**Language Development**

*Language development*(or *language acquisition*) is the process by which babies, who do not use, produce, or comprehend (understand) language at all, ultimately achieve an adult-like command of language. The term generally refers to the development of spoken language (written language is addressed in the entry on reading). Theories of language development address not only the acquisition of one’s native language (first-language acquisition) by typically developing children but also second-language acquisition, bi- and multilingualism, and language development among children with disorders such as Specific Language Impairment (SLI).

**Nativism Versus Constructivism**

Why do researchers favor the terms language development and language acquisition over language learning? The answer is that, under a certain class of theories, many important aspects of language (for example, grammatical categories such as NOUN and VERB) are not learned at all; rather, they are innate, meaning that children have them from birth. These theories are known as *nativist* theories, and the general approach as *linguistic* *nativism* (the word comes from the same root as *nativity,* meaning “birth”). Nativist theories of language acquisition are also known as *formalist, generativist, principles-and-parameters, words-and-rules* or *Universal Grammar* theories. Linguistic nativism -- the best-known proponent of which is the linguist Noam Chomsky -- is an example of the more general concept of *psychological* *nativism*, the idea that certain abilities or aspects of knowledge are not learned but “hard-wired”; that is, nativeto the human brain. As a general approach, nativism has its origins in the philosophy of Plato, René Descartes, Gottfried Leibniz, Immanuel Kant, Arthur Schopenhauer, and Jerry Fodor.

A second class of theories holds that virtually all aspects of language (including, for example, grammatical categories such as NOUN and VERB) are not innate but rather learned or *constructed* by children on the basis of the language they hear (the “input”). These theories are known as *constructivist, functionalist, emergentist, input-based*, *usage-based*, *social-pragmatic*, and *social-interactionist* approaches. Although most constructivist theories would accept some role for innate knowledge or abilities at a non-linguistic level (e.g., the tendency to perceive the world in terms of people who have goals and desires, objects that have stable properties, etc.), they reject the idea of innate linguistic knowledge. Linguistic constructivism is an example of the more general concept of *psychologica*l *empiricism*; the idea that knowledge is not hard-wired and can be acquired only through observation, experience, and evidence. As a general approach, empiricism has its origins in the philosophy of Aristotle, Francis Bacon, Thomas Hobbes, John Locke, George Berkeley, David Hume, and John Stuart Mill and the psychological approaches of Jean Piaget and Lev Vygotsky.

**Typical First-language Development**

**Basic Syntax**

As an illustration of the difference between nativist and constructivist approaches, consider the example of how children learn to produce very simple sentences, such as “John ate”(an important part of learning basic syntax, or grammar). The nativist approach assumes that children are born with the empty categories of NOUN and VERB and are able to identify the words that they hear as members of the relevant category. Under one particularly influential nativist account, namely, Steven Pinker’s *semantic bootstrapping* hypothesis, this is accomplished with the aid of innate rules that assign words for people, objects and concepts (e.g., John) to the NOUN category, and words for actions, events or changes of state (e.g., ate) to the VERB category. In addition to innate categories, children have innate rules for combining these categories into phrases and sentences. For example, the simplest rule combines a NOUN and a VERB. All children have to do is learn the ordering of the NOUN and VERB in the particular language they are acquiring (e.g., [NOUN] [VERB] in English, [VERB] [NOUN] in Korean; “John ate” versus “Ate John”). Under *parameter-setting* accounts – perhaps most famously associated with Nina Hyams and Janet Fodor – children use the input language to set a *parameter*, a kind of mental switch, to the setting that corresponds to, among other things, the relative order of the NOUN and the VERB.

By contrast, the constructivist approach assumes that children have neither innate categories (e.g., NOUN, VERB, nor innate rules for combining them into sentences. Instead, children form generalizations on the basis of the language they hear. For example, a child might hear and store the utterances “Mummy ate”, “Daddy ate:, “Baby ate”, etc., then *schematize* across these utterances to arrive at a *lexically-specific* *slot-and-frame pattern* or *lexical schema* such as “[EATER] ate”. This idea dates back to Martin Braine’s *pivot schemas* of the 1960s and 1970s. This schema allows the child to generate sentences that she has not heard previously, by inserting – for example – a new EATER into the [EATER] slot (e.g., “John ate”). Later in development, children analogize across these schemas (e.g., across “[EATER] ate”*,* “[KICKER] kicked”, and “[DANCER] danced”) to form an adultlike *[NOUN] [VERB]* construction. The basis for the analogy is *relational similarity*; all of these schemas express some kind of AGENT-ACTION (or DOER-THING DONE) relationship. Perhaps the best-known currently active researchers who advocate this position are Michael Tomasello and Brian MacWhinney.

**Inflectional Morphology**

*Inflectional morphology* is the process by which words (e.g., play) undergo changes to indicate, among other things, tense (e.g., present-tense “I play” versus past-tense “I play**ed”**), person (e.g., the speaker, the listener or a third party; “I play” versus “You play” versus “He play**s”**) and number (e.g., plural “John and Sue play” versus singular “John play**s”**). Nativist and constructivist approaches offer contrasting accounts of children’s acquisition of morphology. Under nativist accounts, for example those of Steven Pinker and Kenneth Wexler, children are born with knowledge of (a) the category VERB (e.g., play, walk, laugh), (b) the category INFLECTIONAL MORPHEME (e.g., -s, -ed, -ing) and (c) some kind of abstract rule for combining the two (e.g., play*+*s = plays*;* walk*+*ed = walks). All that children have to do is recognize the VERBs and INFLECTIONAL MORPHEMEs in the language they hear. Most generativist theories assume that children are aided in this task by innate knowledge of the types of distinctions that inflectional morphemes often encode (e.g., tense, person, and number). Exceptions to these rules, for example, English verbs that do not form their past-tense with *–*ed are stored as families of irregulars (e.g., sleep/slept, keep/kept, weep/wept).

Constructivist accounts, for example, those of Joan Bybee and Jay McClelland, assume that children do not possess innate knowledge of inflectional morphology but form generalizations on the basis of the language they hear. For example, a child who heard the past-present tense pairs miss/missed, wish/wished and kiss/kissed could infer that the past tense of hiss was hissed, even if she or he had never heard it. Importantly, this process of *analogical generalization* does not require the aid of an explicit “rule” that combines the VERB and the regular past-tense morpheme –ed. Rather, exactly as for basic syntax, children are assumed to gradually-build up slot-and-frame patterns (e.g., [VERB]ed) on the basis of the language they hear.

**Word Meanings**

Suppose that a child hears the word “doggy” in the presence of the family dog. How does the child know that doggy is the label for the dog rather than, for example, what the dog is doing (e.g., walking), some part or property of the dog (e.g., leg, black, furry), or something else altogether (e.g., Look!). This is a problem raised by the philosopher Willard Quine in the 1960s. A strong nativist account – the *lexical constraints* or *principles* account –holds that children are born with some knowledge of how words work, including, for exa*mple, the assumption that words generally label whole objects (e.g, dog) rather than their parts (e.g.,* *leg*) or properties (e.g., black, furry). (More recent versions of the account – for example, that of Kathy Hirsh-Pasek and Roberta Golinkoff – relax the assumption that these constraints are necessarily innate and inviolable).

Constructivist *social-interactionist* accounts, such as that of Jerome Bruner, include no roles for constraints or principles but instead emphasize the role of socio-pragmatic factors in word learning. For example, the adult speaker and child listener often share *joint attention* to the relevant object in the world (e.g., the adult looks back and forth between the child and the dog, such that the child knows that the adult is attending to the dog). Furthermore, children are argued to be adept at *intention reading*, using social cues to figure out that – for example – the speaker’s intention is to label the dog rather that to instruct the child to perform an action (e.g., Look!). Finally, both attention- and intention-reading are facilitated by the fact that word learning often takes place in social routines that the child understands well. For example, a word heard in the context of a “naming game” probably labels an object, but a word heard in the context of a temper tantrum is most likely some kind of instruction to behave or a request for co-operation.

**Other Domains**

The debate between nativist and constructivist approaches to language acquisition plays out in a similar way in various other domains of typical first-language. These include the production and comprehension of particular speech sounds (*phonology*), of more advanced sentence types such as passives (e.g., “The cake was eaten by John”), questions (e.g., “What did John eat*?”*) and relative clauses (e.g., “John ate the cake *that Sue had made***”**), and of sentences in which pronouns (e.g., he, she) refer back to other nouns in the same sentence (e.g, “John”and “he” can refer to the same person in “John said that he liked cake” but not “He said that John liked cake”). In every case, generativist approaches assume that children rely critically on rules and categories that are innately specified (i.e., that children are born with), but constructivist approaches assume that children instead form generalizations on the basis of the language that they hear.

**Second-, Multiple- and Impaired Language Development**

**Second-language Acquisition**

*Second language* (or L2) *acquisition* refers to the subsequent acquisition of a second language after the process of acquiring the child’s first (i.e., native) language has begun. The main theoretical debate is whether there is a *critical* or *sensitive period* in which any number of languages can be learned to a native-like level, with second-language learners who miss this critical period unable to ever achieve native-like command of the language--a claim popularized by Eric Lennenberg in the 1960s. An alternative is that there is no critical period per se, but that second-language learners are disadvantaged by interference from the first language, and, in many cases, spend fewer hours “on task” than do native learners. These alternatives are often, though not necessarily, linked to the nativist and constructivist positions, respectively.

**Bilingualism and Multilingualism**

Bilingual children are those who acquire two languages to a native standard more or less simultaneously or, at least, with significant overlap (multilingual children acquire three or more). The main debate is whether children use the same system for both languages – the *unitary language hypothesis*, most famously associated with Virginia Volterra and Traute Taeschner– or maintain a separate system for each language. For researchers who favor the latter possibility, a further question is whether the two systems remain entirely separated (e.g., Annick De Houwer’s *autonomous systems* or *differentiation* *hypothesis*) or interact with each other (e.g., Jim Cummins’ *interdependent systems theory*), such that children show *cross-linguistic influence*, that is, the *transfer* of a linguistic rule or pattern from one language to the other.

**Specific Language Impairment (SLI)**

Language impairment can be caused by many different conditions, such as autism, Williams syndrome, Down syndrome, and hearing impairments. However, some children fail to acquire language normally despite the lack of any apparent cognitive or hearing impairment. This condition is known as *Specific Language Impairment* (*SLI*). The *grammar-specific deficit* approach, most famously associated with Mabel Rice and Heather Van Der Lely, holds that SLI is caused by a deficit that is specific to syntax or inflectional morphology (or both). The alternative is that children with SLI suffer from a *general information-processing deficit*, which adversely affects the maximum speed or capacity (or both) of processing and storage for linguistic and non-linguistic information alike--a position most famously associated with Larry Leonard and Paula Tallal. The grammar-specific and information-processing deficit accounts of SLI are generally, though not necessarily, associated with nativist and constructivist approaches to language acquisition, respectively.

*See also (in order of relevance)* Grammar; Syntax; Pinker on Language; Verbal Behavior; Psycholinguistics; Nature vs Nurture; Language Disorders; Language, Evolution of; Piaget’s Theory of Cognitive Development; Cognitive Development; Developmental Disorders; Reading

**Recommended Readings**

Ambridge, B., & Lieven, E.V.M. (2011). *Child language acquisition: Contrasting theoretical approaches*. Cambridge, UK: Cambridge University Press.

Guasti, M. T. (2004). *Language acquisition: The growth of grammar*. Cambridge, MA: MIT Press.

Rowland, C. F. (2013). *Understanding child language acquisition*. London, UK: Routledge.

Tomasello, M. (2003). *Constructing a language: A usage-based theory of language acquisition*. Cambridge, MA: Harvard University Press.