

Nature vs. nurture in language development

[Linguistics](#), [Language](#)



What is Language? Language is a tool we have been using to understand and develop our thinking. We have been: Learning about the thinking of others by reading Expressing our own thinking through writing Exchanging ideas with others by speaking and listening Thought and language can contribute to clear, effective thinking and communication. Language is a system of symbols for thinking and communicating. At 5 years of age human is expected to have; Articulated speech, Vocabulary of more than 6000 words and Observe grammar rules.

An Average speaker is expected to have; 150 words per minute, 20, 000 and 40, 000 alternatives and error rates below 0. 1%. There are two theories concerning Nature or Rationalism in Language and these are the Nativism and Child Talk model of Chapman et al. (1992). In the child talk theory the child's needs will enable him to formulate speech based on his past experiences. Nature or rationalist theory is based on the following study by prominent people in human history: 1. PLATO knowledge and understanding: * innate * biological * genetically * common nature . Rene Descartes (1596 – 1650) Ideas existed within human beings prior to experience. * God * ability of the environment and the mind to influence and initiate behavior * reflex action (unintended behaviors) 3. Kant (1724-1804) “ A priori” knowledge as illustrated below. 4. CHOMSKY The Nativist Perspective: Human beings are born with an innate capacity for language. Universal Grammar * An innate property of the human mind * Growth of language is analogous to the development of a bodily organ * Abstract that it could not be learned at all

Principles of UG: 1. Language is innate 2. Our brains contain a dedicated special-purpose learning device that has evolved for language alone. *

domain specificity, autonomy or modularity Nurture states that knowledge originates in the environment and comes in through the senses. This theory is called Empiricism defines as the importance of sensory experience as the basis of all knowledge. Empiricism is otherwise known as the doctrine that says sense experience is the only source of knowledge, a belief that experience alone is the source of all knowledge.

Empiricism is essentially a theory of knowledge which asserts that all knowledge is derived from sense experience. It rejects the notion that the mind is furnished with a range of concepts or ideas prior to experience. Three principal British philosophers who are associated with empiricism are John Locke (1632-1704), George Berkeley (1685-1753), and David Hume (1711-76). in philosophy, a doctrine that affirms that all knowledge is based on experience, and denies the possibility of spontaneous ideas or a priori thought. Empiricism (greek ????????? from empirical, latin experientia - the experience) is generally regarded as being at the heart of the modern scientific method, that our theories should be based on our observations of the world rather than on intuition or faith; that is, empirical research and a posteriori inductive reasoning rather than purely deductive logic. Other basis of empiricism are: 1. ARISTOTLE * Truth and knowledge to be found outside of ourselves by using our senses. 2. Jean-Jacques Rousseau (1712 - 1778) * Emile: the hero learns about life through his experiences in life 3.

John Dewey (1859 - 1952) * Structured experience matters and disciplinary modes of inquiry could allow the development of the mind. 4. Edward Thorndike (1874 - 1949) STIMULUS - RESPONSE * people learned through a trial-and-error approach * mental connections are formed through positive

responses to particular stimuli * learning was based on an association between sense impressions and an impulse to action * structure the environment to ensure certain stimuli that would ‘ produce’ learning 5. Psychologist B. F.

Skinner (behaviorism or associationism) 3 needs for language formation: * time * opportunity * computing power Skinner further explains that learning is the production of desired behaviors without any influence of mental processes. Programmed learning is positive reinforcement for “ correct” responses Let us now bridge the gap between nature and nurture. Learning is a developmental cognitive process, human create/construct knowledge. There are three theories involved in this process; constructivism, progressivism and language acquisition theory.

We will discuss first constructivism , the following diagrams will show us. Diagram 1: Psychologist Jean Piaget proposed two kind of interaction: * Simple interactions: putting together * Emergentism: adding more to what was put together The first box shows simple interaction while the second box shows emergentism. Diagram 2 shows us how the brain is constructed with interaction to the environment. Diagram 2: Vygotsky (1896 – 1934) states that all learning occurs in a cultural context and involves social interactions.

The zone of proximal development (ZPD) learn subjects best just beyond their range of existing experience with assistance from the teacher or another peer to bridge the distance from what they know or can do independently and what they can know or do with assistance (Schunk, 1996) “ scaffolding” that help students learn in systematic ways. This is illustrated further illustrated in diagram 3. To Piaget there are three element involved in interaction the

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structured environment, the senses and the brain. Vygotsky added one more element notherhuman beingthat makes now the elements of interaction four namely structured environment, the senses, another human being and the brain. Diagram 3: Second theory in bridging the gap is Progressivism which emphases on both experience and thinking or reflection as a basis for learning explore, discover, construct, and create. Emergentist (Tomasello & Call, 1997) said that there is something innate in the human brain that makes language possible, something that we do with a large and complex brain that evolved to serve the many complexgoalsof human society andculture.

A new machine built out of old parts, reconstructed from those parts by every human child. (contrast to domain specificity). Diagram 4 will show us people cannot create something from nothing. People can create but from something already there. The picture on the left is the nurtured face while the picture on the right is the natural face. Diagram 4: LAD THEORY (Language Acquisition Device) Chomsky regards linguistics as a subfield ofpsychology, more especially the cognitive psychology.

The Language Acquisition Device: Chomsky argues that language is so complex that it is almost incredible that it can be acquired by a child in so short a time. He further says that a child is born with some innate mental capacity which helps the child to process all the language which he hears. This is called the quot; Language Acquisition Devicequot; (LAD). Chomsky and his followers claim that language is governed by rules, and is not a haphazard thing, as Skinner and his followers would claim. We must

remember that when Chomsky talks about rules, he means the unconscious rules in a child's mind.

A child constructs his own mental grammar which is a part of his cognitive framework. These rules enable him to produce grammatical sentences in his own language. Chomsky does not mean that child can describe these rules explicitly. For instance, a four or five year old child can produce a sentence like, I have taken meal, he can do that because he has a 'mental grammar' which enables him to form correct present perfect structures and also to use such structures in the right or appropriate situation. Language learning Input Mental grammar Is an (own rules) Innate ability LAD

Grammatical Output sentences Chomsky suggests that the learner of any language has an inbuilt learning capacity for language that enables each learner to construct a kind of personal theory or set of rules about the language based on very limited exposure to language. John Watson / Behaviorism A branch of psychology that bases its observations and conclusions on definable and measurable behavior and on experimental methods, rather than on concept of ; quot; mind. “ Behaviorism is a psychological theory first put forth by John Watson (1925), and then expounded upon by BF Skinner.

Attempting to answer the question of human behavior, proponents of this theory essentially hold that all human behavior is learned from one's surrounding context and environment. Diagram 5 shows the imitation process * Children start out as clean slates and language learning is process of getting linguistic habits printed on these slates * Language Acquisition is a process of experience * Language is a ‘ conditioned behavior’: the stimulus

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response process * Stimulus – Response, Feedback – Reinforcement Diagram 5:

SUMMARY Rationalism (Bloomfield & Noam Chomsky) states the nativist or innateness where children must be born with an innate capacity for language development. Children are born with an innate propensity for language acquisition, and that this ability makes the task of learning a first language easier than it would otherwise be. The human brain is ready naturally for language in the sense when children are exposed to speech, certain general principles for discovering or structuring language automatically begin to operate.

Constructivism (Jean Piaget) proponent of cognitive theory which introduced that language Acquisition must be viewed within the context of a child's intellectual development. Linguistic structures will emerge only if there is an already established cognitive foundation. The earliest period of language learning (up to 18 months), relating to the development of what Piaget called ' sensory motor' intelligence, in which children construct a mental picture of a world of objects that have independent existence.

During the later part of this period, children develop a sense of object permanence and will begin to search for the objects that they have seen hidden. This is further emphasized by Vygotsky in his socio-cultural approach to knowledge. Another theory by C. A. Ferguson (1977) known as the Input Theory claiming that parents do not talk to their children in the same way as they talk to other adults and seem to be capable of adapting their language to give the child maximum opportunity to interact and learn. REFERENCES:

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