A Historical Linguistic Account of Sign Language among North American Indians

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Signed communication among various indigenous peoples has been observed and documented across the North American continent since fifteenth- and sixteenth-century European contact. Early scholars of this subject (e.g., Clark 1885; Mallery 1880; Scott 1931; Tomkins 1926) have made cases for the North American Indian[1] sign variety to justify its being considered a full-fledged language. Two predominant themes in the early writings about Indian signed languages are "universality" and "iconicity" — theoretical issues that signed language linguists continue to address even today. The study of such phenomena helps broaden our understanding of these issues and other linguistic questions. For example, the early research on Indian signed languages informed the seminal work of some of the first signed language linguists (e.g., Stokoe 1960; Battison 1978/2003). These historical linguistic data need to be reexamined in light of current linguistic theories, interdisciplinary perspectives, and current sign use among deaf and hearing North American Indians and other indigenous populations around the world.

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NORTH AMERICAN INDIAN SIGN LANGUAGE VARIETIES

Observed and documented across several geographic locations and cultural areas, the historical varieties of indigenous signed language specific to North America are sometimes collectively referred to as "North American Indian Sign Language" (see Wurtzburg and Campbell, 1995). Historically, these varieties of signed language were named in various ways — Plains Indian Sign Language, Indian Sign Language, The Sign Language, Indian Language of Signs, and historical references in this paper will apply those names where appropriate.[2] Previous anthropological linguistic field research (Kroeber 1958; Voegelin 1958; West 1960) indicates that signed language was used in varying degrees within most of the language families of Native North America. The best documented cases of indigenous signed languages involved various Indian groups who once inhabited the Great Plains area of the North American continent (see table 1). This enormous geographic expanse stretched north to south for more than two thousand miles from the North Saskatchewan River in Canada to the Rio Grande in Mexico. The east-west boundaries were approximately the Mississippi-Missouri valleys and the foothills of the Rocky Mountains and encompassed an area of some one million square miles. Generally, twelve major geographic cultural areas of Native North America are identified in the literature with the Plains cultural area centrally located to all of these (cf. Campbell 2000, Mithun 1999). Historically, this large geographic area was one of extreme linguistic diversity, and hundreds of different languages were spoken among the native populace.[3]

The Plains tribes were geographically and culturally central to most of the other North American Indian cultural groups and a signed lingua franca appears to have evolved as a way to make communication possible among individuals speaking so many different mother tongues (Davis, 2005). Traditionally, the nomadic groups of the Great Plains used Plains Sign Language (PISL hereafter) as an alternate to spoken language. Beyond the Plains geographic area, fluent signers of PISL have been identified among native groups from the Plateau area — e.g., the Nez Perce (Sahaptian) and the Flathead (Salishan). In what remains the most extensive study of PISL to date, West (1960) reported dialect differences among these Indian groups, but found that these did not seriously impede signed communication. In the late 1950s, West found that PISL was still practiced, particularly on intertribal ceremonial occasions

but also in storytelling and conversation, even among speakers of the same language. The historical ethnographic and linguistic documentary materials that are the focus of this paper support that PISL was used as a lingua franca among the Plains Indian tribes as well as between them and other American Indian linguistic groups (compare Campbell 2000; Davis 2005; Farnell 1995; Mithun 1999; Taylor 1978; Umiker-Sebeok and Sebeok 1978; Wurtzburg and Campbell 1995).

For example, Campbell (2000, 10) writes that "the sign language as a whole became the lingua franca of the Great Plains, and it spread from there as far as British Columbia, Alberta, Saskatchewan, and Manitoba." Evidently there was some variation from tribe to tribe, and not all individuals were equally proficient in signed language. Varying degrees of signed language use among some American Indian individuals and groups has been observed even today. However, the number of users has dramatically declined since the nineteenth century, leading several researchers to conclude that these traditional signed language varieties are endangered (Davis 2005; Farnell 1995; Kelly and McGregor 2003; McKay-Cody 1997). Contemporary and historical use of the signed language among Native American groups needs to be documented, described, and stabilized through language maintenance and education to prevent imminent language loss.

Researchers have proposed that the signed systems used by hearing Indians as an alternative to spoken language became a primary signed language when acquired natively by tribal members who are deaf (Davis and Supalla 1995; Kelly and McGregor 2003; McKay-Cody 1997).[4] These studies have reported the contemporary use of traditional PISL among both deaf and hearing Native American descendents of the Plains Indian cultural groups. Deaf and hearing individuals from other Native American groups, such as the Diné/Navajo (Davis and Supalla 1995) and the Keresan of the New Mexico Pueblo cultural area (Kelly and McGregor 2003) appear to sign a variety that is distinct from traditional PISL. Preliminarily, the available linguistic evidence suggests that these traditional ways of signing among Indian groups are distinct from American Sign Language (ASL). At the same time, striking similarities in linguistic structure between PISL and ASL (e.g., marked and unmarked handshapes, symmetry and dominance conditions, classifier forms, and nonmanual markers), have been documented (see Davis 2005, Davis and Supalla 1995, McKay-Cody 1997). In this paper, I report the documented cases of historical and contemporary signed language use among North

American Indian groups, present preliminary linguistic descriptions and findings, and offer readers a link to a prototype on-line digital archive of PISL documentary materials. The author aims to expand this open access on-line linguistic corpus of PISL to include more documentary materials, translations, and analyses. This will encourage and facilitate language revitalization efforts, further research, and scholarship. The link to the on-line digital archive of PISL documentary materials is Plains Sign Language Digital Archive: http://sunsite.utk.edu/plainssignlanguage/

PRE-EUROPEAN CONTACT

Clearly, there was (and still remains) an indigenous form of North American signed language, and its use has been historically documented as being widespread. Wurtzburg and Campbell (1995) make a compelling case for there having been a preexistent, well developed indigenous signed language across the Gulf Coast-Texas-northern Mexico area *before European contact*. In their historical study of "North American Indian Sign Language," Wurtzburg and Campbell (1995, 160) define "sign language" as "a conventionalized gesture language of the sort later attested among the Plains and neighboring areas." Based on numerous early historical accounts, they report that the earliest and most substantive accounts is from the 1527 expedition for the conquest of Florida, lead by the Spanish conquistador Cabeza de Vaca who reported numerous occasions wherein native groups communicated with signs (1995, 154–55). According to the historical record, Cabeza de Vaca "also clearly distinguished which groups spoke the same language, which spoke different languages but understood others, and which groups did not understand others at all, except through the use of sign language" (1995, 155).[5] Similar accounts were made by Coronado in 1541 (reported in Taylor 1978), and subsequent reports were made in the eighteenth century (e.g., Santa Ana in 1740 [reported in Mithun 1999]). Goddard (1979), and Wurtzburg and Campbell (1995) published papers about the role served by signed languages and some spoken native languages as lingua francas, and have discussed the pidgins, trade languages and "mixed" systems used among native groups. The generally accepted hypothesis among scholars (see Campbell 2000; Mithun 1999) is that North American Indian Sign Language originated and spread from the Gulf Coast, became the intertribal lingua franca of the Great Plains, and spread throughout the northwest

territories of the United States and Canada (compare Goddard 1979; Taylor 1978; Wurtzburg and Campbell 1995). Further research of these topics is needed, but presently beyond the scope of this paper. The historical linguistic documents and ethnographic accounts that are the focus of this paper support that signed language was used beyond the Great Plains area and was evident across most of the major American Indian cultural areas (e.g., Southeast and Gulf Coast, Southwest, Plateau and Basin, Subarctic, Mesoamerica, and Northeast).

Attention to the rich legacy of historical linguistic documents that remain (essays, descriptions, illustrations, films) is needed in light of new linguistic theories. The indigenous origins of contemporary signed language use among Native American deaf and hearing signers across different geographic and cultural contexts must be documented. Further consideration must be given to the intergenerational use of highly elaborate signed communication systems that have been documented for hearing signing communities, even when deaf people are not present (e.g., historically on Martha's Vineyard as well as currently and historically in some indigenous and monastic communities). In addition to signed language use in Deaf communities, this linguistic phenomenon (i.e., signing communities that are predominately hearing) has been and continues to be documented in several aboriginal communities around the world and is also evident in some occupational settings and monastic traditions (see, e.g., Davis and Supalla 1995; Farnell 1995; Johnson 1994; Kendon 1988, 2002; Kelly and McGregor 2003; Plann 1997; Umiker-Sebeok and Sebeok 1978; Washabaugh 1986a, 1986b).

More recently, some signed language linguists (Davis 2005; Davis and Supalla 1995; Johnson 1994; Farnell 1995; Kelly and McGregor 2003; McKay-Cody 1997) have documented contemporary signed language use among other North American linguistic groups — for example, Algonquian (Blackfeet) and Siouan (Assiniboine, Dakotan, Stoney) language groups as well as Navajo (Diné), Keresan Pueblo, Northern Cheyenne, Yucatan-Mayan, and others. In light of new field studies and linguistic theories, linguists have reexamined the documented occurrences of aboriginal signed language in North American and in other continents (e.g., Australia and South America). The evidence suggests that in addition to its documented history as a intertribal lingua franca, signed language was used intratribally for a variety of discourse purposes (e.g., storytelling, gender-specific activities, times when speech was taboo, ritual practices).

In this paper, I examine the documented film and written ethnographic accounts of North American Indians signing an assortment of topics, including different discourse types across a variety of settings and participants. Furthermore, I consider some of the historical connections between ASL and indigenous signed language varieties. Historic and contemporary uses of signed language have been documented in at least one dozen distinct North American language families (phyla). Certainly, signing may have been used by even more groups than these, but at least this many cases were documented in historical linguistic accounts. The archived data reveal that regardless of hearing status, signing was used by members from approximately thirty-seven distinct American Indian spoken language groups. Conventions for the classification of North American language families are followed (compare Campbell 2000; Mithun 1999). In each case, the published source is provided and documented cases of current use are highlighted. These historical and contemporary cases are presented in table 1.

HISTORICAL LINGUISTIC DOCUMENTATION AND DESCRIPTION

Throughout the 1800s, the earliest explorers, naturalists, ethnologists, and even U.S. military personnel, extensively documented the use of Indian Sign Language for a variety of purposes. Documentation of Indian Sign Language continued through the 1900s, and the earliest anthropologists, linguists, and semioticians studied and described its linguistic structures (e.g., Boas 1890/1978; Kroeber 1958; Mallery 1880; Umiker-Sebeok and Sebeok 1978; Voegelin 1958), most of whom, notably, also served terms as presidents of the Linguistic Society of America. These early scholars laid the groundwork for Indian Sign Language to be considered a preexistent, full-fledged language. Thus, there remains a rich linguistic and ethnographic legacy in the form of diaries, books, articles, illustrations, dictionaries, and motion pictures that document the varieties of signed language historically used among native populations of North America. One of the richest sources for archival data comes from the motion pictures produced by Scott (1931) with support from a U.S. Act of Congress. The purpose of these films was to preserve signed language as a part of the North American Indian cultural and linguistic heritage. The source and content of these films will be described later in this paper.

TABLE 1. *Documentation of Historic and Current Sign Language Use among North American Indians*

Language Phyla and Group	Published Sources
I. Algic = Algonquian family	Campbell (2000), Mithun (1999), McKay-Cody (1997)
1. Arapaho	Clark (1885), Mallery (1880), Scott (1931)
2. Blackfoot = Blood = Piegan	Davis, 2005; Mallery (1880), Scott (1931); Weatherwax (2002)
3. Northern Cheyenne	Burton (1862), Mallery (1880), McKay-Cody, 1997; Scott (1931), Seton (1918)
4. Cree	Long (1823), Mallery (1880), Scott (1931)
5. Fox = Sauk-Kickapoo	Long (1823), Mallery (1880)
6. Ojibwa = Ojibwe = Chippeway	Hofsinde (1956), Long (1823), Mallery (1880)
7. Shawnee	Burton (1862), Harrington (1938)
II. Athabaskan-Tlingit family	Campbell (2000), Mithun (1999)
8. Navajo = Diné	Davis and Supalla (1995)
9. Plains Apache = Kiowa-Apache	Fronvall and Dubois (1985), Hadley (1891), Harrington (1938), Mallery (1880), Scott (1931)
10. Sarcee = Sarsi	Scott (1931)
III. Siouan-Catawban family	Campbell (2000), Mithun (1999)
11. Crow	Burton (1862), Mallery (1880), Scott (1931)
12. Hidasta = Gros Venture	Mallery (1880), Scott (1931)
13. Mandan	Scott (1931)
14. Dakotan = Sioux = Lak(h)ota	Burton (1862), Farnell, 1995; Long (1823), Mallery (1880), Seton (1918), Tompkins (1926)
15. Assiniboine = Stoney = Alberta	Farnell (1995), Mallery (1880), Scott (1931)
16. Omaha-Ponca	Long (1823), Mallery (1880)
17. Osage = Kansa	Harrington (1938), Long (1823)
18. Oto = Missouri = Iowa	Long (1823), Mallery (1880)
IV. Caddoan family	Campbell (2000), Mithun (1999)
19. Caddo	Harrington (1938)
20. Wichita	Harrington (1938), Mallery (1880)
21. Pawnee	Burton (1862), Mallery (1880)

Language Phyla and Group	Published Sources
22. Arikara	Mallery (1880), Scott (1931)
V. Kiowan-Tonoan family	Campbell (2000), Mithun (1999)
23. Kiowa	Fronval and Dubois (1985), Hadley (1891), Harrington (1938), Mallery (1880)
24. Tonoan = Tewa = Hopi-Tewa = Tano	Goddard (1979), Mallery (1880)
VI. Uto-Aztecan family	Campbell (2000), Mithun (1999)
25. Shoshone = Shoshoni	Burton (1862), Mallery (1880), Scott (1931)
26. Comanche	Harrington (1938), Mallery (1880)
27. Ute = Southern Paiute	Burton (1862), Mallery (1880)
28. Northern Paitue = Bannock = Banak	Mallery (1880)
VII. Shahaptian family	Campbell (2000), Mithun (1999)
29. Nez Perce = Nimipu = Chopunnish	Scott (1931)
30. Sahaptian	Mallery (1880)
VIII. Salishan family	Campbell (2000), Mithun (1999)
31. Coeur d'Alene	Teit (1930)
32. Flathead = Spokane = Kalispel	Scott (1931)
33. Shuswap, British Columbia	Boas (1890/1978)
IX. Eskimo-Aleut family	Campbell (2000), Mithun (1999)
34. Inuit = Inupiaq-Inuktitut	Hoffman (1895)
X. Iroquoian family	Campbell (2000), Mithun (1999)
35. Huron-Wyandot	Mallery (1880)
XI. Zuni (isolate)	Campbell (2000)
36. Zuni	Mallery (1880)
XII. Keresan = Keres	Campbell (2000)
New Mexico Pueblo varieties	
37. Laguna Pueblo	Goldfrank (1923)
Keresan Pueblo	Kelly and McGregor (2003)

Note: For descriptions of current sign language use see McKay-Cody (1997), Davis (2005), Davis and Supalla (1995), Farnell (1995), Goff-Paris and Wood (2002), Kelly and McGregor (2003).

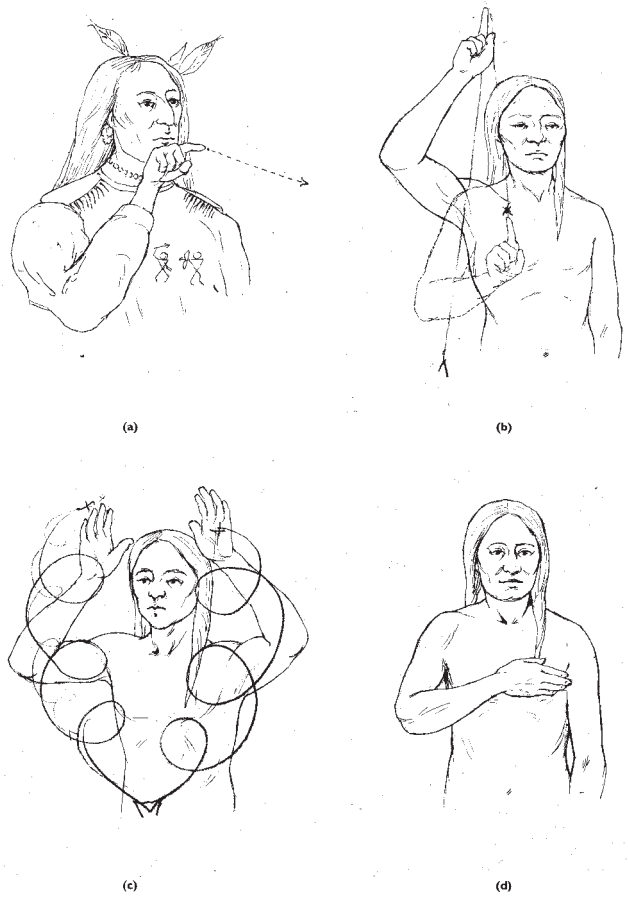

FIGURE 1. *Original Pen and Ink Drawings of Indian Signs (ca. 1880); Courtesy of the National Anthropological Archives, Smithsonian Institution (ms. 2372).*

Unfortunately, since the late 1800s, social, cultural, and historical factors have caused the population of native and secondary users of the signed languages to dramatically decrease, suggesting that PISL is an endangered language. Fortunately, some PISL varieties are still used today and need to be further documented and described. For example, current signed language use and maintenance programs have been documented for the Assiniboine, Stoney, Blackfeet, Piegan, Blood, Crow, North Cheyenne (see Farnell 1995). Further, the National Multicultural Interpreting Project at El Paso Community College, the Intertribal Deaf Council, and the Department of Blackfeet Studies at Blackfeet Community College are involved in the revitalization of PISL.

Contemporary North American Indian Sign Language Studies

Davis and Supalla (1995) studied signed language in a contemporary Native American Indian linguistic community. For a period of two years (June, 1990–May, 1992) these researchers documented the signed language used in a Navajo (Diné) community with several deaf family members (i.e., six out of eleven siblings were deaf or hard of hearing). In that linguistic community, reminiscent of the historical case on Martha's Vineyard (Groce 1985), both deaf and hearing family members shared signed language. Note, however, that the members of the particular Navajo family having several deaf family members signed more fluently than most members of the larger hearing Navajo community.

Davis and Supalla documented the highly elaborate sign-based communication system that was used by the Navajo family and that was distinct from ASL. Apparently, the sign system used by the family has evolved intergenerationally because of several outstanding historical and sociolinguistic causes. The first of these influences was a reported history of sign communication in the larger hearing Navajo community (similar to the types evident in other North American indigenous communities). Second, the hearing Navajo parents of this family signed what was called "the Navajo way." Furthermore, a thirty-year age span separated the oldest deaf sibling and the youngest deaf sibling. Three younger sisters (two deaf and one hard of hearing) and a male cousin, who is also deaf, were educated at the Arizona School for the Deaf and Blind (ASDB) in Tucson. The three older deaf siblings, having never attended school, apparently never learned ASL. Although the younger deaf siblings and cousin were fluent in ASL, they continued to use what was called "the Navajo way" or "the family sign" with their deaf and hearing relatives living on the reservation.

The male cousin served as the primary consultant for the study.[6] He was fluent in the variety of signed language used by the family, fluent in the signed communication used within the larger hearing Navajo community, natively proficient in ASL, and able to communicate in written English. He met with the researchers before and after each site visit and served as an interpreter. Ethnographic procedures were followed to enhance rapport, naturalness, and authenticity of the data collected. Approximately twenty hours of videotaped signed language data were documented for this family. The researchers described the nature of linguistic interaction (e.g., language functions and domains of use) between the deaf and hear-

ing participants in this rarified situation. Davis and Supalla observed that both deaf and hearing family members maintained and recognized linguistic boundaries between these different varieties of signing.

The primary deaf Navajo consultant, hearing family members, and other deaf and hearing Navajo individuals described the different "ways of signing" used in the larger Navajo community. ASL was referred to as "English sign" or "the Anglo way of signing." The family sign system, which they called "our signs" or "family sign," was considered distinct from ASL. The signed language used by the larger Navajo community was called "the hearing Navajo way of signing," "signing the Navajo way," "Navajo Sign," and "Indian sign." The hearing Navajo way of signing was viewed as being related to their family signed language (i.e., shared lexicon), but distinct in other ways. When asked what makes the family sign different, the Navajo sources reported that the family sign is less transparent and environmentally dependent and is signed much faster than the hearing Navajo way of signing. Davis and Supalla observed that the following practices in both deaf and hearing Navajo family members:

- Consistently used the family sign system with one another (i.e., no observed use of ASL among the family members)
- Participated in signed conversations that spanned a range of topics and settings, past and present time periods, and conversations about daily routines (e.g., rug making and sheep herding)
- Interpreted between spoken Navajo, English, ASL, and the family sign system (depending on the hearing status and sociolinguistic background of the participant)
- Used name signs to identify each family member (present or absent)

Significantly, the so-called family sign appeared to be much more complex with linguistic features that are typically absent for various other home sign systems.

According to Frishberg (1987), home sign systems do share some features with natural languages (e.g., individual signs are segmentable, can be assigned to semantic categories, etc.). However, they also have specific characteristics that distinguish them from conventional signed languages. For example, signing space for home sign is larger; signs and sign sequences tend to be repeated; the number of distinct handshapes are fewer; eye gaze functions differently; signs are produced more slowly,

awkwardly, and less fluently; and home sign systems are more environmentally dependent (e.g., requiring the signer to point to a color or object in the environment rather than make a sign for them). In contrast to the above features described for home sign, Davis and Supalla (1995) found that the Navajo family sign system had the following characteristics:

- More multilayered and complex than what is typically described for home sign (e.g., rich use of head and face nonmanual markers and classifier forms)
- Highly elaborated and conventionalized (e.g., a consistent meaning-symbol relationship for signs, including cultural concepts such as herding sheep, weaving, and performing Indian dancing)
- Developed in a historical context where signing has reportedly been used by some hearing members of the larger Navajo spoken language community (even when no deaf individuals were present)
- Used in this family cross-generationally for at least fifty years
- Signed with minimal ASL borrowing and codeswitching
- Distinct from ASL and spoken Navajo (i.e., languages kept separate by family members, depending on the language background of interlocutors)

Overall, Davis and Supalla (1995) observed minimal lexical borrowing from ASL (e.g., some ASL signs were used for family relations, food signs, and color terms, and ASL fingerspelling was used in token ways to convey some proper nouns). In contrast, home sign is usually not maintained cross-generationally and is typically replaced by the conventional sign language of the Deaf community. Davis and Supalla suggested that these combined sociolinguistic factors lead to a full-fledged (or at least emergent) language that is distinct from other types of signed communication (e.g., signs or gestures that accompany speech; home-based signing).

Davis and Supalla (1995) proposed a "Taxonomy of Signed Communication Systems" that was based on work with the Navajo family and on accounts from other aboriginal and indigenous signed language studies (e.g., Kendon 1988; Washabaugh 1986a, 1986b). In this taxonomy, they described the following types of visual-gestural communication:

- *Primary signed languages* that have evolved within specific historical, social, and cultural contexts and that have been used across

generations of signers (e.g., ASL, French Sign Language, Danish Sign Language, etc.)
- *Alternate sign systems* developed and used by individuals who are already competent in spoken language (e.g., the highly elaborated and complex sign system used historically by the Plains Indians of North America)
- *Home sign systems* that are gestural communication systems developed when deaf individuals are isolated from other deaf people and need to communicate with other hearing people around them
- *Gestures* that accompany spoken language discourse

Naturally, these distinctions are not that cut and dried, and the different types of signed communications are interrelated. Although these categories are useful descriptively, Davis and Supalla noted overlap between the categories. For example, the family's home sign system was informed by the alternate signs used by some in the hearing Navajo community. Thus, the way of signing used by this Navajo family emerged as a primary signed language. Along similar lines, McKay-Cody's (1997, 10–11) study supported that the "alternate sign systems" used by hearing Indians became a "primary signed language" when acquired natively by Indians who are deaf. The linguistic evidence also suggests that alternate signs are used to varying degrees of proficiency, ranging from (a) signs that accompany speech to (b) signs that are used without speech to (c) sign use that functions similarly to primary signed language. Like other cases of sociolinguistic variation, these ways of signing are best considered along a continuum.

The National Archives

In 1993, Samuel Supalla and I received a small grant from the Laurent Clerc Cultural Fund from Gallaudet University Alumni Association to collect and organize film and literature on Native American Sign Language in North America. I traveled to Washington, D.C., and the day I was scheduled to do research at the National Archives, a snowstorm of unforecasted proportions descended on the city. The transit system was paralyzed for several hours, but finding safe refuge in the National Archives, I remained longer than expected. While waiting for the blizzard to subside, I met some researchers working on Ken Burns's upcoming

PBS special about the history of American baseball. When I shared my research agenda about Indian Sign Language, the researchers directed me to an area of the archives where there were numerous old films documenting Indian Sign Language.

Because Washington, D.C., was at a standstill, the National Archives remained open beyond the usual hours. Taking advantage of this opportunity, the archivists assisted me in making VHS copies of these old films to bring back to the signed language research lab at the University of Arizona. Since that time, I have shared these films with others who have also studied them periodically. However, a full-scale linguistic study of the phonology, morphology, and syntax of PISL is still forthcoming. A preliminary linguistic analysis of some of the data contained in these films and of the historical documents uncovered during the initial PISL project were the focus of an outstanding master's thesis completed by Melanie McKay-Cody (1997) at the University of Arizona. McKay-Cody compared a traditional narrative about buffalo hunting signed by one of the hearing Indian chiefs from the 1930s film with a similar narrative signed by a contemporary deaf Indian who was a native PISL user.[7] This study distinguished two major categories of signed language used by Indians: (1) as an alternative to spoken language by hearing tribal members; and (2) as a primary language (first language) for deaf tribal members (McKay-Cody 1997, 10). This finding was consistent with the patterns identified earlier by Davis and Supalla, and McKay-Cody observed that when signers who are deaf learn the signed language used by the larger hearing native community they "seem to gain a higher level of proficiency" than the hearing Indian signers (50). These findings suggest that alternate signed language used by hearing Indians become linguistically enriched when learned as a primary language by members of Indian communities who are deaf. McKay-Cody concluded that PISL was a full-fledged language.

McKay-Cody's study also demonstrated that the narrative structures and morphological complexities of historical and contemporary PISL are comparable with those found in ASL. For example, the sign types, marked and unmarked handshapes, and symmetry and dominance conditions described for ASL by Battison (1978/2003) are evident in the PISL lexicon, and the classifier form described for ASL by Ted Supalla (1978) are also clearly evident in the PISL data corpus. Remarkably, more than two-thirds of the signs used by the primary PISL deaf signer in his version of the buffalo hunting story were identical or similar (i.e., different

in only one parameter, or signed with one hand instead of two) to the signs documented in the historical PISL lexicon. Though based on only the analysis of one signed narrative, these results were nonetheless significant. McKay-Cody's primary consultant learned PISL as a young deaf child on the Northern Cheyenne Reservation, and his Cheyenne ancestors were reported to be among the historical progenitors of traditional PISL.

Considering historical linguistic change, regional variation, and intensive language issues, the similarities that are evident between contemporary and historical PISL are striking. The fact that PISL has survived and continues to be used is remarkable, especially considering the pressures for linguistic and cultural assimilation that have been historically imposed on indigenous peoples. Further linguistic comparison, documentation, and description of historical and contemporary PISL use among deaf and hearing Indians are needed. Even more critical is the need for language maintenance and education because PISL is an endangered language. Unfortunately, programs to support the maintenance of the historical PISL variety and to educate users have been lacking. See Crystal (2000) for more information about the extreme urgency for language stabilization and maintenance.

The Historical Linguistic Database

The signs used by American Indians have been documented for a variety of purposes since the early 1800s,and I have identified over 8,000 lexical descriptions, illustrations, photographs, and films documented in archived sources that span three centuries (see table 1). Great care must be taken in classifying, preserving, analyzing, and describing these historical linguistic data documenting the Indians use of signs. Certainly, given the wide geographic expanse of the North American continent and the linguistic and cultural diversity that was evident, more than one native sign variety is represented in these historical linguistic documents. Describing, illustrating, and deciphering signs accurately is a challenge. Consequently, duplicate entries between dictionaries and instances of overlap (wherein the same sign is labeled differently) may have occurred, and some of the descriptions and illustrations may be erroneous.

Fortunately, a substantial amount of PISL has been filmed (historically and contemporarily), thus making possible further comparisons between the written, illustrated, and filmed historical linguistic documents. The sheer magnitude of these data, however, point to the need to establish an

open-source database to provide access for others to study, teach, and research PISL and other Native American sign varieties. A history of language contact between North American Indian and Deaf American communities warrants further consideration, however, before any discussion about the content of the filmed documentation is presented here.

Historical Sign Language Studies

The first known description of Indian sign vocabulary was published in 1823 (Long 1823) after the Stephen Long expedition undertaken in 1820.[8] That account preceded by one hundred years the first published dictionary for the sign language used by Deaf Americans (J. S. Long 1918). In 1848, the first known article to be published by Thomas H. Gallaudet was an essay titled "On the Natural Language of Signs: And Its Value and Uses in the Instruction of the Deaf and Dumb." The first part of his essay appeared in the inaugural publication of *American Annals of the Deaf* (1848a) and the second part in the following issue (1848b). The essay was written following early nineteenth-century conventions that are archaic and patronizing by today's standards. Nonetheless, T. H. Gallaudet used the "Indian Language of Signs" to make a case for the value of "the natural language of signs" for teaching and communicating with deaf people.

In the published essay, Gallaudet did not propose that the Indian Language of Signs be used as the language of instruction, but that "The Natural Language of Signs" was the best method of instruction (1848a). In the second part of the essay (1848b), he proposed that the "originators of this language" are the deaf people themselves (93). Gallaudet discussed the "universality" of what he called the "the natural language of signs." His main point about "universality" was that signed language "naturally" occurs "when necessity exists" and "prompts the invention and use of this language of signs" (1848a, 59). As evidence, Gallaudet used examples from the Indian Language of Signs and included the detailed descriptions of signs used by the "aboriginal Indians" that he had taken in part from "Expedition from Pittsburgh to the Rocky Mountains," an account of the expedition led by Major Stephen H. Long that includes descriptions of a total of 104 "Indian signs" (Long 1823, 378–94).

The historical proximity of the first American deaf school having been established in 1817 and the fact that Gallaudet considered the sign language of the Indians significant enough to make that the central focus of

his article in the inaugural edition of the *American Annals of the Deaf and Dumb,* makes its possible introduction to deaf students an intriguing question. However, the historic publications that are considered here do not exactly support this notion. For example, in 1848, Gallaudet wrote the following:

> Major Long's work contains an accurate description of many of these signs, and it is surprising to notice how not a few of them are almost identically the same with those which the deaf and dumb employ to describe the same things, while others have such general features of resemblance as to show that they originate from elements of this sign-language which nature furnishes to man wherever he is found, whether barbarous or civilized. (1848a, 59)

To support the hypothesis that signed language was a naturally occurring human phenomenon, Gallaudet (1848a) had selected eight examples from the previously published list of 104 Indian signs and descriptions (Long 1823). Specifically, he selected examples that he found were signed the same way by deaf people and by Indians. After the death of T. H. Gallaudet, the complete list of 104 Indian signs (Long 1823) was published as the "Indian Language of Signs" in the *American Annals of the Deaf and Dumb* (Gallaudet 1852) and included this note from the editor: "The points of resemblance between these signs and those in use among the educated deaf and dumb are numerous and striking" (157). The entire published list of the original 104 Indian sign descriptions (compare Long 1823) is too long to include here; however, the eight Indian sign descriptions from Gallaudet's 1848 article are presented in appendix A.

Other Historical Connections

It was not until 1918 that J. Schuyler Long (long-time principal at the Iowa School for the Deaf) published the first illustrated dictionary, *The Sign Language: A Manual of Signs,* which he described as "Being a descriptive vocabulary of signs used by the deaf of the United States and Canada" (Long 1918,). That statement [I mean the dictionary, not the statement] came almost one hundred years after S. H. Long's 1823 published descriptions of the "Indian Language of Signs." It should be noted that J. Schuyler Long corresponded with the both Garrick Mallery and Hugh Scott, the two preeminent scholars of Indian Sign Language of the time. Additional research is needed to learn more about these collaborations and

the historical relationships between the historical varieties of Indian Sign Language and ASL. Furthermore, linguistic comparisons must take into account iconicity, historical change, and variation.

Thus, the historical linguistic evidence in these earliest published accounts raises numerous questions such as the following:

- Did Gallaudet pick the eight signs from the 104 Indian signs as the most salient examples of how the Indians and deaf people signed the same (in an attempt to prove his claim about the universality of natural sign language)?
- Were Indian signs ever used to teach deaf students attending schools for the deaf (something not explicitly stated by Gallaudet in the 1848 *American Annals of the Deaf and Dumb* essay)?
- What about contact between the earliest European immigrants who were deaf and American Indians?
- What contact did deaf students attending the first American schools for the deaf have with American Indians who signed?
- Are there documented cases of American Indian children who were deaf attending schools for the deaf?
- Given the propensity for American Indians to use sign and the fact that Indians were reportedly inhabitants of Martha's Vineyard at the time of the first wave of European immigration (Groce 1985), what connection might there be between these historical facts and the subsequent emergence of a Martha's Vineyard sign language variety?

These questions are beyond the scope of the present study to address but are offered here for others to consider as possible topics for further investigation.

For this paper, I conducted a preliminary analysis of this 1823 published list of 104 Indian signs and compared them with subsequent sign descriptions contained in the historical PISL database. First, I compared the descriptions from the early 1800s with those made in the late 1800s and early 1900s (i.e., documented ethnographic accounts that spanned a one-hundred-year period). Then I compared the nineteenth and early twentieth century descriptions with 150 examples of Indian signs that were contemporarily signed and videotaped by Martin Weatherwax (2002), chair of Blackfeet Studies at Blackfeet Community College in Browning, Montana. Professor Weatherwax reported that he learned Indian Sign Language natively from his Blackfoot grandfather. Thus, the

preliminary historical linguistic comparisons reported here span three centuries (i.e., from the very early 1800s until the 2000s).

Conservatively, I have estimated that at least 75 percent of the signs from the 1823 descriptions were identical or similar (i.e., differing in only a single parameter — handshape, movement, location, orientation) to the Indian signs that have been documented for subsequent generations. Although these results are preliminary and should be interpreted carefully, one must also consider the overwhelming historical linguistic evidence for there having been an intertribal and intergenerational signed lingua franca. The 1930s films produced by Hugh Scott remain the richest source of historical NASIL and provide the strongest evidence for a historical signed lingua franca.

THE 1930s FILM PRESERVATION PROJECT

Unfortunately, by the 1900s, the use of Indian Sign Language was greatly diminished and appeared endangered. Recognizing the endangered status of Indian Sign Language, in 1930, Hugh Scott proposed a motion picture preservation project that was funded and completed by an Act of the U.S. Congress.[9] This effort resulted in The Indian Sign Language Conference that was filmed September 4–6, 1930, in Browning, Montana. This event was the largest intertribal meeting of Indian chiefs, elders, medicine men, and other representatives ever filmed. There were eighteen official participants, including representatives from a dozen different tribes and language groups from the Plains, Plateau, and Basin cultural areas. A permanent monument to the Indian Sign Language Council signifying the importance of this gathering was established at the conference site, and each of the council members had their footprints placed in bronze as a part of the monument. Subsequently, the Museum of the Plains Indian was constructed on this site.

Council Participants and Tribal Affiliations

The original 1930 films documented that Indian Sign Language, without the accompaniment of speech, was the modus operandi for the conference. Following the opening signed remarks by General Scott, each representative signed their name, tribal affiliation, and introductory comments. The order of signed introductions was as follows: Dick Washakie,

Shoshone; Short Face, Piegan; Bitter Root Jim, Flathead; Night Shoots, Piegan; Drags Wolf, Hidasta; Deer Nose, Crow; James Eagle, Arikara; Foolish Woman, Mandan; Strange Owl, Cheyenne; Bird Rattler, Blood; Mountain Chief, Chief of the Piegans; Assiniboine Boy, Upper Gros Venture; Tom Whitehorse, Arapaho; Rides Black Horse, Assiniboine; Little Plum, Piegan; Fine Young Man, Sarcee; Big Plume, Sarcee; and General Scott, Anglo-American.

Notably, dozens of different spoken languages were represented among the participants. Thus, the so-called signed lingua franca was used by the participants, who were the chiefs and elders representing the various tribes. Because the location for the Indian Sign Language Council was in close proximity to the Blackfeet Reservation, several of the participants were from the Blackfeet nation (from both Piegan and Blood lineages). A few woman and children were filmed entering the council lodge, but they were never formally introduced or shown signing. Two Blackfeet participants did not appear on the film. They were Jim White Calf, and Richard Sanderville.

Discourse Types

During the three-day Indian Sign Language Conference (September 4–6, 1930), the participants discussed a variety of topics and shared several anecdotes, stories, and discourse genres, all of which were documented in these films. In particular, the films included signed stories, titled "Sagas in Signs," which are summarized as follows:

- Introductions, signed names, signs for the twelve tribes (six minutes)
- Mountain Chief's Buffalo Signed Chant (two minutes) — The Piegan Chief tells a traditional buffalo hunting story. In the digitized copies of the films, it is possible to see much greater detail than it was previously with the old analog videotapes. It is clear in the film and from Scott's voiced translation that Mountain Chief is singing the Medicine Man chants in accompaniment with signing. In other words he is singing and signing simultaneously. Speech with sign accompaniment has been observed by others (e.g., Farnell 1995) but apparently, this practice was not a common occurrence in these films (there was only one example of a story told in sign with speech accompaniment, and that is noted below).
- Tom Whitehorse's Metaphorical Comparison (thirty seconds) — This Arapaho signer gives a metaphorical comparison of the radio (which he calls White Man's Medicine) and the ability to com-

municate in dreams (Red Man's Medicine). Part of the translation offered by Scott is "Thus the White Man, with his Mechanical Medicine, is also able to hear that which he cannot see."[10]

- Strange Owl's Anecdote (Cheyenne, forty-five seconds) — A story about how Strange Owl, when about fifteen years old, went hunting with his brother, and almost lost his life capturing a buffalo calf (speech with sign accompaniment was evident for this story).
- Bitter Root Jim's Bear Story (Flathead, five minutes and twenty-four seconds) — This narrative was the longest signed story filmed during the conference, and it was reportedly a "classic and renowned story." The translation of the story provided by Scott seems far-fetched. However, Martin Weatherwax, chair of Blackfeet Studies at Blackfeet Community College in Browning, Montana, told me that this narrative is a medicine story and should not be taken literally (Martin Weatherwax, personal communication, June 9, 2002).
- Intertribal Jokes in Sign Language (approximately two minutes) — This section of the film is titled "The formal features of the council over, the visitors relax." Here we see all of the participants engaged in lively signed language discourse.
- In outdated argot, the subsequent sections of the film are titled "Inter-tribal by-play," "Jokes and Wisecracks in Signs," and "The hoary conceit that the Indian does not laugh is left with not a leg to stand on."
- Closing Remarks in Sign Language (forty seconds)

These films show the participants engaged in natural and unrehearsed signed language discourse. For example, during these signed interactions, the interlocutors are frequently and consistently observed using a sign that appears to function as a discourse marker. This Indian sign was documented as early as 1823 and is translated as "Yes" or "It is so." The spontaneity and variety of discourse types captured in these films provide the most remarkable evidence that the Indians used a full-fledged natural signed language (see also figure 1).

Further Historical Considerations

Hugh Scott was seventy-eight years old at the time of the conference and reportedly had been signing for more than fifty years. Though apparently fluent, his having lost several fingers because of frost bite in his younger

days made it difficult to follow some of his signs. His proficiency, however, was evident in that he provided voice-over translation for all of the proceedings in 1931, which were professionally dubbed into the film during the subsequent production stages. No documentation has been uncovered showing that interpreters were used to assist in the translation process. Of course, the use of interpreters remains a possibility because one of the principle participants was Richard Sanderville (a Blackfeet tribal leader) who was reportedly present but who never appears in the 1930 films from the Council (suggesting that he was working behind the scenes and possibly helping with the translation).

Some participants at the Council were probably not fluent in PISL (e.g., the governor of Montana, and a congressman). Their presence suggests that an interpreter would have been needed, and Sanderville would have been a probable candidate. For example, he subsequently traveled to the Smithsonian in Washington, D.C., to complete the Indian Sign Language film dictionary project started by Scott before his death. Scott's contribution — a staggering 358 proper noun signs for tribes and geographic locations — were included with the 1930 films. While working in the National Archives in 2002, I finally came across Sanderville's contribution to Scott's "dictionary" that was filmed at the Smithsonian in the early 1930s. Unfortunately, the only preservation copies available were either poorly processed or produced in an outmoded format. After two years of painstaking analysis to decipher what remains of Sanderville's contribution, the results are more than 200 PISL signs and idioms signifying a variety of lexical categories (including abstract nouns, classifier predicates, and noun and verb modifiers). Thus, Sanderville's contributions represent a type of "Rosetta Stone." That is, the lexical inventories documented in these films combined with the basic voice-over translations provided by Scott in 1931 are the keys to translating what the original participants at the Council were signing.

The oldest participants on the film also appeared to be the most proficient in sign language. For example, Mountain Chief was reportedly eighty-two years old at the time, and Bitter Root Jim appeared to be in the same age range. The ages of the other participants were not reported, but the youngest participants appeared to be in their forties, with several of the others approaching their sixties and seventies. Age is significant because the older participants probably learned to sign in the mid-1800s, that is, before the decline of many Indian traditional ways that occurred in the late 1800s after the Civil War, brought on by the construction of

the first cross-continental railroad and the rapid Western expansion by Anglo-Americans. This decline is reflected in one of the statements signed by Scott during the opening remarks: "The young men are not learning your sign language and soon it will disappear from this country. It is for us to make a record of it for those who come after us, before it becomes lost forever." Furthermore, Indian Schools were established during the post–Civil War reconstruction era, and it became commonplace for Indian children to be taken away from their families and placed in these residential schools. Native languages and cultural customs were forbidden in these schools, and the only language allowed was English. Certainly, such pressures affected the acquisition of PISL among subsequent generations.

DISCUSSION

The films produced from the 1930 Indian Sign Language Council have been preserved in the vaults of the National Archives. However, they are not easily accessible, except for researchers who know exactly what to look for. Preservation copies are not circulated, and the copies made available to researchers are second or third generation VHS analog format. The National Archives provides a list of private vendors who are authorized to digitize the preservation copies. In 2002, I obtained a small grant to have the original preservation copies of the 1930 films professionally digitized. The digitized copies of the original 8 mm films are extremely high quality, especially compared with the old analog copies.

The National Archives has preserved one dozen 8 mm films produced during the three-day Indian Sign Language Conference in Browning, Montana (September 4–6, 1930). The pristine condition of these films, the number of participants from a variety of backgrounds (linguistic and geographic), and the different types of discourse that were recorded provide an excellent source for PISL documentation and description. For this study, I have digitized many of the historical films described in this paper, and my goal is to have these digitized copies placed into an open-source PISL database so others can study these signed language varieties. While efforts are currently underway to establish an open-source database, some sample video clips of historical PISL use can be viewed on-line at this Web site http://sunsite.utk.edu/plainssignlanguage/.

In this paper, I have presented some of the results of preliminary historical sociolinguistic research of PISL, and I have found phonological,

morphological, and syntactic patterns that are consistent with those evident for full-fledged conventional signed languages. For example, some of the phonological and morphological constraints in ASL described by Battison (1978/2003) — passive and dominant handshapes; marked and unmarked handshapes; symmetry and dominance conditions — were originally proposed for Indian Sign Language (compare Kroeber 1958; Voegelin 1958; West 1960). No phonological inventory or analysis of NAISL syntax has been completed since West's (1960) phonological analysis of PISL. Again, this type of effort represents a massive undertaking.

The present paper takes into account some of the historical and contemporary sociolinguistic contexts and describes some of the types of discourse that have been documented for PISL. This discourse includes hearing Indians using signed language for a variety of discourse functions such as making introductions, storytelling, making jokes, chanting, and naming practices. When viewed by native ASL signers, for example, they are astonished that these signers were hearing people (note that not one deaf person was reported present at the 1930 council gathering).

Richard Sanderville, Scott's chief collaborator and interpreter from the Blackfoot Nation returned to the Smithsonian Institution in 1934 (following Scott's death) and posed for 790 signs and signed narratives. The scope and discourse coherence of the signed narratives in the 1930 and 1934 films provides evidence of the use of a language, not a collection of gestures. The following sample translation is of a common joke signed by Richard Sanderville was filmed in 1934. Sanderville provided the following written translation for the signed narrative.

> A man asks a Chief's daughter: "Will you marry me?" She says: "No you're a poor man." The man is sad and goes to war. He steals ten horses and two guns. Man returns after ten days. He asks woman: "Will you marry me?" She says: "Yes!" He says: "No!!" You love my horses, you love me not.

Additional translations of the narratives filmed during the 1930 council gathering and those of Richard Sanderville produced at the Smithsonian Institution in 1934 are currently underway. Restoration of the historical films in digitized formats with open captions will allow others to have access to the contact being conveyed. The leap to the pragmatic level is not intended to bypass the need for more comprehensive and current phonological or morphological descriptions. At this time, the variety of sociolinguistic contexts, participants and discourse types that are evident in

these data, suggests that PISL was (and still remains) a full-fledged signed language. Many questions remain and much more linguistic research, documentation, and description are needed.

SOME ADDITIONAL QUESTIONS

Several additional research questions and linguistic issues are beyond the scope of the present study to address but are nevertheless important. Some of these are offered here for others to consider as possible research topics:

- Do the documented cases of PISL constitute one language variety or a variety of distinct languages?
- What happens when a child is born deaf into a community where there is historical or current use of signed communication by hearing individuals in the linguistic community? How do these instances compare with what happened historically on Martha's Vineyard?
- In what ways were the documented cases of signed language among indigenous populations in North American interrelated?
- What shared linguistic patterns and cognates do we find between these signed language varieties — between and within different groups of American Indian signers (deaf and hearing signers; families who speak and sign; groups differing by region, age, and gender)?
- How does current PISL use differ from its historical antecedents?
- What are the best ways to maintain and preserve these endangered signed language varieties?

CONCLUSION

There remains a linguistic and ethnographic legacy of diaries, books, articles, illustrations, dictionaries, and motion pictures documenting the varieties of signed language historically used among native populations of North America. These documents not only represent a vital part of American Indian cultures and heritages but also are a national treasure and source for invaluable historical linguistic information. Unfortunately, most people are not aware of this part of North American history. Even members of the scientific and academic communities, as well as many in

the linguistic communities where these signed languages once flourished, are generally not cognizant that there once flourished a signed lingua franca and that these language varieties are currently endangered.

For example, I recently visited the National Museum of the American Indian in Washington, D.C., accompanied by a Ph.D. candidate in linguistics who is deaf and another graduate student in linguistics who is of Native American descent. We were inspired by the enormity of the building and quality of the collections. While enjoying all of the exhibits, we diligently searched for examples of the traditional signed language among the exhibits. We talked with various museum workers and curators who tried to help us, only to discover that there was no display of signed language that once had been so widespread and that is a major historical and linguistic part of American Indian culture. Sadly, even if these films were placed on exhibit, without accurate translations and open captions, the content would be incomprehensible to all but the few native PISL signers who remain. It was encouraging at least, to learn from one of my colleagues that a medicine man from the Northern Cheyenne nation, who also happens to be deaf and a native user of PISL, participated in the opening ceremonies for the National Museum of the American Indian.

Historically, with some exceptions, researchers of indigenous signed language were not fluent signers and were working from theoretical orientations and bases that were different from what we have available today. Fortunately, in the past few years, state of the art methods and techniques have emerged to assist the documentation and transcription processes for signed languages (see, e.g., Supalla 2001).

Finally, given new discoveries about PISL (both historical and current), we are better able to translate what the signers on these films were signing. Since the early studies were conducted, others have made new contributions in linguistic theory and ethnographic field practice. Interdisciplinary approaches informed by linguistic theory have brought new insights into the multiple dimensions of human language and cognition. Further PISL research as well as insights from native signers and linguistic researchers with native signed language proficiency can help broaden our understanding of these and other related linguistic phenomena.

NOTES

1. Many terms are commonly used to label the descendants of the first Americans — *Indian, American Indian,* and *Native American* — but the first

two are preferred by most members of these cultural groups (e.g., the National Museum of the American Indian in Washington, D.C.). In this article, these terms are used interchangeably depending on the historical context and source being cited. The term *North American Indian* is sometimes necessary to distinguish the indigenous peoples who inhabited the North American continent from those who inhabited Central and South America.

2. The historical linguistic documents that are the focus of the present study are based on North American fieldwork. Wurtzburg and Campbell (1995), among others, use *North American Indian Sign Language* to distinguish these sign varieties from those used by Central or South American indigenous populations. Historically, the most widely used signed language and the best documented was Plains Sign Language (PISL); however, earlier scholars alternately referred to this as Indian Sign Language (Clark 1885; Mallery 1880; Scott 1931). Some members of the Plains cultural groups referred to sign language as "hand talk" (Davis, 2005; Tomkins, 1926). Depending on the historical reference and cultural context, the uses of these different terms are included in the present paper. In cases where a specific or distinct signed language variety is known — such as Navajo or Keresan Pueblo sign varieties — those are referenced. Further research is needed to determine the number of distinct signed languages and dialects involved.

3. Waldman (2000, 32–33) explains that the modern cultural areas "are not finite and absolute boundaries, but simply helpful educational devices" and "that tribal territories were often vague and changing, with great movement among the tribes and the passing of cultural traits from one area to the next; and that people of the same language family sometimes lived in different cultural areas, even in some instances at opposite ends of the continent."

4. In this paper, uppercase Deaf refers to the larger cultural group or community; lowercase deaf refers to individuals who have a hearing loss regardless of cultural identity.

5. Wurtzburg and Campbell (1995, 155) cite that "Cabeza de Vaca's story was published in a 1542 edition (called *La Relación*) and in a 1555 second edition (entitled *Naufragios*), essentially the same as the earlier one with but minor differences."

6. In the Navajo matrilineal society (compare Witherspoon 1975) it was significant that the male cousin was on the mother's side. According to Navajo kinship terms, he was called a "brother-cousin."

7. The primary signer who was Deaf did not see the alternate signer's narrative before telling his version of the traditional buffalo hunting story. Furthermore, McKay-Cody reported that the primary signer did not use ASL signs in his rendition.

8. Long's 1820 expedition was the next official expedition after Lewis and Clark's initial expedition. Perhaps because of the extreme conditions encountered during that first expedition, there was a dearth of written documentation and no

documentation of Indian sign language uncovered. In contrast, Long's expedition was well documented, and he lived to an old age and lectured frequently about his expedition.

9. Hugh L. Scott had considerable political clout and diligently led the Indian Sign Language preservation effort until his death in 1934. He attended Princeton University, and graduated from West Point in 1876. He began his military career as a lieutenant in the U.S. Calvary, was promoted to major general in 1915, and served as secretary of war on Woodrow Wilson's cabinet. He was responsible for the passage of the Selective Service Act and the appointment of General Pershing as commander in chief. Even after he had officially retired from military and civil service, Scott remained extremely active as a member of the Board of Indian Commissioners and as chairman of the New Jersey Highway Commission, and he spent the remainder of his life studying, lecturing, and writing about Indian Sign Language. He received honorary doctorate degrees from both Princeton and Columbia Universities. In testimony to the respect held for him by tribal leaders, he was made an honorary member of various Indian tribes. Scott worked with the Indians for more than fifty years and was known as "Mole-I-Gu-Op," signifying "one who talks with his hands." Scott was a member of numerous learned societies including the American Philosophical Society and American Anthropological Association.

10. According to the National Multicultural Interpreting Curriculum (Mooney, Aramburo, Davis, Dunbar, Roth, and Nishimura, 2001, 27), "medicine is an array of spiritual practices, ideas, and concepts rather than only remedies and treatments as in *western medicine*" (emphasis in the original). Furthermore, "medicine men and women are viewed as the spiritual healers and leaders of the community. They have the role not only as a *doctor*, but they can be the diviner, rain-maker, prophet, priest, or chief" (27, emphasis in the original). Medicine is anything that brings one closer to the Great Spirit, to the Divine. In this tradition, all space is sacred space. Every place on the planet holds a specific energy connection to some living creature and is to be honored for that reason.

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APPENDIX A

This appendix presents Indian sign descriptions that Gallaudet included in his first published essay titled "On the Natural Language of Signs: And

Its Value and Uses in the Instruction of the Deaf and Dumb" (1848a, 55–60).

> To show how nature, when necessity exists, prompts to the invention and use of this language of signs, and to exhibit from another interesting point of view the features of its universality, a fact is worth mentioning, to be found in Major Stephen H. Long's account of an Expedition from Pittsburgh to the Rocky Mountains, in 1819. It seems, from what he tells us, that the aboriginal Indians, west of the Mississippi, consist of different tribes, having either different languages or dialects of the same language. Some are unable to communicate with others by speech; while they have fallen into a language of signs to remedy this inconvenience, which has been long used among them.

Major Long's work contains an accurate description of many of these signs, and it is surprising to notice how not a few of them are almost identically the same with those which the deaf and dumb employ to describe the same things, while others have such general features of resemblance as to show that they originate from elements of this sign-language which nature furnishes to man wherever he is found, whether barbarous or civilized. Such are the following:

Sun — The forefinger and thumb are brought together at tip, so as to form a circle, and held upwards towards the sun's track. To indicate any particular time of the day, the hand with the sign of the sun is stretched out towards the east horizon, and then gradually elevated, to show the ascent of that luminary, until the hand arrives in the proper direction to indicate the part of the heavens in which the sun will be at the given time.

Moon — The thumb and finger open are elevated towards the right ear. This last sign is generally preceded by the sign of the night or darkness.

Seeing — The forefinger, in the attitude of pointing, is passed from the eye towards the real or imaginary object.

Theft — The left forearm is held horizontally, a little forward of across the body, and the right hand, passing under it with a quick motion, seems to grasp something, and is suddenly withdrawn.

Truth — The forefinger is passed, in the attitude of pointing, from the mouth forward in a line curving a little upward, the thumb and other fingers being completely closed.

Love — The clenched hand is pressed hard upon the breast.

Now, or at present — The two hands, forming each a hollow, are brought near each other, and put in a tremulous motion upwards and downwards.

Done, or finished — The hands are placed, edge up and down, parallel to each other, the right hand without; which latter is drawn back as if cutting something.

[To Be Continued.]

The above descriptions as they appear here in this excerpt were taken out of order from the original list of descriptions first published by Long (1823). It was not until 1852 that the *American Annals of the Deaf and Dumb* editors published the "Indian Language of Signs" (Gallaudet 1852) that included the entire list of 104 Indian sign descriptions verbatim and in the same order as Long's original 1823 publication.