

GINGER PIZER, KEITH WALTERS,
AND RICHARD P. MEIER

Bringing Up Baby with Baby Signs: Language Ideologies and Socialization in Hearing Families

THIS ARTICLE PRESENTS an analysis of the functional roles of “baby signing” in three hearing families in the United States, as well as a discussion of the social and ideological implications of the practice. “Baby signing” refers to the use of visual-gestural signs between hearing parents and their young hearing children with the goal of earlier and clearer communication, often guided by parenting books, videos, and workshops that are available in the United States and other countries around the world. This practice has been adopted by many families who had no previous knowledge of a natural sign language and no contact with the Deaf community. Unlike previous research on baby signing, which has focused on determining its possible effects on linguistic and cognitive development (e.g., Goodwyn and Acredolo

Ginger Pizer is a doctoral candidate in the Department of Linguistics at the University of Texas at Austin. Keith Walters is a Professor in the Department of Applied Linguistics at Portland State University. Richard P. Meier is a Professor in the Department of Linguistics at the University of Texas at Austin.

We would like to thank the three families who made this research possible by welcoming us and our video camera into their homes. Many thanks also go to Elaine Chun and Er-Xin Lee for their helpful comments. Preparation of this paper was supported in part by NSF grant #BCS-0447018 to Catharine H. Echols (PI) and Richard P. Meier (co-PI).

1998; Goodwyn, Acredolo, and Brown 2000), this article addresses the ways in which three baby-signing families use signs in their daily lives. The discussion is based on the close analysis of family interaction, which the first author videotaped between the fall of 2000 and the spring of 2001. It also considers the motivations that these hearing parents had for signing with their hearing babies.

Parental decisions about baby signing are made in the context of socially prevalent ideologies about language and child rearing. *Language ideologies* have been defined as “beliefs, or feelings, about languages as used in their social worlds” (Kroskrity 2004, 498), including “their loading of moral and political interests” (Irvine 1989, 255). Evidence for language ideologies held by particular speakers/signers and their communities may sometimes be found in their explicit statements concerning the value of the languages in question but must more often be gleaned from the analysis of statements and behavior for the assumptions that underlie them. Given the power of language ideologies to influence language behavior and language choice, it is important to situate the practice of baby signing within the history of ideologies about sign language and child language acquisition.

The use of signed languages with deaf children has long been an issue of debate in the United States, and the assumed advantages of spoken over signed language have led many hearing parents of deaf children to decide not to expose their children to sign language in their early years (Baynton 1996). The view that sign language is inferior to spoken language (or at least inappropriate for use by hearing people) has led some deaf parents to refrain from signing with their hearing children. This choice has sometimes resulted in difficulties in the children’s language development (Sachs, Bard, and Johnson 1981).

In the last decades of the twentieth century, as the use of sign language with deaf children became more accepted by hearing parents and teachers, signs also became common for augmentative communication with hearing children with speech delays or disorders (Bryen and Joyce 1985). Baby signs join this complex mix of emotion-laden sign language practices. The practice of baby signing stems from changes in language ideologies concerning sign language that have been prevalent in the hearing community in the United States; the practice may, in turn, contribute to future ideological changes, as we

discuss toward the end of this article. What is new about baby signing is the use of signs with hearing children who have no speech delays and no family or social connection to deafness. Instead of being used to accommodate to hearing loss or developmental delay, signs are now advocated for use with typically developing hearing children in an attempt to compensate for immaturity.

With its focus on prelingual infants—social novices par excellence—the practice of baby signing is perfectly positioned to play a role in socialization, that is, in “the process through which a child or other novice acquires the knowledge, orientations, and practices that enable him or her to participate effectively and appropriately in the social life of a particular community” (Garrett and Baquedano-López 2002, 339). As we demonstrate later in this article, the families in our case study did indeed use baby signs to encourage socially appropriate behavior on the part of their children. Following the tradition of language socialization studies that “link the micropractices of socialization to local social structures” (Kulick and Schieffelin 2004, 351), we point out patterns in the baby-sign interactions of these three families that reveal their connection to the professional class in the United States, what Heath (1983) called the “mainstream.” Baby signs appear to be a new resource that these families used to socialize their children into participation frameworks and interaction rituals already prevalent in their social group.

In the following sections we first present background information on baby signing, including a description of how widespread the practice is. Then, based on a review of mass media and online representations of baby signing, we discuss the motivations behind many hearing parents’ choice to sign with their hearing children, and we show that the impetus for this practice is influenced by mainstream American ideologies of parenting and of sign. After a brief description of the methodology of our case study, we present information on the case study families’ decisions to sign with their babies and their choice of what kind of signs to use. The subsequent section analyzes the families’ actual signing behavior and examines the degree to which this behavior reflects their reported motivations and achieves their stated goals. Finally, we discuss the implications of this signing behavior for hearing views of sign language and deafness.

Background

Research conducted by developmental psychologists Linda Acredolo and Susan Goodwyn (e.g., Goodwyn and Acredolo 1993, Goodwyn, Acredolo, and Brown 2000) provides the main support for claims of baby signing's benefits. Proponents of baby signing (e.g., Acredolo, Goodwyn, and Abrams 2002; Garcia 1999) maintain that the practice leads to earlier and clearer parent-child communication, reduced frustration on the part of the child, accelerated spoken language development, improved parent-child bonding, and increased IQ. These claims have been publicized in newspapers such as the *New York Times* (Berck 2004) and the *Washington Post* (Glazer 2001), on websites (e.g., www.sign2me.com, www.babysigns.com), on television (e.g., *CBS News*, May 11, 2005) and by word of mouth, as baby signing has grown increasingly visible in the public eye. Some baby-signing families use invented gestures, following the *Baby Signs* program (Acredolo and Goodwyn 1996; Acredolo, Goodwyn, and Abrams 2002), while others use signs from a natural sign language, as promoted by the *Sign with Your Baby* program (Garcia 1999), which provides material for American Sign Language and British Sign Language.

No reliable estimates of the number of baby-signing families are available; however, sales of baby-sign materials are impressively strong. For example, the sales rank of the book *Baby Signs* (Acredolo, Goodwyn, and Abrams 2002) as reported on amazon.com has remained high and steady for a number of years; out of all of the books sold on that website, it was ranked 396th in January 2003, 278th in January 2004, 276th in January 2005, and 561st in January 2006, even as many other baby-signing materials became available. The book has now been translated into German and Dutch.

News reports and online postings give accounts of baby-signing families throughout the United States, anglophone Canada, the United Kingdom, and Australia, with at least some baby signers in other countries, including the Netherlands, South Africa, Hong Kong, and the Philippines. In Central Texas, the region addressed by the case studies presented in this article, the prevalence of baby signing is evident from the subject pool of an unrelated language acquisition study conducted at the University of Texas at Austin. Out of 55 hearing fourteen-month-

olds who completed that study, 29 reportedly had had exposure to signs (Shield 2004). Percentages may be even higher within particular groups; for example, the mother of Daniel, one of this study's subjects, reported that, among her circle of friends, only one family had not signed with their baby.¹ There is no reason to believe that baby signing is as widespread in the general population as it is among these members of the professional class in a university town; these percentages therefore should not be seen as broadly representative. Nonetheless, the very populations who are most likely to use baby signs are those with a large presence on the Internet and high visibility to the media, making their behavior socially influential beyond their numbers.

In the three families who made up this case study, parents introduced signs (either ASL signs or invented gestures) into family communication when their children were between 8 and 13 months old.² The children's use of signs peaked during their second year of life, fell off, and eventually disappeared entirely after the children turned two and their speech became increasingly fluent. Reports of baby signing in the popular press and in online forums indicate that this pattern of sign adoption, use, and abandonment is representative of many other baby-signing families as well.

The Choice to Sign

This section presents the reported motivations behind many hearing parents' choice to sign with their babies, including the prevalent views of parenting that make up the ideological context of this choice. This discussion of parental motivation is based on a survey of web postings and mass media reports on baby signing and on the writings of the developers of two of the most popular baby-sign programs, those described in the books *Baby Signs* (Acredolo and Goodwyn 1996) and *Sign with Your Baby* (Garcia 1999). The examples we present are illustrative of broad themes evident in the entire collection of baby sign materials that we examined.

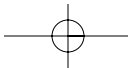
The most-reported reason for choosing to sign is to improve the clarity of parent-child communication, thereby reducing the children's potential frustration at not being able to get their thoughts, needs, or desires across. For example, an article in *Life* described one mother's



tearful reaction to her nine-month-old daughter's first sign: "I was so filled with emotion. . . . Here we were, two months before Eva spoke her first word, and she was telling us exactly what she needed" (Hochman 2005). Another mother told *CBS News* that signing had decreased her child's tantrums: "Mainly around mealtime, and the more signs we do the less crying, the less frustration on his face" (*CBS News* 2005). This interest in facilitating communication with infants as early as possible is consistent with Ochs and Schieffelin's (1984) description of language socialization in the Anglo-American middle class. They observed that, unlike many other social groups worldwide, parents in this group tend to treat infants as conversational partners from birth, well before the infants can speak. In addition, a hallmark of what is considered good parenting in this social group is adapting the environment to the child, rather than expecting the child to accommodate to an adult-centered environment. Baby signing fits neatly into this description: It is a significant adaptation of the linguistic environment that is made with the goal of facilitating early communication. Whatever the degree to which communication is actually improved, this parental choice depends on two beliefs: that the child has something to communicate and that the parent should try to figure out what it is.

These beliefs are not universally shared, however, as Ochs and Schieffelin (*ibid.*) pointed out in their descriptions of Kaluli and Samoan parents' unwillingness to interpret or expand on young children's unclear utterances. Heath (1983) observed a similar tendency among African American working-class parents in her research in the Piedmont Carolinas: "They believe they should not have to depend on their babies to tell them what they need. . . . Adults are the knowing participants; children only 'come to know' " (76). In contrast, the practice and promotion of baby signing are centered around a belief in the importance of infants' thoughts and wishes—"What parent wouldn't welcome such a window into his or her baby's mind?" (Acredolo and Goodwyn 1996, 5)—and around the idea that earlier communication is therefore always preferable: "Considering how slowly babies learn even easy words . . . there is no doubt that the result of waiting would be months and months of wasted time" (*ibid.*).

Baby signing thus shows evidence of a parenting ideology that favors accommodation to children; on a smaller scale, the details of the



routine interactions in which it is used also show its links to a particular social group. One of these interaction frameworks (which are discussed further in a later section of this article) involves the labeling of pictures in books. In their first example of the benefits of baby signs, Acredolo and Goodwyn (*ibid.*) described a thirteen-month-old who labeled for her father all of the animals in a book. They explained that an increased interest in books is one way that babies show their readiness for baby signs: “Parents typically respond to this new interest in books by pointing to various pictures and asking, ‘What’s that?’ They then provide the label themselves, knowing that their baby is not yet capable of producing the answer” (34). Baby signs are seen as a benefit in this context to the degree that signs allow the children to give the answer themselves. Heath (1983) described this “typical” kind of literacy event—specifically, parent/child interactions involving naming and books—as characteristic of the “mainstream” or professional-class families that she studied, but not of other groups. Acredolo and Goodwyn’s choice of this example to illustrate the use of baby signs links the practice to the particular social group most likely to find it attractive.

The anecdotes related by Acredolo and Goodwyn (1996) create a picture of what they explicitly described as optimal parenting that was aided by baby signs. For example, they recounted the story of a wailing child who was put down for her nap and was able to communicate to her father not only that she wanted a pacifier but also that she wanted a particular pacifier. After providing it, the father could be satisfied with his parenting skills: “As he tucked her back into bed, Ed thought . . . that this time he had indeed done everything right—with a little help from Baby Signs” (92). Other examples of model parents included those who recognized the gestures that their children came up with on their own: “Fortunately for these babies, their parents were smart enough to figure out what was going on” (71). In a posting to the online forum of www.sign2me.com, Joseph Garcia echoed the idea that baby signing is evidence of virtuous parenting: “I applaud you for taking the extra energy to make your and your child’s life richer through better communication” (October 27, 1999).

Along with improved parent-child communication, one of the benefits Garcia (1999) claimed is that baby signing will lead to bilingual-

ism in ASL and that childhood bilingualism has known cognitive benefits. The mother in one of our case study families was attracted by this claim and said that one of her motivations for signing with her son was that “I also know about the benefits of a second language in the first few years of life.” As she had known no sign language previously and had learned signs as she introduced them to her son, he could not be said to be truly learning ASL, and the same is surely true for most hearing children who are learning baby signs.

According to the publicity for baby sign programs, the stakes in early child rearing are very high: “More and more research confirms what wise parents have always known—you will establish the lasting foundation of your child’s physical, mental, and spiritual health by meeting all of these needs during those first few years” (Garcia 1999, 52). Such high stakes may lead to parental anxiety. For example, in a forum on the Sign with Your Baby website (www.sign2me.com), the mother of an eight-month-old expressed her worries that her baby had not signed to her even after a month of teaching: “Am I doing something wrong?” (ibid., Hall, November 1, 1999). Another mother told of her eleven-month-old, who “recognizes several signs, but has only produced two. I am beginning to think we may be doing something wrong” (ibid., Davis, October 27, 1999). During the period studied, no parents on this online forum asked explicitly whether something was wrong with their children, although this fear may certainly have arisen upon comparing their offspring to the precocious signers that other parents glowingly described. Rather than seeking explanations in their child’s own abilities, these parents were willing to take upon themselves the responsibility for their babies’ failure to sign.

While some parents who participate in signing programs worry about their children’s performance, those who do not participate may feel negligent. Another poster to the same forum wrote, “The sad thing is that my husband and I already know ASL, could have used it to communicate with our son in the preverbal months, and didn’t! . . . I definitely consider it a missed opportunity. . . . I’m embarrassed and disappointed in myself” (ibid., LeBouef, November 19, 1999). Acredolo and Goodwyn (1996) also referred to missed opportunities when paraphrasing Penelope Leach, a popular author of parenting books: “How sad it is . . . that so many people view babies as unin-

terested in language and uninteresting to talk to. . . . Such attitudes all too often mean missed opportunities to foster language and, perhaps even more important, to strengthen the bond between parent and child so critical to healthy development” (17).

By these accounts, parents appear to be caught between two dangers: the danger of missing opportunities to provide a beneficial environment for their children and the danger of pushing too hard. Acredolo and Goodwyn cautioned that baby signs are “not a race to be won or lost” (ibid., 51). The fact that they felt the need to make this explicit statement raises the possibility that they have encountered a race mentality among parents they have worked with. In awareness of the stigma against pressuring young children, a mother quoted in the *San Francisco Chronicle* said that “she is not one to ‘use flashcards every night’ so that Ryan can get ahead” (Spear 1999). Despite this mother’s implication that baby signing is different from other forms of early childhood enrichment, baby sign books and materials are frequently marketed on websites or in catalogs, along with learning aids such as flashcards or with educational videos on other topics.

It appears, then, that many hearing parents who choose to sign with their hearing infants do so in the belief that this practice will be beneficial to their children’s linguistic, emotional, and intellectual development. A limited amount of research speaks to the question of whether these beliefs are well founded. The idea that children may be able to communicate earlier in the gestural than in the vocal modality is supported by studies of gestural development that have found that hearing children spontaneously produce symbolic gestures around the age of twelve months (Acredolo and Goodwyn 1988) and that a small (one month or less) but reliable advantage exists for the gestural over the vocal modality for first symbol use (Goodwyn and Acredolo 1993). These findings, along with others reported later, provided the impetus for these researchers to begin promoting the practice of baby signing.

Also with respect to the question of a modality advantage, observations of a sign advantage have frequently been reported in studies of sign language acquisition (e.g., Anderson and Reilly 2002; Meier and Newport 1990; Orlansky and Bonvillian 1985). These studies suggest that children (hearing or deaf) who acquire a natural sign language as their first language tend to produce their first signs earlier than speak-

ing children produce their first words. Moreover, young signers' lexicons are larger than young speakers' lexicons up to the age of approximately eighteen months. These findings, however, have been called into question by researchers who dispute the linguistic status of these early manual productions (e.g., Petitto 1988; Volterra and Iverson 1995; Volterra, Iverson, and Castrataro 2006). Nevertheless, the finding of a slight advantage for the gestural modality for early communication appears to be well established, whether or not that advantage is also recognized as linguistic in nature.

Another benefit claimed for baby signs is the acceleration of spoken-language development, which is supported by Goodwyn, Acredolo, and Brown's (2000) longitudinal study of children between the ages of eleven and thirty-six months, which found that children whose parents taught them symbolic gestures performed better on both expressive and receptive verbal language tests than children who had not been encouraged to learn such gestures. In addition, Acredolo and Goodwyn (2000) have reported at a conference that the children in the sign-training group in this study had a higher IQ at age eight than children in the control group. Research has not yet addressed the claims of improved parent-child bonding or infant self-esteem. Johnston, Durieux-Smith, and Bloom (2005) reviewed the available research on baby signing and concluded that methodological weaknesses made these studies insufficient to support claims of significant benefits. The current study was not designed to evaluate the developmental claims made by baby-sign promoters. However, the frequent citation of these claims by journalists, marketers, and parents as reasons to sign with babies makes them an important consideration in the analysis of the social and ideological context of baby signing.

Baby Signing and Ideologies Concerning Sign Language

The parenting ideologies described in the previous section encourage parents to adopt practices that are seen as benefiting the child's early development. Although the tendency to adapt the family environment to the needs of the child has been prevalent for a number of decades, baby signing is a relatively new practice and has become popular only within the last ten years. Why are signs now seen as a resource for

hearing parents with hearing children? This use of signs fits in with other social and language-ideological currents insofar as it would have been inconceivable before the recognition of signed languages as genuine languages. Since Stokoe's (1960) original description of the linguistics of ASL, the language has gained acceptance in ever-widening arenas, first in the education of deaf children and increasingly for hearing students' language requirements in high schools and universities, where ASL classes are extremely popular.

The "coolness" of signing with infants goes along with the coolness of signing in other social arenas, as Ladd (2003) points out: "Sign languages, if not yet their users, are becoming sexy. Here a former Spice Girl has a number one hit using sign language on national TV. . . . And over there a new American TV serial brings Marlee Matlin as a signing Deaf political professional into the White House itself. Cultural hipness apparently awaits" (31).

A widely held positive view of sign languages may encourage families to try baby signing. Additionally, this spreading of sign into more hearing contexts may directly affect families' choices by giving them more contact with sign than they might otherwise have had. For example, the first signs used by one of our case study families had been learned in kindergarten by the infant's older brother.

In many media reports, as in much of this article, baby signing is discussed as if there were little difference between the various programs promoting the practice. However, the debate between proponents of ASL and those of invented baby signs appears repeatedly in newspaper articles and online discussions. A mother who posted her opinion on the web page of the UC Berkeley Parents Network advised, "If you're going to teach your child sign teach him American Sign Language. Why wouldn't you want your child to be bilingual?" (Kimberly, January 1999). The writer of a later posting disagreed: "Babies will find the signs that best trigger the words for them. And the pride and satisfaction your entire family will feel is much more important than what specific signs are used" (Heather, January 1999).

An ASL sign has the prestige of being "a legitimate sign from a legitimate recognized language" (Helms 1999). At the time of this study, the "Sign with Your Baby" program posted at the top of its homepage that it is "Based on Genuine Sign Language." Garcia

pointed out another benefit of ASL signs on the FAQ page of his website: “The advantage of using a standardized sign language as a foundation is that most people who share knowledge of that language will be able to identify and respond to the signs that your baby knows.” A writer to INFO-CHILDES agreed: “[We] decided to teach Sam some ASL rather than made-up signs so that he might potentially be able to communicate with others. . . . He even picked up a few signs from a hearing [preschool] classmate whose parents are deaf” (Bryant, January 14, 1999).

An increased connection with the Deaf community is one motivation for many parents and researchers who believe in teaching infants ASL. Garcia expressed his wish “to prove to hearing people that ASL is a gift to the hearing from the deaf. Also, my hidden agenda is to reduce the barrier between the deaf and hearing communities. My hope is that not only will parents find the wonders of early communication but that in a generation, a major attitude shift will occur regarding the value the Deaf bring to our culture” (www.sign2me.com, October 13, 1999).

Some members of the Deaf community agree with this goal and the means to achieve it. A Deaf university professor wrote the following: “I am thrilled to see that parents are signing with their babies and realizing what we have long known in the Deaf Community—It is Language! It works! . . . I am wondering if you parents find yourself gaining a new perspective about sign language, or about deaf people, from this experience you are now having with your own children?” (ibid., Gina, October 9, 1999).

In the same vein, an ASL interpreter stated that “It is great to see the ‘social stigma’ of being different and using a visual language with your children reduced more and more! . . . Here’s to removing the barriers of misunderstanding and miscommunication that have kept too many families apart. Let’s start with all babies!” (ibid., Renae, October 14, 1999).

Despite these hopes for improved deaf-hearing relations, few of the advertised baby sign programs involve Deaf people or native signers. Not simply an oversight, this lack of inclusion is consistent with the programs’ recommendation of simultaneous sign and speech as a means to promote the children’s spoken-language development. For many hear-

ing parents, a primary goal is to use signs that “trigger the words” (UC Berkeley Parents Network, Heather, January 1999) rather than to teach their children to sign fluently.

Case Study Methods

The preceding sections describe the ideological context of baby signing and the motivations that lead many hearing families to adopt the practice. The case studies of three Central Texas families were conducted in order to investigate the actual behavior of a few baby-signing families and to discover to what degree this behavior is consistent with their explicitly stated goals of fostering earlier and clearer communication with their infants. Our analysis of the details of these families' baby signing is based on seven hours of videotaped naturalistic interaction in their homes.

At the time of the study, all three fathers worked in professional positions, and the mothers had chosen not to work outside of the home while their children were young. All of the parents except Kai's mother are European American; she is ethnically Hawaiian. Rebecca had two older brothers, who were four and five years old. Daniel and Kai were only children. There were three criteria for the selection of the subject families: (1) the parents had decided to use signs with their hearing children; (2) before making this decision, the families had no prior knowledge of ASL or contact with the Deaf community; and (3) the children's spoken language was developing normally. Daniel's and Kai's mothers filled out the MacArthur Communicative Development Inventory (MCDI): Words and Gestures (Fenson et al. 1993). Based on the norms in the MCDI manual, both children fell within a normal range, although Daniel's productive vocabulary was low—but not abnormally so—for his age (*ibid.*, 1993, 1994). Rebecca's parents did not fill out this evaluation, but her videotaped performance gave evidence of age-appropriate language acquisition.

The children were videotaped in their homes during meal times and play times as they interacted with other family members. Each taping session lasted about an hour. In addition, the first author discussed the children's signing with their parents in casual interviews at various times throughout the visits. The children's ages when

videotaped are listed here, and appendix 2 gives details of each child's sign repertoires:

Rebecca, videotaped at 17 months, 18½ months, and 21 months

Daniel, videotaped at 18½ months and 20 months

Kai, videotaped at 15½ months and 16½ months

During videotaping, in situations in which the relative positions of a parent and child prevented them both from being within the camera's view, we kept the camera focused on the child. Combined with the fact (evident both from the video and from field notes) that the parents' signing was quite infrequent overall, this filming choice meant that our data on parental signing are not comprehensive enough to allow quantitative analysis. Therefore, parental signing is discussed only anecdotally, and quantitative analysis is reserved for the children's signing. All exchanges in which the children and/or the parents used any signs visible on the videotape were transcribed, and every child-produced sign token was coded for its function in the interaction and for whether the sign was preceded by a parent's production of the sign or the corresponding spoken word. The latter measure may give an estimate of the relative spontaneity of signing for each of the children and the degree to which the signs added otherwise unavailable information to the interaction. Communicative functions were determined from context and from the parents' responses. Almost all of the children's signs fell into one of the following categories: requests, politeness formulas, labels, or displays of knowledge. These functions are discussed at length in a later section that details the children's signing.

The Families' Choice of Baby Signs

As stated earlier, none of these three Central Texas families had any contact with ASL or the Deaf community before deciding to sign with their children. Rebecca's parents first encountered the idea through a friend who was using signs with her son who has microcephaly, a congenital disorder resulting in an abnormally small head. The young boy had been having problems learning to talk, and his physical therapist suggested that

his parents try using signs. Seeing the boy's improved communication skills when using signs and noticing Rebecca at about thirteen months of age trying to communicate without knowing many words, her parents decided that signing might be helpful for her as well. While the idea of signing came from the family friend, Rebecca's first signs were actually brought into the family by her five-year-old brother, who was learning a few signs at school.

Daniel's mother came across discussions of baby signing in an email list of stay-at-home mothers who were practicing attachment parenting, a child-rearing philosophy that, according to the website of Attachment Parenting International, "encourages responsiveness to the infant or child's emotional needs, and develops trust that their emotional needs will be met" through practices such as cosleeping and child-led weaning. Kai's mother first read of baby signing in a story in *Soap Opera Digest*. All three families gave as their primary reason for signing the desire to facilitate earlier and clearer communication and to lessen the children's frustration.

As mentioned earlier, discussions in the public sphere of what types of signs to use can become heated. However, none of the families in our case studies took part in these conflicts. When choosing to introduce a sign to their child, they all consulted printed or online ASL dictionaries. Yet all three families also used signs that the children themselves invented or adapted from other gestures. For example, one of Kai's invented signs was a wiping motion that meant CLEAN-UP. He used it to ask his mother to clean dirt off a toy shovel and to wipe up a puddle of water on the patio. Kai's mother had no problem with using this sign in the family even though she had chosen to teach him ASL signs. She explained her philosophy in our discussion:

Mother: Any kind of language that I like to learn, I like to learn the proper way to say things, the proper pronunciations, the proper words, and so I figured with signs I'd prefer to learn the real thing. Plus I thought that if we did decide to continue it, especially as a language, then it would be a lot easier than starting off with signs that weren't really sign language and trying to

unteach those and teach the real ones. Except for, for now, the word *help*, I just thought that that was too difficult for him to figure out.

Ginger: So, did you come up with the other one, or was that an option?

Mother: No, that one was suggested by *Sign with Your Baby*, and that was the alternative that was suggested. It's so much easier for little kids, just to go like that than to do the other one.

With this statement, Kai's mother demonstrated that, unlike some baby-signing parents, she understood the difference between baby signing and ASL as a language. Her respect for "the real thing," however, could in some circumstances give way to her desire to make the learning of signs easy for her child. As discussed earlier, the decision to sign with a child is an adaptation of the linguistic environment to the child. Parents may also adapt to their child's abilities in the choice of which signs to introduce, as in Kai's mother's choice of which sign for HELP to teach him. Instead of introducing ASL HELP, which involves two different handshapes for the two hands, Kai's mother taught him to pat his chest with two flat hands, as Garcia (1999) recommended.

Rebecca's parents were likewise hesitant to present her with signs that they felt she would have trouble producing, such as PLAY, which uses a Y handshape, and READ, which uses a V handshape. Despite their hesitation, they taught her READ, and their thought that she might have trouble with the handshape was well founded: She produced it with a 5 handshape instead of the required V handshape. The children made errors in their sign productions, especially in handshape, that were parallel to errors made by natively acquiring children (Meier 2006). Their parents were happy to accept even ill-formed signs as meaningful as long as they could figure out what the child intended, again demonstrating accommodation to the child.

The motivations and philosophies of the families in this case study appeared largely consistent with those seen in our survey of media representations of baby signing. In the following section we present details of these families' sign interactions and discuss the functional roles that baby signs played.

The Children's Signing

Daniel had the largest sign vocabulary of the three children, with 24 different signs produced on videotape and 9 more that his mother reported him as knowing. He produced six different spoken words on videotape: *baby*, *shirt*, *nummy* (the verb *nurse*), and the names of three letters. He produced one simultaneous sign and word, *baby*. Thirty-two percent of his 72 sign productions were preceded by his mother's production of the sign or of the corresponding word.

Kai produced 8 different signs on videotape, and his mother reported that he knew 9 more. Thirty-six percent of his sign productions were preceded by his mother's signing or speech. He produced seven different words on videotape and spoke simultaneously with 4 of his 22 total sign productions.

Rebecca, who spoke the most of the three children, produced a word simultaneously with 40 of her 78 taped sign productions (51 percent). She produced six different words for which she did not know the corresponding sign. She produced 12 sign types on videotape and was reported to know 5 more. The majority of her sign productions (50 of 78, or 64 percent) were immediately preceded by her parents' productions of the sign or of the corresponding word.

All three children frequently used signs for requests, but they differed with regard to the other observed functions. In Daniel's signing, labels predominated, while Rebecca produced a large number of politeness formulas. Kai, the youngest, signed less than the other two children and produced mostly requests and a few labels.

Baby Sign Functions

Requests

The parents in all three of the families encouraged signing for requests, which made up the largest portion of Kai's and Rebecca's signing, at 73 percent (16 of 22) and 46 percent (36 of 78) of sign productions, respectively. In Daniel's signing, requests were second to labels in frequency, at 22 percent (16 of 72).

Kai signed MORE ten times in two hours of tape and produced no other sign more than twice. His use of MORE did not necessarily imply that he had already had some of what he was requesting:

Before the exchange in example 1, for instance, he had not been eating recently:

Example 1.

- Mother:** Do you want me to get some grapes for you, Kai?³
- Kai** (15½ months): (looks at mother) MORE
- Mother:** You want more? Why don't you come over here. Wanna come over here and have some grapes?
- Kai:** No. (getting up)
- Mother:** No? Yes?
- Kai:** MORE (walking to kitchen, laughing)

In this interchange, Kai's speech ("no") actually contradicted both his signing and his movement toward the kitchen. He ultimately received and ate some grapes; it appears that his signing was a more accurate indication of his wants than his speech in this instance.

The examples that Rebecca's parents gave when discussing why they decided to sign with her all had to do with her communicating to them what she wanted. They reported that they noticed her at about thirteen months of age trying to communicate but not being able to get her message across clearly in speech. To ask for a drink, she would bang on the refrigerator and then point at what she wanted. To ask for a snack, she would do the same to the cupboard. If she wanted to be read to, she would hit one of her parents on the arm. When she whined and fidgeted in her highchair, her parents did not know whether she wanted more food, wanted something out of her reach on the table, or was finished eating and wanted to get down. These situations led to the introduction of the signs DRINK, SNACK (= EAT), BOOK, MORE, ALL-DONE (= FINISH), and DOWN.⁴ Rebecca's parents felt that the signs had indeed led to clearer communication. Yet in many situations, Rebecca's earlier methods of communicating were perfectly effective: Her parents knew what being hit on the arm meant, what being led to the refrigerator meant, and so on. The issue was not just communication of what she wanted; it was socially appropriate ways to communicate those wants.

Bringing Up Baby with Baby Signs | 405

In many of the videotaped request sequences, Rebecca signed only after one of her parents either had already offered her something or had interpreted her nonverbal, nonsigning behavior to determine what she wanted. This observation held true for the other children as well; note that in example 1, Kai's request for grapes followed his mother's offer. In example 2, Rebecca's father was already in the process of fetching her a drink before her production of the sign DRINK:

Example 2.

Mother:	Need a drink?
Rebecca (17 months):	DRINK
Mother:	Drink?
Rebecca:	[dwɪ]
Mother:	Drink?
Rebecca:	[wɪ]
Mother:	m hm.
Father:	What do you say?
Rebecca:	[di]
Father:	Drink. What do you say? Say "please."
Rebecca:	PLEASE
	[bi, bi]
Father:	Okay. (gives cup to Rebecca)

When Rebecca initiated a request, she often pointed at what she wanted, as in example 3:

Example 3. (At dinner, Rebecca's cup is out of her reach on the table.)

Rebecca (17 months):	(pointing to cup) [əm]
Mother:	Drink? Drink?
Rebecca:	DRINK
Mother:	Drink? Please?
Rebecca:	[bi]
Mother:	(gives cup to Rebecca) Thank you.
	(Rebecca drinks)

In examples 2 and 3, Rebecca's parents encouraged her to produce the sign DRINK and the politeness formula *please*, either signed or spoken, as a prerequisite to her receipt of her drink, even though these productions were not necessary for her parents to understand what she wanted. These examples thus clearly show a process of socialization: Rebecca was being socialized into the appropriate way to request something and into language-based interactional routines more broadly. Twenty-four of her 36 signed requests were immediately preceded by a production of the same sign or the corresponding word by one of her parents.

The corresponding numbers were smaller for Kai and Daniel, at 7 of 16 and 5 of 16 respectively, although still making up more than a third of each child's signed requests. Even when the children were prompted, their signs could still signal the acceptance of something that was being offered; thus these utterances were not necessarily uninformative. Nonetheless, the frequency with which requests were prompted implies that the typical anecdote of a distraught infant who cannot otherwise communicate what she wants being rescued by the use of baby signs is perhaps not as common as its prevalence in baby-sign materials and media reports suggests.

The role of signed requests in Kai's socialization is evident in his mother's explanation of why the family found signing useful. She described Kai's learning of MORE: "There was a while before he was really using 'more' that he would just point and just make this really annoying æ æ æ æ æ. So we spent a couple of days just telling him, ya know like, 'show us with your hands, show us with your hands.' And

MORE _____

once he got that down, then the æ æ thing went away. Oh, that was so nice!" This description shows that what was being encouraged was not only clearer communication but also, perhaps even more important, communication that was less irritating to the parent.

By the time of the first author's last visit with Rebecca's family, Rebecca was twenty-one months old, speaking more and signing less. She produced almost no signs on videotape, but her parents reported that she had recently begun using her signs for emphasis, when her

spoken words did not have the desired effect. For example, her father reported the following exchange, which had happened as he was putting his coat on to leave for work:

Example 4.

Rebecca (twenty-one months): Outside. Coat.

Father: No, you can't go outside now.

Rebecca: COAT

At a follow-up visit more than a year after the videotaping sessions, Daniel's mother told a similar story: "I think one of the very last times that Daniel signed it was 'more,' 'cause he *really* wanted more and I told him he couldn't have more. And I had thought that he had really forgotten them all." Both of these children seem to have retained signs in their communicative repertoire even after they largely ceased using them for their previous functions. These signs were available for innovative use when the need arose.

Politeness Formulas

Consistent with the use of signs for socially appropriate requests is the use of signs to teach politeness formulas. This role of signing was very important in Rebecca's family. The first two signs her parents taught her were PLEASE and THANK-YOU. Out of the 78 sign tokens that Rebecca produced on videotape, 25 were tokens of PLEASE. More than half of these productions were prompted by one of her parents, as was true in example 2. In that example, Rebecca's father was teaching her not only to say "please" when requesting something but also to respond to the common but indirect prompt "What do you say?" (also commonly used to elicit other politeness formulas, including "thank you"). During the first taping, Rebecca never responded to "What do you say?" with a form of "please." Her parents sometimes produced a more direct prompt and sometimes allowed the interaction to continue without "please." By the next taping, a little more than a month later, Rebecca answered "What do you say?" with PLEASE and/or [bii] (her pronunciation of the word *please*) several times:

Example 5. (Rebecca [18½ months] points from her high-chair to her bowl on the kitchen counter.)

Father: Need this?
Rebecca: Yeah.
Father: What do you say?
Rebecca: PLEASE
 [bii]

With regard to politeness formulas, Rebecca's mother pointed out an additional benefit of signing for use with the family's older children as well: Signing allows parents to discretely remind children of politeness formulas when in public. At the first author's third visit, when Rebecca's spoken words were increasingly replacing her use of signs, her mother reported that Rebecca's five-year-old brother had in fact adopted this use of signing with his little sister, signing PLEASE to prompt her to say the word.

The other two families did not emphasize politeness formulas to the same degree as Rebecca's. Daniel did not know PLEASE, and Kai knew neither PLEASE nor THANK-YOU. Daniel used THANK-YOU but not to thank anyone other than himself. Daniel's mother reported that they often said "Thank you" to him when he stopped doing something that they did not want him to do and that Daniel therefore seemed to associate THANK-YOU with the end of his own misbehavior. In example 6 he used THANK-YOU repeatedly while playing with dresser drawers:

Example 6. (Daniel [18½ months] pulls the drawer open, then closes it.)

Daniel: THANK-YOU. THANK-YOU.
Mother: Thank you. That's right! Thank you.
 Too bad you weren't turned around.
 (Ginger moves the camera.)
Ginger: There he is.
Mother: Can you say "Thank you" again? Can you sign "Thank you"?

- Daniel:** THANK-YOU.
Mother: Thank you.
 (Daniel stands up and opens another drawer)
Mother: Can you shut it? Can you shut the drawer?
 (Daniel shuts the drawer)
Daniel: THANK-YOU. THANK-YOU.
Mother: |Thank you. |Thank you. Sweetheart, it
 might be more useful if you just didn't do it.
Daniel: THANK-YOU. THANK-YOU.
Mother: |Thank you.

In three instances during the second taping, Daniel again signed THANK-YOU after putting something away or straightening it up: once after picking up the water cup that he had accidentally kicked over, once after putting letter blocks into the seat of a toy car, and once after putting the same letters in a row on the floor. Whenever he used THANK-YOU, he tended to repeat the sign several times, yielding a large total number of tokens (fifteen) during only four episodes. Although these productions of THANK-YOU have been counted as instances of politeness formulas, they seem to function more to mark the completion of a straightening-up episode.

Labeling

While Rebecca and Kai signed most frequently for requests, labeling was the most common function of Daniel's signs. Of the 33 signs that his mother reported him as knowing, 19 were nouns. Of the 24 that he produced on tape, 14 were nouns. Seven of these nouns were produced on tape exclusively as labels, and all but two (MILK and MEDICINE) were sometimes used as labels. In contrast, of Rebecca's 17 total signs, only 5 were nouns, and she used them only as requests or displays, not as labels. Kai's use of labels fell between that of the other two children: His noun sign vocabulary was similar to Rebecca's (6 nouns in a sign vocabulary of 17), but he used them as labels several times, signing AIRPLANE when he heard a plane overhead, for example.

Example 7 presents a typical labeling interaction between Daniel and his mother as they looked at a book together:

Example 7. (Daniel [18½ months] points to a picture in the book.)

Daniel:	[ə]
Mother:	Dog.
Daniel:	DOG
Mother:	That's right! DOG. That's right, dog. (Daniel points.) Can you say dog? d-og. dog. (Daniel puts the ball that he is holding down Mother's shirt) Oh, thank you. (laughs) Thank you very much. (Daniel points to a picture.)
	There's a ball. There's a ball. ⁵
	BALL _____
	(Daniel points to a picture.) What's that?
	What is it?
Daniel:	CAT
	[ə]
Mother:	It's a kitty! It's a kitty!
	CAT

The fact that Daniel used signs for labels is unsurprising, as he frequently sought to elicit labels from his mother. Much of the interaction between him and his mother involved his pointing to objects while saying [ə], to which she responded with the name of whatever he was pointing to. Daniel produced very few spoken words on the videotape, and he babbled hardly at all. He appeared very interested in the names of objects, and his preferred modality for producing these names was signing.

Displays of Knowledge

In example 7 Daniel's mother asked, "What's that?" not because she did not recognize a picture of a cat but to encourage Daniel to demonstrate his knowledge. Similarly, one of Daniel's productions of

THANK-YOU in example 6 was a response to his mother's prompt for the benefit of the camera, rather than a spontaneous marking of the end of a straightening-up episode. While some such prompted demonstrations involved signs that were relevant to the previously established discourse context, both Daniel's mother and Rebecca's parents sometimes prompted their children to perform signs whose semantic content was not relevant to the situation (e.g., in Rebecca's case, PLEASE when nothing was being requested or BATH when it was nowhere near bath time). In the calculation of sign functions shown in appendix 2, only the latter type of usage was counted as a "display of knowledge"; for example, sign productions with simultaneous roles as labels and displays were counted as labels.

Some displays were clearly for the camera:

Example 8. (Rebecca [17½ months] goes up to the camera and reaches out to touch it.)

- Father:** No, no. You have to show her "bath."
Rebecca: | BATH
 | [bæ bæ]
Ginger: Oh, that's good!
Father: Can you show her "shoes"?
 (Rebecca sits down and grabs her shoe. Ginger and Father laugh.)
Ginger: There they are. Yup, there's the shoes.
Father: Show her "thank you."
Rebecca: | THANK-YOU (looking at Father)
 | [mmæŋgege]
Father: Look at her and say "thank you." Look at the camera. Say "thank you."
Rebecca: (gets up, looks into camera) | THANK-YOU
 | [mmɪŋku]
Ginger: You're welcome.
Father: Let me see "bath" again. Show me "bath."
Rebecca: | BATH
 | [bæ]

Although the effects of the camera's presence are clear in this example, two pieces of evidence suggest that the family had similar exchanges when they were not being videotaped. First, Rebecca was very good at them: She likely had had practice. Second, the prompting routines that the parents used for signs paralleled those they used to elicit the performance of other types of knowledge, such as body parts or animal sounds. Example 9 illustrates this parallelism:

Example 9. (At the table, before dinner, Rebecca's father is describing how she signs book.)

- Father:** Can you show me "book"?
(Rebecca [17½ months] vocalizes and fidgets.)
- Father:** Can you show me "book"? No?
- Mother:** No?
- Father:** (taps Rebecca's arm) Can you show me your nose?
- Rebecca:** BOOK. (touches her nose)
- Ginger:** There it is.

Believing that Rebecca was not going to respond to his elicitation of BOOK, her father elicited an alternative piece of knowledge. Both kinds of knowledge, signs and body parts, were appropriate objects of display. Through these types of interchanges, Rebecca was learning to demonstrate her knowledge at a certain level of abstraction, away from any obvious application for that knowledge. She happily pointed to parts of her body as her parents listed them and identified family members in a photo album. Her parents consciously integrated signing into these routines of learning and demonstration. At one visit, Rebecca's mother asked the researcher to show her the signs for colors and explained that, now that Rebecca was good at identifying body parts, they would be working more on color terms.

Variation between Children and between Families

The three children we studied showed somewhat different uses of signs. While all of them used signs for requests, Daniel tended to sign more for labels, and Rebecca signed more politeness formulas than the

other two. Daniel rarely spoke while signing, but Kai sometimes did, and Rebecca produced a spoken word with half of her signs. This variation is not surprising, given the often-observed differences between children's language development more generally (e.g., Nelson 1981). Even some of the strongest proponents of baby signing, Acredolo and Goodwyn, have pointed out that the uses and usefulness of signing may vary depending on different children's development of the various components that make up language (Acredolo and Goodwyn 1990). Among these three children, Daniel was the least vocal. On videotape, he neither babbled nor frequently produced spoken words, although all but one of the words that he produced on tape were very clearly articulated. Signing allowed him to satisfy his penchant for labeling while his expressive abilities developed in speech.

The abundance of politeness formulas in Rebecca's signing most likely stemmed from the family dynamic. While Daniel and Kai are only children, Rebecca has two older brothers. Given her brothers' fluent use of politeness formulas, her parents are certainly capable of teaching them without using signs. These families adapted signing to the needs and preferences of each child and integrated it into the parenting and language socialization practices that they would likely have engaged in whether or not they had adopted baby signs.

Baby Signing as Language Socialization

Ochs (1986, 2) defined *socialization* as "an interactional display (covert or overt) to a novice of expected ways of thinking, feeling, and acting" and *language socialization* as "both socialization through language and socialization to use language." If we look at baby-sign interactions with these definitions in mind, we can see that, in addition to learning the signs themselves, the children are learning certain kinds of participant structures and interaction rituals (Pizer 2004). Children are acquiring "expected ways of acting," as well as distinct associations for speech and sign that may reveal their society's "expected ways of thinking or feeling" in relation to these communication modes.

The use of signs to teach socially appropriate behavior was demonstrated in the sections on requests and politeness formulas. The other common functions of baby signing in these families also play a role in

language socialization. The use of signs as prompted by the parents gave the children practice in particular kinds of interactions, such as the labeling of pictures in books, as in example 7. As Heath (1983) has pointed out, such book-reading behavior is not universal even in all U.S. communities. It is, however, extremely common and highly valued in the mainstream middle-class community, whose ways of speaking and reading are reflected in the educational system. Also useful in future school situations is the ability to display decontextualized knowledge on demand, as Rebecca did in example 8. Some display interactions, such as in example 10, followed the initiation, response, and evaluation (IRE) pattern that has been frequently observed in classroom interaction (Mehan 1979; Cazden 2001):

Example 10.

Mother: There's your bear! What's the sign
for "bear"?

Daniel (20 months): BEAR

Mother: That's right!

Like the "mainstream" children in Heath's study who learned at home ways of talking, telling stories, and dealing with books that prepared them for classroom routines, these signing families' socialization of their children into knowledge-display exchanges and book-reading interactions teaches them ways of speaking and acting that they will find useful as they get older. To the degree that this early practice in such interactions gives these children of the professional class an advantage in educational settings, baby signing may play a role in reproducing social hierarchies within the hearing world. Of course, such a claim is not to say that this socialization could not take place without baby signs, as Rebecca's older brothers illustrate. Rather, baby signs are a new means recruited for an old purpose.

Implications of Baby Signing for Hearing Views of Sign Language

Even while promoting a positive view of signing, neither the publicity surrounding baby signs nor the behavior of baby-signing families

challenges the social primacy of spoken language over signed language. One of the most-emphasized claims that the proponents of baby sign make is that its use might accelerate the acquisition of spoken language: They present signing as a stepping-stone toward speech, not as a goal in itself. This argument is often made in response to parental concern that using baby signs will delay spoken language acquisition, the same fear that lay behind decades of oralism in the education of deaf children. The sign-as-stepping-stone attitude is evident in the details of parent-child interaction, as well as in the transitory nature of the children's signing. Signs that the families used during the early stages of their children's language development generally disappeared several months later in favor of speech.

Even when signs are still in use in the family, their part in parent-child interaction is clearly distinguished from that of speech. Example 7 (repeated here as example 11) demonstrates the different roles of signs and words:

Example 11. (Daniel [18½ months] points to a picture in the book.)

- Daniel:** [ə]
Mother: Dog.
Daniel: DOG
Mother: That's right! DOG. That's right, dog. (Daniel points.) Can you say dog? d-og. dog. (Daniel puts the ball that he is holding down Mother's shirt) Oh, thank you. (laughs) Thank you very much. (Daniel points to a picture.)
 | There's a ball. There's a ball.
 | BALL _____
 (Daniel points to a picture.) What's that?
 What is it?
Daniel: | CAT
 | [ə]
Mother: It's a kitty! | It's a kitty!
 | CAT

As Daniel and his mother labeled pictures in a book, he produced the sign DOG, eliciting not only approval from his mother but also an attempt from her to teach him to pronounce the word, now that he knew the sign. The sign BALL fell in a different category because Daniel's mother had only recently begun teaching it to him, and he had not yet produced it. In this episode, BALL was the only sign that Daniel's mother produced before he did; for signs that he already knew, she prompted him to sign using only spoken English and then repeated the sign after he produced it. For any given vocabulary item, her presentation to Daniel would first be the spoken word produced simultaneously with the corresponding sign. Once he knew the sign, she would generally use the spoken word to encourage him to produce the sign and would then move on to encouraging him to speak the word. This pattern shows a clear progression from sign to speech.

At the time of the taping of example 11, Daniel's productive vocabulary consisted primarily of signs, with very few spoken words. At a similar age, Rebecca spoke much more and demonstrated the transition away from signs and toward the spoken language. As discussed earlier, her most frequent sign was PLEASE, which she had learned before ever producing the spoken word. By the time of videotaping, she almost always said the word, which she pronounced [bi], along with the sign; she spoke simultaneously with 18 of her 25 videotaped productions of the sign. By the third videotaping session, when Rebecca was 21 months old, her parents reported that she almost never signed PLEASE anymore and instead said the word by itself.

These examples demonstrate the temporary (but not unimportant) nature of signing in these families. The transition from sign to word can begin early in the language acquisition process, as soon as the child's productive spoken vocabulary begins to expand. For example, the youngest of the three children, Kai, was 16½ months old the second time he was videotaped. When asked whether he had learned any new signs since the previous visit, his mother listed a few but added, "Since he's been a little more verbal, I think we haven't been using or learning new signs as much." Rebecca's mother made a similar observation concerning her own elicitation behavior when her daughter was 18½ months old: "Instead of saying, 'Show me,' for the sign, I say, 'Can you say?' Just because she's saying more things now,

that I try to encourage her to talk, and so I don't necessarily say, 'Can you show me?'"

The change from sign to speech is seen as natural, as presented in a mother's online posting about her son: "He *of course* stopped using signs when the verbal skills became more efficient" [emphasis added] (INFO-CHILDES, Kohnert-Rice, January 15, 1999). The transitory nature of baby signing is even more evident in the fact that, a few years after he stopped signing, Daniel, then a very talkative four-year-old, did not remember ever having signed. It is important to note that the parents may not be solely responsible for the switch from sign to speech. It is very likely that the children, growing up in a speaking environment, stop using signs upon finding them to have limited utility once they are able to communicate easily in speech. In fact, Daniel's mother expressed regret that she had not pushed harder to maintain the signs in family communication.⁶

As the examples show, once the children had learned a particular sign, their parents often used speech exclusively when encouraging them to sign. For example, recall Rebecca's extended performance for the camera in example 8. Throughout that entire example, Rebecca's father did not produce a single sign. This difference between the parents' and the children's behavior might have created associations between speech and maturity, on the one hand, and sign and immaturity, on the other.⁷

The associations between the different modalities and the people who communicate in each one can be interpreted as an example of what Irvine and Gal (2000) have called *iconization*. They suggest that linguistic features that once merely indexed social groups or activities may come to be seen as "iconic representations of them, as if a linguistic feature somehow depicted or displayed a social group's inherent nature or essence" (37). This concept is not related to the idea of iconic signs. Instead, it is a question of a misinterpretation of a link between a group and its language, such that the two come to be perceived as sharing the same characteristics. In this case, signing is linked with pre-verbal infants. Sign may become iconized in connection to infants' limited communicative abilities, contrasting with the adult spoken language model. This iconization may then reinforce the misconception prevalent in the hearing community of signed language as simpler than spoken language.

The view of sign as simple can be found in media and online reports about baby sign. For example, a journalist for the *San Francisco Chronicle* praised the baby sign program: “These *simple signs* are a valuable window into the brains of babies and toddlers. ‘I was amazed at what went on in her mind,’ Walsh says of Ji-ren, who at 2 has begun using *complex verbal sentences*” [emphasis added] (Spear 1999). Such a view makes sense of a mother’s exclamation in Acredolo and Goodwyn (1996): “When I first heard about Baby Signs, I thought, ‘But I know nothing about sign language!’ . . . I was practically doing it already without even knowing it. It comes so easily!” (33).

For most of the journalists, what the babies are using is “sign language” (e.g., “This communication abyss can be overcome by using sign language”; Ahuja 1997). It is doubtful that such writers consider sign language to be equivalent to spoken language. In fact, much of the general public seems to equate signing with body language. A letter to the editor written in reply to an article on baby signs in the *Times of London* read, “Babyhood is not the only time that humans resort to communicating in sign language. Scientists would do well to come to my house and study ‘The teenager: non-verbal language skills’ . . . [including] the slouch n’ scowl” (Astley 1997). The same point of view is in evidence when Bill and Martha Sears (1997), the “Pediatrician and Baby Expert” for iVillage.com and the best-known proponents of Attachment Parenting, said that “The book *Baby Signs* is excellent because it makes the point that communication begins with body language, not just verbal language. . . . By learning to read baby’s body language, you are able to communicate with your baby long before he or she becomes verbal.” When discussing the signing success of her friend’s son, Rebecca’s mother said, “Now he’s signing more than using language.” This comment reveals an assumption that language is not signed.

Acredolo and Goodwyn (1996) do not claim that the program they promote in *Baby Signs* is a language, and in fact, they sometimes contrast simple baby signs with complex ASL. Believing that gestures invented by the child or the parent are easier than ASL signs, Acredolo advocated the use of such invented signs in a newspaper interview: “If a parent wants to introduce a child to ASL, that’s great. . . . We just don’t want parents to think they can’t use baby signs because they are

too complicated” (Spear 1999). As discussed earlier, proponents of the program described in *Sign with Your Baby* advocate the use of signs from ASL in part because it is a true language. However, we have seen that the Central Texas families made no distinction between ASL signs and the gestures that they had invented in their family interactions. None of them learned any ASL grammar. At the time they joined the study, Rebecca’s parents had signed for a number of months. Nonetheless, they still held one of the most common misconceptions about sign language: that it is universal. The fact that these families almost always speak while signing and that the baby-sign programs encourage them to do so may also reinforce the common misconception that sign languages are based on spoken languages.

The view of sign as simple and the differential use of sign and speech in baby-signing families have somewhat problematic implications for the hearing community’s view of signed languages in general and of the Deaf adults who use them. For baby signers, signing is viewed as beneficial; however, it is nevertheless only a tool, a transitory stage on the way to the spoken language. We have seen how quickly the tool is discarded when it is no longer needed. Garcia’s hope that baby signing will “reduce the barrier between the deaf and hearing communities” (www.sign2me.com, October 13, 1999) appears then to be unrealistic.

Nevertheless, in the Central Texas families we studied, the experience of signing with their children did lead the parents to learn more about ASL and Deaf culture. Daniel’s mother learned from a friend that the production of isolated signs without ASL syntax could not be considered actually teaching Daniel ASL. Kai’s mother considered taking ASL classes in order to be able to teach him the language, although she ultimately did not follow through with this plan. Rebecca’s mother read a book on the history of deaf education and during one research visit exclaimed her shock that deaf children had for many years been prevented from signing in school. Baby signing seems then to have somewhat contradictory effects: It is based on a positive view of signing, and it increases the hearing community’s knowledge of basic signs and in some cases their curiosity about sign language and deafness in general. On the other hand, the ways that these families use signs as a temporary tool for preverbal infants may

encourage a set of assumptions about the nature of sign language that reinforce some of the hearing community's most common misconceptions.

Conclusion

This article is not meant to criticize hearing parents who have chosen to sign with their hearing infants, nor is it meant to unhesitatingly laud the practice. Instead, it is an analysis of the social and ideological context in which the practice has arisen, as well as of the roles that signs played in the interactions of three baby-signing families in Central Texas. Future research with larger numbers of families is needed to determine the degree to which these families are representative of others who use baby signs.

On a larger scale, study of an international sample of baby-signing families would provide valuable information on social and cultural influences on baby signing. Naturalistic research using two cameras—one for the child and one for the parent—would allow more analysis of parental signing behavior than we were able to present here. Based on the information that we have, however, we argue that baby signing fits neatly into the parenting ideologies prevalent in the professional class in the United States. These ideologies value early communication with infants and promote the adaptation of the physical, social, and linguistic environment to their perceived needs.

The use of signs as a baby-enrichment resource is consistent with the growing popularity of sign language in other arenas, even as many of the most common misconceptions concerning sign languages persist. Although the marketing claims for baby-sign programs are not all well supported, the parents in this case study felt positive about their decision to sign and believed that the practice had improved early communication in their families. In the details of everyday interaction, these baby-signing families used signs to socialize their children into participation frameworks and interaction rituals that may benefit them as they move into school and the larger society. Although hearing parents who choose to sign with their hearing babies often become somewhat more knowledgeable about sign languages and the Deaf community than they otherwise would have, the relatively quick disappearance of signing from

the family discourse as the children grow older will most likely mean that the long-term impact of the practice is less than its most eager proponents had hoped.

Notes

1. All of the names are pseudonyms.
2. In this article we use the word *sign* to refer to any consciously adopted gesture whose use is conventionalized within the families under study, regardless of whether the origin of the gesture is a natural sign language, a purveyor of baby sign materials, or a member of the family. The use of a single term is justified by the fact that the families use all of the signs in a similar way and make no functional distinctions related to sign origin. Neither pointing nor natural cospeech gestures are signs in this sense; these behaviors are not addressed in this study.
3. Signs are represented in SMALL CAPITALS. Phonetic transcriptions are within [brackets]. A vertical line represents simultaneous sign and speech, and a horizontal line represents the repetition of the sign over a period of time.
4. Rebecca's family used the ASL sign EAT only to refer to a snack (i.e., not to food eaten as part of a meal) and usually said the word "snack" while signing it. Similarly, they almost always said "all done" when producing the ASL sign FINISH. We have therefore glossed these signs as SNACK and ALL-DONE.
5. As we discuss in a later section, Daniel did not know the sign BALL at the time of this example; his mother's production can be seen as an attempt to teach it to him. This example is one of very few sign-teaching episodes observed on the videotapes. In most cases, signs produced by either parents or children were ones that the children already knew. We have therefore not included any analysis of the parents' teaching of signs.
6. We would like to thank an anonymous reviewer for pointing out the importance of the children's agency in the decrease of sign use in favor of speech.
7. An anonymous reviewer argued that baby signs could be considered as a form of "motherese," which would be expected to be transitory. We do not feel that this parallel is exact, in that child-directed registers are generally produced by parents, not children, to facilitate the children's comprehension or attention, whereas baby signs are produced much more by the children than by the parents and are intended to facilitate the children's production and the parents' comprehension. To the degree that baby signs are similar to "motherese," such a connection would play into a semiotic link between signs and immaturity.
8. From his mother's diary of Kai's sign and speech production.

References

- Acredolo, L., and S. Goodwyn. 1988. Symbolic Gesturing in Normal Infants. *Child Development* 59: 450–66.
- . 1996. *Baby Signs: How to Talk with Your Baby before Your Baby Can Talk*. Chicago: Contemporary Books.
- . 2000. The Long-term Impact of Symbolic Gesturing during Infancy on IQ at Age 8. Paper presented at the International Conference on Infant Studies, Brighton, UK. <http://www.babysigns.com/longtermimpactarticle.htm>.
- Acredolo, L., S. Goodwyn, and D. Abrams. 2002. *Baby Signs: How to Talk with Your Baby before Your Baby Can Talk*. New York: McGraw-Hill.
- Ahuja, A. 1997. The Babies Who Speak in Signs. *Times of London* (April 15, 1997).
- Anderson, D., and J. Reilly. 2002. The MacArthur Communicative Development Inventory: Normative Data for American Sign Language. *Journal of Deaf Studies and Deaf Education* 7: 83–106.
- Astley, J. 1997. Letter to the editor. *Times of London* (April 19, 1997).
- Attachment Parenting International. <http://www.attachmentparenting.org/>.
- Baynton, D. C. 1996. *Forbidden Signs: American Culture and the Campaign against Sign Language*. Chicago: University of Chicago Press.
- Berck, J. 2004. Before Baby Talk, Signs and Signals. *New York Times* (January 6, 2004). <http://www.nytimes.com/2004/01/06/health/06BABY.html>.
- Bryen, D. N., and D. G. Joyce. 1985. Language Intervention with the Severely Handicapped: A Decade of Research. *Journal of Special Education* 19: 7–39.
- Cazden, C. B. 2001. *Classroom Discourse: The Language of Teaching and Learning*. Portsmouth, N.H.: Heinemann.
- CBS News. 2005. Signing to Toddlers. May 11, 2005. <http://www.cbsnews.com/stories/2005/05/11/eveningnews/main694676.shtml>.
- Fenson, L., P. S. Dale, J. S. Reznick, E. Bates, D. J. Thal, and S. J. Pethick. 1994. Variability in Early Communicative Development. *Monographs of the Society for Research in Child Development* 59(5) Serial No. 242.
- Fenson, L., P. S. Dale, J. S. Reznick, D. Thal, E. Bates, J. P. Hartung, S. Pethick, and J. S. Reilly. 1993. *MacArthur Communicative Development Inventories: User's Guide and Technical Manual*. San Diego: Singular.
- Garcia, J. 1999. *Sign with Your Baby: How to Communicate with Infants before They Can Speak*. Seattle: Northlight Communications.
- Garrett, P. B., and P. Baquedano-López. 2002. Language Socialization: Reproduction and Continuity, Transformation and Change. *Annual Review of Anthropology* 31: 339–61.
- Glazer, S. 2001. Is It a Sign? *Washington Post* (March 13, 2001), p. T12.
- Goodwyn, S., and L. Acredolo. 1993. Symbolic Gesture versus Word: Is There a Modality Advantage for Onset of Symbol Use? *Child Development* 64: 688–701.

- . 1998. Encouraging Symbolic Gestures: A New Perspective on the Relationship between Gesture and Speech. *New Directions for Child Development* 79: 61–73.
- Goodwyn, S., L. Acredolo, and C. A. Brown. 2000. Impact of Symbolic Gesturing on Early Language Development. *Journal of Nonverbal Behavior* 24: 81–103.
- Heath, S. B. 1983. *Ways with Words: Language, Life, and Work in Communities and Classrooms*. New York: Cambridge University Press.
- Helms, A. 1999. How to Raise a Cookie Monster. *Toronto Star* (November 22, 1999).
- Hochman, D. 2005. Their Fingers Do the Talking. *Life* (February 25, 2005).
- Holder, K. 1995. Signs That Infant Is Learning; Babies Can Talk with Their Hands. *Houston Chronicle* (September 28, 1995).
- INFO-CHILDES archives: General issues in child language development. January 12–15, 1999. <http://listserv.linguistlist.org/archives/info-childes.html>.
- Irvine, J. T. 1989. When Talk Isn't Cheap: Language and Political Economy. *American Ethnologist* 16: 248–67.
- Irvine, J. T., and S. Gal. 2000. Language Ideology and Linguistic Differentiation. In *Regimes of Language: Ideologies, Politics, and Identities*, ed. P. V. Kroskrity, 35–83. Santa Fe: School of American Research Press.
- Johnston, J. C., A. Durieux-Smith, and K. Bloom. 2005. Teaching Gestural Signs to Infants to Advance Child Development: A Review of the Evidence. *First Language* 25: 235–251.
- Kroskrity, P. V. 2004. Language Ideologies. In *A Companion to Linguistic Anthropology*, ed. A. Duranti, 496–517. Malden, Mass.: Blackwell.
- Kulick, D., and B. B. Schieffelin. 2004. Language Socialization. In *A Companion to Linguistic Anthropology*, ed. A. Duranti, 496–517. Malden, Mass.: Blackwell.
- Ladd, P. 2003. *Understanding Deaf Culture: In Search of Deafhood*. Clevedon, UK: Multilingual Matters.
- Mehan, H. 1979. *Learning Lessons*. Cambridge, Mass.: Harvard University Press.
- Meier, R. P. 2006. The Form of Early Signs: Explaining Signing Children's Articulatory Development. In *Advances in the Sign Language Development of Deaf Children*, ed. B. Schick, M. Marschark, and P. E. Spencer, 202–30. New York: Oxford University Press.
- , and E. L. Newport. 1990. Out of the Hands of Babes: On a Possible Sign Advantage in Language Acquisition. *Language* 66: 1–23.
- Nelson, K. 1981. Individual Differences in Language Development: Implications for Development and Language. *Developmental Psychology* 17: 170–87.
- Ochs, E. 1986. Introduction. In *Language Socialization across Cultures*, ed. B. B. Schieffelin and E. Ochs, 1–13. New York: Cambridge University Press.
- , and B. B. Schieffelin. 1984. Language Acquisition and Socialization: Three Developmental Stories and Their Implications. In *Culture Theory:*

- Essays on Mind, Self, and Emotion*, ed. R. Shweder and R. Levine, 276–320. New York: Cambridge University Press.
- Orlansky, M. D., and J. D. Bonvillian. 1985. Sign Language Acquisition: Language Development in Children of Deaf Parents and Implications for Other Populations. *Merrill-Palmer Quarterly* 31: 127–43.
- Petitto, L. A. 1988. “Language” in the Prelinguistic Child. In *The Development of Language and Language Researchers: Essays in Honor of Roger Brown*, ed. F. S. Kessel, 187–221. Hillsdale, N.J.: Erlbaum.
- Pizer, G. 2004. Baby Signing as Language Socialization: The Use of Visual-gestural Signs with Hearing Infants. *Texas Linguistic Forum* 47: *Proceedings of the Eleventh Annual Symposium about Language and Society*, Austin. <http://studentorgs.utexas.edu/salsa/salsaproceedings/salsa11/salsa11contents.htm>.
- Sachs, J., B. Bard, and M. L. Johnson. 1981. Language Learning with Restricted Input: Case Studies of Two Hearing Children of Deaf Parents. *Applied Psycholinguistics* 2: 33–54.
- Sears, B., and M. Sears. 1997. November 12. <http://www.parentsoup.com/experts/sears>.
- Shield, A. M. 2004. How Infants Learn Signs for Objects: Testing the Nature of Unimodal Mappings. Master’s thesis, University of Texas–Austin.
- sign2me. Online discussion group. October 12–November 2, 1999. <http://www.sign2me.com>.
- Spear, P. 1999. Look Who’s Signing. *San Francisco Chronicle* (April 30, 1999).
- Stokoe, W. C., Jr. 1960. *Sign Language Structure*. Studies in Linguistics Occasional Papers 8. Buffalo: University of Buffalo Press.
- UC Berkeley Parents Network. January 1999. UCB parents’ advice about baby sign language. <http://parents.berkeley.edu/advice/babies/signing.html>.
- Volterra, V., and J. Iverson. 1995. When Do Modality Factors Affect the Course of Language Acquisition? In *Language, Gesture, and Space*, ed. K. Emmorey and J. Reilly, 371–90. Hillsdale, N.J.: Erlbaum.
- , and M. Castrataro. 2006. The Development of Gesture in Hearing and Deaf Children. In *Advances in the Sign Language Development of Deaf Children*, ed. B. Schick, M. Marschark, and P. E. Spencer, 46–70. New York: Oxford University Press..

Appendix I: Selected Baby Sign Websites and Recent News Reports (by Country)

Australia

- Baby Sign Time. <http://www.babysigntime.com/>
- ABC Mildura. Baby Bonding. <http://www.abc.net.au/milduraswanhill/stories/st1435409.htm>
- BellyBelly Forums: Baby Sign Language. <http://bellybelly.com.au/forums/viewtopic.php?t=6724>

Bringing Up Baby with Baby Signs | 425

Natural Parenting Forums: Baby Sign Language. <http://forums.naturalparenting.com.au/showthread.php?t=5979>
 TINYtalk. <http://www.tinytalk.com.au/>

Canada

Activités RealKidz. <http://www.kinderworkshops.com/realkidz.html>
 CBC News. March 10, 2004. Baby Signing. <http://www.cbc.ca/news/background/babysign/>
 CanadianParents.com: Teach Baby to Sign? <http://forum.canadianparents.ca/ubbthreads/showflat.php?Cat=andNumber=212091andpage=0andview=collapsedandsb=5ando=andfpart=1>
 Chatterbox Sign 4 Me. <http://chatterboxsign4me.bravehost.com/>
 Desmarais, Barbara. Teaching American Sign Language to Babies. *Early Childhood Educator*, journal of the Early Childhood Educators of British Columbia (ECEBC). http://www.cfc-efc.ca/ecebc/j_signlanguage.htm
 Little Hands Talking. <http://www.littlehandstalking.ca/>
 London Children's Museum: Sign, Sign, Babytime. http://www.londonchildrensmuseum.ca/parents_workshops.php
 Mimic Baby Sign Language. <http://www.mimicbaby.com/>
 Sign 2 Me. <http://canada.sign2me.com/>
 Toronto Wee Signs. <http://www.kinderworkshops.com/torontokindersigns.html>

Netherlands

Ouders Online. Forum-archieff, Baby gebarentaal. <http://www.ouders.nl/forum/lfo0383.htm>

New Zealand

Baby Talk: Baby Sign Language for Hearing Babies. <http://www.baby-talk.co.nz/>
 Treasures Forum: Baby Talk—Sign Language. <http://treasures.co.nz/Default.aspx?DN=11283,536,523,1,Documents>

Philippines

January 11, 2005. The Real Secret to Communicating with Babies. *Manila Times*. <http://www.manilatimes.net/national/2005/jan/11/yehey/enter/20050111ent1.html>

426 | SIGN LANGUAGE STUDIES

South Africa

April 7, 2004. Early Signs of Understanding. *Cape Argus*. <http://www.capeargus.co.za/index.php?fSectionId=342andfArticleId=396295>

United Kingdom

Atkins, L. July 7, 2005. Look Who's Talking. *Guardian*. <http://www.guardian.co.uk/g2/story/0,,1536675,00.html>

Baby Centre: Baby Signing. <http://www.babycentre.co.uk/refcap/547348.html>

BBC News. October 6, 2002. How Baby Signing Aids Communication. <http://news.bbc.co.uk/1/hi/education/features/2299895.stm>

Berman, Kelly. Thumbs Up. http://www.ivillage.co.uk/pregnancyandbaby/baby/babysoc/articles/0,,24_162992,00.html

Grampian TV. September 14, 2004. Tiny Tots Sign Language Classes. http://northtonight.grampiantv.co.uk/content/default.asp?page=s1_1_1andnewsid=4688

Sign 2 Me. <http://uk.sign2me.com/>

Sing and Sign. <http://www.singandsign.com/>

Talk to Your Baby. <http://www.literacytrust.org.uk/talktoyourbaby/signing.html>

TinyTalk. <http://www.tinytalk.co.uk/>

United States

Baby Signs. <http://www.babysigns.com/>

Baby Hands Productions. <http://www.mybabycantalk.com/>

Berck, J. January 6, 2004. Before Baby Talk, Signs and Signals. *New York Times*. <http://www.nytimes.com/2004/01/06/health/06>

CBS Broadcasting. May 11, 2005. Signing to Toddlers. <http://www.cbsnews.com/stories/2005/05/11/eveningnews/main694676.shtml>

Goodnow, C. January 15, 2005. Many Parents Are Teaching Their Babies to Speak First with Their Hands. *Seattle Post-Intelligencer*. http://seattlepi.nwsourc.com/lifestyle/207926_babysign15.html

Hochman, D. February 5, 2005. Their Fingers Do the Talking. *Life*, 8–11. Kindersigns. <http://www.kindersigns.com/>

Kramer, J. B. February 4, 2005. Teaching Sign Language Early: Should You or Shouldn't You? *Minnesota Parent*. <http://www.mnparent.com/articles/2005/02/04/front/feat1.txt>

Sign Babies. <http://www.signbabies.com/>

Sign 2 Me (*Sign with Your Baby*). <http://www.sign2me.com/>

Bringing Up Baby with Baby Signs | 427

Signing Time. <http://www.signingtime.com/>

Signing with Your Baby. <http://www.signingbaby.com/>

Thé, K. P. January 6, 2004. Teach Me the Sign, Please. *Arizona Daily Star*.
<http://azstarnet.com/dailystar/printDS/4715.php>.

Tiny Fingers. <http://www.tinyfingers.com/>

UCB Parents Advice about Babies: Baby Sign Language. <http://parents.berkeley.edu/advice/babies/signing.html>

Weir, W. January 29, 2005. Hey, Baby, What's Your Sign? *Austin American-Statesman*, E3.

Yahoo email groups: signingbaby@yahoo.com, Sign2Baby@yahoo.com, signtoyourbaby@yahoo.com

International

Signing with Baby Meetup Groups (worldwide). <http://babysigning.meetup.com/groups>.

Tiny Fingers. <http://www.tinyfingers.com/links.html#int.%20aaff> (links to Australia, Hong Kong, Japan, and Spain)

Appendix 2: Children's Signs

Signs in **bold** were produced on the video. Other signs were reported by the child's mother. Signs were counted as prompted if the parent produced the sign or the corresponding word in the preceding turn. Signs without a listed description approximate the ASL signs. The function of each sign token was determined by the context of the production and the parent's reaction.

Key to Functions

D: display of knowledge	P: politeness formula
E: error	R: request
L: label	?: function unclear
N: refusal ("no")	

Daniel: Signs Introduced at Nine Months

Sign/gesture	Description	Word	No.	Prompted	Spoken	Function
THANK-YOU			15	1		P/13, D/1, ?/1
BIRD			7			L
APPLE			5	1		L
DOWN			4	2		R
KITTY	waving hand by cheek		4	2		L/3, ?/1
MORE			3			R
SHOES			3	2		L/1, E/1, D/1
MILK			3			R
UP			3			R
DOG			3	3		L
BOOK			3	1		L
WATER			3			L
MEDICINE			2			E
CUP			2	1		L/1, ?/1
BABY		[bebi](1), [bəbi](2)	2	2	1	D/1, L/1
CHANGE			2	2		R
SOCKS			1	1		L
BALL			1	1		L
BEAR			1	1		L
TURN	twisting fist		1	1		R
FINISHED	hands stretched over head		1	1		D
SLEEP	both palms to cheeks		1			?

Bringing Up Baby with Baby Signs | 429

Sign/gesture	Description	Word	No.	Prompted	Spoken	Function
I-DON'T-KNOW	shrug with hands over head		1			?
GENTLE	pet back of non-dominant hand		1	1		D
EAT						
MOMMY						
DADDY						
HAT						
PHONE						
MONKEY						
FISH						
BATH						
NO						
Total: 24 taped + 9 reported: 33		1 (4% of taped sign types)	72	23 (32%)	1 (1.4%)	

Kai: Signs Introduced at Seven to Eight Months

Age at first production ⁸	Sign/gesture	Description	Word	No.	Prompted	Spoken	Function
14, 13	MORE			10	4		R
16, 11	AIRPLANE			2			L
14, 27	HELP	2 hands tapping chest		2	2		R
15, 1	DADDY		[dæ]	2		2	L
	CLEAN-UP	wiping		2	1		R
	UP	stamp foot	[dæ], [dø]	2		1	R
14, 25	BATH		[bæ]	1		1	L
15, 3	HELLO/BYE	wave	[heei]	1	1		D
9, ?	MILK		[mɛ]				
13, 10	HOT						
14, 10	MEDICINE						
14, 15	EAT						
14, 29	SHOES						
15, 18	SLEEP						
15, 19	FINISH						
16, 10	TOILET						
	CHANGE	clapping					
Total: 8 taped + 9 reported: 17			4 (50% of taped sign types)	22	8 (36%)	4 (18%)	

430 | SIGN LANGUAGE STUDIES

Rebecca: Signs Introduced at Thirteen to Fourteen Months

Sign/gesture	Description	Word	No.	Prompted	Spoken	Function
PLEASE		[bi:], [i:]	25	14	18	P
BOOK		[bʊ], [bʊʊhʊhi] (1), [gʊk], [bʊk] (2)	19	5	13	R/17, ?/1, D/1
MORE		[mʌ] (2), more (2)	8	7		D/2, R/5, ?/1
DOWN		[naw](1), [dawn], [daw], [dʊ] (2)	8	8	4	R
DRINK	back of hand to chin	[dwi], [wi], [di]	4	4		R/3, D/1
THANK-YOU		[mʊmʊ], [mæŋgege], [mɪŋku]	3	3	2	P/1, D/2
READ			3	3	1?	R
BATH		[bæ]	2	2	1	D
NO/DON'T-WANT	turn head, hunch shoulder		2			N
WASH-HANDS	rub hands together	[wawa]	2	2		D/1, ?/1
ALL-GONE	FINISH	all gone	1	1	1	
SHOO	wave hand away	shoo	1	1	1	
UP						
SNACK	EAT	[næk]				
STICKY						
SHOES						
TICKLE						

Total: 12 taped + 5 reported: 17

10 (83%)
of taped
sign types

78

50 (64%)

40 (51%)

Copyright of Sign Language Studies is the property of Gallaudet University Press for Sign Language Studies and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.