during their time in each city – it should be expected that there are many more informal meeting places.

3.3 Religion

Religion was listed by deaf people as a key factor influencing social networks and language use among deaf Peruvians. The majority of hearing Peruvians identify with Christianity, while the majority of deaf people do not attend a particular church or embrace a particular religious faith. Deaf people indicate that there is a sharp distinction between people who are “of the world” and those who “go to church”. This dichotomy is primarily based on behavioral distinctions such as drinking alcoholic beverages or smoking cigarettes. Those who choose to attend religious services go to the following, in order of their popularity: Jehovah’s Witness, Baptist, Christian Missionary Alliance, Catholic, Mormon, and Seventh Day Adventist. The three largest groups are described in more detail below.

The Jehovah’s Witnesses have a strong presence throughout Peru and has both hearing and deaf leaders. Their Peruvian central office is located in central Lima but they also have ministries in over ten other locations. Some churches offer deaf-only meetings, while smaller ministries offer interpretation during the hearing services. Jehovah’s Witnesses are actively working toward providing for the social needs of deaf people by providing food, clothing, and helping them to find employment. Jehovah’s Witnesses are also involved in language-development work and have the highest number of interpreters working and being trained throughout the country, with as many as thirty interpreters throughout Peru. They have one dictionary and have published three DVDs labeled as being in LSP, although deaf people who are not involved in their services argue that it is closer to ASL than LSP.

Baptist deaf ministries belong to one of two groups: independent Baptist churches and those associated with Efata. Efata was founded in the 1960s and is now composed of a deaf church, school, and orphanage with its base in southern Lima and outreaches in various cities across the country. During its founding, deaf Peruvians were hired and trained to be missionaries in Peru. These people were sent to as many as ten locations throughout the country, many of which have since closed. Those still present meet together once a year in various cities. Other Baptist ministries have also been founded by former Efata members.

The Cathedral Santa Rosa in central Lima offers the only Catholic deaf ministry in Peru that has sign language interpretation. Their ministry, “Remando con Personas Especiales” (REPES), was founded in 2003. The members of this ministry seem to be more connected with the Deaf Association of Peru and the deaf-blind community than any other religious group.

In addition to church services, there are also parachurch ministries to the deaf community. In particular, the Unión Bíblica, based in Lima, has been working with the deaf community for over 13 years and is currently striving toward the unification of the deaf community, the education of deaf children, and the advancement of LSP. They are working toward gathering deaf people together to fight for their own rights, including bilingual education, legalizing LSP as a legitimate language, social privileges, and are educating parents of deaf children in deaf culture and sign language, connecting deaf children with deaf adults in mentoring relationships, and have a deaf primary school. While their main goal is to help people learn to read so that they can access the Bible, the Unión Bíblica is working toward overall social access for the deaf community so that they can ultimately help themselves.

3.4 Mobility

Deaf Peruvians gather together as much as possible and enjoy visiting other cities’ deaf associations and meeting places. The extent to which they travel is somewhat dependent on each city’s geographical location and educational access. For example, while Iquitos is isolated in the Amazon Basin, it is difficult for people who live there to visit the mountain cities of Arequipa and Cusco since it requires very long bus rides or multiple flight connections to reach them. Most flights to and from Iquitos are available through Lima, so it is not surprising that the cities that they have the most interaction with are closest to Lima. Education also plays a role, as all of the questionnaire participants in Arequipa had moved to Lima

for school because there were no deaf schools available to them in Arequipa. Many teachers in Iquitos needed to live in Lima to get their education. In comparison, Lima and Chiclayo have had deaf schools for decades and do not need to travel for educational access.

Deaf people have also visited a number of countries. Out of fifty deaf questionnaire respondents, nineteen indicated that they had traveled to another country while thirty-one indicated that they have never left Peru. As seen in table 4, the number of people who have traveled internationally is related to the city in which they live. The vast majority of Lima, Cusco, and Iquitos participants had visited other countries while, conversely, the vast majority of Arequipa, Chiclayo, and Trujillo participants had not visited other countries.

Table 4: Number of deaf participants who have visited other countries

City of Peru	Number of Deaf participants	Visited other countries	Not visited other countries
Arequipa	6	0	6
Chiclayo	13	2	11
Cusco	7	5	2
Iquitos	5	3	2
Lima	10	9	1
Trujillo	9	0	9
All Cities	50	19	31
Total Percentage		38%	42%

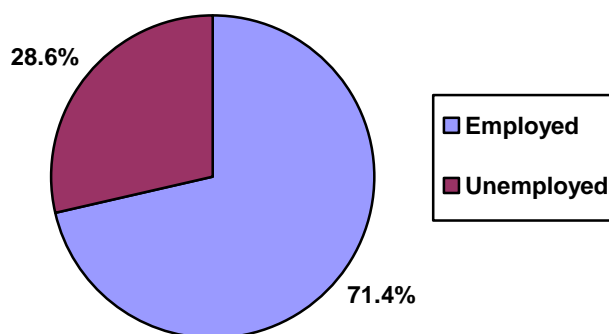
Questionnaire participants indicated that they had visited the following countries: Ecuador, USA, Bolivia, Chile, Argentina, Brazil, Spain, Uruguay, Canada, Colombia, Cuba, France, Germany, Switzerland, and Venezuela. The locations deaf people choose to visit are influenced by geographical distance. People who live in Trujillo are likely to cross the border into Ecuador, while people from Iquitos will visit the neighboring countries of Colombia and Brazil. Deaf people from Chile, Spain, France, Germany, the Netherlands, and the United Kingdom have visited several cities in Peru.

3.5 Social access

Peruvian disability policy does strive to protect people with disabilities, including deaf people. It guarantees to the disability community provision of health care, education, rehabilitation, employment, independence, and participation in decisions that would affect them (Michailakis 1997). Although this policy may not be fully implemented, many cities have attempted to provide some services for deaf people. For example, many cities allow deaf people to enter their sports coliseums and museums at no cost. However, deaf people report frustration over the difficulty in pursuing an independent life, such as not being allowed to obtain drivers licenses. Many deaf Peruvians believe that they receive the least amount of help from their government of any country in Latin America. However, of any city in Peru, deaf Peruvians believe that Lima receives the most government support.

3.5.1 Employment

Out of twenty-nine people who were asked about whether schools prepare deaf people with the tools they need to find employment after finishing their education, 41.4 percent indicated that they do not, 58.6 percent indicated that they do a little, and none indicated that they effectively prepare students for employment. Out of twenty-eight deaf questionnaire respondents, 71.4 percent indicated that they have some type of employment and 28.6 percent indicated that they are unemployed (see figure 2).

Figure 2: Deaf employment levels

Deaf people listed the following as their typical types of employment: cleaning, computer work, construction, electrician, factory work, fishing market, food service, hair dressing and manicures, hotel work, church service, peddling, sewing, teaching, weaving, and other types of manual labor.

Deaf people report that they have a very difficult time finding employment, even if they have the necessary skill set for a job. Those who have oral training and are male, usually find more employment positions available to them. Of those that have jobs, many report that they are not able to work enough hours to become financially independent. Many deaf people are reduced to begging and are frustrated with the lack of opportunity for them to earn their independence. One deaf woman commented that it is a vicious cycle: poor people cannot afford to have a good education that includes oral training and, therefore, cannot get a job and care for their families. Families with money, however, can afford educational opportunities and have contacts in the community that can provide their deaf children jobs that will be passed to the next generation.

3.5.2 Hearing involvement in the deaf community

Although sign language is recognized as the main means of communication for deaf people, there are no government measures encouraging the media to adopt sign language interpretation or to otherwise make their services accessible to deaf people. A recent congress session included a discussion of the use of sign language in deaf education but led to the government's move toward adopting an oralist philosophy in education, discouraging sign language in schools, and the attempt to mainstream all deaf people who are not labeled as having multiple handicaps.

Very few hearing people interact with deaf people through sign language. Deaf people throughout the country indicated that they believe that some hearing people are afraid of their deafness, believe that deaf people have mental problems that render them incapable of employment, are resistant and oppressive, ridicule, and take advantage of them. Some deaf people in Lima are opposed to the idea of having hearing people working with the deaf community, excepting those who work as interpreters. Out of thirty-nine questionnaire participants who were asked about hearing attitudes toward deaf people, only one person thought that the hearing society views the deaf community in a positive light.

There are, however, hearing people that are serving the deaf community in various roles. Some of these work for disability or deaf organizations as described above, others teach in deaf or special education schools, and still others volunteer time and resources to support the deaf community in other ways. Deaf people indicate that hearing people can best support the deaf community by increasing social support, building respect of the deaf community, providing educational and employment opportunities, and increasing communication access through more hearing people learning to sign and skilled interpreters.

3.5.3 Interpreters

There are no formal interpreter training programs available in Peru and interpreting is not considered a profession. Because of this, people who work as interpreters do not always follow a code of ethics that would be expected in countries where interpreters are formally trained. Fulfilling the role of a “helper”, interpreters may not fully facilitate communication in interaction between deaf and hearing people who cannot communicate with each other. The majority of interpreters volunteer their services in religious meetings, not in daily events such as visits to the doctor or business meetings.

Some interpreters have worked full-time positions in specific contexts. For example, one interpreter interpreted for the disability congress that was aired on television and another works full time for the ASP. Most interpreters are connected with religious organizations. The Jehovah’s Witnesses are believed to have approximately thirty interpreters throughout Peru, while Efata may have ten. Deaf people indicate that more than half of the available interpreters in Peru are located in Lima. At times, hard-of-hearing people who sign will step in and act as interpreters. Because they are trained in lip-reading and sign more naturally than most hearing people, deaf Peruvians have used hard-of-hearing friends to facilitate communication in association meetings, court appointments, medical visits, and schools.

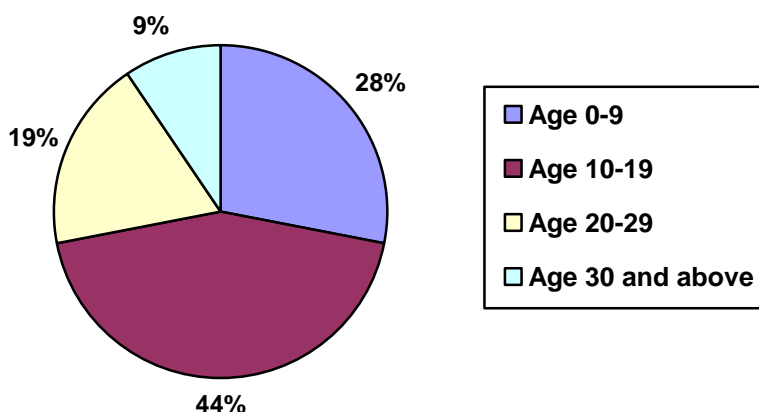
4 Language use

In this section, we will discuss how LSP, ASL, and Spanish are used in the deaf community in regard to language acquisition, domains of language use, language contact, language attitudes, and language vitality.

4.1 Language acquisition

In every city we visited, there were families with deafness inherited through generations. In the majority of these families, sign language was passed down from generation to generation, but some of them spoke more than signed at home, depending on their level of hearing loss. According to thirty-two deaf questionnaire participants, the majority of deaf people do not learn a sign language until after age nine (see figure 3).

Figure 3: Age of sign language acquisition among deaf questionnaire participants



According to forty deaf questionnaire respondents, 25 percent report that they learn sign language from deaf friends, 20 percent from a hearing teacher, 17.5 percent from Efata, 12.5 percent from a deaf teacher, 10 percent from a deaf association, 5 percent from a family member, 5 percent from church, and 2.5 percent from a hearing person (See table 5).

Table 5: Location of sign language acquisition

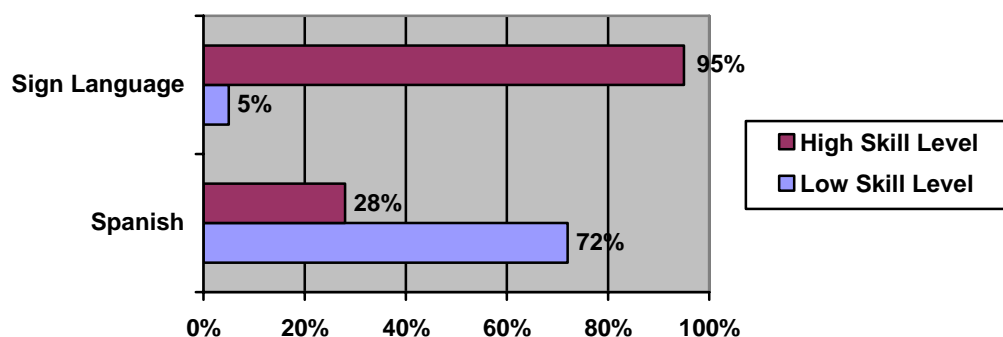
Location of sign language acquisition	Percentage of questionnaire respondents
Deaf friends	25%
Hearing teacher	20%
Efata	17.5%
Deaf teacher	12.5%
Deaf association	10%
Family member	5%
Church or missionary	5%
Hearing person	2.5%

Based on these percentages, roughly half of the deaf community initially learns sign language from a deaf person and the other half from a signing hearing person.

4.2 Domains of language use

Deaf Peruvians report that the cost of attending CPAL, the oral deaf school in Lima, makes it so that only the wealthy families can attend. Speech therapists at schools that use sign and speech in their classrooms indicate that their deaf students do not typically excel with speech development because they are not getting the help needed at home. This is creating a divide in economic classes that correlates with language use. Because employment comes more easily to those who can speak and lip-read, and because the wealthy tend to be those that can afford higher quality oral training for their children, the richer deaf people tend to communicate through Spanish and the average and poorer economic classes through sign.

While both hearing aids and cochlear implants are available in Peru, they are usually too expensive for deaf people to buy or maintain. Out of sixty-three total respondents, fifty-seven reported that they use sign language always or every day, while only six indicated they used it a few times a week to a few times a month. It is not surprising, then, that they also believe deaf people's signing skills, including their own, to be better than their level of Spanish skills. According to forty questionnaire respondents, 95 percent of them believe that the average deaf person signs very well or well, while 5 percent regard the average deaf person not to sign well or at all. In comparison, out of thirty-two questionnaire responses, only 28 percent indicated that they use Spanish very well or well, while 72 percent indicated that they use Spanish not well or at all. figure 4 shows their perceived skill level in Spanish and sign language among themselves and the deaf community.

Figure 4: Perceived language skill levels

At the ASP, deaf people were observed to speak Spanish first and then when they found that a person, deaf or hearing, could not communicate well with Spanish, they switched to using sign language. Out of

thirty deaf people we observed, only one did not use any speech in his communication. The others communicated simultaneously in Spanish and sign. This could be because deaf people who are part of the ASP tend to be more wealthy than the average deaf Peruvian and therefore have had more oral training.

4.3 Language contact

Deaf people have access to other sign languages through access to the Internet and by visiting and receiving visitors from other countries. The Internet has enabled deaf Peruvians to increase the amount of language contact between LSP and other sign languages. According to fifty-eight questionnaire responses, 50 percent of them believe that LSP is similar to the sign language of another country such as (in alphabetical order) Bolivia, Brazil, Chile, Colombia, Ecuador, Spain, USA, or Venezuela.

The presence of ASL in LSP seems to depend primarily on whether or not ASL materials are available and how much exposure to religious ministries a community has had. ASL materials are especially present in Iquitos, where we saw a local school with two ASL-based manuals of sign language, another one handing out ASL materials of some sort, and a local ministry using ASL DVDs. Older deaf people tend to know much fewer ASL signs than the younger population because they tend not to interact as much with religious organizations such as Efata and the Jehovah's Witnesses. Regardless of how much ASL exposure an individual community has experienced, according to the RTT results, deaf people throughout Peru still understand Lima sign better than ASL (for more details about RTTs, see appendix B).

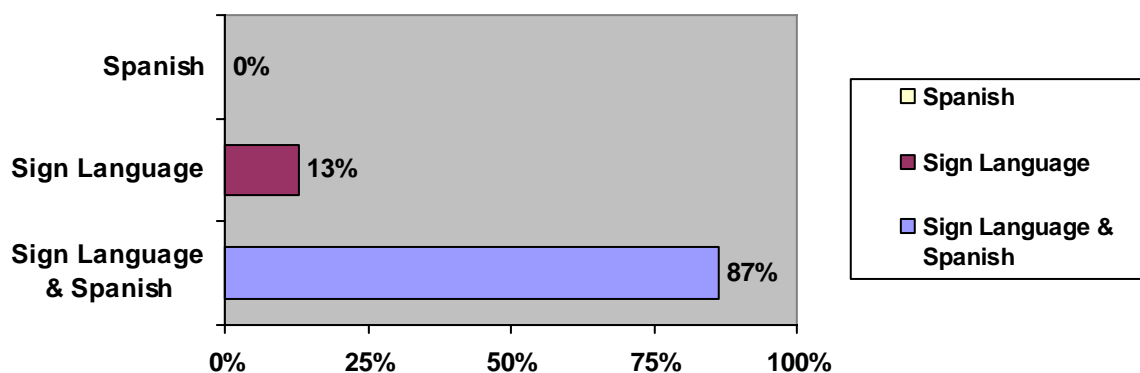
LSP also intersects with Spanish in several expected ways. People report that some variations of LSP follow Spanish grammar more than others, initialization of older LSP signs based on Spanish spelling is present, and fingerspelling systems have created signs to represent the Spanish alphabet.

4.4 Language attitudes

While language attitudes vary among individuals, the observations noted below are generalizations from our Peruvian deaf contacts' indications about their attitudes toward other Peruvian sign varieties, Spanish, and ASL. Information about language attitudes was primarily gathered through sign questionnaires, interviews, and participant observation.

Although most people in the Peruvian deaf community view Spanish as important for their daily life, sign language is considered by some to be even more so. Out of thirty-seven participants who were asked whether it was better for deaf people to use Spanish or sign language, thirty-two (87 percent) responded that they are equally important, five (13 percent) responded that sign language is more important, and zero (0 percent) marked Spanish as being more important (see figure 5).

Figure 5: Language most important for deaf people to use



Not all regional varieties of LSP are considered equal, however. According to nineteen out of twenty-one questionnaire respondents (with only three respondents from Lima), Lima has the best sign language in Peru. In addition, more than half indicated that Lima's signing is the easiest to understand, although a few deaf participants mentioned that Lima's deaf community signs too fast. Some people in Lima commented that theirs is the only "real" LSP because other cities do not have enough vocabulary and are borrowing signs from other countries such as Argentina, Spain, and the USA. Some hearing and deaf people throughout Peru report that non-Lima sign is actually a form of "slang" and not a complete language. Others indicated that they believe good education correlates with good signing skills. Some deaf people see a direct relationship between Lima's access to resources and their signing and indicate that, because Lima has so many resources, they will willingly adopt Lima's signing style in order to access them.

Some deaf people informed us that they are reluctant to teach their hearing children LSP because they believe that it may interfere with their successful use of Spanish or do not want their children to be made fun of in school. On the other hand, some hearing children of deaf parents do not want to use sign language but deaf parents force them to use it. In general, though, hearing children with deaf family members (parents or siblings) do end up learning LSP and end up functioning as interpreters.

According to data gathered through participant observation and questionnaires, attitudes toward ASL in the Peruvian deaf community vary. Some believe that ASL, what Peruvian deaf people typically call "English sign", is better than their own "Spanish sign". Others hate it because they believe that it has destroyed their local sign language. Those who claim that ASL is better than LSP typically believe that ASL is more complex, while LSP is very basic signing. Attitudes toward ASL also correspond with attitudes toward particular groups. Some people will dislike ASL because they dislike the people who use it. Others will dislike particular people because they use a particular sign language variety. Despite these strong attitudes, not all deaf people in Peru have an accurate perception of what truly is ASL. Some signs that are not recognized by an individual are immediately labeled as ASL, even though it may be a regional variation of a Peruvian sign, a home sign, or a sign from a bordering country.

Despite overwhelming negative attitudes toward ASL being used inside Peru, many people mentioned in their questionnaire responses that they wanted to learn ASL as a foreign language. Even those deaf leaders who were strongly opposed to ASL being used in Peru were hoping to travel to the United States and learn some. Many deaf people believe that ASL is becoming a necessary lingua franca if they want to travel. Some deaf people indicated that, although they do not like it, they believe it is inevitable that ASL will destroy LSP and Peruvian deaf culture.

4.5 LSP variation

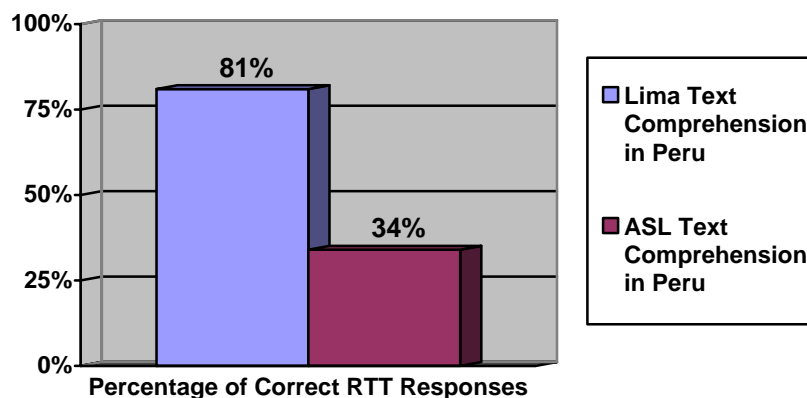
According to thirty-nine questionnaire responses to the question of whether or not everyone in their deaf community signed the same, 82 percent reported that they do not, while 18 percent reported that they do. Individual variation in LSP is influenced by a number of factors, including religious affiliation, age, mobility, level and method of education, social network, geographical region, parents' deaf or hearing status, and personal language preference.

We conducted RTT to probe LSP variation by testing the comprehension levels of a Lima sign language variety text among five cities of Peru. The RTT results suggest that there is some slight regional variation of LSP, since the scores are lower in cities outside of Lima. Although when considering the geographical size and population of Peru, the scores are consistently high enough to suggest that LSP is fairly standardized. With comprehension scores ranging from 86 percent to 75 percent, correct responses to eleven questions of the text, there seems to be a fairly high comprehension level of the Lima sign variety throughout the country (RTT results by region are listed in table 6).

Table 6: Lima RTT results (eleven questions)

Region	RTT responses	Percentage correct	Average score	Standard deviation	High score	Low score
Lima	9	86%	9.5	0.8	10.5	8.0
Cusco	4	84%	9.3	1.3	11.0	8.0
Arequipa	8	78%	8.6	0.9	9.5	7.0
Iquitos	3	76%	8.3	1.4	10.0	7.5
Chiclayo	4	75%	8.3	1.3	9.5	6.5

An ASL text was also used to probe comprehension levels of ASL in Peru. The twenty-eight participant responses to the Lima text throughout Peru were 81 percent correct with an average score of 8.9 correct out of eleven and a standard deviation of 1.1 points. The comprehension results of the ASL text throughout Peru consistently produced significantly lower scores (34 percent correct). From twenty-seven participant responses, the average score was 3.7 correct out of 11, with a standard deviation of 1.7 points (see figure 6).

Figure 6: RTT comprehension levels

While most deaf people in Peru indicate that they can understand each other, some deaf people said that they have difficulty in communicating with some forms of LSP. For example, deaf people in Arequipa report that the younger generation of signers does not understand the older generation's signs. Even during association meetings, information is sometimes signed in multiple ways in order for everyone present to understand. Older deaf people in Lima report that they do not understand the signing of the Jehovah's Witness or Efata groups and that, because a high number of the younger generation is learning sign language from these two groups, the older generation finds it very difficult to understand them. Older deaf people in Lima say that they have no forum to teach their LSP to the younger generation. Most deaf people are learning to sign at school and schools are not interested in using old LSP, preferring instead, according to many deaf people in the older generation, to use more ASL-like signing. There are even two types of fingerspelling – one that is based on the ASL system and the other that seems to be the original LSP fingerspelling and only used in certain segments of the older population.

According to deaf people throughout Peru, religion may be the single most motivating factor in creating language variation in LSP. One hard-of-hearing Baptist pastor indicated that his deaf parents need to have him interpret for them when they attend all-sign services offered by their local Baptist church. Even though his parents were involved in the founding of Efata, they do not understand the signs that are currently being used in the church services. We plan to soon complete a lexicostatistical analysis of the twenty-five LSP wordlists (each with a possible 237 lexical items) gathered during this study. This should

assist in clarifying the lexical aspect of LSP variation and how lexical variation relates to sociolinguistic factors.

It is also possible that there is a village sign language in Peru. Near Cusco, a Quechua village reportedly has a higher than average population of deaf people and the village may use some type of sign language. In addition, there is a deaf people group located near Iquitos that travel on the river together and have not attended any deaf school. Iquitos deaf people indicate that they only use “home signs” but it is possible that, through their interaction, a formalized sign language has developed.

4.6 Language vitality

Although some deaf people fear that LSP is on its way to becoming extinct, if meetings that draw as many as five hundred signing people together from every age group continue, it is most probable that some form of LSP will continue to be used. However, LSP still seems to have a high degree of variation and social dynamics which continue to prevent it from being standardized. While this concerns some deaf people who hope that an LSP standard will form, others want to protect the LSP diversity currently present.

The existence of LSP in general, and the special dialects used among Baptists and Jehovah’s Witnesses may be creating a bilingual or multilingual situation in the Peruvian deaf community. All of these types of signing seem to be strong, as each group that uses them believes that their sign language is important and are eager to protect it. Because these groups are fairly isolated from each other, it is likely that the lack of language contact between these sign varieties will lead to each sign language to remain distinct.

Lima remains a central location for the spread of sign language, since many deaf people still move to Lima to complete their education. In addition, many organizations, associations, and Christian ministry headquarters are located in Lima. The ASP and other deaf associations have the most impact on the spreading and standardization of LSP, and because they are working on a dictionary of LSP signs and many outlying deaf communities look to them to set the standard for LSP, it is likely that the LSP used in the mainstream community will also survive.

5 Technology and development of LSP materials

Deaf people in Peru have access to various forms of technology but do not always have the financial resources to use them. For example, deaf people use Internet cafes to access the Internet and email and to communicate through webcams in chat rooms and instant messaging. Some deaf people use text messaging, but most deaf people cannot afford the cost of cellular phone minutes. Deaf people said that most can access VCR and DVD players, but those who live in remote areas cannot. In Iquitos, the researchers noticed that all types of sign language material were highly valued.

The most typical form of LSP material is a published book. People have been creating books of LSP signs since 1970. The first manual was written with the help of hearing people and included many signs that were not believed by deaf Peruvians to be LSP. The second manual existed for only three to four years before falling out of use. The third manual was published in 1996 by the Ministry of Education. This manual was the first book of signs by the Ministry of Education to officially name the sign language of Peru “Lenguaje de Señas Peruanas” (Peruvian Sign Language) and was specifically designed for teachers in deaf education. Although this book is used in many schools, teachers report that the sign language their students use is often very different than what is shown in the book. Some deaf people report that the people who placed signs in this manual did not discriminate between what are true Peruvian signs and signs that belong to other countries.

A current effort is being made to standardize, yet effectively represent, lexical variation in LSP. The government is supporting the ASP, who has formed a team of deaf people in Lima to record LSP signs.

Although the people involved indicate they are open to including more than one sign per Spanish word and want to represent Peruvian variation, deaf people outside of Lima are concerned that, because of financial constraints at the ASP, outlying cities will not have a chance to contribute to this new manual and it will be published with little, if any, representation of regional sign variations.

Television and video media forms of LSP are also available. In 1987, a government television channel broadcasted a daily program entitled *Mediodía Familiar* (“Family at Noon”) that was interpreted into sign language, as well as *Ayúdame* (“Help Me”), three-minute programs that were interpreted into sign language and broadcasted at various times (Mukarker 1987). In December of 2005, a video series entitled *Héroes de la Fe* (“Heroes of the Faith”) was aired, including sign language interpretation. It was published by the *Sociedad Bíblica Peruana* (Peru Bible Society) with a small window on the screen for the interpreter. The Jehovah’s Witnesses have three videos circulating that are marked as being LSP: *¿Qué Exige Dios de Nosotros?*, *¿Podemos Ser Amigos de Dios?*; and *Espíritus de Difuntos*. Of these videos, there are varying perspectives of how well the signing represents true LSP. Some people involved in the deaf community believe that no one version of LSP used in video materials could effectively reach all of the sign language varieties in Peru because the disparities are so great.

6 Conclusion

Based on the information gathered during this survey, we can make the following tentative conclusions to our two research questions:

- Deaf Peruvians have an ethnolinguistic identity distinct from hearing Peruvians and deaf people in other countries.
- Deaf Peruvians will continue to strive toward bilingualism in Spanish and LSP because they view both as important to their livelihood – Spanish to access employment and improve deaf-hearing relationships and LSP as the key to connection with the deaf community. However, most deaf people indicate that they do not feel comfortable or confident communicating in Spanish.
- Although there are diverse forms of LSP used throughout the country, LSP is not likely to die since large numbers of Peruvian deaf people are eager to protect and use it. However, other sign languages (such as ASL) have, and probably will continue to, influence LSP as language contact continues since LSP is not standardized. In addition, because of the push toward oralism in deaf education, other deaf meeting places will need to increase their role in LSP acquisition, since teachers have been a primary source of LSP acquisition in the past.
- The Lima variety of LSP is more intelligible than ASL by the Peruvian deaf community and ASL materials are not the best option for meeting the Peruvian deaf community’s linguistic needs.
- Deaf Peruvians attitudes toward LSP vary some, but most view the Lima variety of LSP to be the best and easiest to understand. Although there is some fear that ASL will destroy LSP and the Peruvian deaf culture, steps are being taken to protect LSP (such as dictionary production) and the deaf community is hoping for more LSP materials. Because of generally positive language attitudes toward the Lima sign variety, the high Lima deaf population, and the stakeholders present in the capital city, Lima is probably the best place to pursue LSP development.

Appendix A: Sociolinguistic questionnaire methodology

The sociolinguistic questionnaires (SLQ) used in this survey aimed at gathering a wide variety of information about the social situation of the deaf communities and sign language use and attitudes of the participants. The sociolinguistic questionnaire outlines provided by Bickford (1988), Showalter (1990), and Parkhurst (2003) served as a base to the questionnaires used in this survey. Both open (allowing the participant to share information they feel is important, influencing the agenda and building rapport) and closed (asking for agree-disagree or excellent-good-fair-poor responses to allow standardization and comparison) questions were used.

A.1 Sociolinguistic questionnaire instrument

We used an SLQ form that was divided into four sections: Participant information, Deaf community and sign languages; Language use and attitudes; and Education, employment, access, and religion. The complete questionnaire was designed to be used solely with deaf participants and included focused questions about their personal histories and cultural and linguistic perspectives (see table 7). A subset of questions (approximately the first two sections) was chosen for use with both hearing and deaf participants to gather general information about the deaf community upon arrival to a new area.

Table 7: Sociolinguistic questionnaire

Participant information	
1.	What is your name?
2.	Are you male or female?
3.	Are you deaf or hearing?
4.	Approximately how old are you now?
5.	Do you have any deaf family members? If yes, who?
6.	Where were you born?
7.	Where do you currently live?
8.	Have you lived outside of the town you live in now? If yes, where?
9.	Have you traveled to any other countries? If yes, where?
10.	What is your highest level of education (e.g. grade school, university, etc.)?
11.	If you are deaf, please name the school(s) you have attended?
12.	What is your current connection with the deaf community?
13.	Do you know sign language? If yes, when, where and how did you learn?
14.	How often do you use sign language?
15.	Please provide your contact information so we can connect with you in the future:
Deaf community and sign languages	
16.	Please list the leaders, hearing or deaf, of your local deaf community.
17.	Where do deaf adults meet with each other in your town? How often and with what activities?
18.	In your community, do deaf adults and deaf youth interact together? If not, where do deaf youth meet that is separate from deaf adults?
19.	Do deaf people in your community interact with deaf people from other places in Peru? If yes, please answer the following: Which other communities? Where do they meet and how often? For what purposes do they interact?
20.	Have deaf people in Peru interacted with deaf people from other countries? If yes, which countries?
21.	Please list any deaf associations in your area and Peru.
22.	Please list organizations, churches, interpreters, etc. serving deaf people in your area and Peru, indicating where they serve and what their role is.
23.	Please list any published dictionaries or other materials published about Peruvian sign language.
24.	What cities or areas in Peru have the largest deaf communities?
25.	How many deaf schools does Peru have?
26.	Please list the deaf schools in your area.
27.	What is the name of the sign language in your area?
28.	Is your sign language like the sign language of any other country? If yes, which one(s)?
29.	Please list others who would be willing to interact with us about the deaf community.
Language use and attitudes	
30.	How many deaf people use sign language in your community? How well do they sign?
31.	What makes a person a leader in your deaf community?
32.	Describe where and how deaf people learn sign language in your community.
33.	How many hearing people use sign language in your community? How well do they sign?
34.	Describe where and how hearing people learn sign language in your community.
35.	Do you sign differently now than when you first learned? If yes, describe the difference.
36.	Does everyone in your community sign the same? If not, what factors lead to different signing?
37.	Does everyone in Peru sign the same? If yes, what factors lead to different signing? Arrange the cities from top to bottom in the order of how similar they are to your community. Arrange the cities from top to bottom in the order of who signs the best. Arrange the cities from top to bottom in the order of who is easiest for you to understand.
38.	Do you want everyone in Peru to sign the same?
39.	Do you interact more with deaf or hearing people? Why?
40.	Do deaf people sign the same with hearing people as they do with each other? If no, how do deaf people sign differently?

41.	Do people ever arrange the way they sign to be more like spoken language? If yes, in what situation(s) is this done?
42.	How do you feel when deaf people are signing in public?
43.	How do you feel about deaf people who sign differently than you?
44.	Do you want to learn a sign language from another country? If yes, which language?
45.	How do you feel about missionaries and/or educators teaching ASL in your country?
46.	Is it good for hearing people to learn to sign?
47.	Do hearing parents sign with their deaf children?
48.	How can hearing people best support the Peruvian deaf community?
49.	Do you think most hearing people look positively on the deaf community? Explain your answer.
50.	Do you think that it is better for deaf people to use sign language or Spanish? Explain your answer.
51.	How well do you read and write Spanish?
Education, employment, access, and religion	
52.	What grade levels are available to deaf students in your area?
53.	Is your signing taught in Peruvian deaf schools?
54.	Do deaf schools prepare deaf students with the tools needed to get jobs?
55.	Do you have a job? If yes, what do you do? If not, why not?
56.	What type of jobs do most deaf people have in Peru?
57.	Are there interpreters available in your area? If yes, please answer the following: How many interpreters are there in your area? How many of these are skilled interpreters? Where do they work?
58.	Please rank from top to bottom the cities that are best for deaf people to live in.
59.	Which of the following do deaf people in your area commonly own or use (check all that apply)? VCR, DVD player, computer videophone, internet, e-mail, cell phones for text messaging.
60.	Do deaf people attend religious services? If not, explain why not? If yes, please answer the following: What services do they attend? Why do deaf people attend services? What language(s) does the service use? How many deaf people attend services?
61.	If the Bible was in your local sign language, would you use it? If not, why not? If yes or sometimes, when and where?
62.	Is there anything else you would like to add?

A.2 SLQ procedure and limitations

Questionnaire templates were made with Microsoft Word and included text form fields for open questions and drop-down or check box form fields for closed questions, such as those with “yes/no” or numeric answers. After explaining the purpose of the questionnaire, obtaining volunteer consent, and identifying the participants desired accessibility of the data, the questionnaire was administered. Participant responses were typed directly into the questionnaire forms on the researcher’s laptop. During analysis, the questionnaire form data were imported into a spreadsheet for easier viewing and analysis of the responses.

One important limitation of the SLQ methodology lies in the sampling method. Our sampling method was based on whoever was willing and available to talk with us during our brief visit. The data sources tended to be from participants who were more extroverted, educated, and/or in leadership positions within each community. Consequently, the results may not be a comprehensive representation of micro-cultures within each deaf community and, as mentioned previously, the participants included many more highly educated deaf people than is representative of the overall Peruvian deaf community.

Another limitation was that the complete questionnaire proved to be too long for effective use with a large number of participants. In the future, the number of questions on the questionnaire should be decreased so that a greater number of people can participate.

Also, instead of using two separate questionnaire documents for the complete set of questions and the subset of questions, it would be more efficient to use just one uniform document with clearly marked sections which would allow easier import and comparison of all questionnaire responses in a spreadsheet during analysis.

Appendix B: Recorded text testing methodology

The recorded text testing (RTT) methodology explained below was used to investigate levels of comprehension of two sign varieties (one Lima and one ASL text) among five Peruvian deaf communities (Lima, Arequipa, Cusco, Iquitos, and Chiclayo).

B.1 RTT instruments

We had two texts that we tested in Peru. One text was signed by a participant from Lima, and one ASL text by a participant from Arizona. Both participants were deaf and skilled signers. Each text was 2 to 3 minutes long and both were narrative texts of personal experiences (ASL: childhood family visit, Lima: two car accidents).

An RTT with the ASL text had previously been developed and home town tested by students at the University of North Dakota (UND) and was slightly adapted for this project, incorporating the results from their home town testing. For example, the text was shortened and questions that focused on the fingerspelling of English words were eliminated because the Peruvian deaf community is surrounded by a Spanish-speaking majority. From the ASL text, eleven questions were chosen to be used from the sixteen that had been tested in the hometown UND RTT. The Lima text was divided into sections and fourteen questions were developed for use in the RTT.

B.2 RTT procedure and limitations

For each text, the entire video text was played, and then it was shown a second time with pauses where questions were inserted in the video. During the RTT, participants were first shown a brief practice text of a Lima sign language variety with five questions. After the practice test, if the participants were willing and seemed comfortable with the RTT process, we continued with the Lima RTT text, followed by the ASL text. The responses were observed and recorded on a Microsoft Word document with forms, which were later imported into a spreadsheet for analysis.

During fieldwork, thirty-four RTT responses were elicited, but only twenty-eight responses were included in the final RTT results since the six excluded responses did not seem to accurately reflect an understanding of the RTT process. Most of the included data points were the responses of two participants watching the texts and working together on answering the questions. During analysis, three questions were eliminated from the fourteen questions of the Lima text. These three questions received the lowest average scores of the twenty-eight RTT responses and were excluded from the results since the questions were probably poorly formed, interpreted unclearly, or focused on unimportant content of the text.

The RTT procedure transformed throughout the Peru survey. After initially administering the test, it became apparent that the traditional question-and-answer RTT procedure was not working well. Throughout the survey, various adjustments were made to the methodology in pursuit of a method that would work well in a deaf cultural context. The limitations that we experienced and the adjustments or solutions we tried to incorporate into the methodology are discussed in table 8. We anticipate future need for additional adjustments and improvements in the RTT methodology used for sign language survey.

Table 8: Limitations of RTT methodology

Problem	Description	Solution
Test anxiety	Some deaf people felt that they were being examined and buckled under test anxiety even when the researchers emphasized that this was not a test.	This anxiety seemed to lessen when the test was given to at least two people at a time. This allowed them to follow their cultural norm of helping each other understand and come to a group agreement.
Storyteller recognition	Some deaf people recognized the person signing the text or the interpreter and responded negatively to them. This led to varying responses such as “he’s lying” or “he does not know” or other value judgments of the person signing the text, blocking their participation in the test because they would not answer the specific questions.	Do not include participants who recognize the person signing the text and indicate a strong dislike for them personally.
Interpreting aim of questions	Some deaf people did not understand that the interpreter was asking questions about the text itself. This seemed to be in part due to the interpreter’s use of indexing locations that seemed as if he was pointing at the participant watching the text. For example, the interpreter asked “Where did she go?” and pointed to neutral space to refer to “she”. This however, looked like he was pointing to the person taking the RTT and led them to think the question was “Where did you go?”	Re-film the questions to ensure the questions clearly refer to the text. This may mean that the interpreter signs the questions in less natural sign language to ensure that the viewers understand that it is a question they are supposed to answer about the text and not themselves. It also may entail signing like teachers do in school in order for participants to know they are supposed to answer a question.
Level of education influence	Deaf people who had less than seven years of education did not seem to be able to take the RTT successfully. Those who had at least some secondary education seemed more able to understand the RTT process of question/answer.	Screen out participants that do not at least have some secondary education when using the question/answer methodology.
Preference to retell	Some deaf people retold the entire text section instead of answering specific questions.	Try using the RTT retelling method to better match the deaf cultural norm of storytelling instead of the question/answer method. In addition, people in the deaf community whose education has been through rote memory may do better in repeating a whole section that they have seen than in picking out a certain part in order to answer a specific question they did not know in advance.

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