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Phonological Variation

We turn now to examples of variation from the project on which this book and the accompanying CD are based. These examples come from the videotapes we made during a project that began in 1994. We traveled to seven U.S. sites: Staunton, Virginia; Frederick, Maryland; Boston, Massachusetts; New Orleans, Louisiana; Kansas City, Missouri, and Olathe, Kansas; Fremont, California; and Bellingham, Washington (see Figure 8).

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Clip 4. The project, as well as phonological variation, are also described on the CD.

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We chose these sites because they all have thriving communities of ASL users. In addition, Staunton, Frederick, Boston, Fremont, and Olathe are the sites of residential schools for deaf children. We chose these seven areas in order to represent the major geographic areas of the United States—northeast, east, south, midwest, west, and northwest. We videotaped a total of 207 people in groups. Some groups had 2 people; others had as many as 7. For the first part of the videotaping, people just chatted without the researchers present. Most of the people knew each other, so they could talk about shared experiences and current events.

After they had chatted for about an hour, we selected two people from each group. Then we interviewed these people in depth about their

Figure 8. The research sites

language backgrounds, their educational and work experiences, and their family lives. We then showed them a set of pictures, asking them what their signs were for the objects or actions represented in the pictures. In four of the sites—Boston, New Orleans, Kansas City/Olathe, and Fremont—both African American and Caucasian signers participated in the study. In Staunton, Frederick, and Bellingham, where relatively few African American people live, we interviewed only Caucasian signers. We interviewed people in three age groups: 15–25, 26–54, and 55 and older. We chose these specific age groups because they parallel the developments in deaf education. People who were 55 and older were educated at a time when state schools for deaf students focused on oralism and prohibited the use of ASL in the classroom.

When people in the 26–54 group were going through school, ASL was beginning to gain recognition as a language, and many schools were beginning to follow the philosophy of Total Communication, that is, signing and talking at the same time. Many of the signers in the youngest group have been able to use ASL in the classroom.

We tried to get even numbers of men and women, and we videotaped both working-class and middle-class people. For our study "working class" means that the participants had gone to a residential school but had not continued their education after that, had settled in the area of the school, and were working in blue-collar jobs. The "middle-class" group consisted of people who had continued on to college after completing the residential school, had maybe left the area, but, if so, had been back in the area for at least ten years and were working in white-collar jobs. The youngest signers, who were still in school, were grouped with their parents in determining their social class. Of the 207 people in the study, 45 were from deaf families. Figure 9 shows the project at a glance.

We collected examples of three variables from the videotapes: the sign DEAF, which varies in its location; signs such as KNOW, which also vary in their location; and signs made with a 1 handshape, which vary in many ways. We selected examples of these signs because they occur on the tapes frequently (and in everyday signing), and we knew that we would have enough examples of them for statistical analysis. From our observations of

A seven-year project on sociolinguistic variation in ASL.
(June 1, 1994–July 31, 2001)

Overview of Data Collection:

Sites Visited:

1. Staunton, Va.
2. Frederick, Md.
3. Boston, Mass.
4. New Orleans, La.
5. Fremont, Calif.
6. Olathe, Kans./Kansas City, Mo.
7. Bellingham, Wash.

Twelve groups at each site, except for Virginia, Maryland, and Washington (only Caucasian groups)

African American Groups:		**Caucasian Groups:**	
Middle Class	**Working Class**	**Middle Class**	**Working Class**
15–25	15–25	15–25	15–25
26–54	26–54	26–54	26–54
55+	55+	55+	55+

A total of 207 ASL signers (Each group consisted of 2–6 signers)

Overall Goal of the Project:

A description of phonological, morphosyntactic, and lexical variation in ASL and the correlation of variation with external factors such as age, region, gender, ethnicity, and socioeconomic status

Figure 9. The project at a glance

the videotapes we also knew that these signs varied a great deal, and we wanted to understand what was behind the variation.

DEAF

In ASL, the sign DEAF can be signed from the ear to the chin and also from the chin to the ear, as we mentioned earlier. In the course of our analysis, however, we discovered a third form of DEAF, in which the index finger does not move down or up but simply contacts the lower cheek. These are all illustrated in Figure 10. The form of DEAF that goes from ear to chin is called the **citation form.** This is the form that is usually found in sign language dictionaries and taught in sign language classes. The chin-to-ear and contact-cheek forms are known as **noncitation forms.** that is, they differ from the dictionary form in one or more respects.

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Clip 5. We see four examples of DEAF on the CD: (1) The woman on the right signs BOSTON DEAF CLUB (an older form of the sign for "club," which looks like SET-UP), with DEAF moving from ear to chin; (2) the man in the middle signs DEAF HELP, DEAF SUPPORT, with the contact-cheek form of DEAF; (3) the man signs FIND DEAF, PICK++, with the chin-to-ear form of the sign; and (4) the woman on the left signs KNOW PRO.1 ("me") DEAF, also with the chin-to-ear form.

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We collected a total of 1,618 tokens, or examples, from our videotapes. We looked at each token and noted four things:

1. The grammatical function of the sign DEAF: DEAF can be an adjective, as in the phrase DEAF CAT; it can also function as a noun, as in the sentence DEAF UNDERSTAND, which might be translated into English as "Deaf people understand." It can function as a predicate, as in the sentence PRO.1 DEAF, "I am Deaf," and it also appears in many

ear-to-chin

chin-to-ear

contact cheek + CULTURE

Figure 10. Three variants of DEAF

compound signs, such as DEAF‿CULTURE, DEAF‿INSTITUTION, DEAF‿WORLD, and DEAF‿WAY.

2. The location of the preceding sign: We wanted to see whether the location of the preceding sign had any effect on the location of DEAF, so we noted whether the preceding sign was produced at the ear or above ("high," as in FATHER), between the ear and the chin ("middle," as in KID), or at the chin or below ("low," as in PRIDE). We also noted whether DEAF was preceded just by a pause, that is, without a sign.
3. The location of the following sign: We also wanted to see whether the location of the following sign had any effect on the location of DEAF, so we noted where the following sign was produced, just as we did with the preceding sign.
4. Our videotapes show people mostly just chatting but sometimes also telling stories, so we wanted to see whether that would make a difference in the location of DEAF. Thus we noted whether DEAF occurred in a conversation or a story.

Overall we found that people use many more noncitation than citation forms of DEAF. In fact, six groups of signers used noncitation forms more than 90 percent of the time. Older signers in Virginia, for example, used noncitation forms 96 percent of the time. Only three groups of signers—young people in Maryland and signers over twenty-five in Massachusetts—used the citation form for the majority of tokens of DEAF: It seems that in ASL, as in other languages, people use the language the way they want to use it, regardless of what may be written in dictionaries.

When we analyzed the factors that influence people's choice of the citation form of DEAF or one of the noncitation forms, we found that the most important constraint is the grammatical function of the sign. When DEAF is a predicate, it is signed ear-to-chin more often than when it serves some other grammatical function. When it is in a compound, it tends to be contact-cheek. Nouns and adjectives are both ear-to-chin and chin-to-ear. Chin-to-ear and contact-cheek also tend to occur in stories, while ear to chin occurs slightly more often in regular conversation. The location of the preceding and following sign has no effect on the choice between the citation form and a noncitation form. When comparing the two non-

citation forms—chin-to-ear and contact-cheek—the grammatical function is still the most important factor, with contact-cheek occurring most often in compound signs. In addition, we found that the location of the following sign is also important. The contact-cheek form of DEAF occurs more frequently when the next sign is at the ear or above or at the chin or below, but not when the following sign is on the cheek. Charts 1 and 2 contain a quick summary of our findings.

We had expected to find that the location of the preceding and following signs plays a big role in the variation of DEAF, but, surprisingly, the grammatical function of DEAF itself turns out to have the most influence. For the social factors, we found that DEAF also exhibits **sociolinguistic** patterning, but only age and region appear to be important. Other factors such as ethnicity, gender, language background, and social class are not significant. Age and region have a complicated relationship. For example, the Boston signers in general use the ear-to-chin form more often than the chin-to-ear or contact-cheek forms, and the older signers are more likely to use ear-to-chin than the middle aged or young signers. In Maryland we see the opposite: The youngest signers are most likely to use the ear-to-chin form. In Virginia, California, and Washington state, the younger signers tend to use the chin-to-ear and contact-cheek forms. In California, Louisiana, Virginia, and Washington, the middle-aged group consistently tends to use the ear-to-chin forms more often than the oldest and youngest signers in these areas. We think that this may be because the signers in the middle group were in school at the time when ASL was beginning to be recognized as a real language and when linguists were starting to do research on ASL and other sign languages. These signers may have a heightened awareness of what is considered the "correct" form (ear-to-chin) and thus use it more.

Location Signs

We looked at 2,594 examples of signs that are signed at the forehead in citation form but can move down. For convenience, we refer to signs in this class as "location signs," that is, signs that may vary in their location.

Chart 1. Linguistic Influences on the Choice of a Form of DEAF: Ear-to-Chin vs. Chin-to-Ear or Contact-Cheek

DEAF, ear-to-chin vs. chin-to-ear or contact-cheek	
Overall	Noncitation forms (69%) are far more common than citation forms (31%).
Grammatical function	Compound signs tend to be contact-cheek or chin-to-ear. Predicates tend to be ear-to-chin. Nouns may be any of the three, but the ear-to-chin form is the most common.
Conversation or story	Stories tend to be chin-to-ear or contact-cheek. Conversation tends to have more ear-to-chin than stories do.

Chart 2. Linguistic Influences on the Choice of a Form of DEAF (Chin-to-Ear vs. Contact-Cheek)

DEAF, chin-to-ear vs. contact-cheek	
Overall	Contact-cheek is found in all grammatical categories but occurs much less frequently in nouns (17%), adjectives (10%), and predicates (17%) than in compounds (56%).
Grammatical function	Compound signs tend to be contact-cheek. Predicates, nouns, and adjectives tend to be chin-to-ear.
Location of following sign	Low and high signs are often preceded by contact-cheek. Middle and pause are usually preceded by chin-to-ear.

Figure 11. Citation forms of KNOW and FOR

Examples of location signs are verbs such as KNOW, BELIEVE, and REMEMBER, adjectives such as FEDERAL and DIZZY, nouns such as DEER and FATHER, prepositions such as FOR, and interrogatives such as WHY. Figure 11 shows KNOW and FOR in their citation forms, while Figure 12 shows them at lower locations.

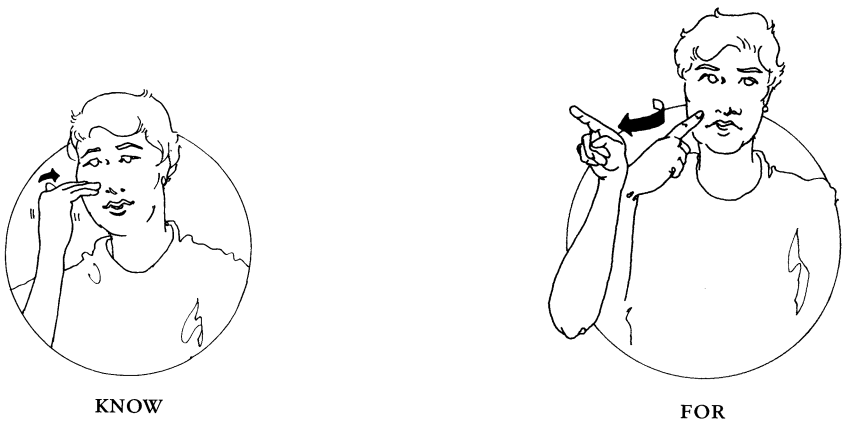

Figure 12. Noncitation forms of KNOW and FOR

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Clip 6. The CD shows three examples of location signs: (1) The man signs PRO.1 ("I") THINK and then several other signs (WONDER, BOY, KNOW, KNOW-NOTHING), all at the forehead level; (2) the woman on the right signs SEARCH in neutral space, not in front of her face; and (3) the girl in the middle signs KNOW, meaning "You know?" very low on her cheek.

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As with DEAF, we looked at each example and noted important things:

- **the grammatical function of the sign:** As we mentioned earlier, the signs in this group can be verbs, adjectives, nouns, prepositions, and interrogatives.
- **the preceding sign and following sign:** We noted whether a sign preceded or followed the location sign or whether a pause was there. We also noted whether the location of the preceding sign and following sign was at the level of the signer's head or at the level of the signer's body (at the neck or below). Then we noted whether the preceding or following sign made contact with the body.

As with DEAF, we noted whether the location sign occurred in a conversation or in a story. And once again, as with DEAF, we found that the grammatical category of the sign is the most important influence on the variation. As Chart 3 illustrates, prepositions and interrogative words tend to be lowered, whereas nouns, verbs, and adjectives are more likely to be produced at the forehead level.

Moreover, characteristics of the preceding and following signs play a role: Both the preceding location and the following contact are important. We found that if the preceding sign is produced at the head level, the location sign tends to be produced there, too. If the preceding sign is produced below the neck, the location sign tends to be lowered. If the following sign has no contact with the body, the location sign tends to be

Chart 3. Linguistic Influences on the Location of Signs such as KNOW

Linguistic influence	Finding
Overall	Noncitation (lowered) forms are slightly more common (53%) than citation forms (47%).
Grammatical function	Prepositions are more likely to be signed lower than the citation form (59%). Nouns and verbs are neutral (52%). The relatively few adjectives in the study are likely to be produced in citation form (65%).
Location of the preceding sign	When the preceding sign is produced at the level of the body, signs such as KNOW are slightly more likely be produced lower than the citation form (53%) than when the preceding sign is produced at the level of the head (48%).
Contact of the following sign with the body	When the following sign has no contact with the body, signers are more likely to choose a lowered form (55%) than when the following sign contacts the body (48%).

lowered, whereas if the following sign makes contact with the body, the location sign tends to be produced at the forehead level.

As Chart 4 shows, the signs that vary in location show sociolinguistic patterning similar to DEAF. Many of the social factors are significant. For example, the younger signers produced the signs below the forehead more than did the signers in the middle aged and older groups. Men tended to lower the signs more than women. This result parallels variation in spoken languages, in which women consistently use more citation forms than men do. Participants from Deaf ASL-signing families are slightly more

Chart 4. Social Influences on the Location of Signs Like KNOW

Social influence	Finding
Age	Signers over 55 are more likely to use the citation form; and younger signers are more likely to use the noncitation form.
Gender	Males use more noncitation forms than females.
Region	Signers in California, Louisiana, Maryland, Massachusetts, Missouri, and Kansas are more likely to use noncitation forms than signers in Washington or Virginia.
Language background	Children of Deaf parents are less likely to use noncitation forms than children of hearing parents.
Ethnicity and social class	Middle- and working-class Caucasian signers are more likely to use noncitation forms than African American signers. Working-class, African American signers are the least likely to use noncitation forms.

likely to produce the forehead-level citation forms, whereas participants from nonsigning families produce slightly more lowered forms. African American signers prefer the citation forms produced at the forehead level, whereas white signers produce more lowered forms. Finally, participants from the more rural sites that we visited—Frederick, Staunton, and Bellingham—also prefer the forehead forms.

Signs with a 1 Handshape

The videotapes show many examples of signs with a 1 handshape. Very often a sign that has a 1 handshape in a sign language dictionary is produced with an L handshape, a 5 handshape, or some other handshape.

For example, in the phrase PRO.1 PREFER ("I prefer"), the sign PREFER has an Open 8 handshape, and it is not uncommon for the PRO.1 sign also to have this handshape. When someone signs PRO.1 KNOW ("I know"), the handshape of the PRO.1 often changes to look like the Bent B of KNOW.

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Clip 7. The CD shows four examples of 1 handshape signs: (1) The young man signs PRO.1 ("I") DON'T-KNOW WHY, and the handshape of the PRO.1 resembles that of DON'T-KNOW; (2) the man on the right of the sofa signs PRO.1 ("I") CAN'T REMEMBER with a standard handshape PRO.1; (3) the man on the right signs PRO.1 OPEN-MOUTH, SHAKE-HEAD, with the standard handshape for PRO.1; and (4) the man on the far right signs PRO.1 ("I") LOOK-AT, with a PRO.1 handshape very much like the handshape for LOOK-AT.

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We looked at more than five thousand examples of signs with 1 handshapes. The three most common variants account for approximately 95 percent of the examples: the citation 1 handshape (index finger extended, all other fingers and thumb closed); the L handshape (thumb and index extended, all other fingers closed); and the 5 handshape (all fingers open). These are illustrated in Figure 13.

Figure 13. Variants of 1 handshape signs

As with DEAF and the location of signs such as KNOW, we noted a number of important potential influences on the way the signs are produced:

- **the grammatical function of the sign:** Signs that use the 1 handshape can be pronouns ("I," "you," "he," etc.), wh-words (WHERE, WHEN), grammatical function words (FOR), adverbs (REALLY), verbs (GO, CANCEL), adjectives (BLACK, LONG), and nouns (WEEK, MONTH).
- **the preceding sign and the following sign:** We took note of the handshape of the preceding and following signs: whether the thumb was extended, whether fingers other than the index were extended, and whether the index was straight or hooked.
- **context:** As with DEAF and the location signs, we noted whether the sign occurred in a conversation or in a story.

Charts 5 and 6 summarize what we found.

As with DEAF and the location signs, the grammatical function of the 1 handshape signs plays the most important role in the variation. Signers prefer the citation form for nouns, adjectives, verbs, adverbs, grammatical function words, wh-words, and pronouns in the third person ("she," "he"). This preference is stronger for some grammatical classes such as nouns and adjectives than for others, such as PRO.3. For second-person pronouns ("you") and first-person pronouns ("I"), signers prefer the L or 5 handshape. In addition, the handshapes of the surrounding signs influence the variation. For example, if the thumb was extended in the preceding sign, the sign we were focusing on was more likely to be an L or a 5.

Since we were looking at three different variants (1, L, and 5), we did many analyses. All of the social factors of age, social class, ethnicity, region, and language background were significant in at least one analysis. For example, signers aged 26–54, working-class signers, African American signers, and signers from Massachusetts, California, Kansas/Missouri, and Louisiana slightly prefer the citation form (1), whereas younger and older signers, middle-class signers, Caucasian signers, and signers from Maryland, Washington, and Virginia tend to use the L or 5 forms.

Chart 5. Linguistic Influences on the Choice of a 1 Handshape Sign

Linguistic influence	Citation form (one hand)	Noncitation form 1 (L handshape)	Noncitation form 2 (open hand)
Grammatical category	Nouns, adjectives, verbs, adverbs, grammatical function signs, wh-signs, and PRO.3 favor.	Wh-signs and pronouns favor.	PRO.1 strongly favors; PRO.2 is neutral.
	PRO.2 slightly and PRO.1 strongly disfavor.	Nouns, adjectives, verbs, and adverbs disfavor; grammatical function signs are neutral.	Signs of all other categories disfavor.
Preceding thumb	Closed thumb favors.	Open thumb favors.	Open thumb favors.
Preceding fingers	Closed fingers favor.	Closed fingers favor.	Open fingers favor.
Preceding index	Straight index favors.	No significant effect.	No significant effect.
Following thumb	Closed thumb favors.	Open thumb favors.	Open thumb favors.
Following fingers	Closed fingers favor.	Closed fingers favor.	Open fingers favor.
Overall	The citation form is the most common (40%), followed by the L handshape (30%) and the open-hand form (25%).		

Chart 6. Social Influences on the Choice of a 1 Handshape Sign

Social influence	Citation form (one hand)	Noncitation form 1 (L handshape)	Noncitation form 2 (open hand)
Age	Older and younger signers favor; middle group disfavors.	Older signers favor; younger and middle groups disfavor.	Older and middle groups favor; younger groups disfavors.
Social class	Working-class signers favor slightly; middle-class signers disfavor.	No significant effect.	No significant effect.
Region	California, Kansas/Missouri Massachusetts, and Louisiana favor; Maryland, Washington and Virginia disfavor.	Maryland, Washington and Virginia favor; California, Kansas/Missouri, Massachusetts, and Louisiana favor.	Maryland, Washington and Virginia favor; California, Kansas/Missouri, Massachusetts, and Louisiana favor.
Language background	No significant effect.	No significant effect.	Signers from Deaf families disfavor; signers from hearing families favor.

We see from this that, as in spoken languages, ASL has patterned phonological variation that correlates with social factors. Some of these social factors, such as age and language background, behave uniquely in the Deaf community.

Discussion Questions

1. List as many signs as you can that show variation in handshape, location, palm orientation, or movement.
2. List other social factors that you think may play a role in variation in ASL and discuss their role.