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"You Want *What* on Your Pizza!?": Videophone and Video-Relay Service as Potential Influences on the Lexical Standardization of American Sign Language

Sign language researchers over the past few decades have begun investigating language variation in American Sign Language (ASL) with regard to gender (Mansfield 1993), social status, region, age, and ethnicity (Lucas, Bayley, and Valli 2001; McCaskill et. al., 2011), to name just a few areas of study. However, the impact of technology on the possible standardization of ASL has not been explored. Videophones and video-relay technology, which were introduced in the early twenty-first century, allow Deaf people to connect

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The meaning behind the title of this article is two-fold. First, it is a nod to Ceil Lucas for all of her contributions to the field of sign language linguistics by borrowing the title of one of her classroom textbooks, "What's your sign for pizza?" Secondly, as VRS interpreters we have been exposed to lexical variations for various pizza toppings (e.g. pineapple).

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with each other via live video feed by means of a high-speed Internet connection. Deaf people can now make direct phone calls to each other via the videophones, or they may use the videophone to connect to an interpreter who will interpret their calls to hearing people. This new technology has allowed Deaf people to become more connected to each other and to the larger hearing community regardless of geographic location. By frequently using this toll-free service to make phone calls to other videophone users across the country, members of the Deaf community also increase their exposure to variation in ASL. Therefore, variants that once were confined by regional boundaries or areas bound by the tight knit communities associated with residential state schools for Deaf, now have the potential for greater use due to the increased virtual mobility of signers via the videophone. Additionally, Deaf users utilize video-relay services (VRS) and come in contact with sign language interpreters around the country, thereby increasing their exposure to sign variants. Familiarity with regional variation and the interpreters' level of skill are two possible factors that encourage Deaf consumers to omit or limit their usage of local or regional variants and to replace them with forms more commonly used by VRS interpreters. This study examines a variety of ways in which the interaction between video-relay interpreters and Deaf consumers may be contributing to the standardization of lexical items in ASL.

The first telephone to include a video screen was the Picturephone, developed by AT&T in the early 1960s. The phone never gained widespread popularity due to the high cost of the equipment and the monthly service fees (Noll 1997, 27). Within the past decade, video conferencing on mobile devices has become popular, especially in countries that had early universal mobile telecommunications systems (UMTS) or 3G cellular networks. In addition, video-conferencing software has been available and utilized in the workplace. The Gartner[1] survey forecasts that by 2015 more than two hundred million workers worldwide will have video-conferencing capabilities on their desktops.

In 2003 Sorenson Media developed a videophone device for the Deaf community. A few factors made the advent and popularity of the videophone for Deaf people possible. Sorenson Media used a compression/decompression device called a "codec" to enable high-quality

video feeds that are viewed as vital to effective sign language exchange (Robitaille 2010). Also, the videophones were relatively inexpensive to manufacture because, unlike previous video-conferencing equipment, no monitor was included. Instead, users simply connected the device to their home television set or computer monitor.

In 2002 the U.S. Federal Communications Commission (FCC) agreed to sponsor video-relay services, which qualifying service providers would provide to Deaf consumers. This has made funds available for video-relay providers to hire qualified interpreters, to carry out further research and development, and to distribute videophones without cost to Deaf consumers. With the now widespread use of videophones within the Deaf community, video-relay services have grown exponentially. According to the chief of the FCC's Disability Rights Office, Sorenson Communications estimates that it has distributed one hundred thousand videophones, accounting for 90 percent of all videophones in the United States (Greg Hlibok, personal communication).

In addition, the yearly growth charts produced by the National Exchange Carrier Association (NECA 2011), reports an average of eight million interpreted VRS minutes per month for 2010. The sheer number of videophones in the United States, along with the large volume of interpreted videophone calls, is significant for this study because it demonstrates the degree of contact between interpreters and Deaf consumers.

Furthermore, when Deaf beneficiaries of VRS services make a phone call via one of the largest VRS service providers in the United States, the call is routed to the next available interpreter working in any one of the numerous call centers located around the country. Those who use interpreting services may come into frequent contact with interpreters from various regions, which may lead to greater exposure to sign variants. The number of interpreted minutes per month, along with increased exposure to signers throughout the United States by way of video interpreting services, demonstrates the high probability that Deaf consumers are being rapidly exposed to interpreters' regional variants and/or standard variants. This technological advance has drastically changed the way in which members of the Deaf community can communicate in their first language from the comfort of

their own home or mobile device. This raises the following questions: In what ways is the use of videophones in the United States affecting ASL, and what role do VRS interpreters play in potential language standardization? In order to begin uncovering forces that may influence the standardization of ASL, this study attempts to answer the following questions:

1. Do video-relay users and VRS interpreters omit or limit regional lexical variants, and replace them with forms that are perceived as more standard?
2. Do VRS interpreters incorporate the regional lexical choices of Deaf consumers?
3. Do Deaf VRS consumers prefer interpreters to use standard forms?

Standardization and Mobility

To tackle these questions, we begin by focusing on standardization and mobility. The broader context of standardization provides a framework within which to determine whether videophone technology contributes to the standardization of ASL. It is necessary to first define language standardization and then identify language attitudes associated with particular forms. We then review the available research on mobility and how greater mobility leads to the use of more standardized forms. Finally, we also examine sociolinguistic studies of regional variation in ASL.

Standardization is essentially the codification of a language as a measurement of agreement about what is or is not a part of the language. By and large, the standard variety is viewed prescriptively as the correct or proper form of language by those who use it. Standardization occurs when a particular variety gains prestige and becomes widely viewed as the proper form. The traditional view of standardization takes into account literary figures, dictionaries, educators, formal education, and organizations as components of the process of standardization.

Milroy describes how a select few individuals develop language by refining and enriching it until it is a "fine instrument of expression" (Milory 2001, 537). These standardization agents are often literary figures. The standardized form is part of the speakers' heritage and

identity and therefore is revered and viewed as needing protection (Wardhaugh 2010, 32). Part of the standardization of spoken languages usually involves the development of written orthography, grammar books, dictionaries, and literature. However, the standardization of signed languages may be less influenced by orthography than spoken languages since there is no standard writing system for them.

Instead, ASL storytellers, sign language instructors, interpreter educators, and ASL textbook authors may be viewed as standardizing agents. First, native ASL storytellers are regarded as literary figures whose reverence among the Deaf community can be likened to that of Shakespeare. These storytellers may act as one of the gatekeepers to what is acceptable in ASL and what is not. Second, numerous ASL dictionaries and textbooks are available in print, and some dictionary editions are also available online; however, the Deaf community might rarely access them. Second-language learners (often students in interpreter-training programs) seem to be the main users of these resources. Therefore, in this one aspect of standardization, it seems that interpreters may use standard signs learned from published books and ASL websites.

Third, unlike native English speakers in the United States who take English courses throughout their academic career, most Deaf students do not have an opportunity to take a class in their native language, ASL. Paradoxically, interpreters are required to spend a number of years attending ASL classes, as well as classes on interpreting. Therefore, if standard forms are being taught in an academic setting, then interpreters are the ones who are rapidly acquiring them. Deaf students who attend residential schools for the Deaf may acquire standard forms from their peers and teachers, but the traditional notion of prescriptive-language education may not be occurring in the Deaf community at large as it seems to be developing in interpreter-education programs. It is important to note that Deaf people are not completely distanced from the traditional instruments of standardization, as many ASL and interpreter-training program educators are Deaf themselves. In effect, by using ASL curricula and teaching their own views on language, they are themselves the teachers of standardized forms.

Finally, the use of popular ASL curricula and textbooks such as *Signing Naturally* (Smith, Lentz, and Mikos 2008) and *Master ASL!*

(Zinza 2006) in interpreting programs may also serve as language-standardization agents. These textbook authors made decisions about the standard lexical forms of ASL when they decided which sign forms to include and exclude. For example, *Signing Naturally* includes the form for OUTSIDE that is produced in neutral space with two movements away from the body from an open to a closed handshape, but it excludes the Upper Midwest regional variant for OUTSIDE, which is produced on the ipsilateral shoulder, much like the sign for BOSS.

Identifying a standard form of ASL is also further complicated because of its contact with created sign systems. Educators have created signed systems such as Signed English and Seeing Exact English as an ill-perceived way to teach Deaf children English. These sign systems often used initialized forms of signs and follow English word order. As users of ASL and users of these manually coded English forms come in contact with each other, some code mixing takes place. Not surprisingly, ASL may borrow some sign forms from these sign systems.

The question remains as to the existence of a standard ASL that the Deaf community uses. Based on the aforementioned points, it appears that interpreters are the primary individuals who are exposed to standard forms because training programs throughout the United States use similar ASL and interpreting curricula. Another question remains as to the similarity between the standard forms used by interpreters and those used by the Deaf community. To rephrase, are the forms being taught to interpreters representative of what the Deaf community is actually using? Historically, the residential schools for the Deaf have played "central roles in the transmission of ASL and can be considered crucibles for the acquisition of language and culture" (Lucas, Bayley, and Valli 2001, 52). Deaf educators trained at Gallaudet or at the American School for the Deaf migrated to different parts of the country to establish schools and teach sign language. Therefore, residential schools have in the past been hubs for the transmission of ASL and perhaps the standardization of signs. Children used to attend schools for the Deaf, where they would acquire ASL from their peers (Lane, Hoffmeister, and Bahan 1996). Today the landscape for the standardization of ASL is very different. A majority of Deaf students are now integrated into hearing classrooms, where they often have no

Deaf peers. Perhaps Gallaudet University and the existing residential schools for the Deaf remain the hubs of ASL standardization as students congregate from different regions.

Another technological development in media, the Internet, also seems to be a potential standardizing agent. The recent popularity of Deaf news websites and video blogs (vlogs) has created a virtual library of signing that allows for the development of standard ASL signs. In addition, those vloggers who are revered for their native-language background and fluid use of ASL may also be a type of ASL standardizing agent.

Clearly, advances in technology (e.g., videophones, video mobile devices, websites) are enabling Deaf people to connect with each other all over the country. As demonstrated, the ways in which interpreters acquire and teach standard signs and those in which the standardization of ASL occurs within the Deaf community are dissimilar. Interpreters appear to be learning more prescriptive textbook-derived forms, whereas Deaf individuals appear to be acquiring more natural, context-driven forms. This point is relevant to this article because these two groups are interfacing in the video-relay context, where they may be negotiating sign forms, making VRS a possible modern-day standardizing agent.

Language attitudes reflect social and cultural notions about certain varieties or groups of people using those forms and thus also play a part in the standardization process for spoken and sign languages alike. The standard variety can impart prestige to one group while distinguishing its members from those who use a nonstandard variety. The pioneering study by Lambert et al. (1960) examined attitudes about French and English in order to determine whether bilingual schooling changed English speakers' perception of the minority, French Canadians. Lambert recorded French and English bilinguals speaking a short paragraph with comparable content in each language. Subjects were asked to listen to the recordings and rank them by personal traits such as height, intelligence, dependability, and character. The outcome was that English and French subjects consistently rated the English recordings higher for these traits. The research by Lambert et al. demonstrates the prevalence of language attitudes within a bilingual community.

The American Deaf community is also a bilingual group, and language attitudes are bound to have an influence on which forms of ASL are accepted as standard.

Other communities in which different language varieties come into contact also show evidence of various language attitudes. Research has been conducted on negative attitudes toward African American Vernacular English (AAVE). Studies have examined the controversy over the use of AAVE as a medium of instruction (Wolfram 1998; Rickford 1999; Baugh 2000; Winford 2003) and the issue of housing-based discrimination of African Americans based on speech (Baugh 1996, 2000, 2003). Since standardization is often based on just the perceived prestige of one particular variety, language users' attitudes are intrinsically tied to the notion of standardization. Again, the attitudes of Deaf consumers and video-relay interpreters may be relevant to the notion of standardization since these may affect the decision to use a more standardized form rather than a regional one. Attitudes also influence the way in which interpreters deal with certain lexical variants while interpreting a video-relay call. In short, the preference for one form over another could cause a particular sign to become the standard form.

In addition to language attitudes, mobility, as studies show, can be a determining factor in the adoption of standardized forms. In the past, dialect geographers sought out people who live in isolation because that is where distinct regional speech varieties can be found. Linguists believe that mobility causes people to speak and sound more like people from other places (Chambers 2009). Milroy's (1980) classic study in Belfast, Northern Ireland, demonstrated that greater mobility correlates with a more standardized accent. The women of one neighborhood in Belfast had greater mobility and therefore used more standard forms than the men of the neighborhood, who preferred more regionalized speech. This mobility came by way of employment: Most of the men did not leave Ballymacarrett (a neighborhood of Belfast) because they were employed by the local shipyard. The women, on the other hand, were much more likely to find employment outside this neighborhood.

This patterning was particularly pronounced in Ballymacarrett, in contrast to the other two neighborhoods in Milroy's study. This

is probably due to another factor: In this area of Belfast, men's and women's activities were extremely polarized. The men preferred to patronize the local pubs, whereas the women sought recreation outside the community. Milroy's study offers insight into how mobility alone can lead to the acquisition of standard forms. Since the women frequented other areas more than the men did, they acquired a greater number of standard forms. This study defines mobility as the actual, frequent movement to other parts of the city for employment or recreation. Palmer and Morris (2010) found a substantial decrease in the use of regional signs in Vermont when interviewed participants who no longer lived there and compared them to participants who still resided in the state. At the root of the concept of mobility is contact; in Milroy's (1980) study, the women who work outside Ballymacarrett are likely to be exposed to various forms and adopt them for a variety of reasons. Likewise, the Deaf Vermonters who now live in a different state may well be exposed to new regional variants and abandon their Vermont sign variants. In the context of this research, mobility is invoked when Deaf video-relay consumers come into contact with nonlocal interpreters and their nonlocal sign variants. Thus, the advent of videophone technology has enabled greater de facto "mobility" in the Deaf community.

The earliest work on regional lexical variation in American Sign Language was published in the 1965 *Dictionary of American Sign Language,* or *DASL.* In appendix D, Carl Croneberg authored the section titled "Sign Language Dialects," which includes results from a study of lexical variation in North Carolina, Virginia, Maine, New Hampshire, and Vermont. This study was the first attempt to define boundaries for regional variation in ASL. As a collaborator on the *DASL* project Croneberg remarked on the difficulty in deciding which signs are standard and which are nonstandard. While identifying perception as a driving factor in what makes a language standardized, Croneberg remarked: "[F]ew have paid any attention to the term standard in the sense of 'statistically most frequent.' The tendency had been to divide sign language into good and bad" (318). After the publication of the *DASL* the number of studies devoted to variation in ASL multiplied.

Shroyer and Shroyer's 1984 study used thirty-eight consultants from twenty-five states to collect more than twelve hundred lexical

forms of approximately 130 words. Mansfield (1993) explored lexical differences in male and female users of ASL. In her study thirty-one pictures were shown to five participants, each of whom was asked to produce one sign per picture. While some differences existed based on content, there were not enough to suggest that men and women utilized a gender-specific lexicon. To date, Lucas, Bayley, and Valli (2001) have conducted the largest study on lexical variation in ASL. They examined 207 ASL signers from seven different sites around the United States. The project grouped participants by region, age, race, and socioeconomic status. The goal of the project was to produce "a description of phonological, morphosyntactic, and lexical variation in ASL and the correlation of variation with external factors such as age, region, gender, ethnicity, and socioeconomic status" (37). At each site the last part of the data collection involved eliciting lexical signs. Thirty-four stimuli (pictures and fingerspelled words,) were used. The results yielded evidence that lexical variation is prevalent in American Sign Language and also that at the lexical level many signs are shared throughout the seven regions. Ethnicity, social class, and language background all seem to be the most pertinent social factors in the lexical variation of ASL. African American signers produced twenty-eight signs that the Caucasian signers did not. The middle- and working-class signers exhibited twenty-four differences.

This review of literature has explored the notion of standardization, its possible application to ASL, and the way in which attitudes and mobility are potentially influencing factors. Additionally, we have examined some of the studies of ASL that specifically addressed lexical variation and regional dialects. The following section describes the methodology for this research project.

Methodology

The most ideal methodology for gathering data about videophone use and lexical standardization would be to record and analyze video-relay interpreters while they are actually interpreting phone calls or Deaf consumers while they are making phone calls via videophone. Unfortunately, this is not a viable option due to privacy regulations: VRS companies must strictly adhere to the specific standards put forth by the FCC in order to be reimbursed for the interpreted phone calls.

One of the minimum standards they must meet as a telecommunication relay service (TRS) provider is to "ensure user confidentiality" and "not keep records of the contents of any conversation."[1] This TRS rule is an understandable impediment to any research project that seeks to obtain natural data on VRS. The FCC has yet to issue clear guidelines for researchers who would like to study VRS practices. Meanwhile, much research remains to be done in the burgeoning field of videophone interpreting, and we presume that VRS providers would be interested in the research results.

In September 2007 representatives from eight VRS providers convened to highlight various aspects of the industry, particularly the need for research and materials. The National Consortium of Interpreter Education Centers issued a document listing the providers' research needs. In order to comply with TRS mandates, we designed our methodology to produce entirely self-reported data. However, it should be noted that the focus group of interpreters and the electronic surveys we used were approved by the Gallaudet University Institutional Review Board.

The purpose of the focus groups was to elicit VRS and standardization topics to utilize when creating the two electronic surveys (one for Deaf consumers and one for VRS interpreters). The electronic surveys were designed to provide statistical information about the issues that emerged during the focus-group sessions. This two-part methodology was intended to elicit both qualitative and quantitative information. The qualitative aspect provided an overall framework that yielded Deaf consumers' unexpected perspectives on interpreters. The quantitative portion allowed us to measure the prevalence of certain practices and ideologies within the community. A pitfall of the methodology, however, is that the data are entirely self-reported. In the conclusion of this article we elaborate on the reliability of such data.

Two focus groups with four participants each were formed, and each session was videotaped to allow for later review and analysis in the survey part of the study. The first group consisted of four Deaf VRS users, and the second group, four VRS interpreters. Each group had an equal number of native and nonnative signers, as well as an

1. http://www.fcc.gov/cgb/consumerfacts/trs.html

equal number of men and women. "Native signer," in this case, was defined as having two Deaf signing parents and acquiring the language naturally from birth. In the Deaf cohort, the other two participants were nearly native signers who had been exposed to ASL before the age of seven. In the interpreter group the two nonnative signers were highly proficient L2 learners of ASL. All of the interpreters were nationally certified and Caucasian. All four of the Deaf participants were current Caucasian graduate students at Gallaudet University. The focus-group participants were told that the research objective was to understand the dynamics of lexical variation in the VRS setting. In both sessions, the participants shared their stories about and experiences with lexical variation, as well as their judgments about correct and incorrect signs. The topics we ultimately used were chosen from the focus-group sessions.

From the topics that emerged in the focus groups, two electronic surveys were developed, one for Deaf consumers and one for VRS interpreters. Questions were designed to target experiences with VRS and attitudes about regional and standardized ASL signs. A free online survey builder was utilized to tally the results and allowed us to filter the responses according to demographic information. The survey consisted of multiple-choice and fill-in-the-blank questions. The latter allowed the respondents to elaborate on their answers and provide more qualitative feedback.

One hundred thirty-one questionnaires were filled out by interpreters from thirty-three states, the District of Columbia, and Canada. Eighty-one surveys were filled out by Deaf consumers in twenty-nine states. More than 90 percent of the interpreters that responded to our survey possessed national certification through the Registry of Interpreters for the Deaf (RID) and/or the National Association of the Deaf (NAD). The survey results are explained in the next section. The discussion portion of this article considers both the qualitative and the quantitative aspects of this research project

Analysis and Results

This section presents the results of this study in two sections. The first part elaborates on topics that emerged during the interpreter focus group and the Deaf-consumer focus group. This section highlights

the general topics of the focus groups and presents some quotations from the participants. The second part covers the results of both the interpreter survey and the Deaf-consumer survey. Some of these findings are presented as percentages in graphs.

The interpreter focus-group conversation can be summarized as follows. First, the interpreters agreed they should be trying to incorporate the Deaf consumers' regional variants. However, they stressed that doing so is not always possible. They explained that, depending on the circumstances, some VRS calls are more cognitively demanding than others. They reported that they fail to incorporate the Deaf consumers' regional variations for two reasons. One, while processing information or actually interpreting a phone call, the interpreters might not use the Deaf consumers' sign and/or replace it with a more standard sign because they might simply forget it. This is conceivable, given that VRS interpreters may take hundreds of calls a day, many of which come in rapid succession. In addition to being unable to incorporate regional signs due to the heavy cognitive load, the interpreters expressed some of their attitudes about incorporating specific signs. They referred to more English-based signs as difficult to incorporate because they are awkward or uncomfortable to produce.

This was mainly the case with initialized signs, which have a hand configuration that represents a letter from the English (Latin-based) alphabet and are considered part of the ASL manual alphabet. These hand configurations help to make a correspondence between a particular sign and an English word. For example, FAMILY and GROUP are signed the same way but have the F and G hand configurations, respectively, to differentiate them. FAMILY is widely accepted in the Deaf community, whereas GROUP is accepted only in some communities. This example demonstrates both the arbitrariness and the regional influence that come into play when determining which initialized signs are considered ASL and which are not. When asking whether the interpreter's sign was similar to the Deaf consumer's but varied only in hand configuration (considered a result of English influence), the interpreters stated that they did not substitute their own sign for the initialized sign. They believed the Deaf consumer could understand both. From a linguist's perspective, the reluctance to incorporate variants, initialized or otherwise, is viewed as resulting from language

attitude. Interpreters and prescriptive attitudes are further considered later in the discussion.

The most surprising theme that emerged from the second focus group was that Deaf consumers have low expectations of VRS interpreters. When VRS began, it was known for having highly qualified interpreters because the providers were hiring only seasoned, certified interpreters. Since 2006 the largest video-relay provider, Sorenson Communications, has been hiring precertified individuals. Since that time, Deaf consumers report significant variability in the quality of the interpreters. Some of the Deaf focus-group participants stated that they begin most of their calls with more contact signing and continue to use it until they are confident of the interpreter's ability. All of the participants shared an experience about how they had either disconnected with an inadequate interpreter by asking to be transferred to another interpreter, made an excuse to end the interpreted call early, or simply hung up on an interpreter.

Deaf consumers in the focus group reported avoiding regional variants when making VRS calls because the interpreter would likely not understand them. One participant stated that he avoids the California sign for WALK because only signers from California use it. However, the Deaf consumers in this focus group reported that they did not mind if the interpreters used the regional variants from where they had learned to sign. This was an interesting finding as well since the Deaf consumers might then have had to ask for clarification of a variant that was unknown to them. As the participants explained, the meaning of a variant can often be illuminated via context. Also, they stated that if they did not have enough contextual clues to discern the meaning of a sign, they would ask the interpreter to clarify it, and more often than not the interpreter would just fingerspell the English word for the sign, and the interpreted call would then continue. It is possible that these Gallaudet University graduate students have had more experience working with interpreters and are more comfortable with both ASL and English; thus, they are able to ask for clarification without disrupting the flow of a call. However, if a monolingual Deaf consumer uses VRS and does not recognize an interpreter's variant, the interpreter's fingerspelling may not be sufficient. If the interpreter needs to resort to another strategy, such as expanding, then the flow of the interpreted call may be disrupted.

Overall, the results from the focus groups correlate with those from the electronic surveys, which targeted specific experiences and attitudes of the interpreters and the Deaf consumers. All of the interpreters reported believing that they should try to incorporate the Deaf consumers' signs into their interpretation. They also all reported that it is sometimes difficult to incorporate the consumers' signs. This is not surprising since catch-22 philosophy seems to apply to most interpreter-training programs. As the professional organization for interpreters, RID encourages interpreters to be aware of language variations but does not explicitly mention incorporating consumers' variants. The RID standard practice paper, called Video Relay Service Interpreting, offers a best practice for cultural competence:

> VRS interpreters work with consumers from different geographical and cultural backgrounds. Because culture is inextricably tied to language, interpreters must develop cultural competency as well as understanding of language variations for both signed and spoken languages. Variations can be seen in word meaning, accents, and speed of production. Managing these differences skillfully can be challenging for interpreters.

When we asked interpreters through our online survey whether they used their own regional variants while working at VRS, 74 percent responded in the affirmative. Additionally, 17 percent responded that they do not, while the remaining 9 percent said they rarely or sometimes use their own regional variants with callers. Again, with the California WALK example, it is possible that California VRS interpreters use that variant in all or some of the VRS calls.

The next two survey questions what elicited the types of signs interpreters incorporate. We had predicted that the interpreters would say that they should incorporate the Deaf consumer's sign, so we rephrased the question again later in the survey and added a text box so that they could elaborate. Earlier we reported that, in the focus groups, 100 percent of interpreters responded yes to question A: "Do you think interpreters should always use Deaf consumers' signs?" This question could be answered only yes or no (by clicking a radio button). We then asked them question B: "If you and your Deaf caller use different signs, which do you use?" (figure 1) and followed that up with (question C)"what: "What if the Deaf caller's sign is initialized?" (figure 2).

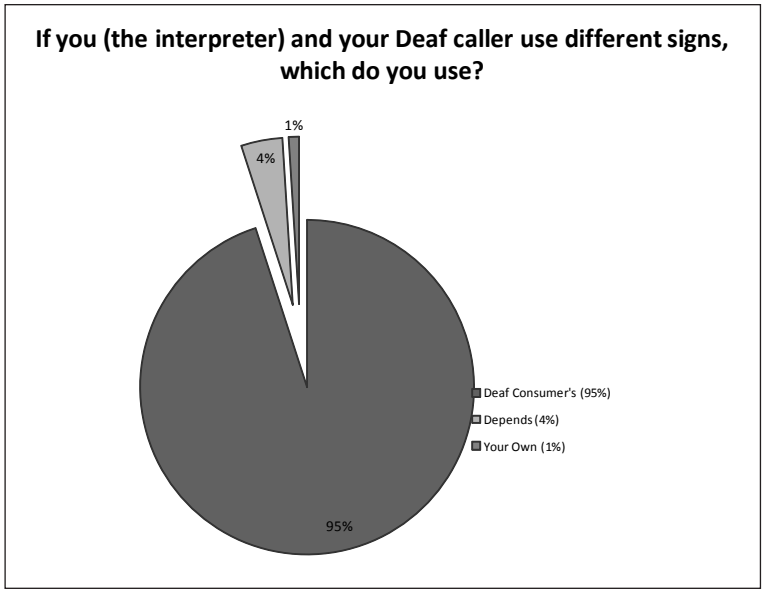

Figure 1.

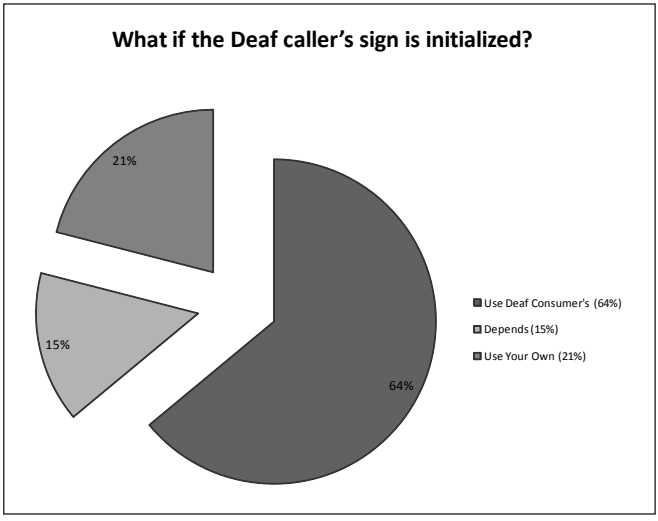

Figure 2.

In figure 1, 95 percent of the respondent interpreters said they would incorporate the Deaf consumer's sign. This reveals a slight drop from the response of the interpreters in the focus groups, who unanimously said they would incorporate the Deaf consumer's sign. Again, the answers to question A and question B in figure 1 reveal a difference. In question A, we asked the interpreters whether they try to incorporate a regional variant if the Deaf consumer uses one. For regional variants we got an overwhelming 100 percent. When the question was rephrased and the word "sign" was used in place of "regional sign variant," the percentage dropped. Some of the survey participants explained why they sometimes do not incorporate the Deaf consumer's sign: "I would try to use their sign, but if it is a 'highly stressful call,' I can't say that I would remember to use their sign if I'm trying to handle all of the other call dynamics, too." Another survey response mentioned that interpreting through video feed hinders one's ability to perceive an unfamiliar sign correctly. One interpreter commented as follows in response to question B: "Theirs as much as possible unless I am unsure of how to produce it correctly—in a 2D setting, it is sometimes hard to fully see how to correctly reproduce a new sign."

Aside from cognitive and technical issues, language attitudes began to emerge in the interpreters' comments. One respondent said she uses the Deaf caller's sign "unless it is not conceptually accurate." A similar response was this: "I tend to match the Deaf caller's signs unless it is conceptually ineffective." Based on these responses, it appears that interpreters make judgment calls about what signs to incorporate. In addition, we found evidence of concern about what a regional sign is versus what is English-like or incorrect. As one interpreter mentioned, "This doesn't seem to be a question of regional signs as much as other language preferences." A different respondent said he would incorporate the Deaf consumer's sign "unless it is strongly signed English." Yet another typed-in response was this: "Depends on whether the sign is a regional variant or a mispronunciation." As these responses demonstrate, interpreters seem to have a definition of regional signs that does not include initialized signs, English-like signs, or conceptually inaccurate signs. This definition perhaps explains the contradictory results.

Another follow-up question was designed to explore this notion of English-based sign variants that interpreters seem to resist incorporating. The interpreter respondents were asked question D: "If the Deaf caller is using an initialized sign that is basically the same as your sign, do you use the initialized version? (e.g., you use the sign SWEET for "diabetes," while the Deaf consumer uses the same sign but with a D handshape). If no, explain." It appears that some initialized signs in the Deaf community are highly stigmatized, and interpreters inherit these perceptions. These two signs for "diabetes" were chosen for the example because they are not as highly stigmatized as other initialized choices. Nonetheless, an interpreter's willingness to incorporate the Deaf consumer's signs dropped significantly to 65. percent. One interpreter commented that she will not incorporate the caller's sign if it is initialized: "If I switch more to ASL, they very rarely say anything. In fact, I can never recall anyone complaining on the sign choice." Another respondent stated that he also did not incorporate initialized signs and added: "Just because it is being used does not make it a legitimate sign." However, 65 percent of the respondents said they try to incorporate callers' signs regardless of the initialized status. One interpreter wrote the following: "I feel that the language belongs to the caller; therefore, I strive to accommodate." Some expressed trepidations: "I go back and forth on this. Normally I try to use what the caller says, but if it is just an initialized version of a sign, I don't always remember to use it." In summary, interpreters self-report that they should always incorporate the Deaf consumer's sign, whereas in actuality they are selective about which signs they incorporate. This seems to be, in some cases, based on an attitude about what is and is not ASL.

Since video-relay services have been around for nearly a decade, the interpreters were asked if they noticed whether Deaf consumers now use more or fewer regional variants during interpreted calls than in previous years. The following two tables illustrate the results. Figure 3 shows the 131 responses in percentages to the question "Have you noticed [whether] Deaf callers use more or fewer sign variants now as compared to when you first started work as a VRS interpreter?" Figure 4's percentages include only respondents who have five or

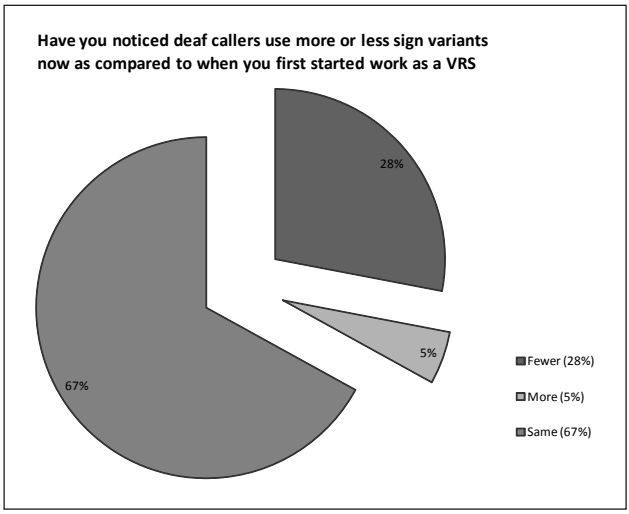

Figure 3.

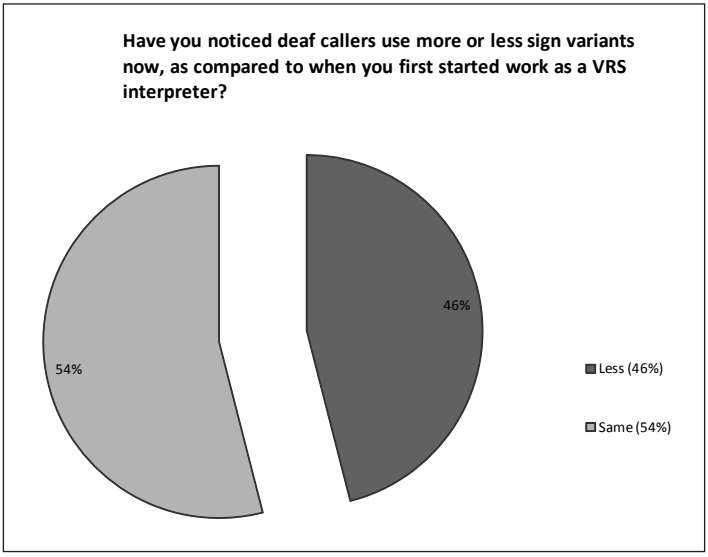

Figure 4.

more years of VRS experience. These thirty-nine respondents were essentially the first video-relay interpreters.

Figure 3 shows that 67 percent of the respondents feel that Deaf consumers use the same number of regional variants now as compared to when they first started VRS. The problem with figure 3 is that it includes all of the video-relay interpreters, even those with less than one year's experience. Figure 4 shows the responses from seasoned VRS interpreters (five to eight years of experience). In this case the results are evenly split. Approximately half of the interpreters feel that fewer variants are used now than when they first started, while the other half believes that about the same number of regional variants are being used. Interestingly, none of the interpreters noted *more* variant use. One respondent wrote the following: "I don't think Deaf callers use sign variants any more or less than they did 6 years ago. I think the callers are now more aware of these variants and willing to accept them." Contrary to that sentiment, an interpreter commented as follows: "Less. I feel that is because VRS is being used more [now] and the interpreters have influenced the language. The interaction between interpreters and Deaf consumers of VRS is causing the language to become more standardized." The purpose of this question was to learn whether interpreters have noticed any observable change in Deaf consumers' sign usage. These responses are largely inconclusive because, as one respondent aptly put it, "I am not sure if there are less [*sic*] sign variants now. It could seem that way just for the fact that I have been exposed to more sign variants than before and added them to my vocabulary."

To complement the interpreters' perception of lexical variation in the video-relay setting, a separate electronic survey was developed for Deaf consumers. The survey had eighty-one respondents. When the Deaf consumers were asked whether they used regional variants with VRS interpreters, 76 percent said they did. In addition, 70 percent of the respondents believed that interpreters should try to incorporate their signs. This was echoed by one Deaf consumer's response: "Interpreters should adapt to the signing style of the consumer even if it means using a sign different from what they were taught." Others expressed concern that understanding was the primary goal and that the incorporation of an unfamiliar sign might

be troublesome: "Because if they do not know/recognize it, they shouldn't attempt to mimic it, which would mess up my local signs (wrong handshape, movement, location, etc.), which will lead to misunderstanding/miscommunication." This also echoes the sentiment of an earlier interpreter who did not want to reproduce an unfamiliar sign from a 2D screen.

In addition, Deaf consumers were asked whether they requested clarification when the interpreter used an unknown regional variant. Of the respondents, 73 percent said they would ask for clarification, while 24 percent stated that they would sometimes ask. One Deaf consumer explained as follows: "I use the context in which the regional sign was used to figure out what it meant." The intent of this question was to determine whether the use of regional signs during interpreted calls is salient to Deaf consumers. With 73 percent stating that they did ask interpreters for clarification, it suggests that Deaf consumers are aware of their exposure to signs from different regions.

The next question addressed the standardization of signs. Deaf consumers were directly asked whether they thought all interpreters should use the same signs. Of the respondents, 60 percent said that interpreters should not all use the same signs. The remaining 40 percent expressed the belief that they should.

Finally, the respondents to the Deaf-consumer electronic survey were asked whether it bothered them when the interpreters did not incorporate their signs. By and large, the majority of responses were in the negative.

Figures 5a and 5b illustrate the results for the same question: Does it bother you when interpreters don't incorporate your signs? The responses are categorized according to parental hearing status. Currently it is estimated that 5 percent of Deaf children have Deaf parents. Research in the past has estimated this number to be closer to 10 percent (Best 1943, Schein and Delk 1974). However, 5 percent is the purported current figure (Mitchell and Karchmer 2004). The participant demographic for this electronic survey is not congruent with the aforementioned trend. Nearly 24 percent of the Deaf-consumer survey respondents have Deaf parents. In comparison with Deaf consumers with hearing parents, "Deaf of Deaf" consumers are more concerned about interpreters not incorporating their signs. This

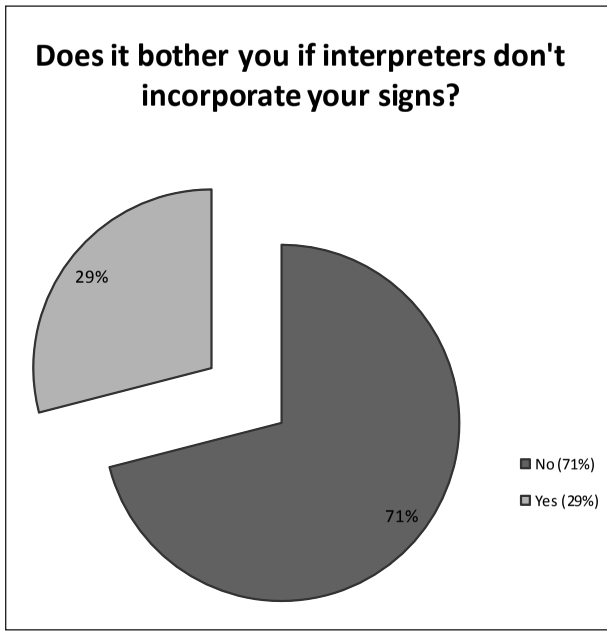

FIGURE 5A. Hearing parents (n = 61)

FIGURE 5B. Deaf parents (n = 19)

could be interpreted as either Deaf of Deaf consumers' resistance to the standardization of ASL or their perception that the interpreter's choice of sign is incorrect. The role of Deaf of Deaf individuals and ASL is further explored in the following discussion.

Discussion

Both interpreters and Deaf consumers expressed their attitudes about English-like signed forms. Both groups of respondents, interpreters and Deaf consumers, revealed a strong resistance to incorporating signs that are seen as non-ASL. Most comments about such types were specifically about initialized signed forms. The perception that some sign forms are more correct than others may indicate a rejection of the invented manual codes of English. However, there can be a challenge in identifying English-like signs from ASL signs since some native signs do have initialized handshapes as mentioned earlier with the sign FAMILY. From the results of the survey, the Deaf community's attitudes about initialization appear to have permeated the interpreter community as well and likely are passed along in both ASL classes and interpreter-training programs.

The issue of language attitude is relevant to the standardization of ASL because the way in which interpreters negotiate and incorporate unfamiliar signs can influence Deaf consumers. If a Deaf consumer uses a particular initialized sign but grows increasingly aware that interpreters do not use it, the Deaf consumer may be less likely to use that form. Furthermore, users of nonstandard ASL may well be acutely aware of such language attitudes.

Increased "mobility" via videophone may increase a Deaf person's awareness of so-called ASL standard forms because interpreters consistently use them. However, at the same time, interpreters may be curtailing their use of their own regional variants. One interpreter wrote this: "I rarely use regional sign variants. After gaining experience as a VI [video-relay interpreter], I realized [that] using a standardized sign is a more successful strategy. Deaf callers may ask for clarification, so it is easier and may be better customer service to use a standardized sign." Conversely, one Deaf respondent stated the following: "When interpreters do not use my variations of certain signs,

it does not bother me. What bothers me more is when interpreters use conceptually inaccurate signs." This response reflects a non-preference for the use of specific variants and places a higher importance on the interpretation skills of such video-relay interpreters.

It is important to note that in this study the data are all self-reported and rely on informants' perceptions of what is standard and what is not. In addition, we were unable to effectively determine whether standardization of ASL due to videophone technology is in fact occurring over time. However, factors such as mobility and language attitudes, which play a significant role in standardization, have been identified. Deaf consumers with high-speed Internet access can obtain a videophone from numerous providers free of charge. From the comfort of one's own home a Deaf consumer can call acquaintances and sign language interpreters throughout the United States. As mentioned earlier, Milroy's (1980) seminal study of working women with increased contact with different dialect users in Belfast shows that increased mobility leads to the adoption of more standard forms. Technology is creating a way to be virtual mobile. Those Deaf users are linguistically less isolated because of increased contact with Deaf people and video-relay interpreters across the nation due to videophone technology and video-relay services.

Furthermore, language attitudes are instrumental in the spread of the perception that certain signs are more correct or more standard than others. The Deaf community, Deaf students, Deaf teachers of ASL, and Deaf textbook writers continue to discuss which sign forms are and are not native to ASL. At the same time, we have found attitudes that could reduce the impact of video-relay technologies on the standardization of ASL. For example, a majority of Deaf video-relay consumers reported that they did not want all interpreters to use the same signs. This important finding shows that linguistic diversity is valued within the Deaf community

The opinions and perspectives of the use of sign variants, by interpreters and Deaf consumers of videophones and video-relay services, gleaned from this study have various implications. Sign language interpreters, educators and students should engage in discussion regarding their sign choices and the possible impact of such choices. Since standard forms are linked to prestige, it is a worthwhile endeavor to

consider why certain forms have achieved such status and the implications of not incorporating a consumer's sign. This is particularly relevant to the VRS setting since videophone technology allows for virtual "mobility" and mobility has been historically linked to the abandonment of standard forms.

Conclusion

The questions we posed in this study yield interesting results about language attitudes and mobility. The first research question we formulated was, Do video-relay users and VRS interpreters omit or limit regional lexical variants and replace them with forms that are perceived as more standard? Overall, we found that both interpreters and consumers reported using regional forms on the videophone. Our second research question was, Do VRS interpreters incorporate the regional lexical choices of Deaf consumers? For most part, the interpreters reported incorporating Deaf consumers' variants, but interpreters were particularly unwilling to incorporate certain signs. Our final research question was, Do Deaf VRS consumers prefer interpreters to use standard forms? Predominately, the Deaf consumers involved in this study report that they do not want interpreters to use standard forms.

This study is just the first step toward identifying the way in which contact between Deaf video-relay users and video-relay interpreters may influence the standardization of ASL. Larger-scale research needs to be done to truly reveal how this technology may be influencing ASL. Our findings reveal strong language attitudes held by both Deaf signers and interpreters. Further investigation is needed to discover how these attitudes may influence the sign forms used in particular settings.

Notes

1. Gartner is a technology research firm: http://www.gartner.com.
2. Http://www.fcc.gov/cgb/consumerfacts/trs.html.

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