Language development

The process by which children acquire their first language in early childhood.

Human infants are acutely attuned to the human voice, and prefer it above all other sounds. In fact, they prefer the higher pitch ranges characteristic of female voices. They are also attentive to the human face, particularly the eyes, which they stare at even more if the face is talking. These preferences are present at birth, and some research indicates that babies even listen to their mother’s voice during the last few months of pregnancy. Babies who were read to by their mothers while in the womb showed the ability to pick out her voice from among other female voices.

Infancy

Since the early 1970s, it has been known that babies can detect very subtle differences between English phonemes (the functional units of speech sound). For example, they can detect the difference between “pa” and “ba,” or between “da” and “ga.” Of course, they do not attach meaning to the differences for 12 months or more. The original technique of investigating this capacity capitalized on babies’ innate ability to suck on a nipple. The nipple is linked to a device that delivers sound contingent on the baby’s sucking. Babies introduced to this device suck vigorously to hear the sound, even when it is a repetitive “ba ba ba ba.” Because babies also get bored with repetition, they stop sucking hard after a few minutes. At that point the researcher can change the sound in subtle ways, and see if the baby shows renewed interest. For example, it might be a different example of “ba,” perhaps one with a bit more breathiness. Or, it could play a sound that would fall into a new phoneme class for adults, like “pa.” Babies ignore the first kind of change, just as adults would, but they suck with new vigor for the new phoneme.

Babies have finely tuned perception when it comes to speech sounds, and, more importantly, they seem to classify many sounds the same way adult speakers would, a phenomenon known as categorical perception. These sounds that they perceive as indivisible categories are generally those that form the basis for many speech systems in the world’s languages, rather than those that are used only rarely, like “th.” Infants come into the world already predisposed to make certain distinctions and classifications: apparently they are not driven to make them by language exposure.

Babbling

At the beginning of infancy, vegetative noises and crying predominate. Observers note that by the age of four months, the baby’s repertoire has expanded in more interesting ways. By this point babies are smiling at caregivers and in doing so they engage in a cooing noise that is irresistible to most parents. When the baby is being fed or changed, she will frequently lock gazes with her caregiver and coo in a pleasant way, often making noises that sound like “hi,” and gurgles. It is common for the caregiver to respond by echoing these noises, thereby creating an elaborate interchange that can last many minutes. This may not happen universally, however, as not all cultures take the baby’s vocalization so seriously. The nature of the sounds made at this stage is not fully speech-like, though there are open mouth noises like vowels, and an occasional “closure” akin to a consonant, without the full properties that normally make a syllable.

At some point between four and 10 months, the infant begins producing more speech-like syllables, with a full resonant vowel and an appropriate “closure” of the stream of sound, approaching a true consonant. This stage is called “canonical babbling.”

At about six to eight months, the range of vocalizations grows dramatically, and babies can spend hours practicing the sounds they can make with their mouths. Not all of these are human phonemes, and not all of them are found in the language around them. Research has shown that Japanese and American infants sound alike at this stage, and even congenitally deaf infants babble, though less frequently. These facts suggest that the infant is “exercising” her speech organs, but is not being guided very much, if at all, by what she has heard.

By age 10 or 12 months, however, the range of sounds being produced has somewhat narrowed, and now babies’ babbling in different cultures begin to take on sound characteristics of the language that surrounds them. The babbling at this stage often consists of duplicated syllables like “bababa” or “dadada” or “mama.” It is no accident that most of the world’s languages have chosen, as names for parents, some variant of “papa,” “mama,” “dada,” “nana.” These coincide with articulations that baby can make most easily at the end of the first year.

Toddlerhood

The first words make their appearance any time between nine and 15 months or so, depending on the child’s precocity and the parent’s enthusiasm in noticing. That is, the baby begins making sounds that occur fairly
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Average vocabulary growth of children from ages 1 to 7.

The meanings of the child’s first words are not necessarily the same as those of the adults around her. For instance, children may “overgeneralize” their first words to refer to items beyond their usual scope of application. A child might call all men “Daddy,” or all animals “dog-

reliably in some situations AND are at least a vague approximation to an adult-sounding word.

What the baby “means” by these sounds is questionable at first. But before long, the baby uses the sounds to draw a caregiver’s attention, and persists until she gets it, or uses a sound to demand an object, and persists until it is given to her. At this point the first words are being used communicatively as well. There is a fairly protracted period for most babies in which their first words come and go, as if there is a “word of the week” that replaces those gone before. One of the characteristics about these first words is that they may be situation-specific, such as the case of a child who says “car” only when looking down on the roofs of cars from her balcony. But after several months of slow growth, there is an explosion of new words, often called the “word spurt.” This usually coincides with an interest in what things are called, e.g., the child asking some variant of “What’s that?” Vocabulary climbs precipitously from then on—an estimated nine new words a day from ages 2 to 18 years. These developments are noted in all the cultures that have been studied to date.

The nature of the child’s first 50 words is quite similar across cultures: the child often names foods, pets, animals, family members, toys, vehicles and clothing that the child can manipulate. Most of what is named can either move or be moved by the child: she generally omits words for furniture, geographical features, buildings, weather and so forth. Children vary in that some develop an early vocabulary almost exclusively of “thing” words and actions, whereas others develop a social language: words for social routines, and expressions of love, and greetings. Researchers differ as to whether these are seen as different styles inherent in the child or whether their social environment encourages them in different ways. Researchers agree that the child learns most effectively from social and interactive routines with an accomplished talker (who may be an older child), and not, at least at the start, from passive observations of adults talking, or from radio or TV shows. Experiments and observations show that children pick up words at this stage most rapidly when the caregiver uses them to name or comment on what the child is already focused on.

Word meanings

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