

First Language Acquisition

How children so quickly and as if by magic acquire language has interested people for thousands of years.

Psammeticus, an Egyptian Pharaoh during the 7th century BC, believed language was inborn and that children isolated from birth from any linguistic influence would develop the language they had been born with. He isolated two children, who were reported to have spoken a few words of Phrygian, an IE language of present day Turkey. Psammeticus believed that this was the first, or original, language.

In the 15th century **King James V** of Scotland performed a similar experiment; the children were reported to have spoken good Hebrew.

These first studies of human language tended to be concerned with the origin of the oldest, or first, language (They were **phylogenetic**), and were only secondarily concerned with the precise way in which individual infants acquire speech. True studies of language development in the infant (**ontogenetic** studies) came later.

Akbar, a 16th cent. Mogul emperor of India, desired to learn whether language was innate or acquired through exposure to the speech of adults. He believed that language was learned by people listening to each other and therefore a child could not develop language alone. So he ordered a house built for two infants and stationed a mute nurse to care for them. The children did not acquire speech, which seemed to prove Akbar's hypothesis that language is acquired and does not simply emerge spontaneously in the absence of exposure to speech.

Only in the last 40 years after the invention of the tape recorder was child language recorded carefully and studied in any systematic fashion. Sophisticated recording machinery of all sorts are now used to monitor language proficiency in infants and small children.

Child language acquisition studies often attempt to map out the stages of language acquisition. Such studies are of two types:

longitudinal-- development of speech in the same group over time. Most studies of child language acquisition are of this form.

cross sectional-- search for a certain type of data in a broad spectrum of different children, such as a study of the language of two-year olds across the country.

Since this discipline is so new there is little conclusively known about child language acquisition. One fact is definite: Language acquisition depends upon the child being exposed to language. (Akbar's experiment was correct.) The language a child acquires is that of his/her surroundings. Children who are deprived of language in their environment simply do not begin to speak spontaneously. (Wolf children, Genie, had no language.)

The main question in all modern studies of child language acquisition involves finding out what in human language is inborn, innate, we say **hard-wired**, into the infant's brain structure, and what is learned through experience. Although this question hasn't been answered to anyone's complete satisfaction, it seems clear that the basic capacity to learn language is innate, while the particular form/meaning connections of individual languages are acquired through prolonged exposure to a specific speech community.

There are three main theoretical approaches to child language acquisition; all of them have merit but none can fully explain the phenomenon of child language acquisition.

1. Cognitive theory-- Jean Piaget (1896-1980)

Views lang. acq. within the context of the child's broader intellectual development. A child first becomes aware of a concept, such as relative size, and only afterward do they acquire the words and patterns to convey that concept. Simple ideas are expressed earlier than more complex ones even if they are grammatically more complicated-- Conditional mood is one of the last. (cf. Spanish vs. Russian.)

There is a consistent order of mastery of the most common function morphemes in a language. Example from English: first-- -ing, then *in* and *on*, then the plural -s, last are the forms of the verb *to be*. Seems to be conditioned by logical complexity: plural is simple, while forms of the verb *to be* require sensitivity to both number and tense.

Pros and cons-- clearly there is some link between cognitive development and language acquisition; Piaget's theory helps explain the order in which certain aspects of language are acquired.

But his theory does not explain why language emerges in the first place. Apes also develop cognitively in much the same way as young children in the first few years of life, but language acquisition doesn't follow naturally from their development. Bees develop the cognitive ability to respond to many shades of color, but bees never develop any communication signals based on shades of color.

2. Imitation and positive reinforcement

Children learn by imitating and repeating what they hear. Positive reinforcement and corrections also play a major role in Language acquisition. Children do imitate adults. Repetition of new words and phrases is a basic feature of children's speech. This is the behaviorist view popular in the 40's and 50's, but challenged, since imitation alone cannot possibly account for all language acquisition.

Con: 1) Children often make grammatical mistakes that they couldn't possibly have heard: *Cookies are gooder than bread. Bill taked the toy. We goed to the store, Don't giggle me.*

2) This hypothesis would not account for the many instances when adults do not coach their children in language skills. Positive reinforcement doesn't seem to speed up the language acquisition process. Children do not respond to or produce metalanguage until 3 or 4, after the main portion of the grammar has been mastered. (Children don't comprehend discussions about language structure.) Story about Tyler, Kornei Chukovsky: *yabloka, tibloka*)

3. The final theory we will discuss involves the belief in the **innateness of certain linguistic features**. This theory is connected with the writings of Noam Chomsky, although the theory has been around for hundreds of years. Children are born with an innate capacity for learning human language. Humans are destined to speak. Children discover the grammar of their language based on their own inborn grammar. Certain aspects of language structure seem to be preordained by the cognitive structure of the human mind. This accounts for certain very basic universal features of language structure: every language has nouns/verbs, consonants and vowels. It is assumed that children are pre-programmed, hard-wired, to acquire such things. (The "gavagai" experiment.)

Yet no one has been able to explain how quickly and perfectly all children acquire their native language. Every language is extremely complex, full of subtle distinctions that speakers are not even aware of. Nevertheless, children master their native language in 5 or 6 years regardless of their other talents and general intellectual ability. Acquisition must certainly be more than mere imitation; it also doesn't seem to depend on levels of general intelligence, since even a severely retarded child will acquire a native language without special training. Some innate feature of the mind must be responsible for the universally rapid and natural acquisition of language by any young child exposed to speech.

No one has been able to explain just what this mysterious language acquisition device, or LAD, is. Some language acquisition must certainly be due to simple repetition: greetings, swear words; much of it is not. A three year old child generally can recall and use a new word heard once even months afterward.

Chomsky originally believes that the LAD is a series of syntactic universals, structural properties universally found in all languages. These syntactic structures are inborn. Only the words are learned. Allows us infinite creativity based on a limited number of patterns. Children thus generate sentences based on learned words and innate syntactic patterns. This is why children make grammatical mistakes that they could not be repeating.

And yet, so far, no properties have been discovered that are truly universal in all languages. It seems that the syntactic structures differ from language to language and couldn't be innate. All attempts to construct a universal grammar that would underlie all structures in all languages have come to failure, Chomsky's theory of transformational grammar being a case in point.

Today Chomsky believes that the universal properties are constraints, rules that dictate what cannot be in any language rather than structures which are universal. Some of these apparently universal constraints include the observation that forms a question by reciting words backwards; the subject of a subordinate clause never governs the verb in the main clause, etc. It is assumed that something about the structure of our brain causes languages to be somewhat limited in how they can differ syntactically. This built in limitation aids the child in acquiring the language by narrowing down the possible patterns to a few.

The problem with the theory of innateness, then, is not in deciding whether the theory is correct, since the ability to learn language is certainly innate, but rather in identifying just what the mysterious language acquisition device actually is, what constraints or structural features are hard-wired in the mind. The LAD must be something more than general intelligence. And yet there doesn't seem to be any structural property or set of properties found in all languages that would allow us to identify any purely linguistic skill that is separate from human intelligence.

Let's take up the subject of just how structured the input is in child learning acquisition. Chomsky maintains that children couldn't simply figure out language structure by repetition and analogy because the language they hear is highly irregular. He claims that language spoken around the child extremely fragmentary, random simplification of adult speech. Speech between adults is often fragmentary or even ungrammatical. Such run on and incomplete sentences must serve as clues to something already in the mind.

More recent studies show that language spoken around child is not as full of random errors, not as fragmented or randomly pidginized as one might believe. It has been found that mothers use a special register of language, dubbed **motherese**, to talk to their children. Motherese, just like other social registers, is highly structured; it is not random and irregular as Chomsky would have us all believe. There is a set correlation between motherese and adult language and the features characteristic of motherese differ across cultures:

Let's look at a few features of Anglo-American motherese:

Pragmatic features: sentences are shorter (4 or fewer words), speed slower, use of more clarificational features than in speech between adults, more questions, attempts at getting feedback from the child. In Samoan these features are lacking.

Grammatical elements found in motherese are even more diverse, but each language group has its own structured set: expressive element (intonation), lip rounding (Latvian palatalizes consonants), reduplication: choo-choo, use of special words, especially for toys, bodily functions: *bunny, kaka, poo-poo*. Use of special morphemes, like English y/ie: *doggy, kitty, ducky*. (Berber suffix: sh/sht, Russian -ik, ichiko, itsa). Such 'baby' morphemes often are used in speech between adults to make **hypochoristics**. Some language apparently lack any special grammatical or lexical markers for motherese: Samoan, Maya.

There is also a social register called **fatherese**: more demanding of information, using more direct questions and a wider vocabulary than motherese. There is also **otherese**. Older children and neighbors also talk to infants and very small children using special baby talk. The special social registers that developed from the need to speak to small children have developed into forms that are specific to each language. Very little work has been done to study these types of speech.

It seems increasingly apparent that the language a child hears is not fragmented randomly, but is highly structured and this structure plays a role in language acquisition. This proves, once again, that the structures themselves are not innate but acquired through exposure; the capacity to learn is what is innate.

Stages in child language acquisition--Universal

1. Pre-speech: Much of importance goes on even before the child utters his first word: infants learn to pay attention to speech, pays attention to intonation and the rhythm of speech long before they begin to speak.

Infants respond to speech more keenly than to other sounds. Speech elicits greater electrical activity in the left side of the 2 month old infant's brain than do other sounds. Experiment with microphone and nipple showed that infants suck more vigorously if the action triggers a human voice as opposed to music or other sounds.

Child learn to recognize the distinctive sounds, the phonemes of the language they hear from birth long before they are able to pronounce them. Infants can distinguish between /p/ and /b/ at three or four months (in an experiment with /ba/ played vs. /pa/, a two month infant showed awareness of the change). But children do not learn how to use these sounds until much later-- around the second year or later--as shown by the experiment with /pok/ and /bok/. The same is true for rising vs. falling intonation, which only becomes systematically functional much later. Infants know the difference between one language and another by recognition of phonological patterns (*Story of the Russian fairy tale book*.)

2. Babbling stage. Begins at several months of age. Characterized by indiscriminate utterance of speech sounds-- many of which may not be used in the given language but are found in other languages-- clicks. Many native speech sounds may be absent-- some are naturally harder to pronounce-- /r/ /th/. Very few consonant clusters and repeated syllables are common.

3. One word (holophrastic) stage. Infants may utter their first word as early as nine months: usually mama, dada (these words resemble babbling). Deaf babies whose parents use sign language begin making their first word/gestures around eight months. This stage is characterized by the production of actual speech signs. Often the words are simplified: "du" for duck, "ba" for bottle. When the child has acquired about 50 words he develops regular pronunciation patterns. This may even distort certain words-- turtle becomes "kurka". Incorrect pronunciations are systematic at this time: all words with /r/ are pronounced as /w/. sick--thick, thick--fick. Children tend to perceive more phonemic contrasts than they are able to produce themselves.

The first 50 words tend to be names of important persons, greetings, foods, highlights of the daily routine such as baths, ability to change their environment--*give, take, go, up, down, open*.

The meaning of words may not correspond to that of adult language:

overextension-- dog may mean any four legged creature. apple may mean any round object. bird may mean any flying object. Child can still distinguish between the differences, simply hasn't learned that they are linguistically meaningful. Dissimilarities linguistically redundant.

two patterns in child word learning--

referential-- names of objects.

expressive-- personal desires and social interactions: bye-bye, hi, good,

This is a continuum. Child's place on this continuum partly due to parent's style: naming vs. pointing.

The extra-linguistic context provides much of the speech info. Rising and falling intonation may or may not be used to distinguish questions from statements at the one-word stage. Words left out if the contexts makes them obvious. At this stage, utterances show no internal grammatical structure (much like the sentence yes in adult speech, which can't be broken down into subject, predicate, etc.)

4. Combining words-- 18 mo--2 years. By two and a half years most children speak in sentences of several words--but their grammar is far from complete. This stage rapidly progresses into what has been termed a fifth and final stage of language acquisition, the **All hell breaks loose stage**. By six the child's grammar approximates that of adults.

Children learning any language seem to encode the same limited set of meanings in their first sentences:

ownership-- Daddy's shoes; describing events-- Me fall; labeling-- That dog; locational relations-- toy in box.

Sentences usually two words. Children can repeat more complex sentences spoken by adults but cannot create them until later (called prefabricated routines) not indicative of the child's grammar.

Other patterns in early speech

The ends of words learned more quickly: -raff for giraff, -mato for tomato, -narna for banana. This is true even in lang. where the stress is always on the first syllable.

Avoidance of exceptions-- overextension of a pattern: go--goed; good--gooder.

The rest of the acquisition of grammar is idiosyncratic-- some children repeat more, others create more. Some children produce a great number of words before beginning to combine them into sentences. Others immediately begin to make sentences. There may be several individual routes to mastering one's native language.

Conclusion. All three theories--the imitation theory, the innateness theory, and the cognitive theory--are probably correct to a degree; each describes particular facets of a complex phenomenon.

1) Cognitive development is an essential prerequisite for linguistic development. But language acquisition doesn't occur spontaneously because of cognitive development (as seems to be the case in animal systems of communication).

2) Repetition, imitation, structured input are all a part of language acquisition. Greater exposure to language might speed language acquisition up but is not essential.

3) Innate learning device. All children exposed to language, regardless of environmental factors and differences in intelligence, are able to acquire very complex grammars at a very early age. Something innate to the child--the LAD--allows for such rapid and successful language acquisition by children.

All of the above studies have revealed a few universally accepted facts about child language acquisition.

1) Child Language acquisition is a natural consequence of human society. All children exposed to language acquire it naturally without deliberate efforts of teaching or learning.

2) The outcome of first language acquisition will be the same regardless of individual differences in intelligence. Two children with quite different intellectual abilities will both acquire a highly complex native language by age six.

3) Although the basic ability to acquire language is innate to the child, no specific structural property of language has yet been proven to be innate. Therefore, any infant is equally capable of acquiring any language. Infants born of different racial stocks will acquire the same form of language if raised in the same linguistic environment. There is no such a thing as a Russian language gene or a Swahili language gene. An infant born of Russian parents and adopted into an American family will acquire the same form of English as his stepbrothers and sisters.

Otherwise, the phenomenon of child language acquisition is just as much a mystery to us as it was to Pharoah Psammeticus.