Language Files

Materials for an Introduction to Language and Linguistics

Twelfth Edition

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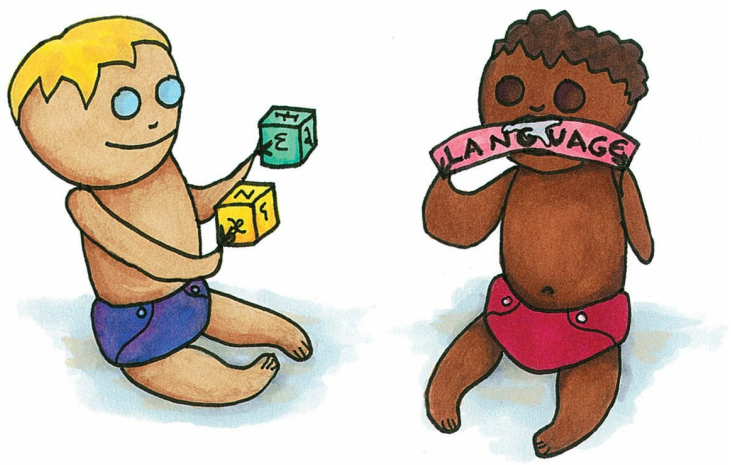
CHAPTER
8

Language Acquisition



FILE 8.0

What Is Language Acquisition?

Many people believe that language is what sets humans apart from other animals. Languages are highly complex and sophisticated systems. So how do we humans manage to learn such complicated systems? This chapter addresses that question. A predominant theory assumes that part of our ability to acquire language is innate and that children learn language by "inventing" the rules specific to their language.

When acquiring one or more native language(s), all children go through the same stages of language development: they start by babbling, then learn their first words, go through a so-called one-word stage (during which they can utter only one word at a time), enter the two-word stage, and finally learn the more complex structures of their language(s). Language acquisition is not limited to children; many people learn a second language later in life. However, second-language acquisition can differ from first-language acquisition in many respects.

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Discusses the one-word stage, the two-word stage, and later stages of language acquisition, and introduces phenomena involved in the acquisition of word meaning.

8.4How Adults Talk to Young Children
Introduces various features of child-directed speech.

8.5Bilingual Language Acquisition
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Provides exercises, discussion questions, activities, and further readings related to language acquisition.

FILE 8.1

Theories of Language Acquisition

8.1.1About Language Acquisition

Humans are not born talking. Instead, we typically learn to understand language and to speak during the first few years of our lives, before we even enter kindergarten or grade school. Recall from File 1.2 that language is a communication system consisting of sounds, morphemes, words, and rules for combining all of these. The knowledge of these elements enables people to understand and produce sentences they may never have heard or uttered before. So how does a child acquire this knowledge? If knowing a language were simply a matter of knowing a lot of words, language acquisition would just be a process of figuring out what the words were and memorizing them. Instead, children must acquire a grammar with all its components and rules. How do children learn these rules? For instance, how do they learn that the morpheme un- (meaning 'not') attaches to adjectives to form other adjectives having the opposite meanings? How do they learn to compose a sentence from a noun phrase and a verb phrase? Rules, unlike words, are never explicitly stated, so the child cannot just memorize them: he must somehow figure the rules out on his own—a remarkable intellectual feat.

Various theories have arisen that attempt to account for how children acquire language. One theory that has found a lot of support throughout the years is that at least part of the human language ability is innate. In the sections that follow, we will first explore the innateness hypothesis and the evidence for it.

However, innateness alone does not answer all of the questions about how children acquire the specific language that is spoken around them. Again, there are a number of theories that have been proposed for how additional, more specific knowledge is acquired. We will briefly consider two early ones, Imitation Theory and Reinforcement Theory, which have been

refuted but which remain part of popular belief. It is therefore important to point out why these theories are inadequate. We will then consider three more current theories of language acquisition: the most influential of them is the Active Construction of a Grammar Theory. This theory is the one that most linguists believe today. However, there are a number of influential competing theories. Of these, we will introduce Connectionist Theories and Social Interaction Theory.

8.1.2The Innateness Hypothesis

A hypothesis underlying many theories of language acquisition asserts that language ability is innate in humans. That is, humans are genetically predisposed to acquire and use language (though not any particular language, of course). This theory claims that babies are born with the knowledge that languages have patterns and with the ability to seek out and identify those patterns. Some theorists have even claimed that humans have innate knowledge of some core characteristics common to all languages, such as the concepts of 'noun' and 'verb.' These basic features shared by all languages are called linguistic universals, and the theoretically inborn set of structural characteristics shared by all languages is known as universal grammar. No one knows exactly what the contents of universal grammar might be, though this is currently an active area of research in linguistics.

The claim that linguistic ability is innate in humans is supported by, for example, the work of biologist Eric Lenneberg. He studied animal behavior and developed a list of characteristics that are typical of innately determined behaviors. Innate behaviors are present in all normal individuals of a species, whereas learned behaviors are not. Walking, for instance, is a behavior for which humans are genetically predisposed (that is, humans learn to walk as a natural part of development, without being explicitly taught), but playing the piano or riding a bicycle must be specifically taught. Is talking like walking, or is it like playing the piano?

To answer this, let's examine Lenneberg's characteristics of biologically controlled behaviors. If language acquisition has each of these characteristics, we can safely assume that it is a genetically triggered behavior.

(1) Lenneberg's characteristics of biologically controlled behaviors:[1]

1. The behavior emerges before it is necessary.

2. Its appearance is not the result of a conscious decision.
3. Its emergence is not triggered by external events (though the surrounding environment must be sufficiently "rich" for it to develop adequately).
4. Direct teaching and intensive practice have relatively little effect.
5. There is a regular sequence of "milestones" as the behavior develops, and these can usually be correlated with age and other aspects of development.
6. There is likely to be a "critical period" for the acquisition of the behavior.

Consider the first criterion. In what sense is language necessary? From a biological standpoint, language is a behavior that has encouraged the survival and predominance of the human species. Each individual needs the ability to use language in order to take care of other basic needs. But children ordinarily begin to speak a language between the ages of twelve and twenty-four months, long before their parents have stopped providing them with the necessities of life. So language is a behavior that, like walking, emerges well before children have to fend for themselves.

As for the second and third criteria, language is neither the result of a conscious decision nor triggered by external events. Children decide whether or not they want to learn to play baseball or checkers, but they do not make a conscious choice about acquiring a native language; it's just something that all children do. Also, language is not learned as a result of something special triggering the learning. It is not taught the way (for example) piano playing is taught. Think about this: if you grew up hearing brilliantly played piano music, would you automatically pick up that skill the way we all seem to have automatically picked up language? Clearly not. While it is true that a child has to be exposed to language—this is what is meant by the environment being "rich"—it is not the case that a child's caretakers need to make a special effort to teach the child to speak. Other than hearing normal conversation and being spoken to, the child needs no special external stimulus to begin the process of acquiring language.

But doesn't intensive teaching help children learn language? Surprisingly, it does not seem to have much of an effect. Children don't necessarily perceive (or correct!) their mistakes just because an adult points them out (see Section 8.1.4).

Language acquisition also exhibits Lenneberg's fifth characteristic of having a sequence of "milestones" or identifiable stages associated with its development. Specifically, children master linguistic skills in a certain order. You will read about these stages in more detail in subsequent files. Although there is some variability in the milestones and the ages at which children achieve them, there is a path of developmental stepping stones that all children follow.

Lenneberg further proposes that innate behaviors have a critical period associated with their emergence. The term critical period describes a period of time in an individual's life during which a behavior—in this case language—must be acquired; that is, the acquisition will fail if it is attempted either before or after the critical period.

The critical period for language acquisition is assumed to extend from birth to approximately the onset of puberty. During this time, a child needs exposure to language in order to develop the brain structures necessary for language acquisition. If a child is not exposed to language at all during this time, then the child will never acquire normal language skills and, in fact, may not acquire language skills at all. If a child has acquired a native language during the critical period and starts learning a second language before the age of twelve, the child will likely achieve native competence in this second language as well. However, if the second language is learned after about age twelve, the child is likely never to acquire complete native competence in the language.

How can we tell whether there really is a critical period for first-language acquisition? To prove this, we would have to show that language skills could not be acquired normally or even at all if the learning began after the critical period had ended. This could be accomplished by depriving a child of linguistic input for the early years of life, but obviously it would be highly unethical to submit a child to such treatment. However, there are least two sources of information available to linguists that support the claims that there is a critical period for first-language acquisition.

First, evidence for the critical period hypothesis comes from children who, owing to unfortunate circumstances, were exposed to little or no language during their early lives. These children were either neglected by their caretakers (neglected children) or grew up in the wild, often with animals (feral children). When these children were rescued or discovered, researchers attempted to help them acquire language. The success of these

attempts depended largely on the age at which the children were discovered. We will consider two such cases, outlined in (2) and (3).

(2) Genie was found in 1970 when she was nearly fourteen years old. She had been abused and isolated since the age of twenty months. When first discovered, Genie was completely silent. Thereafter, her language acquisition was extremely slow, and although she did learn to speak, her speech was abnormal. She was able to memorize many vocabulary items, but her expressions were formulaic, as in what is X and give me X. She never learned grammar.

(3) Isabelle was discovered in 1937 at the age of six and a half. Her mother was deaf and could not speak. Isabelle's grandfather had kept Isabelle and her mother isolated but had not otherwise mistreated them. Isabelle then began lessons at The Ohio State University, and although her progress was at first slow, it soon accelerated. In two years her intelligence and her language use were completely normal for a child her age.

At first sight, the cases of Genie and Isabelle seem to provide good evidence for the critical period hypothesis: Genie, discovered after the supposed critical period was over, never learned language; Isabelle, discovered before the end of the period, did. But evidence from feral or neglected children is problematic. Such children are usually traumatized or are not socialized before they are rescued or found. So it is possible that it is not the lack of exposure to language but rather a larger trauma that prevents them from acquiring language properly. For example, Genie had been beaten by her father for making noises, so her difficulty with language could have had multiple causes. The case of Isabelle is problematic for the opposite reason: prior to being found, she was locked in a room with her mother, and although her mother could not speak, they developed a rudimentary personal gesture system to communicate. Thus, Isabelle did have some exposure to a communication system during the early years of her life. It is possible that Isabelle acquired language not because she was discovered at an earlier age than Genie, but because she had access to a rudimentary communication system. Likewise, it is possible that Genie didn't learn language not because she was discovered at an older age than was Isabelle, but rather because she had been abused.

Stronger evidence supporting both the innateness of language and the critical period hypothesis for first-language acquisition can be found in instances of deaf children and adults who were initially raised in environments without access to signed language input. One particularly illustrative example is the case of the deaf population of Nicaragua in the late twentieth century. At the end of the 1970s, following Nicaragua's civil war, the country founded a new state school for the deaf. In the late 1970s and early 1980s, deaf children and adults were able to come together in a way that had not been possible earlier in the country's history. Most children and adults arrived at the schools with idiosyncratic and rudimentary homesign gesture systems. Homesign gestures are communicative gestures (a form associated with a meaning) that are invented by deaf children and the people with whom they routinely interact in cases where a signed language is not made available. Homesigns may represent the names of individuals such as family members and the names of common activities ('eat') or common objects ('house') that are often referred to. However, a homesign system is not a language: it is an extremely limited lexicon without a grammar. Thus the students arrived at the school with backgrounds that involved social interactions and communication and that were normal in every way except that they did not include exposure to language.

Soon, combining the homesigns that the students brought with them as well as some newly created signs, the children at the school created a pidgin (a type of simplified language—see File 12.3) to communicate with each other. After the pidgin was created by the first students at the school, younger children came and were exposed to the pidgin. Without instruction, and based only on their exposure to the pidgin used by their older peers, these younger children created Idioma de Signos Nicaragense (ISN), which is a full-fledged language with a complex system of grammatical rules.

The creation of ISN has been cited as evidence for the innateness of language, because within two or three generations of students, children created a new and complete language. Because they did not have exposure to any other linguistic system, all of the grammatical principles that were developed in ISN must have arisen through some innate ability in the children to create a complete grammatical system.

However, those students who first came to the school as older children, and who had not acquired any linguistic communication system prior to the time that they enrolled but had otherwise grown up in a caring environment,

did not perfectly acquire this new language: in adulthood, their language use still resembles the pidgin, and there are inconsistencies in their use of phonological, morphological, and syntactic principles of the sort that one would not see in a native speaker of the language. This evidence supports the critical period hypothesis because the older children came from backgrounds similar to those of the younger children, yet they were unable to fully acquire language.

Support for a critical period for second-language acquisition involves comparing the acquisition of a second language by children and by teenagers and adults. Teenagers and adults have more difficulty learning languages than do children. People who have learned a language as an adult almost always have a foreign accent, indicating that they have not acquired the phonological rules of the second language perfectly. They may also find syntactic and other rules difficult to master completely. Children, however, can acquire a second (or third) language easily and completely as long as they have sufficient input from those languages. This ability tapers off around the age of puberty. However, the idea of a critical period for second-language acquisition is very controversial. Critics argue that there are (rare) cases of adults learning a second language perfectly. Furthermore, it is possible to learn a second language at any age. Rather than a critical period, there seems to be a steady decline in how well one can learn a second language. Finally, factors such as teaching methods, motivation, identity, dedication, utility, and so on, play a role in how successfully a second language is learned, and these factors may also change with age, confounding studies looking for critical period effects in second-language acquisition.

Another concern related to the critical period hypothesis is that different aspects of language acquisition may behave differently relative to the critical period. For example, many feral or neglected children gain the ability to learn vocabulary and to understand others' speech, but they are not able to learn to use syntax productively. Second-language learners are able to learn large amounts of vocabulary and frequently master the language's syntax, but they rarely master the phonological system. This suggests that a critical period may exist for certain aspects of language (syntax in first-language acquisition and phonology in second-language acquisition), but not for others.

Despite our lack of a complete understanding of the acquisition process, we can conclude that language acquisition shows characteristics of being an innate human behavior.

8.1.3Imitation Theory

Even if language acquisition is an innate human behavior, the question still remains of how specifically it is acquired by children. The first two theories we will discuss have generally been refuted, but, as is often the case, there is a grain of truth in both that keeps them part of popular belief, even though there is much about the acquisition process that they are incapable of explaining.

We will first consider Imitation Theory, which claims that children learn language by listening to the speech around them and reproducing what they hear. According to this theory, language acquisition consists of memorizing the words and sentences of some language. The idea that acquiring a language is a process of learning to imitate the speech of others is at least partly true, of course. Since the connection between the way a word sounds and what it means is largely arbitrary (see File 1.4), children cannot guess what the words of their target language are. They must hear the words used by other speakers and then reproduce or "imitate" them. This theory also helps explain the fact that children learn the language that is spoken around them by parents, caretakers, and others, regardless of what the language of their ancestors may have been. Thus a Korean child, for instance, will speak Korean if raised in a Korean-speaking environment, but Arabic if raised in an Arabic-speaking environment. In other words, a child's genetic makeup has nothing to do with which language the child will acquire.

Unfortunately, however, Imitation Theory explains little else of what we know about language acquisition. Children's speech differs from adult norms: it is full of "errors" of many types. A two-year-old might say nana for adult banana, a three-year-old might say Mommy tie shoe, and a four-year-old might say hitted or goed rather hit or went.

The last example clearly cannot be a case of imitation because children would not have heard an adult say hitted or goed. Rather, it seems that the child who says hitted has a rule in her internal grammar that adds -ed (pronounced as [d], [t], or [əd]) to a verb to make it past tense. The child has not mastered the exceptions to this rule, such as the use of hit rather than hitted in the past tense. However, Imitation Theory fails to acknowledge that a child has any sort of internal mental grammar that includes rules for combining words and other elements in systematic ways, so it would incorrectly predict that a child would not produce words like hitted.

The most serious fault of Imitation Theory is that it cannot account for how children and adults are able to produce and understand new sentences. If children learned only by imitation, the only way they could understand a sentence is if they had heard it before. However, we know that there are an infinite number of possible sentences in any language, and speakers (even children) are able to understand and produce completely novel utterances.

8.1.4Reinforcement Theory

Reinforcement Theory asserts that children learn to speak like adults because they are praised, rewarded, or otherwise reinforced when they use the right forms and are corrected when they use wrong forms. However, the claim that parents and other caretakers frequently correct their children's grammatical mistakes and praise their correct forms is unfounded. Such corrections seldom happen, for although parents often do correct their children, their corrections generally have more to do with the accuracy or truth of a statement than with its grammatical form. Thus, The dog wants to eat may receive the response No, the dog doesn't want to eat if the dog has just finished its dinner, whereas the sentence Robin goed to school today may receive the response Yes, he did if Robin did go to school that day.

Reinforcement Theory is also contradicted by the fact that even when adults do try to correct a child's grammar, the attempts usually fail entirely. Consider the following conversation:

(4)	Child:	Nobody don't like me.
	Mother:	No, say "nobody likes me."
	Child:	Nobody don't like me.
		(repeated 8 times)
	Mother (now exasperated):	Now listen carefully! Say, "Nobody likes me."
	Child:	Oh! Nobody don't likes me.

Notice that although the child does not form negative sentences in the same way the adult does, the child's utterances follow a pattern just as the adult's do. The child's way of forming negative sentences involving nobody is completely regular: every such sentence contains nobody + a negative

auxiliary verb, such as Nobody can't spell that or Nobody won't listen. If the child produces a variety of such sentences, then he or she must possess a rule that defines this pattern, but the rule is not the same as the one in the adult's grammar. Reinforcement Theory can explain neither where the child's rule came from nor why the child seems impervious to correction. (Incidentally, the conversation sample above is a good example of how direct teaching does not help children to acquire language—recall the criteria for innate behaviors in Section 8.1.2.)

The next three theories are ones that are currently held (and debated) among language acquisition researchers.

8.1.5Active Construction of a Grammar Theory

The Active Construction of a Grammar Theory, the most influential theory of language acquisition, holds that children actually invent the rules of grammar themselves. The theory assumes that the ability to develop rules is innate, but that the actual rules are based on the speech children hear around them; this is their input or data for analysis. Children listen to the language around them and analyze it to determine the patterns that exist. When they think they have discovered a pattern, they hypothesize a rule to account for it. They add this rule to their growing grammar and use it in constructing utterances. For example, a child's early hypothesis about how to form the past tense of verbs will be to add an allomorph of -ed. All past tense verbs would then be constructed with this rule, producing forms such as holded and eated alongside needed and walked. Notice that at this point the child would have already learned the rules of when the regular past tense ending is pronounced [d], [t], or [əd]. When children discover that there are forms in the language that do not match those produced by this rule, they modify the rule or add another one to produce the additional forms. Eventually, the child has created and edited his or her own grammar to the point where it matches an adult's grammar. At this point, there are no significant discrepancies between the forms produced by the child and those produced by the adults. Clearly, the child has a complete working grammar all along, even before it is essentially adultlike. The child uses this grammar to produce utterances; when those utterances differ from adult speech, they are reflecting the differences in the two grammars.

Within this framework, children's mistakes are expected to occur and to follow nonrandom patterns. This is because the child is forming utterances according to grammatical rules even though the rules are often different from those that adults use. It is important to note also that active reinforcement by adults about a child's mistakes is not enough to help the child "discover" what is wrong with his or her own utterances; the child must make the connection in his or her own time.

8.1.6Connectionist Theories

Connectionist theories of language acquisition assume that children learn language by creating neural connections in the brain. A child develops such connections through exposure to language and by using language. Through these connections, the child learns associations between words, meanings, sound sequences, and so on. For example, a child may hear the word bottle in different circumstances and establish neural connections every time the word is heard. Such connections can be to the word itself, to the initial sound /b/, to the word milk, to what the bottle looks like, to the activity of drinking, and so on. Eventually, all of these connections become the child's mental representation of the meaning and the form of the word (see Section 1.4.7). Connections can have different strengths, and language acquisition involves adjusting the strengths of the connections appropriately. The strength of a connection is dependent on input frequency. For example, if a child hears the word bottle more frequently in connection with milk than with water, then the connection between bottle and milk will be stronger than that between bottle and water. Thus, instead of developing abstract rules, according to connectionist theories, children exploit statistical information from linguistic input. Such theories assume that the input children receive is indeed rich enough to learn language without an innate mechanism to invent linguistic rules (though note that the ability to make statistical generalizations must be innate).

To get a better feel for how this theory works and how it differs from other theories, let's look at the acquisition of the past tense of verbs again. The Active Construction of a Grammar Theory assumes that children produce words like goed or growed because they have formed a rule that tells them to add -ed to a verb to form the past tense. Connectionist models

assume that the child merely exploits statistical information about forming past tenses. Thus, the child says goed and growed because the existence of forms like showed, mowed, towed, and glowed makes this pattern statistically likely.

Evidence for the exploitation of statistics as opposed to the development of abstract rules comes from experiments in which, for example, children create the past tense of nonsense verbs. For instance, when asked to complete the phrase "This man is fringing; Yesterday, he _____," many children create nonsense irregular forms such as frang or frought instead of the nonsense regular form fringed. Such data pose a problem for the Active Construction of a Grammar Theory, but the data can be explained in terms of a connectionist model. If children invent rules and then learn exceptions to the rules, they should produce fringed as the past tense of fring because it is not one of the learned exceptions. However, if children exploit statistical data, they would be expected to sometimes produce irregular forms because of their exposure to words like sing, ring, or bring.

Of course, it is possible that children both develop rules and also make use of statistical data. That is, it is possible that acquisition of grammatical rules proceeds according to a hybrid model and that children actively construct a grammar by establishing and exploiting neural connections.

8.1.7Social Interaction Theory

Social Interaction Theory assumes that children acquire language through social interaction, with older children and adults in particular. This approach holds that children prompt their parents to supply them with the appropriate language experience they need. Thus, children and their language environment are seen as a dynamic system: children need their language environment to improve their social and linguistic communication skills, and the appropriate language environment exists because it is cued by the child. Like those who advocate the Active Construction of Grammar Theory, social interactionists believe that children must develop rules and that they have a predisposition to learn language. However, social interaction theorists place a great deal of emphasis on social interaction and the kind of input that children receive, instead of assuming that simply being exposed to language use will suffice. According to this approach, the ways in which older children and

adults talk to infants play a crucial role in how a child acquires language. In many Western societies, speech to infants (child-directed speech) is slow and high-pitched and contains many repetitions, simplified syntax, exaggerated intonation, and a simple and concrete vocabulary (see File 8.4). Consider the following examples from Berko Gleason and Bernstein Ratner (1998: 385):

(5) See the birdie? Look at the birdie! What a pretty birdie!

(6) Has it come to your attention that one of our better-looking feathered friends is perched upon the windowsill?

When pointing out a bird on the windowsill to an infant, adults and older children are likely to say something like (5) in a slow, high-pitched voice with exaggerated intonation. In addition, they are likely to point at the bird. The social aspect of the interaction involves sharing an observation with the child. All of this helps the child to decode what the speech might mean. No adult would normally point out a bird to an infant by uttering something like (6). Social interactionists believe that the way adults speak to children and interact with children is crucial to acquiring language.

Of course, one of the problems with this theory is that children eventually do acquire the ability to utter and understand sentences like those in (6). While child-directed speech may be crucial early on, it is unclear how long a child must be exposed to it. Furthermore, the characteristics of child-directed speech vary from culture to culture, and we do not at this point know what specific aspects of such speech might, in fact, be crucial.

At the same time, this theory is also not completely incompatible with either of the two previous theories. That is, the types of social interactions that infants have may, in fact, be invaluable to language acquisition, which may develop through neural connections and involve the hypothesizing of particular grammatical rules on the part of the child.

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[1] From Aitchison (1976: 60), adapted from Lenneberg (1967).

FILE 8.2

First-Language Acquisition: The Acquisition of Speech Sounds and Phonology

8.2.1 Physiological Prerequisites of Sound Perception and Production

Before children can begin to speak a language, they must first master several tasks related to the form of language: they must be able to identify the sounds (phonemes) of the language they hear; they must learn how to produce each allophone of these phonemes—the variants of the phoneme that depend on the context in which it occurs (see File 3.2); they must decode the larger strings of sounds that they hear into syllables and words; and they must learn to combine the sounds into larger strings themselves. Below, we discuss the basics of how children learn to perceive and produce speech sounds, as well as some of the experimental techniques that researchers use to study child language acquisition.

a. Identifying Sounds. In order to produce spoken language, infants first need to be able to perceive it. In fact, they are able to perceive many distinctions in language much earlier than they are able to produce them. Since we cannot just ask babies about their perception and receive an answer, special methodologies are needed to determine what they can and cannot perceive. One of the most successful techniques used for studying the abilities of infants up to the age of six months is called High Amplitude Sucking (HAS). In this technique, infants are given a special pacifier that is connected to a sound-generating system. Each suck on the pacifier generates a noise, and infants learn quickly that their sucking produces the noise. At first, babies suck often because they are interested in hearing the noise. They lose interest, however, in hearing the same noise over again, and their sucking rate slows down. When this happens, the experimenter changes the sound that the pacifier generates. If the infant sucks faster after the change, we infer that he has recognized the change in sound and is sucking faster to hear the interesting new sound. If the infant does not suck faster, we infer that

he could not discriminate between the two sounds.

Another important technique is the Conditioned Head-Turn Procedure (HT), usually used with infants between five and eighteen months. This procedure has two phases: conditioning and testing. The infant sits on a parent's lap, watching a display and listening to sounds. During the conditioning phase, the infant learns to associate a change in sound with the activation of visual reinforcers. At first, the visual reinforcers are presented at the same time as the change in sound. Then the visual reinforcers are presented shortly after the change. The infant will begin to anticipate the appearance of the visual reinforcers and look for them before they are activated. During the testing phase, if the infant looks to the visual reinforcers immediately after a change in sound, we infer that the infant has perceived the change in sound and can thus discriminate between the two sounds involved. If the infant does not look to the visual reinforcers, we infer that he did not perceive the change and thus cannot discriminate between the two sounds.

HAS and HT have been used in many studies on infants to determine what they can hear and how they process what they hear. DeCasper and Spence (1986), for example, used HAS to show that babies can hear speech in the womb. The researchers wanted to see whether infants whose mothers had read a Dr. Seuss story aloud during the final six weeks of pregnancy would recognize the story after they were born. They therefore tested a group of infants whose mothers had read them the story, along with a control group of infants whose mothers had not. Within a week of birth, the infants were played recordings of a couple of stories, including the Dr. Seuss one. When the infants who had heard the Dr. Seuss story in the womb were played the recording of that particular story, they modified their sucking rate, but the control group showed no such change. DeCasper and Spence concluded that the infants who modified their sucking rate recognized the story as a new stimulus—that is, they heard it as familiar sounds after hearing the unfamiliar sounds of the other stories. The babies who did not change their sucking rate heard unfamiliar sounds throughout the experiment.

Perception studies have also shown that by the age of four months infants can already distinguish between the production of the vowels [ɑ] and [i]. In one experimental paradigm, infants are shown the mouths of two adult faces, one saying [ɑ], the other one saying [i]. Simultaneously, a tape plays one of the two sounds. When the infants hear an [ɑ], they show a preference

by looking at the face saying [ɑ]; when they hear an [i], they show a preference by looking at the face producing the [i]. These findings suggest that infants of about four months of age are able not only to distinguish different vowel qualities but also to use visual cues to determine the kind of articulation involved in producing the sounds. In fact, the infants' own coos differ in these two contexts: they are more [ɑ]-like (or [i]-like, respectively), to match the sound heard and the mouth watched.

Not only are babies born with the ability to hear very slight differences between sounds; they can also hear distinctions between sounds that their parents cannot. For example, sounds that English-speaking adults perceive as a /b/ or a /p/ differ in their voice onset time (VOT; refer to Section 9.4.2). English-speaking adults perceive bilabial stops with a VOT of 20 ms as a /b/, but those with a VOT of 40 ms as a /p/. Six-month-old infants can also perceive this difference. Studies using HAS or HT have shown, however, that the infants can also perceive the difference between a bilabial stop with a VOT of –60 ms (that is, voicing starts 60 ms before the consonant is released) and a VOT of –20 ms. English-speaking adults don't perceive this difference; rather, they hear both sounds as /b/. In contrast, six-month-old infants show an increase in sucking rate when a recording switches from the first to the second sound. Interestingly, however, by the time they are twelve months old, infants living in an English-speaking environment will have lost the ability to perceive the difference between bilabial stops with a VOT of –60 ms and a VOT of –20 ms. Twelve-month-old infants born to Thai-speaking parents, on the other hand, are still able to differentiate between these sounds, as are Thai-speaking adults.

It seems, then, that at six months, infants are able to perceive phonetic distinctions that correspond to phonemes in many languages. Yet by twelve months they are able to distinguish only between sounds that are phonemic (contrastive) in their native language; that is, the particular sounds that can be used in the language to distinguish words. This means that a twelve-month-old with English-speaking parents can no longer differentiate between a bilabial stop with a VOT of –60 and a VOT of –20 because this ability is not important for distinguishing English words. On the other hand, a twelve-month-old child with Thai-speaking parents can tell these sounds apart because the sounds are important for understanding the meaning of words in Thai. It seems that once infants have figured out the important distinctions of their native language(s), they ignore distinctions that are not important.

In addition to being able to distinguish between phonemes of the language they are acquiring, children also need to figure out where one word ends and the next one begins. This is a difficult task because even in relatively slow speech, adults do not pause after every word. In fact, whole phrases or sentences are often uttered as one continuous stream of speech. Some researchers have suggested that children make use of intonational cues (see File 2.5) to help them segment speech. For example, many words in English are stressed on the first syllable. If children born to English-speaking parents take a stressed syllable to indicate the beginning of a word, they would be correct more often than not. A child using this strategy would segment the stream What a pretty birdie into What-a, pretty and birdie. However, this cannot be the only strategy a child uses because not all English words are stressed on the first syllable. Another approach to word segmentation assumes that children make use of statistical cues. For example, if a child hears sentences like What a pretty birdie. Look! The birdie is flying, he or she can use the fact that [bɻ] always seems to be followed by [di] to arrive at the conclusion that [bɻdi] is probably a word.

b. Producing Sounds. A child's first vocalizations are present at the very beginning of life. (Everyone knows how adept babies are at crying!) Within a few weeks after birth, a child begins to coo, producing sequences of vowel-like sounds. The child uses these cooing and gurgling noises to indicate contentment and pleasure, or at least this is how most adults interpret these sounds.

Since an infant's tongue is relatively large compared to the size of its vocal tract, the front of the tongue easily makes contact with the roof of the mouth, and a baby is very likely to produce coos that sound vaguely palatal, like the adult phonemes /j/ or /ɲ/. From very early on, the baby "practices" sounds of various kinds. What the baby has to learn are the articulatory gestures involved in producing a particular sound (e.g., bringing both lips together to produce a bilabial sound), as well as the timing relationships between these gestures (i.e., starting vocal-fold vibration for voicing a sound, opening the mouth, lowering the velum to allow air passage through the nasal cavity, raising the tongue for an alveolar closure, etc.) (see Files 2.2–2.4). The young child has to practice the execution of the motor programs that underlie speech production. This might seem to be an easy task, but, by analogy, if you were to try patting your right hand on your left knee and rubbing your left hand in circles on your right knee, it would probably take a

bit of practice to get the different movements coordinated. Learning to speak is just as hard or harder for infants, since they have to learn to gain control over the muscles in their speech organs and to coordinate the execution of articulatory movements. Therefore, a child's production of speech will generally be slower and more variable than that of an adult.

8.2.2Babbling

At the age of four to six months or so, children in all cultures begin to babble, producing sequences of vowels and consonants if they are acquiring spoken language, or producing hand movements if they are acquiring signed language. Children acquiring signed languages babble by moving their fingers in repetitive rhythmic ways that are very similar to the hand motions that will be needed for making actual signs. Some linguists assume that babies babble to practice the muscle coordination needed to produce language. In the case of spoken languages, this involves the opening and closing movement of the jaw and manipulating other articulators; in the case of signed languages, it involves hand and finger coordination. The following discussion focuses on babbling by children acquiring spoken language. However, apart from the modality, there seems to be no cognitive difference between the babbling of children learning spoken and signed languages.

As mentioned above, a baby's tongue is relatively large compared to the size of its oral cavity. Since the tongue is attached to the lower jaw, as the lower jaw moves up, the tongue moves up with it. For this reason, it is very likely that the infant will produce vaguely palatal sounds like [ɲ] or [j] as the tongue moves up near the hard palate. Since the lower lip is also attached to the jaw, labials such as [b] and [m] occur frequently, too. When the jaw goes down and the tongue lies on the jaw, the infant is very likely to produce the vowel sound [ɑ]. These are, of course, not the only sounds that an infant produces, but they are likely sounds in the very beginning. Also, keep in mind that babbling a certain sequence of sounds is not a conscious process. It is probably accidental if the infant produces a syllable like [ti], since the tongue tip has to contact the alveolar ridge while the mouth is open.

Repeated or canonical babbling starts around the age of seven to ten months. The continual repetition of syllables helps the infant practice a sequence of consonant and vowel sounds. For example, a common canonical

babble like [mɑmɑmɑmɑ] involves the sequence of a bilabial nasal consonant followed by a low vowel. Since babies breathe mostly through their noses, the velum is open already, and producing an [m] "just" involves closing the lips. However, practicing a sequence consisting of a nasal consonant and a non-nasal vowel also helps practice working on when the velum has to lower and open relative to when the mouth opens for the production of the vowel. Between about ten and twelve months of age, infants begin to produce a variety of speech sounds, even sounds that are not part of the language the child is acquiring natively. At this age, babbling is no longer canonical. Instead of repeating the same syllables as in [mɑmɑmɑmɑ], the infant strings together different syllables as in [bugɑbimo]. This is called variegated babbling.

Though babbling is far from being language, it resembles adult language in a number of important respects. For one thing, babbled sequences are not linked to immediate biological needs like food or physical comfort and are thus frequently uttered in isolation for sheer pleasure. Moreover, babbled sequences have many physical characteristics of adult speech. For example, syllables can be identified in a sequence like [gɔŋgɔŋ], and often there is a clear alternation between consonants and vowels. In longer sequences, intonation patterns that might be interpreted in some languages as questions can be discerned. However, the resemblance to adult speech stops here, since there is no evidence for the existence of more abstract structures like sentences or even single words. Only later does the child come to associate word meanings with vocal noises.

Although precisely how babbling relates to language development is not yet clearly understood, psychologists and linguists have suggested that babbling serves at least two functions: as practice for later speech and as a social reward. The first function is intuitively plausible, because the fine motor movements necessary for accurate articulation are exercised extensively during babbling. Indeed, babbling children of about one year of age produce a great variety of sounds, mainly practicing sequences of consonants and vowels.

The second possible function, that children babble for social reward, also seems plausible. Parents often encourage their babies to continue babbling by responding with smiles or speech or nonsense "babbling" of their own, giving the child important experience with the social aspects and rewards of speech. Evidence for the importance of the social factor in

babbling comes from the study of severely neglected children, who may begin to babble at approximately the same age as children reared in normal settings but will stop if not encouraged by their parents or caretakers.

It remains to be explained why babbling occurs at more or less the same time in all children, since children receive encouragement for their efforts in unequal doses. According to one hypothesis, children babble because language development involves a process of biological maturation. Thus babbling occurs automatically when the relevant structures in the brain reach a critical level of development. If all children have brains that develop at comparable rates, the universality of babbling is no longer surprising.

Dramatic evidence for this hypothesis comes from some of the children studied by biologist Eric Lenneberg. These children had vocal passages that had become so narrow because of swelling caused by various diseases that they were in danger of choking to death. Breathing could be restored only by constructing an alternative route that bypassed the mouth; this was accomplished by inserting tubes in the trachea (air pipe) through an opening in the neck. Under such conditions, babbling and any other vocalizations are prevented, since air never reaches the vocal cords. Yet Lenneberg observed that when children of babbling age underwent this operation, they produced the babbling sounds typical of their age as soon as the tubing was removed. The behavior of these children demonstrates that babbling is possible when the brain is ready, even if physical limitations prevent any real practice.

8.2.3Phonological Acquisition

When an eighteen-month-old child attempts to pronounce the word water, he or she might say [wɑwɑ], a pronunciation that is quite different from the adult's model. A child's pronunciation of the word that may sound like [dæt]. Differences in pronunciations like these may persist for some time, despite drilling by the child's parents or caretakers and even despite the child's own realization that his or her pronunciation does not quite match the adults' pronunciation. All children, regardless of what language they are acquiring natively, make mistakes like these before they have mastered the phonological system of their native language. Yet such errors reveal that they have already learned a great deal, because the errors are systematic, that is, rule-governed, rather than random. In roughly two and a half more years,

their speech will resemble that of their parents in all important respects.

It is important to keep in mind that adults analyze the speech of children with reference to their own adult system. Child speech is therefore analyzed as imperfect and full of errors according to the adult's model of grammar. If you listen to young children speak, you will notice that although they try to approximate the forms and pronunciations that they hear around them, many of the sounds they produce do not quite match the adult form. It takes a long time for a child to gain absolute control over the individual movements of the articulators and the timing of these gestures. For example, it is difficult for a young child to produce a consonant sequence like [dɹ] as it occurs in the word drum. The child may say something like [dwʌm], which sounds close enough to make an adult understand what is meant, especially if the child is pointing to a drum at the same time.

A major task in the acquisition of phonology involves understanding the word as a link between sound and meaning (see File 1.4). Around the age of eighteen months, children learn and ask for the names of objects in their environment. When children first acquire the concept of a word, their first attempts at production show tremendous variability in pronunciation. Some may be perfect productions; others may be so distorted that they are comprehensible only to the child's closest companions. Some children vary considerably in their pronunciations from one occasion to the next, while others consistently use a "wrong" sound relative to the adult speech model, saying, for example, [wɑɪt] for right, [wɛd] for red, or [əwɑʊ̃nd] for around.

Children initially appear to regard an entire word as if it were a single sound (a sound that can vary somewhat). However, as their vocabulary expands between fifteen and twenty-one months of age, keeping track of a large store of independent sounds becomes very difficult for them to manage. So in order to learn more words, children must begin to break words into a smaller number of simpler units, which are sounds that can be used in different combinations to make up many other words. That is, they arrive at the idea of a word as a sequence of phonemes whose pronunciation is systematic and predictable. In the course of learning a language natively, children must acquire the complete set of phonemes as well as the set of phonological processes found in the language of the adults in their surroundings.

When children learn the phonemes of their native language, they first master sounds that differ maximally from one another. Thus it is no accident

that the first meaningful word learned in many languages is often [mɑ] or [pɑ]. When a bilabial stop or nasal is pronounced, the passage of air in the mouth is completely blocked, but the vocal tract is wide open in the low back vowel [ɑ]. Thus, these two sounds are maximally different because one is a consonant (C) and one is a vowel (V). This kind of CV-syllable structure or template appears to be the preferred structure in young children's productions. Only later will they produce consonant clusters, such as [sp] in words like spill or [tɹ] as in tree, and syllable-final consonants, such as [t] in cat. Final consonants are often omitted in children's productions. It is even later before a child will learn to produce longer words or utterances that consist of more than one syllable. Very often, consonants like [l] and [ɹ], which share many properties of vowels and are thus difficult to distinguish from vowels, are mastered last.

Even though children master CV sequences early on, we often find that in longer words, some CV syllables are deleted. In the speech sample in (1), at least one syllable is omitted from every word.

(1) banana [___nænə] granola [___owə] potato [___deɪdoʊ]

We might wonder why children leave out the first syllable in these examples and whether this first syllable is in any way different from the other syllables in the word. An answer to this question is that since all of these first syllables are unstressed, they are not very perceptually prominent. In English there is usually one syllable (or vowel) within a word that is somewhat louder and more prominent in relation to the other vowels in that word. This is the vowel with primary stress (see File 2.5).

However, infants may also make use of the stress pattern of a stream of speech to determine where a word ends and the next one begins. This is a big problem for the infant to solve because the baby has only a very limited knowledge of the structure of the language's vocabulary. Babies and young children might begin to master the difficult task of finding the boundaries between words by looking for the most stressed syllable or the most prominent part of the word, since in English the first syllable of a word is often stressed. Such a strategy allows the infant to correctly determine word boundaries more often than not. However, this strategy does not always guarantee the correct result or the correct analysis of where one word begins and where it ends. Consider the word banana. This word consists of three

syllables: [bə.næ.nə]. The first and the third syllables are not stressed, but the second one is. In this case, a child might unconsciously look for the most stressed syllable and believe it to be the beginning of a word. If the child has already learned that a word can consist of more than one syllable and generalizes that the most stressed syllable is the beginning of the word banana, then it makes sense that he or she will incorrectly think that the word is actually [næ.nə].

To summarize, when children acquire the phonological system of their native language, they must master the fine-muscle coordination necessary for producing a rich variety of sounds, learn that combinations of sounds are associated with particular meanings, and eventually realize that their pronunciations of words must consistently match those of adults. Learning a language natively does not result from a conscious learning strategy spontaneously invented by children or from a teaching method devised by adults. Instead, it is a consequence of the human brain's innate capacity for learning language. Children of all backgrounds, provided they have enough input, will learn a language and master the phonological system of their native language. The acquisition of phonology appears to involve a process of biological maturation and is in many aspects like motor development: first the child babbles to practice for later speech, then the articulatory sequences become longer and more complex, and the child is able to pronounce "difficult" consonant clusters. Nevertheless, the adult phonological system is learned only when the child is given models to imitate as well as encouragement.

8.2.4Language Development from Birth to Twelve Months

The table in (2) provides an overview of infants' language abilities from birth to twelve months of age.

(2)Infants' language abilities, birth to twelve months

Approximate Age	Language and Communicative Developments
1 month	• Cry to express displeasure and make other throaty sounds. • Look at their parents when being talked to.
2–3 months	• Turn their eyes and later their heads to look for sounds and voices. • Cry differently depending on their need and begin to make other noises, like gurgling, squealing, and chuckling. • Smile and make noises in response to familiar faces and voices. • Begin cooing, especially palatal-like sounds like [j], [ɲ].
4–5 months	• Begin to make consonant sounds in addition to their vowel-like cooing, especially sounds like [m], [b]. • Can laugh and begin to try to copy sounds they hear.
6 months	• Respond to sounds by making sounds. • String vowels together in vocalizing and also produce syllables, especially sequences such as [mɑ], [bɑ], [dɑ], [di].[1] • Practice turn-taking and respond to their own name.
7–9 months	• Respond to familiar words and try to copy sounds and gestures. • Begin repeated or canonical babbling, including strings like [mɑmɑmɑ] and [dɑdɑdɑ]. • Begin to use intonational patterns in their babbling. • Understand "no" when directed at them and begin to respond to simple verbal commands.
10–11 months	• Begin variegated babbling, with sequences like [bugɑbimo]. • Understand "bye-bye" and can wave "bye." • *Mama* and *dada* begin to become real words meaningfully associated with mother and father.
12 months	• May say a few words and exclamations in addition to *mama* and *dada*, such as *no*, *go*, *bye*, *uh-oh!* • Can use other simple gestures, such as shaking their head for "no." • Can understand the meanings of several words and recognize objects by name, and can respond to simple requests.

[1]Notice that these sounds are often similar to the words for *mother* and *father* in many languages. While many parents think it is a sign of their child's developing genius that they learn to produce *mommy* and *daddy* as their first words, it is quite likely that the form of these words is simply taken from the first sounds a child can recognizably make!

FILE 8.3

First-Language Acquisition: The Acquisition of Morphology, Syntax, and Word Meaning

8.3.1 The Acquisition of Morphology and Syntax

It is not until about the age of twelve months that a child will begin to consistently produce words of the language he or she is learning. It is at this stage that we can begin to examine the development of syntax and morphology in children's speech.

It is important to note, however, that there is much variation in the age range during which children acquire words, fundamental cognitive concepts, and so on. The fact that a child reaches certain stages more quickly or more slowly than average does not mean that the child is necessarily more or less intelligent or well-developed: it is normal for children to vary in this regard. The ages associated with the different "stages" of language acquisition are only averages. There is also variability in terms of children's behavior. While the term "stage" seems to imply that a child abruptly changes his or her behavior when moving from one stage to the next, this is not actually the case. A child can have behaviors associated with different stages at the same time. Finally, it's important to keep in mind that stages are not specific to children acquiring English: all children tend to go through the same stages no matter what language they are acquiring. The following sections describe some of these stages of language acquisition.

8.3.2 The One-Word Stage

The first stage of morphological acquisition usually involves the child's producing single words in isolation. These first words uttered by a one-year-old child typically name people, objects, pets, and other familiar and important parts of his or her environment. The child's vocabulary soon comes

to include verbs and other useful words (including no, gimme, and mine). Often a phrase used by adults will become a single word in the speech of a child, such as all-gone and whasat? (‘what’s that?’). The single words produced at this stage are used as more than just labels for objects or events; they may be used for naming, commenting, requesting, inquiring, and so on. This level of development has been called the holophrastic stage (a holophrase being a one-word sentence). Children at this phase of linguistic development are limited to one word at a time in their production, but they understand and probably intend the meaning of more than a single word. Furthermore, the intonation children use on their one-word utterances may be that of a question, an ordinary or emphatic statement, or demand. If children do consistently use these adultlike sentence intonation patterns (and researchers disagree about whether they do or not), holophrastic would seem an especially appropriate name for this phase.

8.3.3 The Two-Word Stage

Between approximately eighteen and twenty-four months of age, children begin to use two-word utterances. At first the utterances may seem to be simply two one-word sentences produced one right after the other. There may be a pause between them, and each word may bear a separate intonation contour. Before long, however, the two words are produced without pausing and with a single intonational pattern.

Children at this stage do not just produce any two words in any order; rather, they adopt a consistent set of word orders that convey an important part of the meaning of their utterances. At this level of development, the structure of utterances is determined by semantic relationships, rather than adult syntactic ones. Word order is used to express these semantic relations; it is not until later that additional syntactic devices are added to the basic word-order rules. Most of the utterances produced by a child at this stage will express a semantic relation like one of the following:

(1)	agent + action	baby sleep
	action + object	kick ball
	action + location	sit chair
	entity + location	teddy bed

possessor + possession	Mommy book
entity + attribute	block red
demonstrative + entity	this shoe

Words such as more and ’nother may be used as modifiers of nouns (more juice, ’nother cup) to indicate or request recurrence. Here and there may be used as deictic terms (Section 8.3.5). Some children at this stage of development also use pronouns. For the most part, however, their speech lacks function morphemes and function words, that is, prepositions, auxiliary verbs, determiners, and inflectional affixes (see File 4.1).

Because of the omission of function words (which continues even after the child begins to produce more than two words at a time), the speech of young children is often called telegraphic. When you send a telegram or run a classified ad, every word you include costs you money. Therefore, you put in only the words you really need, and not the ones that carry no new information. Children follow the same principle of economy. The words they use and the order in which they use them convey the relevant information; function morphemes are not, strictly speaking, necessary for the child to effectively communicate ideas. Eventually, children do acquire the full set of function morphemes of their language.

8.3.4Later Stages of Development

Three-word utterances are initially formed by combining or expanding two-word utterances. Two two-word strings with a common element may be combined; for example, Daddy cookie and eat cookie may be combined to form Daddy eat cookie. A two-word utterance may also be expanded from within, when, for example, throw ball becomes throw red ball. That is, one of the elements of a two-term relation itself becomes a two-term relation.

There is no clear-cut three-word stage of language acquisition, however. Once children are capable of combining more than two words into an utterance, they may use three, four, five, or even more words at a time. These longer utterances are syntactically organized, rather than being just semantically organized sequences of words like those produced in the two-word stage.

Children’s speech at this stage is still telegraphic, including only content

morphemes and words. Gradually a child will begin to include function morphemes in his or her utterances, but these function morphemes are not acquired randomly. Instead, children acquire them in a remarkably consistent order. For example, in English, the present progressive verbal suffix -ing (she walking) appears in children's speech well before the past tense marker -ed (she walked), which in turn is acquired a little before the third-person present tense marker -s (she walks). Around the time -ing appears, so do the prepositions in and on. Three homophonous morphemes, all phonologically /-z/, are acquired at different times. First, children use the plural morpheme -s (e.g., shoes); later they acquire the possessive -'s (Mommy's); and finally the third-person present tense morpheme mentioned above is added to verbs. Articles (a and the) are acquired fairly early, but forms of the (highly irregular) verb be appear only at a relatively late stage.

a. Plurals. Recall that the plural morpheme -s is acquired quite early by children—in fact, it is usually one of the very first function morphemes to appear, along with in, on, and -ing. That does not mean, however, that very young children have complete mastery over the plural system of English.

At first, no plural marker is used at all. Nouns appear only in their singular forms (e.g., man). Next, irregular plural forms may appear for a while—that is, a child may say men instead of man, using the same form adults do. Then the child discovers the morpheme -s and suddenly applies it uniformly to all nouns. In some cases this involves overgeneralization of the rule of plural formation; for example, the plural of man becomes mans. During this stage the child often leaves nouns ending in sibilants (e.g., nose, house, church, etc.) in their singular forms. Once children discover the generalization about how the plurals of these nouns are formed, they may go through a brief period during which [-əz] is added to all nouns, giving not only houses but also man-es or even mans-es. This soon passes, however, and the child produces all plurals correctly, except for the irregular ones they haven't encountered yet, of course (such as oxen or sheep or cacti). These are learned gradually and may not be fully acquired by the time the child is five years old. When irregular plurals first appear in a young child's speech, they are simply isolated forms that fit into no pattern. Once they are learned, however, they are exceptions to the child's regular process of plural formation, just as they are for an adult.

b. Negatives. Children also go through a series of stages in learning to produce negative sentences. At first they simply put the word no in front of a

sentence to negate its meaning, for example, no baby sleep or no I drink milk. As a matter of fact, this word shows a fairly high occurrence in children's speech, even if children might not initially understand what the word means. Next, they insert a negative word, most often a word like no, not, can't, or don't, between the subject and the verb of a sentence, resulting in baby no sleep or I no drink milk. (It is interesting to note that at this stage, can't, won't, and don't are unanalyzed negative words; that is, the child doesn't parse them as containing two morphemes: an auxiliary verb and a consistent negative marker. The auxiliaries can, will, and do are not acquired until later; even three-year-olds still tend to have trouble with them.)

The child continues to develop a more adult system of negation, but for a while he or she will use words such as something and somebody in negated sentences, producing results such as I don't see something. Later these words are replaced by nothing and nobody. Finally, if the child's adult models use the forms anything and anybody, the child eventually acquires these words.

c. Interrogatives. Very young children can produce questions only by using a rising intonation, rather than by using a particular syntactic structure. The meaning of Mommy cup? or more ride? would be quite clear when produced with the same question intonation that adults use. Later, at around three years, children begin to use can, will, and other auxiliary verbs in yes/no questions, using the appropriate word order. That is, the auxiliary precedes the subject in these questions, as in, for example, Are you sad? At this point, however, children still fail to use adult word order in questions that use a wh- word (such as what, who, or why). They follow instead the question word with a sentence in normal declarative word order: Why you are sad? Eventually, of course, they learn to invert the subject and the verb in these constructions, as adult speakers do.

The fact that children produce words and sentences like foots or I don't want something or Where he is going? provides clear evidence that they are not merely imitating the adult speakers around them. What we as adults perceive and interpret as "mistakes" are not random but reflect the system of grammar that children are in the process of constructing for themselves.

8.3.5The Acquisition of Word Meaning

When children hear a word for the first time, they don't know what makes the

use of the word appropriate. Consider a preschooler whose teacher chose teams by dividing the class in half and asked each team to sit on a blanket. At home later that day, the student got annoyed because her younger brother kept crawling onto her blanket while she was watching television. “He won’t stay way from my team,” she complained. With a single exposure to the word team, this child formed a definition something like ‘a group of people on a blanket’—a reasonable, but incorrect, guess.

Though this trial-and-error process may seem laborious from an adult perspective, consider what every normal child is able to accomplish by using it: children produce their first words at age one, and by age six they have a vocabulary approaching 14,000 words. Simple arithmetic will reveal that children master an average of ten words a day starting from their first birthday. This feat might suggest that children learn the vocabulary of their native language in a more systematic fashion than is apparent from the above example. While it is not possible to speak of particular stages in the acquisition of word meaning like those identified in the acquisition of phonology, morphology, and syntax, linguists have determined that the acquisition of word meaning does follow certain patterns. First of all, the order in which words are learned reflects the intrinsic complexity of the concepts involved. Second, children’s initial meanings of words do not deviate randomly from those of adults, but rather they are usually related to and progress toward adult meanings in systematic ways. For example, many nouns are used to refer to sets of objects with something in common (e.g., the adult word chair is used appropriately with desk chairs, rocking chairs, easy chairs, and so on, because all of these things can be sat on), but sometimes children may select the wrong unifying characteristic(s), as happens in complexive concepts, overextensions, and underextensions.

a. Complexive Concepts. Sometimes, not only will a child associate a wrong or incomplete set of unifying characteristics with a word, but she will also seem to try out different characteristics each time she uses the word. For example, a child might learn that the word doggie refers to dogs and then use it to name other furry things, like soft slippers, and on later occasions, she may use doggie to refer to things that move by themselves, like birds, toads, and small toy cars. When a child associates different characteristics with the meaning of a word on successive uses, thereby creating a set of objects that do not have any particular unifying characteristic, we say that she has produced a complexive concept. The linguist William Labov reports another

example of a complexive concept. His one-year-old son used oo to refer to the music produced by his brother's rock and roll band; on later occasions oo was applied to the group's jackets, their musical instruments, their cigarettes, and then other people's cigarettes. Note that successive uses of the word tend to pick out objects with similar properties, but the class of objects as a whole has little in common. Complexive concepts serve to form a loose bond between items associated in the child's experience and represent a primitive conception of word meaning.

b. Overextensions. When a child extends the range of a word's meaning beyond that typically used by adults, we say that he has produced an overextension. For example, one American-English-speaking child called specks of dirt, dust, small insects, and bread crumbs fly; another gave moon as the name for cakes, round marks, postmarks, and the letter <O>. A third child overextended the word ticktock, using it to refer to clocks, watches, parking meters, and a dial on a set of scales.

At first glance, the set of objects named in overextensions may look as varied and random as those in complexive concepts. In fact, children of age two or so frequently have overextensions and complexive concepts in their speech at the same time. But closer inspection reveals that the concept defined in an overextension does not shift from one occasion to the next. In the above examples, the child's definition of moon is applied consistently to pick out any round thing. Likewise, fly referred to any small, possibly mobile object. The concept underlying the use of ticktock was perhaps more complex, but all of the objects in the child's list contained a dial with small marks.

Usually, the common properties of objects included in the overextension of a word are perceptual features like shape, size, color, or taste. In this respect, the child's strategy for defining a word resembles that of adults, since adults also define words in terms of perceptual features. But if the child's strategy of defining words now resembles that of adults, what misunderstanding is responsible for the overextensions?

Linguist Eve Clark offers one plausible explanation. In her view, the child who uses overgeneralizations has only an incomplete definition of the adult word. The child who calls dogs, cats, slippers, fur coats, and rugs doggie has recognized the significance of being furry, but the adult definition mentions more properties; for example, dogs are four-legged. Once the child grasps this property as part of the definition of dog, she will no longer

overextend the word doggie to slippers, rugs, and fur coats. Eventually the child becomes aware of all properties in a definition, which enables her to narrow down the class of objects named by doggie to just those observed in adult usage.

c. Underextensions. An underextension is the application of a word to a smaller set of objects than is appropriate for mature adult speech. Careful study reveals that, although less commonly noticed than overextensions, underextensions are at least equally frequent in the language of children.

Underextensions also occur among older, school-aged children when they encounter category names like fruit or mammal. Since most people are unsure of the properties that constitute the definitions of these words, they prefer to think of them in terms of their most ordinary members; thus for many Americans, dogs are the most ordinary mammals and apples are the most ordinary fruits. Children are surprised to learn that whales are mammals, or that olives are fruits, because these deviate so profoundly from the ordinary members of their categories. As a result, children underextend the words mammal and fruit, failing to apply these labels to the unusual members.

Why do children's first definitions fall into the three classes that we have discussed? Each class represents a different strategy for seeking out the adult definition of a word. Complexive concepts are the most basic and are present in a child's speech for only a short period of time before being replaced by overextensions and underextensions. Psychologists have determined that a child who overgeneralizes a word tries to make the most out of a limited vocabulary. Accordingly, overgeneralizations decrease dramatically after age two, when children experience a rapid vocabulary expansion. The opposite strategy underlies the formation of underextensions: children attempt to be as conservative as possible in their use of language, with the result that they perceive restrictions on the use of words not imposed by adults. By systematically over- and underextending the range of a concept, the child eventually arrives at the adult meaning.

The words discussed so far have been limited to those that denote the members of a set of objects. For example, the word chair is used correctly when it is applied to the set that includes objects as different as straight chairs, folding chairs, and rocking chairs. The same skill, identifying members of a set, is required for understanding some types of verbs. For

example, all people walk differently, but native speakers of English use the word walk correctly when they realize that these minor differences are irrelevant.

But not all words in a language involve the identification of sets. In fact, the mastery of a working vocabulary in any human language requires a wide range of intellectual skills, some easier and some more difficult than those required for grasping the meaning of common nouns and verbs. As an example of a relatively easy concept, consider what is required for understanding proper names: one must simply point out a single individual and attach a label, like John or Daddy. Because it is easier to associate a label with a single individual than to name a set with common properties, children master the comprehension of proper nouns first, sometimes when they are as young as six to nine months old.

In contrast, a relational term like large or small constitutes a relatively complex concept. (Refer to Section 6.4.3.) The correct use of words like these requires that two things be kept in mind: the absolute size of the object in question and its position on a scale of similar objects. For example, an elephant that is six feet tall at the shoulders may be small as far as elephants go, but a dog of the same height would be huge. Five- and six-year-old children are often unable to make the shift in perspective necessary for using relational words appropriately. In one well-known experiment documenting this conclusion, children were engaged in a pretend tea party with dolls and an adult observer. The adult gave the child an ordinary juice glass and asked the child if it was large or small. Though all of the children in the study agreed that the glass was small from their own perspective, it appeared ridiculously large when placed on the toy table around which the dolls were seated. Nevertheless, the youngest children were still inclined to say that the glass was small when asked about its size with respect to its new context.

Another difficult concept underlies deictic expressions, which are words referring to personal, temporal, or spatial aspects of an utterance and whose meaning depends on the context in which the word is used (refer to Section 7.1.3). For example, a speaker may use here or this to point out objects that may be close to him, while there and that are appropriate only when the objects are relatively far away. But since there are no absolute distances involved in the correct use of these deictic expressions, children have difficulty determining when the ‘close’ terms are to be preferred over the ‘far’ terms. As with relational terms, it is necessary to take into account the

size of the object pointed to. Thus a thirty-story building six feet in front of us is close enough to be called this building, but an ant removed from us by the same distance is far enough away to be called that ant.

Many verbs are conceptually more complex than most nouns. For example, every time someone gives something, someone else takes it; and every time someone buys an item, somebody else sells that item. Thus, every event of giving or buying is also an event of taking or selling, respectively. However, speakers usually don't talk about such events using both verbs. For example, people will probably say a sentence such as Peter bought the car from Mike or Mike sold the car to Peter, but not both sentences. So children need to figure out that both sentences refer to the same event without ever hearing both sentences describing the event. Furthermore, many common verbs like think or believe are abstract, referring to events that cannot be observed. Some researchers believe that verbs' greater conceptual complexity is one of the reasons why verbs are learned later than nouns.

Common and proper nouns, relational terms, deictic expressions and verbs do not exhaust the range of concepts mastered by children, but they do illustrate the variety of tasks involved in acquiring the vocabulary of a first language. Linguists can examine the evidence from the acquisition of word meaning and find support for two fundamental hypotheses: that some concepts are more complex than others and that the acquisition of language requires a considerable exercise of intelligence.

8.3.6Overview: Language Abilities from Twelve Months to Four Years

The table in (2) provides an overview of children's language abilities from twelve months to four years of age.

(2)Children's language abilities, twelve months to four years

Approximate Age	Language and Communicative Developments
12–18 months	• Continue to increase vocabulary, adding verbs and other useful words, such as *no*, *gimme*, *mine*; can produce 5–50 words. • Can produce only one word at a time, but understand and may intend more than that; use a lot of repetition. • Still babble a lot, but with longer sequences and complex intonational patterns. • Often produce holophrases, such as *all-gone* and *whatsat?*, and may be able to use consistent intonational patterns for questions, statements, or demands.
18–24 months	• Begin to use two-word utterances with a single intonational pattern. • Structure utterances by semantic relationships, such as agent + action *baby sleep*, or possessor + possession *Mommy book*, rather than adult syntax. • May use noun modifiers such as *more* or *'nother*, as well as deictics like *here* and *there*. • Generally do not produce function morphemes and function words. • Can produce 50–100 words and understand several hundred or more.
2 years	• Can produce short sentences and ask and answer simple questions. • Begin to use pronouns, though some are often still confused (e.g., *I* vs. *you*). • Can follow 2-step directions. • Can point to things or pictures when they are named.
3 years	• Understands words like prepositions *in*, *on*, *under*, etc. • Can use some pronouns correctly and begin to use plurals and past tense forms. • Can use hundreds of words, and understand several hundred more. • Can put together 2–3 sentences at a time. • Begin to ask a lot of questions.
4 years	• Can correctly use subject vs. object pronouns and follow other basic rules of grammar. • Can tell stories and use language for many functions. • Can consistently use regular plurals, possessives, and simple past tense forms. • Begin to use some irregular plurals and past tense verb forms. • Utterances are 80–90% intelligible, even to strangers.

FILE 8.4

How Adults Talk to Young Children

8.4.1Talking to Children

When people talk to one another, their general goal is to get listeners to understand what they are saying, as was illustrated by the communication chain in File 1.2. This goal applies just as much when listeners are young children as when they are adults. The problem is that young children know very little about the structure and function of the language adults use to communicate with each other. As a result, adult speakers often modify their speech to help children understand them. Speech directed at children is called infant-directed speech or child-directed speech.

How adults talk to children is influenced by three things. First, adults have to make sure that children realize that an utterance is being addressed to them and not to someone else. To do this, adults can use a name, speak in a special tone of voice, or even touch the child to get his attention. Second, once they have the child's attention, they must choose concepts that maximize the child's chances of understanding what is being said. For example, adults are unlikely to discuss philosophy but very likely to talk about what the child is doing, looking at, or playing with at that moment. Third, adults choose a particular style of speaking that they think will be most beneficial to the child. They can talk quickly or slowly, use short sentences or long ones, and so on. Children are thus presented with a specially tailored model of language use, adjusted to fit, as far as possible, what they appear to understand. Each of these three factors will be addressed in turn below.

8.4.2How Adults Get Children to Pay Attention

Speakers depend on their listeners being cooperative and listening when they

are spoken to. But when the listeners are children, adult speakers normally have to work a bit harder to ensure that this happens. They use attention getters to tell children which utterances are addressed to them rather than to someone else, and hence which utterances they ought to be listening to. And they use attention holders whenever they have more than one thing to say, for example, when telling a story.

Attention getters and attention holders fall into two broad classes. The first consists of names and exclamations. For example, adults often use the child's name at the beginning of an utterance, as in Ned, there's a car. Even four-year-olds know that this is an effective way to get a two-year-old's attention. Or, instead of the child's name, adults use exclamations like Look! or Hey! as a preface to an utterance that they want the child to pay attention to. The second class of attention getters consists of modulations that adults use to distinguish utterances addressed to young children from utterances addressed to other listeners. One of the most noticeable is the high-pitched voice adults use for talking to small children. When the linguist Olga Garnica compared recordings of English-speaking adults talking to two-year-olds, five-year-olds, and adults in the same setting (1977), she found that when talking to children, adults use a wider pitch range: the range of the adults' voices was widest with the youngest children, next widest with the five-year-olds, and narrowest with other adults. These results are consistent with the findings of the psychologist Anne Fernald (1992), who found that in various cultures, speech directed to children is usually higher pitched and shows more pitch excursion (variation) compared to speech addressing adults.

Another modulation adults use is whispering. If children are sitting on their laps or standing right next to them, adults will speak directly into their ears so it is clear they are intended to listen. Garnica observed that all the mothers in her study on occasion whispered to two-year-olds, a few whispered to five-year-olds, but none whispered to adults.

Not all attention getters and attention holders are linguistic. Speakers often rely on gestures as well and may touch a child's shoulder or cheek, for example, as they begin talking. They also use gestures to hold a child's attention and frequently look at and point to objects they name or describe.

8.4.3What Adults Say to Young Children

Adults both observe and impose the Cooperative Principle (see File 7.2) when they talk to young children. They make what they say relevant, talking about the "here and now" of the child's world. They encourage children to take their turns and contribute to the conversation. And they make sure that children make their contributions truthful by correcting them, if necessary.

a. The "Here and Now." Adults talk to young children mainly about the "here and now." They make running commentaries on what children do, either anticipating their actions—for example, Build me a tower now, said just as a child picks up a box of building blocks—or describing what has just happened: That's right, pick up the blocks, said just after a child has done so. Adults talk about the objects children show interest in. They name them (That's a puppy), describe their properties (He's very soft and furry), and talk about relations between objects (The puppy's in the basket). In talking about the "here and now," usually whatever is directly under the child's eyes, adults are very selective about the words they use. They seem to be guided by the following assumptions:

(1)
- Some words are easier for children to pronounce than others.
- Some words are more useful for children than others.
- Some words are hard to understand and best avoided.

Most languages contain "baby talk," words that are considered appropriate in talking only to very young children. For example, adult speakers of English often replace the word for an animal with the word for the sound it makes, as in meow and woofwoof instead of cat and dog, or with a diminutive form of the adult word, like kitty(-cat) or doggie. As one would expect, not all types of words have equivalent baby-talk words; instead, the domains in which baby-talk words are found overlap considerably with the domains young children first talk about. They include kinship terms and nicknames (such as mommy, daddy); the child's bodily functions and routines (wee-wee, night-night); names of animals; games and toys (peek-a-boo, choo-choo); and a few general qualities (such as uh-oh! for disapproval). Adults appear to use baby-talk words because they seem to be easier for children to pronounce. This assumption may well have some basis in fact, since in many languages, baby-talk words seem to be modeled on the sounds and combinations of sounds that young children tend to produce when trying their first words. At the same time, baby-talk words provide yet another signal that a particular utterance is addressed to a child rather than someone

else.

Psychologist Roger Brown (1925–98) has argued that the words parents use in speaking to young children anticipate the nature of the child's world. This seems to be true not only of baby-talk words but also of the other words used in speaking to young children. Adults select the words that seem to have the most immediate relevance to what their children might want to talk about. For instance, they supply words for different kinds of fruit the child might eat, such as apple or orange, but not the more abstract word fruit. They likewise supply the names of animals, but not the word animal. In other domains, though, they provide more general words like tree rather than the more specific words for different kinds of tree like oak, ash, or birch. Similarly, they are not likely to point to an Irish wolfhound and say to a one- or two-year-old That's an Irish wolfhound. They would be much more likely to say That's a dog. Some of the words adults select are very frequent in adult-to-adult speech; others are not. The criterion adults seem to use can be characterized by what Brown called "level of utility": the judgment that one word is more likely to be useful than another in the child's own utterances.

Adults are selective in another way too: they seem to leave out function words and word endings because they think this simplifies what they are saying. (In fact, they do the same thing when talking to non-native speakers.) For example, instead of using pronouns like he, she, or they, adults often repeat the antecedent noun phrase instead, as in The boy was running, The boy climbed the tree, where the second instance of the boy would normally be changed to he. Where I and you would be used in adult-to-adult speech, adults often use names instead, as in Mommy's going to lift Tommy up for I'm going to lift you up, or Daddy wants to tie Julie's shoe for I want to tie your shoe. Adults often use names in questions addressed to children too, for example, Does Jenny want to play in the sand today? addressed to Jenny herself. Adults seem to realize that pronouns are complicated for young children, so they try to avoid them.

b. Taking Turns. From very early on, adults encourage children to take their turns as speaker and listener in conversation. Even when adults talk to very young infants, they thrust conversational turns upon them. Adults respond to infants during their very first months of life as though their burps, yawns, and blinks count as turns in conversations. This is illustrated in the following dialogue between a mother and her three-month-old daughter Ann (taken from Snow 1977: 12).

(2) Ann: [smiles]
Mom: Oh, what a nice little smile! Yes, isn't that nice? There. There's a nice little smile.
Ann: [burps]
Mom: What a nice wind as well! Yes, that's better, isn't it? Yes.
Ann: [vocalizes]
Mom: Yes! There's a nice noise.

Whatever the infant does is treated as a conversational turn, even though at this stage the adult carries the entire conversation alone. As infants develop, adults become more demanding about what "counts" as a turn. Yawning or stretching may be enough at three months, but by eight months babbling is what really counts. And by the age of one year or so, only words will do.

Once children begin to use one- and two-word utterances, adults begin to provide both implicit and explicit information about conversational turns. For example, they may provide model dialogues in which the same speaker asks a question and then supplies a possible answer to it.

(3) Adult: Where's the ball?
[picks up ball] THERE'S the ball.
Adult: [looking at picture book with child]
What's the little boy doing?
He's CLIMBING up the TREE.

On other occasions, adults expand on whatever topic the child introduces.

(4) Child: Dere rabbit.
Adult: The rabbit likes eating lettuce.
Do you want to give him some?

By ending with a question, the adult offers the child another turn and in this way deliberately prolongs the conversation. In fact, when necessary, adults also use "prompt" questions to get the child to make a contribution and to take his or her turn as speaker.

(5) Adult: What did you see?

Child: [silence]
Adult: You saw WHAT?

Prompt questions like You saw what? or He went where? are often more successful in eliciting speech from a child than questions with normal interrogative word order.

c. Making Corrections. Adults seldom correct what children have to say (see File 8.1), but when they do, they seem to do it mostly to make sure that the child's contribution is true rather than grammatically correct. They may correct children explicitly, as in examples (6) and (7) below, or implicitly, as in (8). In example (9), the child is being corrected with regard to the truth value of the utterances, but the adult also uses the correct form of the verb.

(6) Child: [points] doggie.
Adult: No, that's a HORSIE.

(7) Child: That's the animal farmhouse.
Adult: No, that's the LIGHTHOUSE.

(8) Child: [pointing to a picture of bird on nest] Bird house.
Adult: Yes, the bird's sitting on a NEST.

(9) Child: Robin goed to school yesterday.
Adult: No, Robin went to a BIRTHDAY PARTY yesterday.

In each instance, the adult speaker is concerned with the truth of what the child has said, that is, with whether she has used the right words for her listener to be able to work out what she is talking about.

The other type of correction adults make is of a child's pronunciation. If a child's version of a word sounds quite different from the adult version, a listener may have a hard time understanding what the child is trying to say. Getting children to pronounce recognizable words is a prerequisite for carrying on conversations. What is striking, though, is that adults do not consistently and persistently correct any other "mistakes" that children make when they talk. Grammatical errors tend to go uncorrected as long as what the child says is true and pronounced intelligibly. In correcting children's language, adults seem to be concerned primarily with the ability to communicate with a listener.

8.4.4How Adults Talk to Children

Just as adults select what they say to young children by restricting it largely to the "here and now," so too do they alter the way they say what they say when talking to children. They do this in four ways: they slow down; they use short, simple sentences; they use a higher pitch of voice; and they repeat themselves frequently. Each of these modifications seems to be geared to making sure young children attend to and understand what adults say.

Speech addressed to two-year-olds is only half the speed of speech addressed to adults. When adults talk to children aged four to six, they go a little faster than with two-year-olds but still speak more slowly than they do to adults. To achieve this slower rate, adults put in more pauses between words, rather than stretch out each word. The higher pitch combined with exaggerated falls and rises in the intonation contour may be acoustically appealing to the infant (Goodluck 1991).

Adults also use very short sentences when talking to young children. Psychologist J. Phillips found that adult utterances to two-year-olds averaged fewer than four words each, while adult utterances to other adults averaged over eight words. These short sentences are generally very simple ones.

There is also a great deal of repetition in adult speech to children. One reason for this repetition is the adults' use of sentence frames like those in the left-hand column in (10).

(10)

Where's		Mommy	
Let's play with		Daddy	
Look at	+	(the) birdie	
Here's		…	
That's (a)		…	
Here comes		etc.	

These frames mark off the beginnings of words like those in the right-hand column by placing them in familiar slots within a sentence, and one of their main uses besides getting attention seems to be to introduce new vocabulary. Often, these kinds of sentence frames are used by the children too, and we might hear utterances like Mommy tie shoe or Robin want cookie, where we have a subject followed by a verb followed by an object. Adults also repeat themselves when giving instructions. Repetitions like those in (11) are three times more frequent in speech to two-year-olds than in speech to ten-year-

olds.

(11) Adult: Pick up the red one. Find the red one. Not the GREEN one. I want the RED one. Can you find the red one?

These repetitions provide structural information about the kinds of frame the repeated unit (here the red one) can be used in. Also, these contrasts are often highlighted by emphasizing the difference in color (indicated by the capitalization). Repetitions also allow children more time to interpret adult utterances, because they don't have to try to remember the whole sentence.

When all of these modifications are put together, it is clear that adults adjust what they say and modify how they say it to make themselves better understood. They first get children to attend; then they select the appropriate words and the way to say them. This suggests that young children are able to best understand short sentences and need to have the beginnings and ends of sentences clearly identified. In addition, the sentences used are about the "here and now," since children rely heavily on the context to guess whenever they don't understand. But as children begin to show signs of understanding more, adults modify the way they talk less and less. The shortest sentences and the slowest rate are reserved for the youngest children; both sentence length and rate of speech increase when adults talk to older children.

8.4.5How Necessary Is Child-Directed Speech?

The fact that adults systematically modify the speech they address to very young children forces us to ask two questions. First, are the modifications adults make necessary for acquisition? Second, even if they are not necessary, are they at least helpful? It seems that child-directed speech can help children acquire certain aspects of language earlier. For example, Newport and her colleagues (1977) found that mothers who used more yes/no questions in their speech had children who acquired auxiliaries earlier. But is child-directed speech actually necessary for language acquisition? Some exposure to language is obviously necessary before children can start to acquire it. But it is quite possible that any kind of spoken language might do. We need to know, for example, whether children could learn language if their only input came from speech they overheard between adults or from what they heard on the radio or television. If they could, it would be clear that

child-directed speech is not necessary, even though it might be helpful. On the other hand, if children could not learn from these other sources of information, it would be clear that some child-directed speech is not only helpful but necessary.

Experiments on these topics are difficult if not impossible to devise since it is unethical to deprive children of potentially useful input, but occasionally a real-life situation presents itself in a way that provides a glimpse of the answers to these questions. For example, the hearing children of deaf parents who use only sign language sometimes have little spoken language addressed to them by adults until they enter nursery school. The parents' solution for teaching their children to speak rather than use sign language is to turn on the radio or television as much as possible. Psychologists Jacqueline Sachs and Mary Johnson reported on one such child in 1976. When Jim was approximately three and a half years old, he had only a small spoken language vocabulary, which he had probably picked up from playmates, plus a few words from television jingles. His language was far behind that of other children his age. Although he had overheard a great deal of adult-to-adult speech on television, no adults had spoken to him directly on any regular basis. Once Jim was exposed to an adult who talked to him, his language improved rapidly. Sachs and Johnson concluded that exposure to adult speech intended for other adults does not necessarily help children acquire language.

Exposure to a second language on television constitutes another naturalistic situation in which children regularly hear adults talking to each other. However, psychologist Catherine Snow and her colleagues in the mid-1970s reported that young Dutch children who watched German television every day did not acquire any German (Snow et al. 1976). There are probably at least two reasons why children seem not to acquire language from radio or television. First, none of the speech on the radio can be matched to a situation visible to the child, and even on television people rarely talk about things immediately accessible to view for the audience. Children therefore receive no clues about how to map their own ideas onto words and sentences. Second, the stream of speech must be very hard to segment: they hear rapid speech that cannot easily be linked to familiar situations.

While such evidence may suggest that child-directed speech is necessary for language acquisition, that turns out not to be the case. There are cultures in which adults do not use child-directed speech to talk to infants and

children. There are even cultures, for example, the Kaluli of Papua, New Guinea, in which adults do not talk to children at all until they have reached a certain age. Instead the Kaluli "show" their children culturally and socially appropriate language use by having them watch everyday communication routines.

The difference between these cultures, in which children do successfully acquire language, and studies like those of Sachs and Johnson, in which they did not, seems to be related to how immediate the language use is: television and radio speech is too remote to be of any real help to a child. This suggests that one ingredient that might prove necessary for acquisition is the "here and now" nature of the speech children are exposed to, be it through child-directed speech or by being "shown" how to use language in a context that somehow involves the child, even if the child is not being directly addressed.

FILE 8.5

Bilingual Language Acquisition

8.5.1 Scenarios of Bilingual Language Acquisition

In a country like the United States, where the vast majority of people would consider themselves to be monolingual, it may come as a surprise that the majority of people in the world are bilingual (speakers of two languages) or multilingual (speakers of more than two languages). But when exactly can a person be called bilingual? Definitions of bilingualism are very diverse, ranging from having native-like control of two languages (Bloomfield 1933) to being a fluent speaker of one language and also being able to read a little in another language (Macnamara 1969). Neither of these extreme definitions is satisfactory. We certainly wouldn't want to call a person who speaks English and can read a little French a bilingual. One reason is that spoken or signed language is more basic than written language (see File 1.3). Thus, a bilingual should be a person who is able to speak or sign two languages, not just read them. The main problem, however, with both definitions mentioned above bears on the central issue: how well does someone need to know two languages to be called bilingual? Bloomfield's definition excludes too many people: for example, second-language learners who are fluent in their second language but speak with a foreign accent. Macnamara's definition, on the other hand, includes too many people. A better definition lies somewhere in between. For the purposes of this file, we will define being bilingual as being able to hold a conversation with monolingual speakers of two different languages.

There are different ways that a person may become bilingual. Some people learn more than one language from birth (simultaneous bilingualism) or begin learning their second language as young children (sequential bilingualism). Some children grow up with two or more languages from birth because their parents speak two different languages at home or because their

parents speak a language at home that is different from the local language. This is often the case for children when one or two parents are immigrants. Children may also grow up bilingually from birth or early childhood because they grow up in a bilingual or multilingual society, for example, in parts of Belgium or Switzerland, where multiple languages are commonly heard and controlled by most speakers. Finally, children may become bilingual because the language used at school is not their native language. This is the case in many countries where many languages are spoken. Instead of offering instructions in all the languages natively spoken, a neutral language or one that is perceived to be advantageous is chosen as the language of instruction (refer to File 11.3). This is frequently the case in African and Asian countries.

Another way of becoming bilingual is to learn a second language not as a young child but rather later in life. This is called second-language acquisition and is the process used, for example, by immigrants who come to a new country as adults and have to learn the local language. Other late learners are often people who learned a second, third, etc., language through formal education and/or travel.

These different ways of becoming bilingual tend to have different characteristics and results; we will discuss each of them in turn below.

8.5.2Bilingual First-Language Acquisition

When children acquire two languages from birth or from young childhood, we usually talk of bilingual first-language acquisition. Any child who receives sufficient input from two languages will grow up fully bilingual in the sense that Bloomfield meant of having native control over two languages. Research by Barbara Pearson and her colleagues in 1997 suggests that children will become competent speakers of a language only if at least 25% of their input is in that language. In addition, not just any input will do, as was discussed in File 8.4. Children learn language by interacting with speakers of that language. It's not enough, for example, to sit a child in front of a Spanish television program and expect him to learn Spanish. The child will learn Spanish only if he interacts with others in Spanish.

One typical feature of bilingual children's speech is language mixing or code-switching: using more than one language in a conversation or even within a phrase. Mario, a boy who grew up mostly in the United States and

whose parents spoke Spanish to him, frequently used both English and Spanish in the same sentence, as in the following examples (Fantini 1985: 149):

(1) Sabes mi school bus no tiene un stop sign.
"You know, my school bus does not have a stop sign."

Hoy, yo era line leader en mi escuela.
"Today, I was line leader at school."

Ponemos cranberries y marshmallows y después se pone el glitter con glue.
"Let's put cranberries and marshmallows and then we put the glitter on with glue."

The fact that bilingual children mix their languages has led some early researchers to believe that they speak neither of their languages really well. It has even been suggested that mixing in young children shows that their languages are fused into one system. That is, children have not yet figured out that they are using two different languages. However, more recent research has shown that bilingual children can differentiate their languages by the time they are four months old—long before they utter their first words. Laura Bosch and Nuria Sebastián-Gallés (2001) found that four-month-old Spanish-Catalan bilingual infants could distinguish between even these rhythmically similar languages. Since infants can differentiate two rhythmically similar languages like Spanish and Catalan, it is reasonable to hypothesize that four-month-old bilingual infants would also be able to differentiate languages that are rhythmically different (because this would be an easier task). However, more research in this area is needed to confirm this hypothesis.

If bilingual children can differentiate their languages well before they utter their first word, why do they mix languages? Let's take a closer look at Mario's utterances in (1). We can see that Mario does not just randomly mix English and Spanish. Instead, he seems to use some English nouns in what are basically Spanish sentences. Furthermore, all of the English nouns he uses are related either to his school experience in the United States (school bus, line leader, etc.) or to typically American items (cranberries, marshmallows,

etc.). It's then possible that he knows these words only in English or that he uses them more frequently in English. Even if we assume that Mario does not know these words in Spanish, we certainly can't conclude that he's unable to differentiate between Spanish and English.

Alternatively, Mario may mix his languages in the examples above because he knows that the people he is talking to understand both languages. Children are very sensitive to which languages their listeners can understand. If they believe that their listeners speak, say, only Spanish, they would try to stick to Spanish. But if they believe that their listeners know, for instance, English and Spanish, there is no reason for them to make an effort to stick to one language in particular, since many bilingual children grow up in an environment in which adults also frequently code-switch.

Finally, children's language mixing can be a strategy to avoid words that are difficult to pronounce. For example, Werner Leopold (1947) observed that his German-English bilingual daughter Hildegard preferred to use the German da [dɑ] instead of English there [ðɛɹ], but the English high [hɑɪ] over hoch [hox] because they were easier for her to pronounce.

8.5.3Bilingual vs. Monolingual First-Language Acquisition

Let's go back to the idea that Mario may not know words like stop sign or school bus in Spanish. Does this mean that his language acquisition is lagging behind monolingual children of his age? Some early researchers have suggested that learning two languages from birth would exceed the limitations of the child's brain. They assumed that bilingual children would lag behind their monolingual peers, and, indeed, studies from that time indicate that bilingual children's language skills are inferior to those of monolingual children.

During the 1980s, however, researchers began reevaluating the earlier studies and found that many of them were methodologically flawed. For example, some studies compared monolinguals' language skills with bilinguals' skills in their non-dominant language. The studies conducted in the 1980s suggested that, on the contrary, growing up bilingually is advantageous. In particular, studies found that bilingual children develop some metalinguistic skills, such as understanding arbitrariness (see File 1.4), earlier than monolingual children.

Current studies on bilingual language acquisition display a more balanced view. On the one hand, bilingual children may lag behind their monolingual peers in certain specific areas, like the vocabulary of one of their two languages (after all, they have to learn twice as much), but they have usually caught up by the time they reach puberty. This doesn't mean that they can't communicate their ideas; instead, it usually just means that there are some concepts that are easier to express in one language than the other. On the other hand, growing up bilingually may have some cognitive advantages, as mentioned above; and, of course, the end result is the ability to communicate fluently in two different languages. Other than that, bilingual children go through the same stages of language acquisition as monolingual children of each of the languages.

It should be mentioned that there are cases of problematic bilingual language acquisition. Sometimes children who grow up bilingually do not become functional bilinguals, usually because they are confronted with a bad attitude toward bilingualism, or one of their languages is not valued in their community and its use is discouraged. Thus, it is not the limitations of a child's brain or capabilities that cause problems in bilingual language acquisition, but rather a negative social environment: any child exposed to two languages in a positive social environment can grow up to be fully bilingual.

8.5.4Second-Language Acquisition

As mentioned above, not every bilingual speaker acquired both languages during childhood. Many people become bilingual later in life, after already acquiring their native language. This is called second-language acquisition. While children exposed to two languages from birth or early childhood will usually grow up mastering both languages as do monolingual native speakers of those languages, people learning a language later in life usually attain different levels of competence. Some people achieve native-like competence in a second language, but the vast majority of second-language learners do not. Speakers may learn the syntax and vocabulary of a second language perfectly (although even this is rare), but few learn the phonological system that well. Thus, most second-language speakers speak with a foreign accent (see Section 3.1.3 and File 10.1). It seems that non-native forms, as part of

either the morpho-syntax or pronunciation, can become fixed and not change, even after years of instruction. This is called fossilization.

There are a number of individual differences that contribute to how well a learner learns a second language. First, the learner's native language plays an important role. A Dutch speaker will have an easier time learning English than, for example, a Chinese speaker, because Dutch and English are closely related languages with similar grammatical and phonological systems, while Chinese and English are not. By the same token, a Burmese speaker will have a much easier time learning Chinese than a Dutch speaker. A speaker's native language also plays a role in second-language acquisition because having learned one language influences the subsequent learning of another language. This is called transfer. Transfer can be positive or negative, depending on whether it facilitates or inhibits the learning of the second language. For example, having a native language, regardless of which language it is, facilitates the learning of a second language because we already know much about how language works. In fact, evidence from feral children and deaf children suggests that it's not possible to learn a language later in life without having already learned a native language earlier (see File 8.1).

But a learner's native language can also inhibit learning the second language. For example, we learn the phonological system of our native language early in life. In fact, by the time we are twelve months old, we perceive speech in terms of the phonemic categories of our native language (see File 8.2). This specialization for the sounds of our native language can interfere with learning the phonological system of a second language and is one of the reasons why second-language learners usually have a foreign accent. Let's consider the sounds [p] and [p^h]. In English, aspirated [p^h] occurs only syllable-initially (e.g., in pin, pot, etc.), whereas unaspirated [p] occurs only after [s] (e.g., in spin, spot, etc., as was discussed in File 3.2). Most native speakers of English are not even aware they are using two "different kinds" of /p/ in their speech. In Thai, on the other hand, [p] and [p^h] are allophones of different phonemes, namely, of the phonemes /p/ and /p^h/. That is, [p] and [p^h] are not restricted in their distribution as they are in English. Instead, both [p] and [p^h] can occur syllable-initially in Thai, as in the words [pai] to go and [p^hai] danger, for example. Negative transfer occurs when native English speakers learning Thai apply English phonological rules to the Thai words and incorrectly pronounce both to go and danger as [p^hai]. Negative transfer is not limited to pronunciation; it may affect all levels of

second-language acquisition.

A number of other factors influence how successfully a learner will learn a second language. They include the learner's age, working memory, motivation, and context. Motivation plays a particularly large role in the level of fluency second-language learners will achieve. Some learners are perfectly content speaking a second language with a foreign accent and making an occasional mistake here and there. A study by Theo Bongaerts and his colleagues (1997) found that Dutch second-language learners of English who had achieved native competence in English were highly motivated learners and considered not having a foreign accent to be one of their goals.

Finally, the context in which speakers learn a second language and the amount of exposure to the second language also play a role. For example, the highly competent learners in Bongaerts and colleagues' study all learned English in an immersion setting where English was the language of instruction and learners were constantly exposed to native speakers of English. Trying to learn a second language later in life in a situation where you receive forty-five minutes of instruction a day, five days a week, may not result in the same high degree of native-like fluency.

FILE 8.6

Practice

File 8.1—Theories of Language Acquisition

Exercises

1. Suppose a friend of yours has a son, George, who is three years old. Your friend has been explaining to you that George has a problem with forming the past tense of verbs, for example, George says "Yesterday I go to the park" and "Last week I swim in the pool." But your friend has a plan: he is going to spend one hour each day with George, having the child imitate the past tense forms of the verbs, and he will give George a piece of candy for each correct imitation.

   i. Which theory/theories of language acquisition does your friend assume?

   ii. Will your friend's plan work? Explain why or why not.

   iii. What suggestions would you give your friend? Explain why, using a relevant theory.

2. For each pair of statements below, indicate which one is true and which one is false. For the true statement, say which theory of language acquisition best accounts for it as well as which theory is the least suited to explain the statement. Explain your answers.

a.
- A Chinese child adopted soon after birth by a Danish family will learn Danish just like other children growing up in Denmark with Danish parents.
- A Chinese child adopted soon after birth by a Danish family will learn Danish more slowly than other children growing up in Denmark with Danish parents because the child is genetically predisposed to learn

Chinese.

b.
- Children say things like foots and both mans before they master the correct forms feet and both men because they overuse the rule for regular plural formation.
- Children never say things like foots and both mans, because they imitate what adults say and no adult would say this.

3. Consider the following examples of children's speech taken from Clark (1995: 402), and answer the questions:

[playing with a toy lawnmower] "I'm lawning."

[pretending to be Superman] "I'm supermanning."

[realizing his father was teasing] "Daddy, you joked me."

[of food on his plate] "I'm gonna fork this."

i. Explain what the children are doing with language. How are these utterances different from the adult norm? What do the children not know about the English language yet? On the other hand, what do the children already demonstrate knowing about English in order to use it so creatively?

ii. Which theory of language acquisition best accounts for these data? Why?

4. Consider the following exchange taken from Braine (1971: 161). Discuss the effectiveness of the father's strategy in teaching the child. Also think about what the father's and child's respective objectives are. Which theory of language acquisition does this example refute?

Child: Want other one spoon, Daddy.

Father: You mean, you want the other spoon.

Child: Yes, I want other one spoon, please Daddy.

Father: Can you say "the other spoon"?

Child: Other . . . one . . . spoon.

Father: Say "other."

Child: Other.

Father: "Spoon."

Child: Spoon.
Father: "Other spoon."
Child: Other . . . spoon. Now give me other one spoon.

5.Read the following description of a feral child named Victor, and answer the questions below:

Victor was found in France in 1797 when he was twelve or thirteen years old. He had no speech when he was found. However, his hearing was normal and he made some noises. A man named Jean Marc Gaspard-Itard spent five years trying to teach Victor language. When Victor was sixteen, he could name objects. However, he would never use the words to request the objects. He also applied each word to only one object. That is, he would call only a certain shoe a shoe, but not other shoes. Victor developed no grammar.

i.Does Victor's case support the critical period hypothesis? Why or why not?
ii.What factors other than a critical period could be responsible for Victor's not acquiring normal language skills?

Activity

6.Interview a highly proficient non-native speaker of your native language. How would you rate his or her language skills at each of the following levels of linguistic structure, and how does your non-native speaker rate his or her own skills at these levels? Relate your ratings to the critical period hypothesis for second-language acquisition. You may want to ask the speaker when he or she started to learn the second language.

a. pronunciation (phonetics and phonology)
b. grammar (syntax and morphology)
c. word choice (lexicon)
d. intonation (phonetics and phonology)
e. appropriateness (pragmatics)
f. general comprehension

File 8.2—First-Language Acquisition: The Acquisition of Speech Sounds and Phonology

Exercises

7. For this exercise, go to a video-sharing website (e.g., YouTube, Google Video, etc.), and search for "babbling" and "baby." Choose whatever video you wish (as long as it is of a babbling baby!) and answer the following questions.
   i. Give the URL and/or the exact name of the video so that your instructor can find the video easily.
   ii. Do your best to transcribe in IPA at least five syllables of the baby's babbling.
   iii. What stage of language acquisition is the baby in? (See especially table (2) at the end of File 8.2, but it may also be helpful to also check table (2) at the end of File 8.3.) In particular, what kind of babbling does he or she produce, or could it be more properly described as cooing?
   iv. Based on the stage of language acquisition, how old would you guess the baby is? If the video description includes the baby's age, does that match up with what you would expect?

8. The data below are from a child named Paul at the age of two. They were collected by his father, Timothy Shopen. Consider each set of examples, and answer the questions at the end of each section.

A.

Adult Word	Paul
a. sun	[sʌn]
b. see	[si]
c. spoon	[pun]
d. snake	[neɪk]
e. sky	[kɑɪ]
f. stop	[tɑp]

   i. State a principle that describes Paul's pronunciation of these words. That is, how does Paul's pronunciation systematically differ from the adult pronunciation?

B.

Adult Word	Paul

g. bed [bɛt]
h. wet [wɛt]
i. egg [ɛk]
j. rake [ɹeɪk]
k. tub [tʌp]
l. soap [soʊp]
m. bus [bʌs]
n. buzz [bʌs]
o. man [mæn]
p. door [dɔɹ]
q. some [sʌm]
r. boy [bɔɪ]

ii. State another principle describing Paul's pronunciations here. Be sure to word your statement in a way that reflects the fact that (o)–(r) are not affected.

C.

	Adult Word	Paul
s.	laugh	[læp]
t.	off	[ɔp]
u.	coffee	[kɔfi]

iii. State a third principle describing Paul's pronunciation in this section. Based on the principles you have seen so far, suggest how Paul would pronounce the word love.

D.

	Adult Word	Paul
v.	truck	[tʌk]
w.	brownie	[bɑʊni]
x.	plane	[peɪn]
y.	broken	[boʊkən]
z.	crack	[kæk]
aa.	clay	[keɪ]
bb.	cute	[kut]
cc.	beautiful	[butəpəl]

dd. twig [tɪk]

iv. State a fourth principle describing the new aspects of Paul's pronunciation in these examples.

E.

	Adult Word	Paul
ee.	quick	[kwɪk]
ff.	quack	[kwæk]

v. Do these two words illustrate an exception to the fourth principle? If so, how?

9. The data below are taken from Fasold and Connor-Linton (2006: 233). The data show words pronounced by different children at about the same age. Are there any sounds or sound sequences that seem to be particularly difficult? What patterns are evident in the children's pronunciations?

	Adult Word	Child
a.	bottle	[bɑbɑ]
b.	butterfly	[bʌfɑɪ]
c.	tub	[bʌb]
d.	baby	[bibi]
e.	tree	[ti]
f.	candy	[kæki]
g.	banana	[nænə]
h.	key	[ti]
i.	duck	[gʌk]
j.	water	[wɑwɑ]
k.	stop	[tɔp]
l.	blanket	[bæki]
m.	doggie	[gɔgi]
n.	this	[dɪs]

10. The children below pronounce some words differently than adults do, and differently from one another. Look at the examples of each child's speech and determine how each will pronounce the target

phrases that follow.

Child A:

	Adult Word	Child
a.	ghost	[doʊst]
b.	dog	[dɑg]
c.	cat	[kæt]
d.	gopher	[doʊfəɹ]
e.	muffin	[mʌfɪn]
f.	pig	[pɪg]

Child B:

	Adult Word	Child
a.	ghost	[goʊst]
b.	dog	[dɑk]
c.	cat	[kæt]
d.	gopher	[goʊf]
e.	muffin	[mʌf]
f.	pig	[pɪk]

Targets:

- Go faster
- Big tummy
- Good baby

File 8.3—First-Language Acquisition: The Acquisition of Morphology, Syntax, and Word Meaning

Exercises

11. For this exercise, go to a video-sharing website (e.g., YouTube, Google Video, etc.), and search for “two year old,” “baby,” and “talking.” Choose whatever video you wish (as long as it is of a

talking child that seems to generally be in the two-year-old range and is at least two minutes long) and answer the following questions.

i. Give the URL and/or the exact name of the video so that your instructor can find the video easily.

ii. Do your best to transcribe (either in normal spelling or IPA) at least five full utterances (e.g., phrases, sentences).

iii. What stage of language acquisition is the child in? (See especially table (2) at the end of File 8.3.) Is he or she producing two-word utterances, or three words or more? Is the child's speech telegraphic, or does it include function words? Give examples in support of your answers.

iv. Does the child produce any suffixes like -ing, or the plural -s, or past tense -ed? Does the child use any incorrect irregular forms (e.g., goed, wented, blowed)? Give examples in support of your answers.

v. Does the child use any words that seem to be overextensions, underextensions, or anything else that does not match up with normal adult usage of a word? Give examples in support of your answers.

12. Consider the examples from children's speech below. Using the linguistic terminology you have learned so far, explain what mistakes the children make. Be as specific as possible. Example 12d is taken from Fasold and Connor-Linton (2006: 233), and examples 12e and 12f from Yule (1996: 159, 160).

a. Mike: What do you want for lunch? Do you want a hotdog?
   Calvin: No! I don't like hot! I only want a warm dog!

b. Calvin: That bug had already [bɑɪtn̩] me.

c. Calvin: I'm so sorry I broked you! Do we need to buy a new mommy?

d. Child calls leaves, grass, moss, green carpet, green towels, spinach, lettuce, and avocado a leaf.

e. Child: No the sun shining.

f. Child: Why you waking me up?

13. Read the description of the feral child Victor given in Exercise 5. What mistake does Victor make regarding object names? Do children who were exposed to language from birth make the same

mistake? Do children eventually learn the correct referents for these object names? Which stage of the acquisition of lexical items does Victor seem to be stuck in?

14. Each pair of utterances below comes from children at different ages. For each pair, which utterance was most likely said by the older child? Explain your answers.

a. Daddy, go park!
   I'm so hungry for go to the park.
b. Why she doesn't liked it?
   No wake upping me!
c. More door! More door!
   I have another one candy?
d. Now the bad guy show up!
   Where go him?
e. This my super awesome bed.
   What's name dis?

15. For each word below, explain what a child has to learn about the word in order to use it correctly.

a. cold
b. Susan
c. you
d. bird
e. this

Activity

16. This activity is adapted from Yule (1996: 188–89). Show the following list of expressions to some friends and ask them to guess the meaning:

a. a snow-car
   a running-stick
   a water-cake

a finger-brush
a pony-kid

Now compare your friends' versions with those of a two-year-old child below (from Clark 1993: 40). What do the examples suggest about the nature of vocabulary acquisition?

b. [talking about a toy car completely painted white]
Child: This is a snow-car.
Parent: Why is this a snow-car?
Child: 'Cause it's got lots of snow on it. I can't see the windows.

Child: This is a running stick.
Parent: A running-stick?
Child: Yes, because I run with it.

Child: [in the bath] It's a water-cake.
Parent: Why do you call it a water-cake?
Child: I made it in the water.

Child: I bought you a toothbrush and a finger-brush.
Parent: What's a finger-brush?
Child: It's for cleaning your nails.

Child: [wearing a sun hat] I look like a pony-kid.
Parent: What's a pony-kid?
Child: A kid who rides ponies.

File 8.4—How Adults Talk to Young Children

Exercises

17. Read the following "conversations" between three-month-old Ann and her mother (from Snow 1977: 13). Which aspects of how adults talk to young children and what they say to young children can you identify in each "conversation"?

a. Mom: Oh you are a funny little one, aren't you, hmm?
[pause]
Aren't you a funny little one?
[pause]
Hmm?

b. Ann: abaabaa
Mom: Baba.
Yes, that's you, what you are.

18. For each pair of sentences, which of the two would an adult most likely say to a young child? Justify your answer.

a. Timmy, see the bird?
Do you see the bird?
b. You are taking a bath now.
Timmy is taking a bath now.
c. Look, the girl is eating. And now she is playing with the ball.
Look, the girl is eating. And now the girl is playing with the ball.
d. That's a birdie.
That's a robin.
e. No, that's a kitty, not a doggy.
No, say went, not goed.

Discussion Question

19. Many adults use child-directed speech to speak to children, and they seem to be able to use child-directed speech in ways that are helpful to the child. How do you think adults know what to do to be most helpful?

Activity

20. Make a list of all the aspects of how adults talk to children and what they say to children that are discussed in this file. Then observe adults interacting with two children of different ages. Which of the

aspects on your list do the adults use? Write down examples. How does the child's age influence the adult speech?

File 8.5—Bilingual Language Acquisition

Discussion Questions

21. Why do you think motivation plays such a big role in the success of second-language acquisition?

22. Do you have any experience trying to learn a second language? How proficient are you? How do you think the factors mentioned in this file affected your proficiency?

Activity

23. Interview a proficient non-native speaker of your language. Find out where and when your speaker learned your native language. Also ask your speaker how motivated he or she was in learning the language. Then listen carefully to your speaker: do you find features in his or her speech that could be attributed to transfer? Think about pronunciation (phonology), grammar (syntax and morphology), word choice (lexicon), intonation, and appropriateness. Does your speaker speak your language at a level that you would expect, considering his or her language-learning background? Why or why not?

Further Readings

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