Discourse Features of American Indian Sign Language

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Historically, the vast geographic expanse and extreme linguistic and cultural diversity of North America contributed to Native American groups speaking numerous mutually unintelligible languages. In order to mediate this contact and language divide, the Indians often either adopted or developed an intermediary third language, which anthropologists and sociolinguists sometimes call a *lingua franca*. It has been well documented that a highly conventionalized and linguistically enriched signed language emerged and was used in varying degrees across the major cultural areas of native North America—a *signed lingua franca*. This historical linguistic case of an international signed lingua franca involved American Indians representing at least (if not more than) 40 different spoken language groups across 12 major language families, or phyla (Campbell, 2000; Davis, 2005, 2006, 2007, 2010; McKay-Cody, 1997, 1998; Mithun, 2001; Taylor, 1978, 1981, 1997). Based on more than two decades of intensive research on the subject of the North American Indian signed lingua franca, I posit and describe in this chapter that this was an unparalleled historical occurrence of a signed language being used by this number of hearing community members, from different nations, across such a wide geographic expanse.

Although I have written this chapter to focus on American Indian Sign Language (AISL) varieties, it is worth noting that in many of today's intercultural, intercontinental, or international contexts American Sign

Some parts of the material in this chapter draw on material that first appeared in previous publications (Davis 2006, 2007, 2010; Davis & McKay-Cody 2010; Davis & Supalla 1995; although the material has been considerably reworked and recast for this chapter and volume. I alternate between "I" and "our," "me" and "we" when referring to aspects of our NSF-funded fieldwork (Davis, PI; McKay-Cody, co-PI), which involved collaboration with other scholars, linguistic students, and PISL community stakeholders.

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Language (the ASL variety) functions much like a lingua franca. Moreover, the notion of a type of "third-language system" emerging from sign language contact situations is a familiar theme in research literature (e.g., Locker McKee & Davis, 2010; Quinto-Pozos, 2007a). Consider the international scope, status, and spread of ASL varieties across the North American continent. Besides ASL being widely used throughout most of Canada, the contiguous United States, Alaska, Hawaii, and U.S. territories, we find ASL varieties or dialects (based on degree of mutual intelligibility and similarity of linguistic features) commonly used across northern Mexico and in many parts of the Caribbean—including Puerto Rico, Jamaica, and Trinidad and Tobago in the West Indies. I believe that closer historical and sociolinguistic examination of North American signed language varieties will further illuminate language contact phenomena such as language hybrids, lingua francas, and Creoles. Although I find the span and spread of ASL use worth noting, this chapter focuses on North American Indian Sign Language, which is distinct from ASL and involves several sign language dialects and varieties.[1]

INTRODUCTION

In the research literature about sign language, varieties of indigenous signed language used among North America Indian groups are collectively referred to as North American Indian Sign Language (NAISL; cf. Wurtzburg & Campbell, 1995). Though at times broadly categorized this way, it is essential to note that different varieties of indigenous sign language have been identified among American Indian groups (e.g., Inuit-Iñupiaq, Keresan Pueblo, Navajo/Diné, among others). Plains Indian Sign Language (PISL) has been the most well documented and described variety of American Indian signed language.[2] Traditionally, the Indian signed lingua franca served various social and discourse functions within and between numerous American Indian communities of the Great Plains and other cultural groups bordering this area. However, the transmission of the Plains Indian signed lingua franca has dramatically waned from its widespread use in previous times. This is due to various historical and social factors—including its replacement by English and, in some instances, ASL. Today there is an extreme urgency to document, preserve, and revitalize the Plains Indian signed language variety and maintain traditional Indian ways of signing. Melanie McKay-Cody and I have collaborated

for 20 years in efforts to conduct fieldwork among Native American communities who use the traditional Indian sign language (cf. Davis, 2010; Davis & McKay-Cody, 2010).[3] We have been conducting ethnographic fieldwork and historical linguistic and sociolinguistic research in order to illuminate several questions about American Indian signed languages: What is the role and function of indigenous or village signed language? To what extent and in which domains do deaf and hearing members of American Indian communities use sign? What is the etymology of indigenous signed language and how is it transmitted and acquired? What types of lexical borrowing or code switching/code-blending exist between the signed and ambient spoken languages of Native American communities?

Focus of this Chapter

The Plains Indian Sign Language (PISL) variety, which is central to our 2006–2011 fieldwork project and ongoing linguistic research, encompasses several dialects among Plains Indian cultural groups (e.g., the Algonquian and Siouan linguistic families). As its name suggests, PISL was at one time used predominantly among Indian cultural groups of the Great Plains region of North America, spreading across a geographic area of over 1.5 million square miles (4.3 million square kilometers)—an area in size comparable to the European Union's 27 member states combined.[4] However, in modern times there has been a marked decline in the number of American Indians learning the traditional signed lingua franca (PISL), which is now primarily known by hearing elders and American Indians who are deaf.[5] Although PISL (also called *hand-talk* or *sign-talk*) is currently considered an endangered language, we find that it remains resilient and is still being learned and used by dozens of American Indians, and potentially hundreds by some accounts (Marvin Weatherwax [Blackfeet scholar], personal communication, 2010).

In this chapter I concentrate on the best documented historical and contemporary cases, describe the linguistic properties of the PISL variety, and explore the various dialects and discourse functions of what I believe to be a truly "native" *American* sign language. The findings reported here are based on my ethnographic fieldwork and observations from over two decades of combined ethnographic fieldwork—collaborating, interpreting, and participating in North American Indian communities—*and* historical linguistic research of legacy materials. The central focus of my collaborative research (1990–present) has been and still remains documenting, preserving, and studying traditional and contemporary varieties of

indigenous sign language used among North American Indian communities. This chapter addresses several long-standing questions about the linguistic status and sociolinguistic functions of AISL. The first questions I will address are recurring ones: Why is the study of AISL still relevant today? And, what aspects of human language and discourse does the study of AISL potentially illuminate?

Significance of AISL Studies

Prior to my recent historical linguistic studies and current fieldwork, PISL had been generally overlooked and understudied, and it was often considered a primitive, emblematic, or dying language. For many years in the field of sign language studies, it has been widely accepted that ASL developed in part from the sign language used by deaf members of the 17th century American communities, such as Martha's Vineyard, Massachusetts (Groce, 1985). It is also believed that ASL borrowed heavily from European sign languages, for example, Old Kent Sign Language and French Sign Language. The former could have been brought to America by some early British signing immigrants, and the latter was imported for the purpose of educating American deaf children beginning in the early 1800s (Lane, 1984). Although these cases of early language contact are often mentioned in the sign language literature, they are based on a dearth of documentary linguistic evidence. In contrast, the historical contact between early European-American signing communities and American Indian signing communities is sometimes mentioned, but rarely, if ever, described in the sign language literature of recent times. When it is discussed, it is typically glossed over, footnoted, or dismissed altogether as not being relevant to our studies of the sign languages of Deaf communities. I propose that AISL studies contribute to the scholarship of sign language linguistics and sign language/Deaf studies in general. I hope that the historical and contemporary cases reported here will further illuminate the history, mystery, and contemporary use of America's native languages—both signed and spoken. (See Davis [2010] for further descriptions of these historical and contemporary cases, and the author's research website for sample texts and film clips of PISL.)

How My Studies of AISL Began

From June 1990 to May 1992, my colleague Sam Supalla and I conducted extensive ethnographic fieldwork concentrating on one Navajo

(Diné) signing community (reported in volume 1 of this series; Davis & Supalla, 1995). We documented and described a highly elaborate family-based sign system (distinct from ASL) used by this particular Navajo family with several deaf members (six out of eleven siblings were deaf or hard of hearing). The family members signed more fluently than members of the larger hearing Navajo community, who used signed communication only for specific events or occasions.[6] We were astonished that this particular Navajo clan was reminiscent of the well documented historical case of Martha's Vineyard Sign Language—described in Nora Groce's (1985) book *Everyone Here Spoke Sign Language*—which was used by both deaf and hearing community members on the island for more than 200 years (on Martha's Vineyard, Massachusetts).

Evidently, the sign system used by this Navajo family had evolved cross-generationally due to several historical and sociolinguistic factors. First, there was a reported history of sign communication in the larger hearing Navajo community comparable to the types evident in other American Indian groups. Second, the hearing grandparents and parents of this Navajo family, and members of the larger hearing Navajo community, used what was termed "the Navajo way of signing." Moreover, in this particular Navajo family, a 30-year age span separated the oldest deaf sibling and the youngest deaf sibling. Three younger sisters and a male cousin were deaf and attended the state residential school for the deaf. These four younger deaf family members learned the Navajo "family sign" first, before being taught ASL and English at the school for the deaf. The three older deaf siblings never attended school, and did not acquire ASL. Although the younger deaf siblings and cousin were fluent in ASL, they continued to use what was called "the Navajo way of signing" or "the family sign" with their deaf and hearing relatives living on the reservation. In this family, ASL was called "English sign" or "the Anglo way of signing." They also considered the "family signs" distinct from ASL. Some members of the Navajo nation signed and this was described as "the hearing Navajo way of signing," "signing the Navajo way," "Navajo Sign," and "Indian sign." At the same time, the "hearing Navajo way of signing" was viewed as being related to their family signed language (i.e., a shared lexicon), but distinct in other ways—for example, our consultants reported that the family sign was less transparent and environmentally dependent and signed much faster than the hearing Navajo way of signing (Davis & Supalla, 1995). In brief, we concluded that this Navajo "family sign" system was more linguistically enriched than most general

home sign systems—that is, gestural communication systems that develop when deaf individuals are isolated from other deaf people and need to communicate with the hearing people around them.[7]

We also observed that among clan members signing was used to varying degrees of proficiency—ranging from signing with or without speech to signing that functioned similarly to a primary sign language. I posit that the "alternation" between sign-driven discourse with or without speech accompaniment is a form of code-switching or code-mixing (*code-blending* in the current argot). See Davis (2005, 2006, 2007) for more descriptions of these and other outcomes of language contact (e.g., code-switching, mixing, and lexical borrowing).[8]

Types of Signing Communities

Deaf people's strong inclination to develop and acquire sign language can be traced through history and can be seen world-wide. Although the use of sign language is generally associated with individuals who are Deaf, several types of indigenous sign language communities have emerged globally in the past, both recent and distant. In addition to being primary languages in Deaf communities, signed languages have developed in some hearing indigenous communities as an alternative to spoken languages. My studies center on Native American communities—especially where signing is used within the community for a variety of discourse purposes, and when it has existed for more than one generation (cf. Davis, 2010). In addition to its occurrence across North America, signed communication has emerged and been observed among several indigenous groups in other places around the world, such as Asia, Australia, the Middle East, and South America (Johnson, 1994; Kendon, 1988; Marsaja, 2008; Nonaka, 2007, 2009; Nyst, 2007; Umiker-Sebeok & Sebeok, 1978; Zeshan, 2008).

INDIGENOUS OR VILLAGE SIGNED LANGUAGES

The worldwide linguistic phenomenon of indigenous, or "village," sign language has been documented and described within communities that were predominately hearing but had a high incidence of genetic deafness, such as the historical case of Martha's Vineyard Sign Language (Groce, 1985) and the present-day occurrence of Al-Sayyid Bedouin Sign Language (Aronoff, Meir, & Sandler, 2005; Sandler, Meir, Padden, & Aronoff, 2005). In perhaps the most well-documented historical account of signed communication used by both deaf and hearing members of a community, Nora Groce (1985) reports that English-sign bilingualism was prevalent

on Martha's Vineyard (Massachusetts) for over 250 years. Similarly, one of the best documented and described cases today is Al-Sayyid Bedouin Sign Language (ABSL), which is used by about 150 deaf and many hearing members of a Bedouin community in the Negev desert of southern Israel. Preliminarily, Sandler et al. (2005) report that ABSL is uniform within a single family (*family-lects*) and comparable with the features common among home sign systems. Apparently, ABSL has existed for at least three generations (during the past 75 years or so). The linguists studying ABSL report that it spontaneously emerged, and it has developed a lexicon and grammar without influence from any other signed or spoken language (cf. Sandler et al., 2005).

In brief, signed language has traditionally been used among North American Indians as an alternative to spoken language even when deaf people were not present. It also has been learned as a first language by some deaf members of these indigenous communities. In most modern industrialized societies, sign language is used primarily by members of the larger Deaf community; in contrast, in some indigenous communities or villages around the globe, signing is used by both deaf and hearing community members (Davis, 2005). Thus, one striking difference between indigenous or village types of sign language is that the sign languages of most Deaf communities today are acquired and maintained in residential schools for the deaf within what one might call industrialized societies (in contrast to indigenous societies). Around the world today, sign language is acquired and transmitted primarily (and predominantly) by members of the Deaf cultural group. In contrast, in the cases of indigenous signing considered here, sign language is typically acquired by both deaf and hearing members of the community. Still, there have been few studies about the outcomes of signed language acquisition when a deaf child is born into a situation in which sign is used as an alternative to speech by hearing members of the indigenous community (e.g., Davis & Supalla, 1995; Davis & McKay-Cody, 2010; McKay-Cody, 1997; Nonaka, 2007, 2009).

PRIMARY AND ALTERNATE SIGN SYSTEMS

Generally, *alternate signed language* has been described in the research literature as a widespread medium of communication between individuals speaking different languages or as an alternative to spoken language when the use of speech was difficult or taboo. According to Kendon (1988), in contrast to primary sign systems, in alternate systems "space is little exploited for the expression of grammatical relations, the 'layered'

inflectional system is little developed, and the use of so-called 'classifier' forms is not found. Head and face action is scarcely used for the production of lexical signs, and not at all as means of bracketing segments of discourse to display their grammatical status." Thus, the American Indian signed languages central to our studies—ranging from the Navajo clan sign system to the varieties of PISL central to this chapter—are more like primary sign systems (i.e., phonologically, morphologically, and syntactically complex).[9]

To summarize, primary sign systems are developed, acquired, and used by deaf people as a first language, whereas the so-called alternate sign systems are developed, transmitted, and used by hearing individuals already competent in a spoken language. In contrast to primary sign systems that are used across a wide range of functions and domains, in some communities alternate sign systems oftentimes have more restricted functions and limited domains of use—for example, specific occupational settings or at times when speech is difficult or taboo. Despite these distinctions, both primary and alternate sign systems demonstrate important linguistic properties—for example, both are codified, conventionalized, and serve discourse purposes to varying degrees (Davis, 2010; Davis & Supalla, 1995).

ISSUES WITH THE "ALTERNATE SIGN LANGUAGE" LABEL

The main issue with the "alternate" label is that it leads some to assume that there were no native PISL signers or that it is was merely an auxiliary to spoken language. On the contrary, we find that PISL was acquired natively and signed fluently by both deaf and hearing American Indians. Our documentary linguistic fieldwork and the PISL documentary materials offer strong evidence for a history of nativization among PISL signers. Moreover, we would not see PISL being used in this number of linguistic domains, and adhering to linguistic rules, had it not been acquired and transmitted natively. Although some of the most fluent signers were deaf or had deaf family members, hearing Indians also acquired PISL or its antecedents to fulfill a wide variety of discourse functions and purposes—ranging from in-group to international communication (Davis & McKay-Cody, 2010; Davis & Supalla, 1995).

Again, we find the main issue of PISL (Indian's signing) being labeled an alternate signed language/secondary linguistic system is that it glosses over its role as a primary/first language. Perhaps this is due in part to the lack of modern linguistic documentation and description, the percep-

tion that PISL is a dead or dying language, or that its use was limited to communication between individuals speaking different languages. Thus, our PISL documentary project aims to raise awareness about this overlooked and understudied native sign language variety. Although typically dismissed or glossed over in most of the sign language linguistic research literature, the use of the PISL variety has been observed and documented at various levels of social interaction serving major discourse functions both between and within certain native communities, and was acquired natively in the process (Davis, 2005, 2006, 2007; Davis & McKay-Cody, 2010; Taylor, 1978, 1981, 1996).

Goldin-Meadow (2005) writes that "no hearing culture has developed a sign language in preference to a spoken language—despite the fact that sign languages work perfectly well, and that hearing individuals can process language in either modality." The notion of "language preference" in this quote from Goldin-Meadow warrants further consideration—especially given the historical linguistic evidence about the patterns of acquisition and spread, widespread use, and status of PISL as a lingua franca among hearing American Indian communities. Historically, PISL was used among Indian communities that were considered bilingual or multilingual, not unlike many Deaf communities around the world today (Campbell, 2000; Locker McKee & Davis, 2010; Mithun, 2001).

As Goldin-Meadow and other researchers have long observed, deaf children sign readily—as a rule, rather than as an exception. Not surprisingly, PISL has been linguistically enriched and expanded as deaf members of the community acquired it as a primary language. Indeed, we have repeatedly observed that deaf tribal members play a vital role in the development and transmission of PISL (McKay-Cody, 1997; Davis & McKay-Cody, 2010). As PISL expanded into a lingua franca for international purposes, it was used by many hearing Indians; however, it continued to serve as the primary language for deaf Indians, their families, and other members of these Native American communities.

TRAJECTORY FROM GESTURE TO LANGUAGE

Several researchers (most notably, Armstrong, Stokoe, & Wilcox, 1995; Goldin-Meadow, 2003, 2005; Kendon, 2004; Liddell, 2003; McNeill, 1992) have long studied how gesture and language are interrelated, and how they are distinct. These researchers have defined gesture and its contribution to language. In the field of gesture studies, deaf and hearing types of gesture are generally considered as being distinct. Generally, two

main types of gestures have been considered: (1) gestures used by hearing individuals (i.e., face, hand, body gestures generally accompanying speech; or highly emblematic gestures that occur alone—e.g., *thumbs-up*), and (2) gesture systems (a.k.a. home signs) that emerge among some children who have no accessible language model but have someone to communicate with (Goldin-Meadow, 2003). However, like so many other features of language and properties of acquisition, the nature of the communicative role of gestures is also a matter of degree and interrelatedness. In fact, gesture and language are tightly interwoven.

Along these lines, McNeill (1992, p. 6) identified four types of gestures that should be considered along a continuum of "gesticulation," "pantomime," "emblem," and "sign language." McNeill (2000, p. 6) proposed that "g*esticulation* accompanies speech" and "is non-conventionalized" and distinguished this from the signs in a signed language that, "like words in speech, are conventionalized, segmented, and analytic, and possessed of language properties, while they are obligatorily not performed with speech." McNeill correlated the presence or absence of speech with gesture and with the absence or presence of conventional linguistic properties and concluded that "*emblems* are at an intermediate position . . . partly like gesticulations, partly like signs." McNeill (1992, p. 6) emphasized "the *nonlinguistic* character of these gestures: the lack of a fully contrastive system and the lack of syntactic potential." In brief, despite the labels we assign to distinguish hearing gesture or deaf gesture, in reality, language (in linguistic or extra-linguistic terms) is communicated with words and gestures; rather than as dichotomous terms, these properties of language are best conceptualized along a continuum. The trajectory of gesture to language can be simply illustrated in the following diagram, based on the seminal research of Kendon (1988) and McNeill (1992). Here, I have expanded the continuum to include the trajectory of gesture from nonlinguistic to linguistic.

SOCIOLINGUISTIC UNDERPINNINGS AND OUTCOMES OF LANGUAGE CONTACT

Essentially, we are working with multilingual and multicultural communities—not any single language or culture—thus the complexities of describing these sociolinguistic contexts and outcomes are exponential (Davis & McKay-Cody, 2010). The hallmark of sociolinguistics is to not view language as a monolith. Many scholars have written that sociolinguistic outcomes are best considered along a continuum of varia-

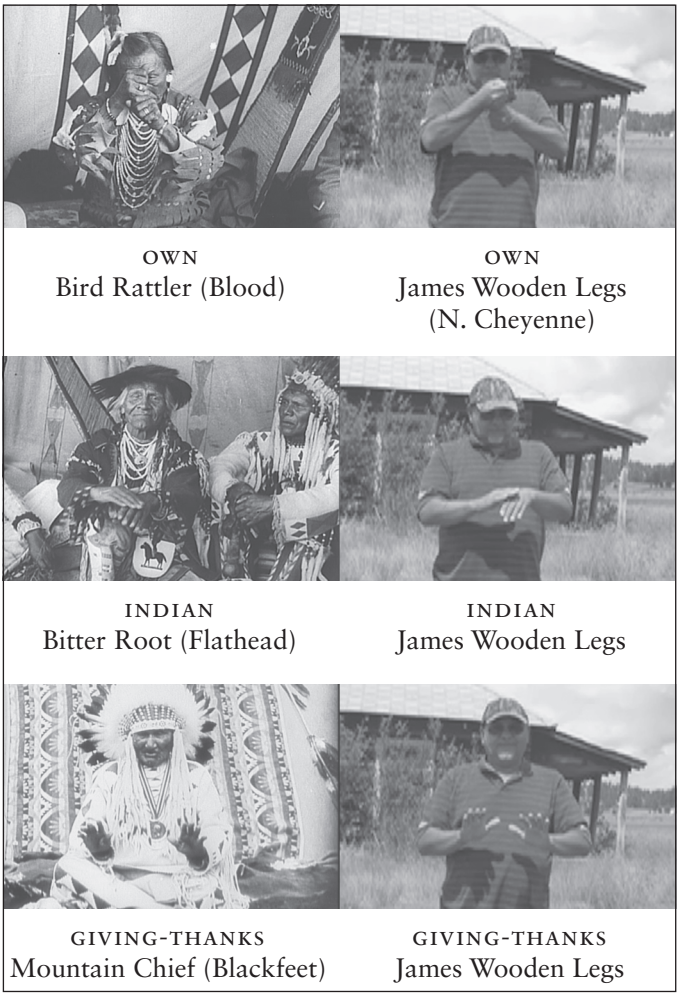

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FIGURE 7.1. *Trajectory of gesture from non-linguistic to linguistic*

tion—that is, in signed and spoken language contact situations, we typically find signing that co-occurs with speech, ranging to signing that occurs without any speech, as well as signing that represents varying levels of proficiency (Davis, 2005). Not surprising, we also find signed-language-to-signed-language alternation, switching, blending, and borrowing—for example, as an outcome of ASL–PISL contact, and contact among sign types (home sign and conventionalized sign language) and sign dialects (comparable to ASL–Black ASL contact). Thus, the forms and alterations of signing range from home sign (Davis & Supalla, 1995;

Goldin-Meadow, 2005), which emerge in one generation within families with deaf members, to full-fledged signed languages, which are transmitted widely and acquired for many generations (e.g., PISL). Stated differently, we find that the secondary (or alternate) sign language also serves as the primary sign language for some tribal members. Rather than viewing primary and alternate signed languages dichotomously, we can observe how they function interdependently; and I maintain these ways of signing are best considered along a communication continuum (Davis, 2007, 2010).

RESEARCH METHODOLOGIES AND QUESTIONS

In my ongoing quest to gather as much original source material about this subject as possible, I discovered that the richest sources of historical linguistic and ethnographic documentation come from archival sources (in the form of legacy materials).[10] I maintain that the historical linguistic documentary materials represent an unparalleled resource for historical sign language research, which can now be reexamined in light of current linguistic theories, interdisciplinary perspectives, and comparative studies of sign language among deaf and hearing American Indians and other indigenous peoples around the world (see Davis, 2007, 2010).[11]

Moreover, Davis and McKay-Cody (2010) have been conducting the first PISL fieldwork in more than 50 years, with its one-of-a-kind focus on the signing of women, deaf tribal members, and other members of the Indian signing community. Our fieldwork is also the first to document instances where PISL has been acquired and maintained as the primary sign language of American Indians who are deaf. Our research aims to bridge gaps in the earlier anthropological linguistic fieldwork (Farnell, 1995; West, 1960), which focused mainly on the alternative or ad hoc role of signing among hearing male community members.[12] In contrast, our fieldwork includes both women and men who acquired PISL natively regardless of hearing status (as well as both deaf/Deaf Native Americans). Furthermore, our current research entails multidisciplinary theoretical and applied approaches focusing on both secondary (i.e., alternative or L2) and primary (i.e., nativization or L1) patterns of acquisition, transmission, and use among both deaf and hearing community members. The project has documented the continued use of PISL within some native groups for a variety of discourse purposes, including traditional storytelling, rituals,

legends, prayers, jokes, games, conversations, and personal narratives by both hearing and Deaf Natives.[13]

I maintain that this approach offers valuable insights about PISL–ASL contact, signed language–spoken language contact, the conveyance of human language in signed and spoken modalities, and the interrelatedness and distinctiveness of speech, sign, and gesture. The fact that these indigenous signed language varieties have survived and continue to be learned and used is remarkable, especially considering the pressures for linguistic and cultural assimilation historically imposed on native groups (Davis & McKay-Cody, 2010). Thus, we continue our quest to document these cases and determine the extant number of surviving sign varieties and users. During our 2009–2010 fieldwork, Melanie McKay-Cody (Cherokee-Chippewa) and I filmed the signing of over one dozen individuals from North American Indian communities.[14]

Thus far, our fieldwork has documented that PISL is still learned and used to varying degrees by American Indians in the U.S. and Canada, namely Algonquian (Blackfeet/Blackfoot, Piegan, Northern Cheyenne,) and Siouan (Assiniboine, Crow, Hidasta, Gros Ventre, Sioux, Lak(h)ota, Dakota, Nakota). We have been told that members of Uto-Aztecan (Bannock, Shoshoni, Ute), Sahaptian (Nez Perce), and Salishan (Spokane, Kalispel) cultural groups may still know the traditional Indian sign language. Thus, we anticipate meeting more native signers and documenting the signing of these and other American Indian groups in the near future.[15]

In summation, our PISL fieldwork and linguistic corpus project has been documenting a rich and complex array of sociolinguistic outcomes, which vary between individuals and among communities, and which are featured in this chapter. The findings reported here are based on the largest known linguistic corpus united from two main sources: (1) Indian sign language legacy materials from the late 1700s through the mid-1900s, and (2) film footage of PISL native signers spanning an 80+ year time period up until today. In the meantime, plans are underway to expand the linguistic corpus with more legacy materials and contemporary examples of PISL discourse.[16] Thus, my research findings presented here take into account both historical and contemporary instances of indigenous sign language around the world. I also consider these cases in light of current interdisciplinary theories and perspectives, most recent fieldwork in these communities, newly discovered historical evidence, and the latest developments in the rapidly evolving discipline of documentary linguistics.[17]

CENTRAL FOCUS AND RESULTS OF PISL RESEARCH

The American Indian communities central to my studies are multilingual and multicultural, and as such, we have been documenting and analyzing particular sociolinguistic outcomes, most notably code-switching and blending between varieties of ASL, AISL, English, and one or more American Indian spoken languages. Thus, our fieldwork has been carried out in multilingual communities where at least three languages, and often four, are used. Although further description of the sociolinguistic outcomes and vicissitudes inherent in these multilingual contexts remain beyond the scope of the present chapter, see Davis and McKay-Cody (2010) for more detailed descriptions about this fieldwork, and for descriptions about the multicultural and multilingual issues facing Deaf Native Americans—ranging from educational placements to enculturation patterns.

Much of my PISL research pivots around two main questions: Do the documented cases of North American Indian Sign Language constitute one language with a variety of dialects, or a variety of distinct languages? What evidence of historical relatedness do we find between PISL and ASL—such as language contact and lexical borrowing? With these questions in mind, I conducted extensive linguistic assessments based on written, illustrated, and filmed sources of lexical signs used by the Indians from the early 1800s into contemporary 20th- and 21st-century descriptive linguistic studies (Davis, 2007, 2010). My studies of historical relatedness have adhered to methods and standards established in the research literature and have considered two main causes of historical relatedness: genetic relations and lexical borrowing. Genetically related languages develop from a common earlier ancestor and are classified as members of the same language family. Lexical borrowing is due to language contact—that is, two languages may have borrowed from each other over time, but their origins can be traced to two distinct original languages. (cf. Campbell, 2000).

Results from Recent PISL Studies

My lexical comparisons were extracted from more than 1,000 previously collected lexical descriptions, illustrations, and films of American Indian signs from five historical periods (1800s, 1820s, 1920s, 1930s, and 2000s).[18] In sum, between 80 and 92 percent of the PISL lexical sign varieties in these comparisons are identical or similar to the sign lexicon

of subsequent generations of North American Indian signers, with a historical span of 200 years (1801 to 2002). The high percentage of lexical similarity (cognates) suggests that the PISL varieties compared here are dialects of the same language from similar origins—that is, they are genetically related members of the same language family. Although my lexical similarity studies are among the largest of this kind, my comparative studies of PISL varieties are ongoing. I maintain that additional research is needed before more definitive conclusions can be reached about the number of PISL dialects and distinct varieties of North American indigenous signed language. Given the history of intensive language contact and loss of sign language due to pressures to use English, and ASL in some cases, it is striking that the core lexicon of PISL has remained relatively stable for at least the past 200 years —i.e., in the range of 90 percent similarity between the older and modern varieties of PISL.

PISL and ASL Comparisons

I have also conducted lexicostatistical analysis to determine if there was historical language contact between early ASL and PISL (Davis, 2007, 2010). In these studies, a range of 50-percent lexical similarity was identified between historical varieties of ASL and PISL. According to the linguistic criteria and standards established for these studies, these findings suggest that ASL and PISL are separate languages—that is, they are unlikely to be genetically related, or to have a common language ancestor. Still, historical connections between languages are not that easily traced. The search for clues (cognates) is further complicated due to a percentage of lexical similarity among languages being attributable to non-historical factors—for example, chance or coincidence based on the potential of shared symbolism. Specifically, the greater potential for shared visual symbolism between genetically unrelated signed languages—the iconicity factor—is one of the more challenging aspects of this line of research. Nevertheless, 50 percent is a relatively high degree of lexical similarity and suggests possible lexical borrowing, which likely occurred as a consequence of language contact between American Indians and individuals who were deaf.[19]

The historical evidence suggests that sign language contact could have occurred in several ways, for example, the historical proximity of the first American deaf schools that had been established in the early 1800s and American Indians who had commonly used sign language. Furthermore, between 1847 and 1890, early publications prominently featured lexical

descriptions of Indian Sign Language, and these publications were widely distributed to educators and deaf schools through the periodical *American Annals for the Deaf and Dumb*. Thomas H. Gallaudet, cofounder of the first school for deaf students in the U.S. in 1817, used the Dunbar (1801) and Long (1823) descriptions titled the "Indian Language of Signs," to strengthen the case that "the natural language of signs" was essential to teaching and communicating with deaf people (Gallaudet, 1847, 1848, 1852; also reported in Davis, 2007, 2010). Thus, it is plausible that during this historical period American Indian signs were introduced to deaf students.

Additional contact between the American Indians and deaf people likely occurred. For example, the New Mexico School for the Deaf and the School for Indians were constructed next to each other in Santa Fe in the late 19th century. Indian children who were deaf also began attending some state residential schools for the deaf around the United States during the historical period that sign language was commonly used among Indian groups. Furthermore, it has been documented and reported that some deaf children from Indian families first acquired the alternate signed language as a primary language before attending schools for the deaf and learning ASL as a second language (Davis & Supalla, 1995; Davis & McKay-Cody, 2010).

In sum, the evidence of PISL and ASL contact has been corroborated from two main historical sources: (1) 18th century descriptions of Indian signs, which were published and widely distributed to educators at schools for deaf children around the country; and (2) historical accounts of American Indians visiting residential schools for deaf students during the 19th century. Moreover, due to the wide geographic spread and status of PISL as a lingua franca prior to and leading into the 20th century, deaf people are known to have came into contact with American Indians who signed. For example, several deaf American Indians have informed me that they learned PISL, or another indigenous sign language variety, before they attended schools for the deaf and learned ASL as a second signed language. Further research along these lines is anticipated.

Although much of my research efforts have been devoted to ethnographic fieldwork to document the historical and contemporary cases of American Indian Sign Language and comparative linguistic studies, I have also conducted discourse analysis of the large documentary linguistic corpus collected over the past two decades, which also encompasses legacy materials dating back as far as 1800 and perhaps earlier.

PISL LINGUISTIC PROPERTIES AND DISCOURSE FEATURES

Although my linguistic research of PISL is ongoing, I find it to be a complete, complex language that can be analyzed at various linguistic levels—phonemic, morphemic, syntactic, semantic, and pragmatic (Davis, 2010). The linguistic characteristics of PISL are strikingly similar to the perceptual, physical, and modality properties common among signed languages (Aronoff et al., 2005; Emmorey, 2003; Padden, 1988). For example, derivational and inflectional morphological processes are evident, and PISL has bound (affixes) and free morphemes (content words and function words).[20] Although further descriptions about PISL linguistic features are underway, in the remaining sections of this chapter I offer my preliminary linguistic findings.

Word Order Typology

The data collected and analyzed thus far show PISL to have basic SOV word order (generally considered the most common among the world's languages) and, correspondingly, head-initial directionality. While seemingly predominant, this is not the only word order type evident in PISL We also find examples of *null actors/arguments* and the use of *topicalized forms*. Null arguments are those which are not explicitly stated (phonologically realized), being understood from the discourse context. Topicalized forms are parts of the sentence marked as semantically salient and about which the rest of the sentence is a comment; in the case of PISL (like ASL), this marking includes movement to the front, although PISL does not appear to have facial marking of topic like ASL does. Analysis of further grammatical markers is ongoing; see Davis (2010) for more descriptions of these and other grammatical features.

ISSUES IN DETERMINING BASIC WORD ORDER

In general, claims about word order are problematic because more than 90 percent of the all languages investigated naturally have basic SOV or SVO word order (with the former being the predominant type). Thus, we find that correlation is not always grounds for causation (in the sense of there having been language contact). This appears particularly true when comparing spoken and signed language syntax. Matters are further complicated because signed languages are structurally distinct (at least modality-wise) from spoken languages—especially in terms of simultaneous (co-occurring) morpho-semantic features. Simply put,

signed languages make grammatical use of visual-spatial-gestural (VSG) properties in ways not possible for spoken languages. We must take into account an array of phonetic, morpho-syntactic, and semantic properties to determine the possible outcomes of language contact. I believe that further clues along these lines can be found in the PISL corpus, and more research is anticipated.

BASIC WORD ORDER OF AMBIENT SPOKEN LANGUAGES

Meanwhile, to further illuminate these issues, I would like to return to the question of basic word order among the ambient spoken language communities, in which PISL once flourished. Mithun (2001) has collaborated extensively with native speakers and conducted in-depth linguistic analyses of North American Indian spoken languages. She reports that SOV is the most common word order found among Native American languages (e.g., Eskimoan and Lakotan languages). Although indigenous languages share strikingly similar morphological processes—for example, pronominal suffixes and verb derivation—different types of word order are evident among them. Mithun has described the pragmatic nature and use of topical makers among certain languages with so-called *flexible word order.* For example, Mithun (2001, p. 200) writes this about Tuscarora (a Northern Iroquoian language): "Word order is not syntactically based at all. Elements are ordered purely according to their relative importance within the discourse. There is no unmarked syntactically based order." In such cases, word order is distinctly marked based on constituents being talked about in order of "newsworthiness." In short, some languages, such as Tuscarora (and other members of the Iroquoian family), demonstrate "purely pragmatic word order" (p. 201).[21]

In sum, there is variation among the spoken languages of Native North America—ranging from fairly rigid to flexible word order. Basic word order is frequently altered for pragmatic purposes without causing referential ambiguity. In contrast to English and many Indo-European languages, in which word order is more critical to convey meaning and the role of the arguments in the sentence, the roles of subject and object in Native American languages are most often conveyed by affixes on the words themselves. Although we find some shared properties between PISL and ambient spoken American Indian languages (e.g., the rich modulation of predicate forms), we also find other features that are markedly different (e.g., the amount of affixation involved in these processes). Further investigations are ongoing about inflectional features and predominant word

order patterns evident among signed languages, and notions of flexible word order (a.k.a. "free word order").[22]

Again, it should be emphasized that the mere classification of a language according to its basic or preferred word order in no way means that the language exhibits only that one type of word order. In other words, each language adheres to its basic word order to greater or lesser degrees; and, most grammatical patterns are interpreted as variations, modifications, or transformations of the so-called "basic word order" (cf. Johnson & Schembri, 2007). Signed languages make rich use of certain simultaneously occurring VSG properties in ways unavailable to spoken languages (cf. Aronoff et al., 2005; Meier, Cormier, & Quinto-Pozos, 2002; Sandler et al., 2005). Thus, signers exploit these properties in highly systematic and conventionalized ways—precisely because the rules of language allow them to do so.

Other Grammatical Principles

Tense in PISL is indicated by lexical signs comparable to adverbs, such as "today," "tomorrow," "yesterday," "since," etc. When they occur, time indicators are at the beginning or ending of phrases or sentences. Other lexical and grammatical features, such as question formation, negation, pronominal forms, and possession have also been identified. In brief, the morpho-syntactic processes in PISL are highly productive, thus generating distinct lexical categories (nouns, verbs, adjectives, adverbs, etc.), compounds, polysemous forms, and a variety of predicates composed of indicating, depicting, and pointing signs (common among signed languages). Again, my analysis of PISL lexical and grammatical features is ongoing; in the meantime, see Davis (2010) for the most current descriptions along these lines. In the next sections, I will describe and provide examples of rich use of metaphor that is abundantly evident in the PISL corpus including metonyms, hyponyms, and hypernyms.

Semantic Properties of PISL

Linguists have generally identified three main types of lexical meaning: referential, social, and affective. This is why we find different denotations and connotations reflected in our glosses and translations. In other words, one sign could be glossed or translated more than one way depending on its denotation or connotation (see examples below, and figures 7.1 and 7.2). In cases where more than one meaning can be

Callout for fig 7.2 on prev. pg--
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CALL-NAME
White Horse (Arapaho)

CALL-NAME
James Wooden Legs (N. Cheyenne)

FRIEND
Strang Owl (N. Cheyenne)

FRIEND
James Wooden Legs

FIGURE 7.2. *Please Supply Caption*

assigned to a particular sign gloss, the additional meaning is bracketed in lowercase English. For example, the Indian sign sometimes glossed as MY-COUNTRY has been assigned several synonyms depending on context (ABIDE, ABODE, LIVE, etc.). Two signs are considered synonymous if they share the same meaning, and we have glossed synonymous signs this way: ABIDE = HOME = ABODE. These different semantic types are plentiful in our PISL corpus (extensive documentation and description of 3,500 lexical signs generated from a core lexicon of at least 900 distinct signs) and constitute evidence of PISL linguistic productivity.

IDIOMATIC, FIGURATIVE, AND METAPHORIC LANGUAGE

As stated above, there are numerous examples of metaphor in the PISL corpus, for example, White Horse's (Arapaho) metaphor laden narrative about the "white-man's radio" and describing that as "White Man's Medicine," and comparing that to the Indian's "Medicine" (Scott, 1934). Likewise, idiomatic expressions are abundant in PISL, for example, CARRY PIPE ("to be a leader"); TINY-BIT-RECOVER ("saved by the skin of one's teeth"); LITTLE WHILE TAKE, GIVE BACK ("borrow"); and BURROW UNDER SURFACE ("deceive"). PISL has other ways to construct semantic relationships (e.g., hyponyms and hypernyms).[23] Correspondingly, PISL has a way of producing hyponyms that appeared earlier in this chapter: the signer simply signs the hypernym followed by modifiers that discriminate the class member among all the others, as in the compound WHITE-MAN⌒SOLDIER⌒CHIEF. To create hypernyms, PISL signers produce serial constructions of exemplary members of the class being described. For example, consider the following PISL texts (Sanderville, 1934).

Examples from "A Real Estate Transaction," Richard Sanderville's (Blackfeet) signed narrative, originally filmed in front of the Smithsonian Institution, July 11, 1934, presented here with the original English translations:

RELATIVES = BROTHER-SISTER TO-HELP BUY⌒LODGE
"Relatives who help the purchaser [buy the lodge]"

BUY⌒LODGE, PAY-WITH HORSE, PAY-WITH ROBE WEAPONS+++
"The purchaser paid for the lodge in horses, robes, and weapons"

PRO.3rt PRO.3lf WEAPONS WAR-BONNET EXCHANGE
"The exchange between owner and purchaser is sealed, following an exchange of the war bonnet and regalia"

changed the carrot symbols
--OK?

Examples of metaphor and metonymy are commonplace, such as BUFFALO, based on horns and WHITE-MAN, indicating the brim of a hat which is depicting the wide brim hats commonly worn by Euro-Americans (see figure 7.1 for example). In the PISL corpus we find a plethora of signs representing compounds, idiomatic expressions, metaphors, and other abstract concepts, for example, ANXIOUS, CHOLERA, DAYBREAK, DANGEROUS, EVERY, FEW, FAMOUS, and GHOST-DANCE. These are but a few examples of the semantic properties and richly layered discourse of PISL.

Summary of Linguistic Findings

In summary, the morpho-syntactic processes identified thus far in PISL are highly productive; they generate distinct lexical categories (nouns, verbs, adjectives, adverbs, etc.), compounds, polysemous forms, and a variety of predicates composed of indicating, depicting, and pointing signs (common among signed languages). Based on my preliminary linguistic analysis, PISL appears to be typologically similar to other signed languages, which are characterized by certain spatial-grammatical features, verb inflections, depicting signs, and classifier-like constructions (Aronoff et al., 2005; Emmorey, 2003; Padden, 1988).

Sign language researchers from Garrick Mallery to William Stokoe, and those up until today, have often described how signed languages demonstrate more varied or gradient features or "semiotic elements" in the production of language than do vocally driven languages. Semiotics offers other ways to approach these "gradient" features of language, such as the linguistic properties of space and gesture. Liddell (2003) noted this when he wrote, "Spoken and signed languages both make use of multiple types of semiotic elements in the language signal, but our understanding of what constitutes language has been much too narrow." In the field of linguistics, it is sometimes said that "semiotics is where syntax leaves off." Although the work of linguistics makes it necessary to analyze, distinguish, and classify the domains and features of the languages we study, in essence, communication, culture, and language are inextricably bound. In linguistic terms, language is always communication, whereas communication may not always be considered language (one of the hallmarks of Chomskyian approaches). Likewise, sign language is always gesture; however, gesture is not always sign language (attributed to William Stokoe). And, as Mallery, Stokoe, and other scholars have shown, beyond the labyrinth of comparative and descriptive linguistic analysis is the realm

of semiotics. This was the trajectory of Mallery's research, even in the late 1800s when he researched North American Indian Sign Language at the Smithsonian. Now in the early 2000s, linguists continue to explore the gradient and semiotic features of human language as a pathway to discover more about the vast dimensions of language and the mind.

Summary of Sociolinguistic Findings

While sociolinguistic variation (dialects and discourse types) are evident among PISL signers, we also see that linguistic principles and constraints are adhered to in highly systematic ways—thus leading to a conventionalized PISL lexicon and grammar. I began this chapter by discussing the role of PISL as a major lingua franca. Such uniformity and linguistic enrichment can be accounted for based on two fundamental points: (1) the continuity of sign language varieties used across several generations and groups of native signers including both deaf and hearing Indian community members, and (2) language contact and these hallmarks spread across a wide geographic area among various native groups using PISL.

In summary, regardless of physical language modality (signed or spoken), we find universal patterns and a similar array of linguistic features among languages—yet they are still different enough to represent different typologies. Further research is anticipated to compare PISL with the spoken American Indian languages in the same environment, which are typically polysynthetic inflectional (Yamamoto & Zepeda, 2004). In contrast to many spoken languages, however, sign languages appear to use far less affixation, which also makes them different from polysynthetic inflectional spoken languages (e.g., Navajo). In all languages, certain linguistic features are arranged simultaneously (co-occurring) and sequentially (linearly). This occurs to altering degrees ranging from the smallest meaningless discrete units to the production of meaningful words, thus leading to a potentially infinite number of phrases. Though different languages may "package" their words and phrases in distinct ways, the same general morpho-syntactic processes occur to varying degrees among all types of language.[24]

In other words, certain linguistic features may be structured differently and developed to lesser or greater degrees according to a particular language typology. In this regard the overall symmetry and continuity of human language as it is transmitted via different modalities, domains, and generations is nothing short of astonishing. In furthering these analyses, we seek to examine and describe the multiple linguistic levels and domains

of PISL—syntax (describing its grammar), lexicon (developing a dictionary of PISL signs), and comparative analyses to determine dialect differences and discourse types. Further PISL fieldwork, documentation, linguistic analyses, comparisons, and descriptions are underway. These findings are being integrated into our digital archive of American Indian sign language documentary materials.

Although I feel that I have barely touched the tip of the iceberg in relation to the discourse features and linguistic underpinnings of PISL, I have aimed to accomplish two major objectives in preparing the material highlighted in this chapter: first, to provide descriptions of new discoveries, insights, linguistic descriptions, and discourse analyses of PISL—ranging from phonetic features to pragmatic functions; second, to draw attention to the one-of-a-kind digital corpus of American Indian Sign Language documentary materials to *create* greater access and to raise awareness across multidisciplinary fields of sign language and linguistics; My main aspiration is that the work produced thus far will advance the scholarship of others and contribute to further recognition, preservation, and revitalization of PISL and indigenous signed languages everywhere.

DISCUSSION

Several overarching linguistic themes have emerged throughout this chapter: (1) The visual-spatial-gestural (VSG) linguistic properties of signed languages; (2) language nativization and transmission of signed languages; and (3) outcomes of language contact along a multidimensional continuum (i.e., a semiotic perspective of linguistic phenomena).[25] I believe these recurrent themes reflect that humans have the propensity for natural language acquisition regardless of the linguistic modality or type being signed or spoken; and that no single language, language modality, or language typology is a monolith.

Modality Effects

The need to understand the role that the visual-gestural modality plays in human language and cognition has been widely recognized in the research literature (e.g., Meier et al., 2002; Quinto-Pozos, 2007a; Sandler & Lillo-Martin, 2006; and others). Sign language linguists have described how linguistic features are shaped by the visual-spatial properties common to all signed languages. Likewise, modality effects have been dis-

cussed in my preliminary linguistic analysis of PISL; and indeed, some of its most salient linguistic features (symmetry, directionality, use of space, pointing signs, depicting verbs, classifier-like constructions, etc.) appear to be more similar to the signed languages of deaf communities than to the spoken languages of the ambient communities. However, the first question I am typically asked by linguists is how PISL is comparable to the spoken ambient languages, not how it is comparable to other signed languages!

In recent years sign language linguists have made significant contributions to the multidisciplinary fields of linguistics, and in the emergent discipline of sign language linguistics we have focused most of our attention on describing the signed languages of deaf communities (e.g., ASL, BISL, Auslan, etc.) and sought to find comparable linguistic patterns (analogs) between signed and spoken languages. Naturally, a great deal more work needs to be done to compare PISL contact, which entails dozens of distinct spoken languages. David Quinto-Pozos (2007a) edited the first research volume in which each chapter specifically addressed some aspect of contact between sign languages. Thus, we find that some outcomes of contact between signed languages are similar to the patterns found between spoken languages, whereas others are different.

The Quest for Language Universals

Two themes are ubiquitous in much of the previous research literature about native signed languages: "universality" and "iconicity." Strikingly, these two theoretical issues remain front and center in the discipline of sign language linguistics even today. It is my belief that PISL studies illuminate these questions and shed light on the underpinnings of human language, culture, and cognition, although, perhaps unintentionally, the subject of American Indian sign language has been dismissed or glossed over in contemporary sign language linguistic studies and understudied in the discipline of linguistic anthropology in modern times. This may be due to notions about its non-primary role as an alternative to spoken language, a lack of understanding about its linguistic properties (rich lexicon and complex grammar), and general fallacies about the conveyance of language in the VSG modality. Regardless of the reasons for these misconceptions, such oversight does little to advance our understanding of sign language typologies, or to reverse the trend toward the dramatic loss of native languages.[26]

In short, the fundamental differences between signed and spoken languages have to do with how the visual-spatial-gestural modality shapes

certain linguistic features and outcomes. On the other hand, the differences among signed languages—ranging from home-sign systems to the sign languages of indigenous groups and the world's Deaf communities (see earlier sections of this chapter)—have mainly to do with the types of signing communities in which they have emerged. Comparing different types of sign language communities illuminates the roles of linguistic modality and community in the development and transmission of language. In these studies we find that linguistic modality, sign language typology, and transmission patterns are highly salient factors, and more research is anticipated along these lines.

Resilient Features of Human Language

Researchers have conducted extensive comparative studies between signed and spoken languages, and on the emergence of natural sign language, in the search for language universals (e.g., Goldin-Meadow, 2003, 2005; Sandler et al., 2005; Sandler & Lillo-Martin, 2006). Most notably, Goldin-Meadow (2005) has described in extraordinary detail the emergence of home sign systems among American deaf children, and also in other countries (e.g., China). Goldin-Meadow and her colleagues have documented that the home sign gestures of the deaf children in these studies were not acquired from modeling the gestures of their hearing parents. In other words, home sign systems appear to be developed by deaf children themselves. Thus, Goldin-Meadow and her colleagues have brilliantly demonstrated that home signs perfectly illustrate the resilient features of human language according to linguistic principles: productivity and displacement. These findings offer some of the most compelling evidence linguists and cognitive scientists have concerning the innateness of human language.[27]

Emergent Signed Language

Sandler (2003) states the main purpose of these studies quite pithily:

> Where the two systems converge, universal linguistic properties are revealed. Where they diverge, the physical medium of transmission is implicated, and its contribution to the form of language in both modalities illuminated. Neither can be seen quite so clearly if linguists restrict their study to spoken language alone (or to sign language alone). For this and other related reasons, it is often remarked that

sign languages provide us with a natural laboratory for studying the basic characteristics of all human language.

The key point here is that emergent sign language is "a natural laboratory" for studying "universal linguistic properties." Indeed some of the most striking evidence about human language universals and the differing effects of language modality comes from sign systems that have emerged within the span of one, two, or three generations. Thus, a major question has to do with language age (in generations) and creole-like processes that may be driving some of these language outcomes, which are major theoretical tenets running throughout this chapter.

While the emergent sign languages described that have been written about extensively of late do have the same basic core gestural elements and comparable linguistic underpinnings as other sign languages, they are also distinguishable from the other sign systems being described here. For example, most home signs are not conventionalized further than the individual deaf children who created them; that is, home signs are typically used for one generation and not transmitted beyond the domains of the deaf children and their immediate families. In rare instances home sign may continue being used in a family when there is more than one generation of deaf family members due to genetic factors (comparable to the Diné clan family sign system described by Davis & Supalla [1995]). In contrast to the home signs of individual deaf children, family sign systems (family-lects) continue to be transmitted cross-generationally and become linguistically enriched in the process (e.g., the Diné family sign system and ABSL described elsewhere in his chapter).

The Question of Language Youth

Some researchers have likened the cases of emergent sign language described above to creoles, based on the relatively short time span in which the emergent sign language appears to have developed; the strikingly similar universal patterns evident between these emergent sign languages is attributed to the fact that they are relatively young (e.g., Johnston & Schembri, 2007; Sandler et al., 2005). In the research literature, the argument for the "youth" of sign languages is generally based on two main forms of evidence: (1) the recent documented cases of emergent sign languages (e.g., home sign, Nicaraguan Sign Language [NSL], ABSL, and other "signing villages"); and, (2) the notion that the oldest extant sign

languages have only been traced back to the 17th century (or about 300 years ago, e.g., as reported in Woll et al., 2001). Most scholars who refer to the youth of sign languages mean that these languages are young in that there likely was no antecedent signed language in whatever community saw the emergence of the signed language in question (e.g., Quinto-Pozos, 2007a; Sandler et al., 2005;).[28]

It appears that some writers may be using the term *language youth* to avoid the term *creole*, because creole may not necessarily apply to the cases of emergent sign language we have been considering (Fischer, 1978, 1996). Besides being attributable to language youth, the strikingly similar linguistic patterns between historically unrelated sign languages could be due to the common properties of the VSG modality. Therefore, to apply the term "youth" to most extant sign languages today (as Woll et al., 2001, seem to suggest doing), even to those like PISL with a documented history of more than 200 years, strikes me as problematic. Is the age of a language measured in hundreds of years (e.g., Haitian Creole) or thousands of years (e.g., Greek or Hebrew)? Historical linguists have recognized that the "age" of a language can be difficult to determine, especially because most languages do not have a history of being written (see Campbell, 2004). Thus, we can only hypothesize about the origins and approximate age of many languages, such as Navajo, Tagalog, PISL, ASL, etc. And, if a nonwritten language became extinct before being documented and described linguistically (e.g., Arikara, Cree, and Martha's Vineyard Sign Language (MVSL), then what can we say about its linguistic properties and previous dominion of use? The question of language age remains a matter of speculation; however, historians, anthropologists, linguists, and other scholars have rigorously reconstructed information about certain language communities from archival and historical sources (e.g., Baynton, 1996; Groce, 1985; Lane, 1984), thus illuminating what the language community was like in previous times (cf. Davis, 2010).

SUMMARY AND CONCLUSIONS

PISL is the best documented and most described lingua franca of the Great Plains, a cultural area spanning more than 2,000 miles from the North Saskatchewan River in Canada to the Rio Grande in Mexico. Historically, it was used among American Indian nations encompassing

12 language families and representing 40 spoken languages, including tribes outside the Great Plains cultural areas who maintained contact and formed alliances with different Indian nations of the Great Plains. PISL evolved as a lingua franca among hearing individuals speaking distinct and mutually unintelligible languages, and it served a number of major sociolinguistic and discourse functions while the spoken languages fulfilled others.

Although PISL was traditionally used by hearing Indians as a common alternative to spoken language, it likely first emerged from the village or home-signs of community members who were deaf or who had deaf family members (e.g., CODAs)—comparable to other cases of emergent indigenous or village sign language (e.g., Walpiri Sign Language of far north Queensland, Australia, or Al-Sayyid Bedouin Sign Language in a desert community of southern Israel). In contrast to home-sign and many village-based signed languages; historically up until today, PISL use was maintained for many generations (in contrast to home-sign) and though not to the extent as in previous times, the PISL variety spans far wider domains (in contrast to village-sign). In this regard the historical case of PISL is somewhat comparable to modern-day ASL in that it could be considered a "high-status sign language." For example, the ASL variety is used widely in many other countries besides those geographic locations colloquially and collectively referred to as being in "the Americas." In the communities and nations where it once flourished, PISL was considered to be a prestigious language and commonly used among chiefs, elders, and medicine men/women among American Indian nations of the Great Plains and beyond; though also used at varying levels of discourse within Native American tribes and families—thus spanning most contexts and encompassing many discourse genres among these native societies.

In conclusion, the Plains sign lingua franca (PISL in today's terms) was natively acquired by both deaf and hearing community members, and served a broad array of discourse functions within and between American Indian groups for many generations. PISL spread from smaller tribal units or clans to larger and larger spheres of interaction and developed the visual-gestural-spatial linguistic properties common among full-fledged signed languages (i.e., phonologically, morphologically, and syntactically enriched). The use and transmission of PISL were widespread and served many sociolinguistic purposes and discourse functions for many generations—to an extent unparalleled by any currently or previously known case of an indigenous or village signed language.

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NOTES

1. The sociolinguistic term *variety* is used throughout this paper to refer to "varieties" of a genetically related language: British and American English are varieties of the same language, and Black ASL is considered a variety or dialect of ASL, for example.

2. While labeling conventions are sometimes necessary in written language, it is extremely important to recognize that American Indian individuals and communities are heterogeneous populations with diverse languages and cultures. Ideally, specific tribal affiliation or cultural-linguistic group are acknowledged whenever possible—e.g., Assiniboine, Blackfoot, Eastern Cherokee, Inuit, Lakota, Northern Cheyenne, etc. Whenever possible, I have used the newer self-designations of today's American Indians cultural groups and nations, though these terms are used interchangeably depending on the historical contexts and individual sources being cited. Elsewhere, I have written more extensively about "issues of naming" in American Indian cultural contexts (Davis 2010, pp. 3–5). See also Davis and McKay-Cody (2010) and the National Congress of American Indians website for more information (http://www.ncai.org/).

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4. It should be noted that the placement of cultural-linguistic boundaries generally recognized by linguists and anthropologists is based on numerous cultural, linguistic, and historical factors.

5. "Big-D" only applies in reference to the Deaf community or Deaf culture, or in reference to core members of the larger Deaf community. It is not used to refer to individuals who are deaf—*unless* they fully participate in the core Deaf culture (and this acculturation happens mainly through attending residential Deaf schools or being a member of a Deaf family—i.e., having parents/siblings who are Deaf).

6. Davis and Supalla (ibid.) also found that the Navajo family sign system was distinct from the PISL variety of the Great Plains cultural area.

7. Frishberg (1987) was one of the first contemporary sign language linguists to describe that home-sign systems 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 it).

8. Code-switching/blending typically occurs in language contact situations in which discourse utterances entail a mixture/blending of different languages or different varieties of a single language. See Quinto-Pozos (2007) for descriptions of sign language–sign language contact phenomena.

9. Kendon (1988) studied signed language as an alternative means of communication among Koori of Central Australia, and proposed that the sign language of people already competent in spoken language be called *alternate sign language* and that the signed language of deaf communities be called *primary sign language*. However, he did not describe what happened when deaf individuals born into these communities acquired the alternate sign language natively.

10. For example, the extensive fieldwork conducted by late 19-century anthropologists and ethnologists who worked with the Smithsonian's Bureau of American Ethnology, and the motion pictures of the "Grand Sign Language Council" with delegates/participants from the Plains and several other cultural areas (First Nations) produced with support from a 1930 Act of the U.S. Congress.

11. Likewise, George Veditz and his colleagues with the National Association of the Deaf (NAD) were concerned that sign language was endangered; and in order to preserve sign language the NAD produced a well-known series of films in the early 1900s (Supalla, 2001). Although these films were made of formal signed presentations, they provide an extraordinary view of how ASL was signed at the nexus of the 19th and 20th centuries.

12. LaMont West (1960) developed an elaborate transcription system and "phonemic" inventory for PISL, and provided extensive film documentation and linguistic analyses. During several years of fieldwork, he filmed and collected signed language narratives covering a wide spectrum of discourse topics from over 100 American Indians from the Great Plains area who were proficient sign language users. One generation later, the anthropologist Brenda Farnell (1995) focused on the sign language storytelling of two Assiniboine elders at Fort Belknap Reservation, Montana.

13. In other words, our current fieldwork includes deaf/Deaf and hearing Native Americans. In the literature the shorter term Deaf Native is generally used instead longer official designations such as Deaf American Indian/Alaska Native

or Deaf First Nations of Canada. The label Deaf Native reflects that cultural identities are predicated on a complex array of factors and choices—for example, degree of assimilation or membership and multiple cultural backgrounds. Deaf Natives often walk in three worlds and three distinct cultural experiences—Deaf American, American Indian, and Deaf Native (see Davis & McKay-Cody, 2010; Dively, 2001; Goff-Paris & Wood, 2002; Miller, 2004; National Multicultural Interpreting Project [NMIP], 2000).

14. Today, most indigenous languages around the world are endangered (Crystal, 2000). Language documentation and description for the purpose of revitalizing an endangered language are enormous undertakings. Native leaders and other community members have generally recognized and even embraced the need to record and preserve their languages, traditions, and cultural practices for this and future generations—as long as the documentary materials are treated with respect when made available outside of American Indian communities.

15. Again, it is worth noting, different varieties of indigenous sign language have been identified among American Indian groups (e.g., Inuit-Iñupiaq, Keresan Pueblo, Navajo/Diné, among others). For descriptions of North American Indian sign language varieties besides PISL, see Davis (2005, 2006, 2007, 2010), Davis and McKay-Cody (2010), Davis and Supalla (1995), Farnell (1995), Goff-Paris and Wood (2002), Kelly and McGregor (2003), and McKay-Cody (1997).

16. Fortunately today the Linguistic Society of America (LSA) and National Science Foundation (NSF) have recognized the urgency to document endangered languages. Furthermore, the LSA, NSF, and academic research institutions of higher education have also recognized that the study of sign languages helps broaden our understanding of numerous theoretical linguistic issues (e.g., prosody, inflection, language typologies, and semiotics) and illuminates numerous other questions about the nature, structure, and origins of human language

17. Our PISL research brings together linguistic students and native collaborators; and we have been capturing hundreds of hours of video, digitizing the footage for long-term preservation and for linguistic analysis using state of the art technologies (e.g., ELAN transcription/annotation). We are currently working to obtain more legacy material and ethnographic data and prepare previously obtained footage for the creation of instructional materials (e.g., dictionary and grammar lessons) to mediate the dramatic decline in native or indigenous languages in recent years.

18 Including the Blackfeet sign variety (Weatherwax, 2002) and PISL signs filmed during the 1930s (Scott, 1934; Sanderville, 1934).

19. Sign language linguists (Bickford, 1991; Davis, 2007, 2010; Guerra Currie et al., 2002; Kyle & Woll, 1985; McKee & Kennedy, 2000; Parkhurst & Parkhurst, 2003; Woll , Sutton-Spence, & Elton, 2001) have recognized the need to establish relatively high thresholds of lexical similarity to account for the potential of shared visual symbolism. Generally, it is agreed that at least 80

percent lexical similarity or greater is needed to determine whether signed language varieties are dialects of the same language (i.e., genetically related). If 41–80 percent of the signs are similar or identical, then the two signed languages are considered as members of the same family—although researchers have offered several explanations concerning the historical relationship of languages within these ranges of similarity).

20. In the field of signed language studies, there continues to be debate amongst linguists about how best to classify and label certain linguistic features, particularly, *affixation* and *inflection*. For further discussion of these theoretical issues, see Davis (2010), Liddell (2003), and Johnston and Schembri (2007, pp. 123–124).

21. See Mithun (1999/2001, pp. 196–202) for an extensive discussion of word order and syntax in North American Indian spoken languages.

22. Though more in-depth comparisons of PISL and ambient spoken languages remain beyond the scope of this chapter and volume, further research along these lines is anticipated, and would further illuminate our understanding about signed–spoken language contact and language typologies.

23. *Hyponyms* and *hypernyms* are complementary terms referring to members and labels of semantic categories, respectively). For example, in English the hypernym "dog" includes the hyponyms "German Shepherd," "Irish Setter," "Yorkshire Terrier," etc., and "dog" is itself a hyponym of "mammal," along with "cat," "dolphin," and "human."

24. For example, English relies relatively little on morphology when compared to languages like Navajo, in which words are more morphologically complex; that is, one word may convey the same meaning as a sentence would in English. It appears as if a more complex morphology leads to a simpler syntax, or a simpler morphology could produce a more complex syntax; however, defining simple or complex is yet another matter. Linguists have noted that a "continuum of language types" is evident based on how much they rely on morphology to express linguistic relations (cf. Fromkin et al., 2007, p. 106).

25. Although it is generally considered to be in the philosophic realm, semiotics is highly multidisciplinary and has informed the fields of linguistics, pragmatics, translation and interpretation, communication, and mass media.

26. The ongoing misconceptions about the nature and structure of sign language among the general public, and even in some academic circles, led the Linguistic Society of America (LSA) to issue a position paper affirming that signed languages are rule-governed linguistic systems, not "merely a set of informal gestures," nor "a signed version of any particular spoken language" (Perlmutter, 2001).

27. Home signs involve discrete units (gestures) functioning as words, which the deaf children combine in systematic and predictable ways to form phrases

(productivity) and use to refer to other people and situations beyond the present and immediate contexts (displacement). See earlier endnote on this subject (Frishberg, 1987).

28. As far as we know, prior to the 1970s, there appears to have been no signed language in Nicaragua; and 75 or so years ago, there was no ABSL community like that Sandler and her colleagues have been recently examining. There is no exactly comparable situation for spoken languages, although creoles have also emerged from a dramatic break in the prototypical pattern of language transmission. See also Kegl, Senghas, and Coppola, (1999); and Senghas, Kita,and Özyürek (2004) for more descriptions of Nicaragua Sign Language (NSL or LSN).