Journal of Language, Linguistics and Literature
Vol. 1, No. 2, 2015, pp. 30-40
http://www.publicscienceframework.org/journal/j3l

Theories of First Language Acquisition

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Abstract

Investigating the processes through which individuals acquire language is Language acquisition**.** In general, acquisition of language points to native language acquisition, which examines children's acquisition of their first language, while second language acquisition concerns acquisition of extra languages in children and adults as well. The history of language learning theories can be considered as a great pendulum cycled from Skinnerian environmentalism to Piagetian constructivism to Chomskian innatism. Consequently, much of research in this field has been revolved around the debates about whether cognitive process and structure are constrained by innately predetermined mechanism or shaped by environmental input. Linguists Noam Chomsky and Eric Lenneberg, for half a century have argued for the hypothesis that children have inborn, language-specific capabilities that make possible and restrict language learning. Others, like Catherine Snow, Elizabeth Bates and Brian MacWhinney have hypothesized that language acquisition is the product of common cognitive capacities and the interface between children and their surrounding communities. William O'Grady suggests that multifaceted syntactic phenomena stem from an efficiency-driven, linear computational system. O'Grady refers to his work as "nativism without Universal Grammar. Nevertheless, these basic theories of language acquisition cannot be absolutely divorced from each other. The purpose of the present paper is reviewing some of the fundamental theories that describe how children acquire their native language. Therefore describing the strengths and weaknesses of Behaviorism, Mentalism, Rationalism, Empiricism, Emergentism, Chunking, Vygotsky's Sociocultural Theory, Piaget's theory of child language and thought, Statistical Language Learning, Relational Frame Theory and Activity theories are among the objectives of this study. In general these basic theories are very much complementary to each other, serving different types of learning and indicating diverse cases of language learning.

Keywords

Behaviorism, Mentalism, Rationalism, Empiricism, Emergentism, Sociocultural Theory

Received: March 18, 2015 / Accepted: April 9, 2015 / Published online: April 10, 2015

1. The Behaviorist Perspective

In psychology, during the first half of the 20th century behaviorism was the dominated philosophy of mind as a reaction to the pitfalls of introspectionism. According to Schultz and Schultz (2012) introspection is the inspection of one's own conscious thoughts and feelings. It refers exclusively to the decisive and rational self-observation of one's mind status and it is directly connected to the theoretical notion of human self-reflection, and is contrasted with external observation. Behaviorist theory, founded by J.B. Watson, is in fact a theory of first language acquisition, advanced partly as a reaction to traditional grammar. The main tenet of this theory relates to the analyses of human behavior in terms of observable stimulus-response interaction and the association. On the whole, "the behaviorist theory of stimulus-response learning, particularly as developed in the operant conditioning model of Skinner, considers all learning

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to be the establishment of habits as a result of reinforcement and reward" (Wilga Rivers, 1968, 73). Therefore, babies acquire mother tongue habits by the use of varied babblings which are similar to the words uttered by a person around them. Because the babies are rewarded for babblings and mutterings, more production of similar type into combination of syllables and words in the same circumstances will be reinforced. Thus, babies continue producing sounds, clusters of sounds, and by the passage of time they merge the utterances by analogy and generalizations. Then babblings and mutterings develop into socialized speech but gradually they are internalized as implicit speech, and thus many of their sentences get close to the adults. According to Rivers (1968) in the process of trial-and-error, in which satisfactory utterances are reinforced by understanding and agreement, and inaccurate utterances are rejected by the lack of reward, children progressively discover to make better discriminations until their production approximates the speech of the adults. Thus behaviorist theory has the view that human learning is the same as animal learning in the process of habit formation. According to this view, an extremely complex learning task by being broken down into minute habits could be acquired (Hubbard and Thomton, 1983). In short, in this view language development is an issue of conditioning via practice, imitation, reinforcement, and habituation, which represent the paces of language acquisition. We should consider that all theories of leaning in the school of thought of behaviorism are associationistic, like Thorndike's, Guthrie's, Hull's, Skinner's, and the theory of the school of functionalism.

2. Counterargument on Behaviorist Theory of Language Learning

From the perspective of behaviorism, the central strategies of language learning are imitation, reinforcement, and rewarding. Nevertheless further investigations on the language acquisition have demonstrated that imitation of utterances demonstrates almost no evidence of innovation; furthermore children differ noticeably in the amount of their imitation (Bloom1974). Since kids do not imitate language elements at the same rate they will naturally learn at different rates. However in terms of vocabulary acquisition it must be supported that imitation is exceptionally. In this theory, the process of learning depends more on generalization, rewarding and conditioning which advocate the growth of analogical learning. However a process of learning that persuades the learners to build language elements modeled on earlier established set of drills and rules seems to frustrate the instinctive construction of language. Subsequently, habit formation drills possibly will not naturally promote intrinsically oriented language acquisition. Therefore prior to achieving the threshold level, the learners are not creative and it is evident that the intrinsic learning will be postponed, due to the delayed acquisition of threshold level as a result of formerly developed set of drills and rules. In this theory also the rate of social effect on acquisition is not adequately clarified and the degree to which the social context enhances language acquisition remains unexplained. Moreover the chief strategies of the theory can only be right for the early stages of language development and the theory is generally fruitful for animal learning and experimentation. Another counterargument on behaviorist theory is that lots of the learning processes are by and large too complicated, and there are unobservable intervening variables between stimulus and response. Thus, language acquisition cannot occur through stimulus and response chain, since language is too complex to be acquired this way, particularly in a very short period of time. Actually, behaviorism has its pitfalls, although it is a fact that learning process is for the most part a behavioristic processing or a verbal behavior. In the domain of language teaching this theory sets up the central background of drills in considering language as stimulus and response and it provides a perspective in the appreciation of the use of restricted observation to find out the laws of behavior. It also has had enormous impacts on many teaching methods, for instance, Audio-lingual Method, Total Physical Response, and Silent Way represent the behaviorist view of language.

3. Neo-Behaviorism

Throughout the expansion of behaviourism, there were some psychologists who understood the nature of some sort of mediating processes involved in between the pure stimulus-response association. Charles E. Osgood (1916-1994) was among the neo-behaviorists whose theory of language behavior was less puristic and more interesting in comparison to pure stimulus-response theories of language. Neo-behaviorists added concepts including thought and mental processes in their analysis of human behavior, and consequently the issue of meaning was of dominant requirement in the clarification of human language performance. Such model definitely considers possible intervening processes which may take place internally in the organism to join such stimulus-response events. This model which relates stimulus-response events through internal mediating processes was known as 'meditational' approach and was greatly attributed to Osgood. As a neo-behaviorist, Osgood (1957) rejected the simplistic use of Pavlovian doctrine by early behaviorists since it recommended that a stimulus, in consequence of conditioning, would create

similar response as the original stimulus created. However, in his explanation of the intermediate processes, he was very wary against any mentalistic notion. Osgood was mostly concerned with the construction of a theory of meaning. His concern in meaning related to the 'mediational process' not focused on how meaning was reflected in conditioned behavior. In a mediational model meanings can be conditioned similar to the procedures of classical conditioning. Therefore meaning is the mediator between the external stimulus and the external response behavior. Even though there is not a direct relationship between stimulus and response, meanings are not originally there. Through conditioning, meanings are acquired in the same way as other types of learning occur. The response which is called to mind by the existence of a sign, or a word, is only an incomplete fraction of the reaction activated by the original stimulus. In short, following the debates of the mediational model initiated by Osgood, it can be claimed that a third variable has been attached to the S-R model to be able to clarify language behavior more accurately. Adding this variable presupposes the appearance of definite internal processes, called meaning, to take place as responses to some external stimuli. This model depends on the links that are there between the external stimulus and its succeeding internal response and also the relation between this internal response which is not visible and the organism's final output which is observable. Considering Skinner's functional analysis model, most of the researchers have supported Osgood's model to clarify language behavior since the second has *added* some internal processes.

4. The Innatist Perspective

Noamm Chomsky as one of the key figures in linguistics challenges structural linguistics and introduces transformational grammar. Chomsky pointed out that all languages are essentially innate and they share the same universal principles. He stated that human being biologically endowed with language and children acquire language exactly similar to the development of other biological functions. Chomsky challenged behaviourism view in a way that their theory has no justification for logical problem of language acquisition. In fact in comparison to the instances of language expressed around them children confirm to know more about the construction of their language. Universal grammar is one passionately debated issue in which the biological donation includes capacity specific to language acquisition. Noam Chomsky and the late Eric Lenneberg for fifty years have argued for the hypothesis that children have innate, language-specific knacks that make easy and restrain language learning. As a result Chomsky hypothesized a universal grammar which is an innate linguistic knowledge which contains a set of common principles underlies all languages and he also referred to Language acquisition device as inborn knack to acquire language and to apply it productively Lightbown and Spada (2000).

5. Critical Period Hypothesis

Following the chomsky's view there is a Critical period hypothesis claiming that there is a restricted period during which language acquisition can happen. This hypothesis implies that human beings possess biological devices planned particularly for acquiring first language and that such mechanisms are accessible at puberty or even prior to that. As a result an adult learner should employ the general learning mechanisms that are not intended for language acquisition. According to Lightbown and Spada (2006) finding evidence to confirm or refute existence of the critical period hypothesis is not simple since from birth, nearly all children are exposing to language. Though there are instances of children who were deprived of language before the puberty and never learn it in a typical way, which more or less support the hypothesis.

6. Creolization

The deaf inhabitants of Nicaragua offer more evidence for the innateness of language. In Nicaragua there were no education and official sign language for the deaf until around 1986. When the language experts in Nicaragua tried to resolve the condition, they revealed that children past a certain age had problem to acquire any language. Furthermore, they noticed that the younger kids were making use of gestures unfamiliar to them to be in touch with each other. To solve this complex issue they asked an American linguist from MIT, Judy Kegl, to offer recommendations. She revealed that these deaf kids had expanded their own Sign Language with its own systems of syntax and "sign-phonology". Kegl moreover came across some 300 adults who had never acquired language, and they were incompetent to acquire language in any meaningful sense, although they grew up in healthy conditions. These persons were not capable of learning syntax while it was feasible to teach words. In Hawaii where first-generation adults communicated through an inaccurate "pidgin English" Derek Bickerton's (1990) investigated immigrant inhabitants. Bickerton discovered that these parents' children employed a complete language in terms of syntax. Additionally, their language displayed lots of the fundamental syntactical characteristic*s* of many other natural languages. The language became "creolized", and is known as Hawaii Creole English. This process of Creolization could be considered as strong support for innate grammar of children.

7. Evolution of Language

Nowadays the nativist argument is about how language developed. According to Derck Bickerton a single mutation, a "big bang", connected together formerly evolved qualities into complete language. Other researchers including Steven Pinker supported a milder evolution during longer stages of time differentiates itself from Skinner's work by recognizing and explaining a special kind of operant conditioning known as derived relational responding, a learning route that so far comes out to take place merely in humans possessing a capacity for language. Empirical evidences imply that children learn language by means of a system of intrinsic reinforcements, challenging the idea that language acquisition is based on innate, language-specific cognitive capacities.

8. Criticism of Nativist Theories

There are many criticisms of the fundamental suppositions of generative theory, with slight reply from its supporters. The evolutionary anthropology unconfirmed the notion of a Language Acquisition Device (LAD), which demonstrates a slow adjustment of the human body to the application of language, instead of a rapid emergence of a full set of binary parameters describing the entire gamut of potential grammars. The theory encompasses numerous theoretical constructs that cannot probably be attained from any quantity of input .These theoretical constructs for instance, are strict binary branching, empty categories, movement and complex underlying constitutions. In view of the fact that the theory is, quintessentially, unlearnably difficult, subsequently it should be necessarily innate. However a different theory of language possibly will offer diverse interpretations. Lexical functional grammar, head-driven phrase structure grammar, and a variety of construction grammar are cases of alternative theories that do not employ empty categories and movement. Despite the fact that the entire theories of language acquisition hypothesize some amount of innateness, a less complicated theory may engage less innate structure and additional learning. The input, in cooperation to common and language-specific learning capabilities, in the company of such a theory of grammar may be satisfactory for acquisition.

9. Chunking Theory

Chase and Simon (1973) originally put forth the Chunking theory. The chief principle of this theory is that learning takes place in consequence of the accumulation of chunks. Miller (1956) introduced the term ‘chunking’ and believed that it is feasible to efficiently enhance short-term memory for low-information-content items by mentally recoding them into a smaller number of high-information-content items. Two most important problems have remained unsettled regarding chunking theory. Regarding the first problem, even half a century after Miller’s article (1956), the description of a chunk is still astonishingly tentative (Mathy & Feldman, in review). Various researchers have defined chunks in different ways. The second problem is that there are many different terms used for the same notion of ‘chunks’ in the literature. There is not a unanimous term on which all scholars and linguists agree. To refer to ‘chunks’ in language acquisition studies, most researchers and linguists have created their own idiosyncratic terms.

Many L1 investigations refer to the reality that chunks are beneficial to L1 acquisition since they are ready-made memorized wholes which can be saved and retrieved straightforwardly and effortlessly. Consequently, the application of chunking decreases processing loads and improves overall oral fluency (Newell, 1990). Nevertheless, some researchers consider chunks as an impediment to language acquisition (Newport, 1988, 1990). Newport (1988, 1990) pointed out that children are better language learners since they possess more imperfect information processing mechanisms in comparison to adults and they must analyze language in proper components.

Both first and second language learners utilize chunks; however L2 learners appear to be more prone to using them as communicative strategies. One plausible justification is that because of greater cognitive maturity, L2 learners not only have a superior capability for learning but they may possibly have a greater need for them because L2 learners should perform in real-life conditions that require early use of the target language.

According to Peters (1983) both in native and target language acquisition, children initiate by choosing unanalyzed chunks to fit diverse conditions. Step by step children develop those patterns via employing syntactic or grammatical systems as the connection between lexis and context becomes inadequate to satisfy novel communicative requirements. The innovative procedure of producing sentences by rules would play the sustaining auxiliary role of regulating previously identified formulas to new circumstances. The chunking theory literature implies that prefabricated patterns are as an L2 learner’s main policy in his L2 acquisition. Additionally, the assessment of their functions discloses that prefabricated speech can function in L2 learner’s interlanguage before or after L2 rule internalization.

10. Emergentism Theory

Because the proponents of nativist theory were incapable of offering precise or testable descriptions of the elements of language acquisition many researchers sought to discover substitutes to genetically-wired modules. The alternatives attempt to clarify the formal structures of language as emerging from the interface of social patterns, patterns embedded in the input, and demands arising from the biology of the cognitive system (MacWhinny, 2005). MacWhinny (2005, p.7) maintains that "the Emergentist approach to language acquisition views language as a structure arising from interacting constraints, much as the shape of the coastline arises from pressures exerted by ocean currents, underlying geology, weather patterns, and human construction".

Although many researchers in the field of language acquisition suppose that Emergentist approaches to language acquisition stand in straight conflict to theories of the language faculty which hypothesize an innate *Universal Grammar*, some other researchers believe that the principles of emergentism are not well described and there is no common compromise as to how problems of linguistic analysis should be dealt with (MacWhinny 2005). A promising body of research in the area of linguistic analysis founded on emergentism accounts implements the procedures of *Connectionism* (MacWhinny 2005). Connectionism is an approach to the study of the mind which tries to model language learning and cognition in terms of networks of neuron-like units. (MacWhinny 2005, p. 9) maintains that:

Although connectionist modeling provides a useful way to test various predictions about language acquisition, processing, change, and evolution, the eliminativist position is far from universally accepted within emergentism. Therefore, emergentism began as a reaction against stipulationism. Nevertheless, following O' Grady (2007a) words; it is not a real idea to assume that any model of language acquisition which does not explicitly specify particular rules or hard-wired modules is Emergentist. If the lack of stipulated rules is considered as the criterion, we would allow ourselves to accept even the most undeveloped, inarticulate idea to count as an Emergentist resolution. As a result it can be concluded that for an emergentist account something more is needed. As MacWhinny (2005, p.15) observes: An emergentist account must provide a specific mechanism that works to generate the observed behavioral patterns. In an emergentist account, generativity emerges not from stipulated rules, but from the interaction of general mechanisms.

Many instances of emergentism are evident in the nature. For example if you happened to watch the checkout lines at a chain store, you will notice that the number of people in each line is approximately the same. That is, for example there are rarely eight people in one line and two in the other. There is no governmentally or socially articulated rule governing this pattern. Rather, the regularity of this straightforward social "structure" *emerges* from other fundamental facts about the objectives and behaviours of customers and chain stores directors. The behavior of honeybees, though they are definitely not cleverer than costumers, abides the same emergentistic tenets.

11. Stipulationism

The majority of researchers throughout the 1950s, hypothesized that language learning is formed by the use of habit formation and imitation, based on the principles of stimulus and response and reinforcement. At the end of the decade the cognitive proponents and generative grammarians challenged this view. These novel views maintained that the multifaceted behavior of language cannot be expressed via links between habit formations but the behavior should be expressed by the system of rule formation not habit formation. According to MacWhinny (2005, p. 5), "The power achieved by these systems relied on the ability of the modeler *to stipulate* the right set of rules in terms of their elements, combinations, and patterns of rule orderings. MacWhinny (2005:5) goes on and maintains that:

The successes of these stipulative systems can be attributed to the precision of their formulation and the expressiveness of the formal production system language on which they relied. Through its descriptive successes, stipulationism ended up sowing the seeds of its own conceptual destruction. The development of connectionism In the 1980s presented a substitute to stipulationism. Neural networks viewed children as learning cues, rather than rules. In the 1990s, investigators started searching other alternatives to rule systems, such as optimality theory, biological models of neural plasticity (Elman, 1999) and dynamics systems theory. Also Formal linguistic theory initiated to deviate from stipulationism, trying to draw a minimal set of principles from which wider syntactic patterns could emerge.

12. Statistical Language Learning

Statistical learning can be described as the process of extracting the statistical properties of the data input (Kim et al. 2009). It is a process through which an individual can track regularities in the input (Graf Estes et al., 2006). Statistical learning can be described as recognizing patterns in the environment. Natural language contains fundamental statistical information that can be explored by listeners.

children as young as 6 month old can employ computational strategies to learn the distributional patterns of sounds, simple grammatical structures, and the sequential probabilities, as well as the stress patterns, necessary to perform word segmentation. Statistical learning can be figure out as a mixture of structural linguistic and nativist perspectives, namely, that the distributional characteristics of natural language reflect underlying linguistic structure and that the development of language requires learning (Saffran, Aslin, and Newport, 1996). Saffran et al. maintain that "infants possess experience dependant mechanisms that may be powerful enough to support not only word segmentation but also the acquisition of other aspects of language". They argue in favour of "innately based statistical learning mechanisms… rather than innate knowledge" (1996, p. 1928). Proponents of this model believe that "Chomsky and his followers have underestimated the power of learning and thereby overestimated the need to build language-specific knowledge into the organism in advance" (Elman and Bates, 1997, p. 1274).

13. Relational Frame Theory

Taking into account a gamut holding different approaches towards learning in general and language learning in particular, according to the following figure one can put Relational Frame Theory (RFT) somewhere between Empiricism – which is at one of the extremes - and Cognitivism – which is located somewhere in the middle of the continuum.

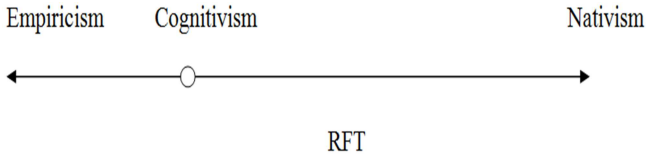

Figure 1. Relational Frame Theory (RFT)

RFT which has had a remarkable attendance in the psychology literature since its expansion over a decade ago, is a psychological theory of human language and cognition was developed largely by Steven C. Hayes and Dermot Barnes-Holmes. In its version related to language learning, it focuses on how humans learn language through interactions with the environment. Consequently it could be declared, that it is strongly related to Behaviorism of which B.F Skinner's approach is one example. It is distinguished from pure behavioristic approaches to learning, however, in that it takes into consideration the role of the mind in the learning process. This is why it takes a halfway position between Empiricism, which stimulates Behaviorism, and Cognitivism.

14. The Interactionist / Developmental Perspective

The phenomenon of language acquisition was considerd the same as other types of skills and knowledge and under the influence of learning other skills by Cognitive and developmental psycholinguists. They believe that language acquisition is an issue that is similar to and mainly free from the child's experience and cognitive development .Language acquisition is one of the most fascinating features of human development. It is normally believed that it starts after birth and continues till school age; however, there is some proof that acquisition gets under way long before this, even prior to birth. Karmiloff and Karmiloff (2002) describe language acquisition as a "journey that begins in the fluid world of the womb and continues through childhood, adolescence, and even beyond". They claim that as early as twenty weeks development, the hearing system of the fetus is adequately developed to begin processing of the sounds that filter through the amniotic liquid. One can imagine its world full of different sounds including the mother's heartbeats and conversations as well as other noises from the outside world. Karmiloff and Karmiloff (2002) state "from the six month of gestation on ward, the fetus spends most of its working time processing the very special linguistic sounds, growing familiar with the unique qualities of its mother's voice and of the language or languages that she speaks."

Following interactionists position Children acquire language because of the complex interaction between exclusively human characteristics and the condition in which the child grows, namely, children acquire language in the milieu of interaction particularly with adults.

15. Social Interactionism as an Opposition to the "Poverty of the Stimulus"

Chomsky claims that the child is exposed to the input in the context filled with puzzling information including imperfect sentences, false starts, or slips of tongue, thus it cannot offer all the information which the child requires (Lightbown & Spada, 2000). They came to the conclusion that children are in no way systematically connected or instructed on language. They believe that parents are inconsistent in their correction, and they do not correct some of the children's errors as well. Furthermore, even if the parents correct errors, children often overlook their corrections and keep on using their own habits of uttering things. Chomsky (1965 cited in Brown, 2000) suggests that children have the capacity to acquire language since they are equipped with a language acquisition device. Just small language data from the setting serve as a "trigger"

to make active the device. When the device is triggered, the child has the ability to notice the structure of the language by harmonizing the innate knowledge to the structure of the particular language in the environment.

Alternatively, intertactionists suggest that the child's linguistic progress is chiefly the result of interaction with others (Brown, 2000). In contrast to the idea of the "poverty of the stimulus" and slight attention to the function of the environment, interactionists attribute more significance to the environment (Lightbown & Spada, 2000). They put emphasis on the role of the child directed speech which is adjusted in a way that makes it easier for the children to comprehend the language. It is believed that children develop their language through interaction and conversation with adults and other children.

16. Vygotsky's Sociocultural Theory

Vygotsky (1981cited in Foley and Thompson, 2003) summarizes his socio-cultural theory as:

Any theory in the child's cultural development appears twice, or on two planes. First, it appears on the social plane, and then on the psychological plane. First it appears between people as interpsychological category, and then within the child as an intra psychological category. This is uniformly accurate with regard to voluntary attention, logical memory, the formation of concepts, and the development of volition. He believes that language grows completely from social interaction, and children are only able to develop to an advanced level of knowledge only via employing a helpful interactive *environment*.

17. Environment in Vygotsky's Theory

Vygotsky believes that the environment is "the socially organized world of culture created by the individual who developed, in the process, his latent forces and abilities" (Yaroshevsky, 1989 cited in Ghassemzadeh, 2005). The environment in this sense is not considered as "an absolute and immutable concept which is already present when the child is born, but a factor, or rather a set of factors, which vary according to the peculiarities of the organism (e.g. the developmental stage of the child) and which possess some regulations that can be internalized according to a transformational and developmental system" (Ghassemzadeh, 2005). Van Der Veer (1986, cited in Ghassemzadh, 2005) differentiates between the child's environment and the animal environment in that "human environment is a social environment, that the child is part of a living environment, that the environment is never external to the child". In this regard, the child's environment is changing and dynamic meaning as the child changes the environment changes, too.

18. Mediated Mind

The most fundamental notion of Vygotsky's sociocultural theory is that human mind is mediated. Vygotsky expressed that we use "symbolic tools or signs to mediate and regulate our relationship with others and with ourselves and thus change the nature of these relationships" (Lantolf, 2007). Music, art, numbers and arithmetic systems and above all language are components of these signs or symbolic tools. To set up an indirect or mediated connection between the world and ourselves the tools are used. Vygotsky proposed an *ontogenetic* domain to concentrate on how children appropriate and integrate especially language as well as other tools into their thinking activities as they mature. As children grow, they enhance control over the meditational tools including language for interpersonal (social interaction) and intrapersonal (thinking) purposes. Lantolf (2007) describes that children go through phases in which they are controlled first by things in their setting, after that by others in this situation and at last they manage their own cognitive and social activities. In sociocultural theory such stages are usually known as object-, other-, and self-regulation. Later on the stages were applied to the first language acquisition.

19. Activity Theory

Activity theory explains the nature and development of human behavior based on Vygotsky's view that human behavior is the result of "the integration of socially and culturally constructed forms of mediation into human activity" (Lantolf, 2007 p8). Activity In this theory refers to something which is provoked by a biological desire, like as hunger, or a culturally made need such as the need to be educated in specific cultures. Needs would develop into motives to attain specific objectives. When an individual make a decision to eat or be educated, needs become motives. According to Lantolf (2000) an activity has three levels: a) level of motivation, b) level of action (or goal) and c) level of conditions. Activities can only be observed at the level of conditions while levels of motivation and goal are not observable. Consequently, the same observable activity can be linked to different goals and motives. For example, people may hunt animals either for food or for fun.

20. Piaget and Vygotsky: Piaget's Theory of Child Language and Thought

The first one who looked into child perception and logic systematically by focusing on the typical features of the child thought was Piaget (Vygotsky, 1986). He believed that the distinction between adult and child thinking was qualitative not a quantitative difference. He investigated the child's use of language and concluded that all the particular features of the child's logic are the egocentrism of child's judgment. He placed egocentrism as "occupying an intermediate position, genetically, structurally, and functionally, between autistic and directed thought" (Vygotsky, 1986).

Piaget (1959 cited in Vygotsky, 1986, p.16) explains the distinction between directed and autistic thought.

Directed thought is conscious, i.e. it pursues an aim which is present to the mind of the thinker; it is intelligent, which means that it is adapted to reality and tries to influence it; it admits of being true or false (empirically and logically true), and it can be communicated by language. Autistic thought is subconscious, which means that the aim it pursues and the problem it tries to solve are not present in consciousness; it is not adapted to reality, but creates for itself a dream world of imagination; it tends, not to establish truths, but to satisfy desires, and it remains strictly individual and incommunicable as such by means of language. On the contrary, it works chiefly by images, and in order to express itself, has recourse to indirect methods, evoking by means of symbols and myths the feeling by which it is led.

Vygotsky unlike Piaget believes that the development starts with social, continues with egocentric and ends with inner speech. The direction of development in Piaget's view is from individual to social, but according to Vygotsky it is from social to individual.

21. Process of Verbal Thinking

The relation between thought is said to be a process rather than a thing, a continual movement from word to thought and from thought to word (Vygotsky, 1986, p.211). According to Vygotsky (1986) speech can be investigated in two planes:

1. External, phonetic aspect of speech
2. Inner, meaningful and semantic aspect of speech

The first aspect, Vygotsky says, begins as the child starts from one word; then he connects two or three words. Later on, he advances from simple statements to more complex sentences and lastly to coherent speech contains a sequence of these sentences; to put it another way, the child proceeds from fraction to complete. Taking the meaning into consideration, the first word of the child is a whole sentence. Semantically, the children initiate with a whole meaningful complex and then begin to take control over the meaning of words, the disconnected semantic units and to divide their previously undifferentiated thought into those parts. The semantic and the external facets of speech grow in reverse directions, one from specific to the general and the other from general to the particular, from sentence to the word.

The movement direction of External and inner aspects is opposite, their progress does not overlap, but it cannot be claimed that they are independent. Vygotsky (1986, p.219) explains that it is because the "child's thought, precisely because it is born as a dim, amorphous whole, must find expression in a single word. Progress in speech to the differentiated whole of a sentence helps the child's thought to progress from a homogenous whole to well-defined parts." He believes that there is the self-determining syntax of thought behind words which is the grammar of word meanings.

22. Internalization and Inner Speech

Vygotsky (1986, p.225) rejects the earlier definitions of "inner speech" by Mueller and Watson. Mueller defined it as "speech minus sound" and Watson as "subvocal speech". He believes these elucidations are in no way adequate since silent "pronouncing" of terms is not the same as the whole process of inner speech. He says, "Inner speech is speech for oneself; external speech is for others", so difference in functions will lead to difference in structures.

Vygotsky believes that egocentric speech transforms into inner speech at the school time. The "declining vocalization" of egocentric communication demonstrates an emerging construct from sound and the child's "new capacity to think words" as an alternative for pronouncing them; in other words, egocentric speech extends in the trend of inner speech. Vygotsky (1986) present a fascinating explanation to make difference between egocentric and inner speech. Consider a person who is at the desk and taking to another person behind. While he is talking, the listener leaves the room without the speaker's awareness. Under the illusion that the listener is attending to his speech, he continues talking. He is outwardly talking with himself, but psychologically his speech is social. Vygotsky believes that Piaget's theory is totally different from the illustration, "the child's egocentric talk is for and with himself; it only has the appearance of social speech, just as the person's speech gave the false impression of being egocentric (p.234).

23. Inner Speech and Gesture

David McNeil (1993 cited in Lantolf, 2007) claims that gesture is both an indivisible part of our communicative activity with others and a very important feature in our activities with ourselves. He argues that some meaning is conveyed by gesture not as a substitute for a verbal sign but as a complement to it. Therefore, as we interact with someone we read his verbal signals and at the same time his gestural signals. For example, the movement of hands, their direction of movements and the speed of movement may convey meaning not expressed verbally.

24. Zone of Proximal Development

The zone of proximal development (ZPD) is considered Vygotsky's "most important psychological methodological Discovery" (Newman and Holzman, 2005, p.52). Vygotsky (1987 cited in Newman and Holzman, 2005, p.53) defines it as:

The state of development is never defined only by what has matured. If the gardener decides only to evaluate the mature or harvested fruits of the apple tree, he cannot determine the state of his orchard. Maturing trees must also be taken into consideration. The psychologist must not limit his analysis to functions that have matured. He must consider those that are in the process of maturing. If he is to fully evaluate the state of the child's development, the psychologist must consider not only the actual level of development but the zone of proximal development.

The fundamental topic in the description as Newman and Holzman (2005) referred is the "relationship between 'matured' and 'maturing' processes. Indeed, it refers to what the child can do independently and in collaboration with others. A child can accomplish more with collaboration, help or support than he can alone. However, Vygotsky believes that the child's potential is not unlimited even if he is helped (Newman & Holzman, 2005). They assert that one can imitate what is in the range of our developmental level (our ZPDs).

Lantolf (2007, p.16) states that "the ZPD is not a physical place situated in time and space; rather it is a metaphor for observing and understanding how meditational means are appropriated and internalized." According to this writer, what an individual can attain with support from others and/or cultural artifacts differ from what he/she can get when acting alone. Although, it is not the subject of simple repetition of the behavior but the children "transform what the experts offer them as they appropriate it". The key to this transformation is "imitation, which along with collaboration in the ZPD" is the cause of human development (Lantolf, 2000, p.18). Therefore imitation is deemed more complicated than pure copying, and it is considered to entail communicative behavior.

According to Vygotsky's ZPD, Children must learn in order to be motivated contrary to the common belief that children must be motivated in order to learn. Newman and Holtzman (2005) explain that in ZPD's framework of learning, children engage in developmental activity "volitionally and with conscious awareness rather than merely spontaneously" (p.63). In this context motivation is not an internal prerequisite for learning, but self-consciousness is closely related to motivation. Vygostsky concludes that children must learn to be motivated; then learning results in development.

25. Conclusion

From the perspective of behaviorism, the central strategies of language learning are imitation, reinforcement, and rewarding. Nevertheless further investigations on the language acquisition have demonstrated that imitation of utterances demonstrates almost no evidence of innovation; furthermore children differ noticeably in the amount of their imitation (Bloom1974). Since kids do not imitate language elements at the same rate they will naturally learn at different rates. However in terms of vocabulary acquisition it must be supported that imitation is exceptionally. In this theory, the process of learning depends more on generalization, rewarding and conditioning which advocate the growth of analogical learning.

It is nearly about two thousand years that the war between Nativism and empiricism has begun. Some times Nativism won the war some other times empiricism. And the war continued on till the alternative approaches like emergentism came into existence during one decade ago to reconcile the war between these two approaches. The proponents of Emergentism believe that neither empiricism nor Nativism is right and both of them are wrong. Empiricism is wrong since it tries to construct the mind out of nothing and Nativism is wrong for its attempts to make untestable assumptions about genetics and unreasonable proposals regarding the hard-coding of complex formal rules in neural tissue (MacWhinny, 2005).

Contrary to the innatists' view, the proponents of the social interactionism state that children acquire language as the result of the complex interaction between uniquely human characteristics and the environment. They reject the chomsky's "poverty of stimulus" hypothesis, which states that acquisition of language is impossible without proposing an innate mechanism responsible for the computation and generation of language.

Considering the two important approaches to first language acquisition, that is innatist and developmental theories, statistical language learning is located between the two extremes with a tendency toward nativism. On the innatist end of the continuum, statistical language learning proponents maintain that human mind has the potential, natural ability of detecting and acquiring computational and pattered data. But as was mentioned earlier, rather than considering language knowledge as innate, proponents of statistical language learning argue in favor of innately based statistical learning mechanisms. On the learning and developmental end of the first language acquisition continuum, statistical language learning believes that all human languages have statistical and computational features and that learners must be exposed to this input in order to observe those regularities and acquire them.

Chunking theory was originally proposed by Chase and Simon (1973). The main tenet of this theory is that learning occurs as a result of the accumulation of chunks. The word 'chunking' itself was introduced by Miller (1956) who believed that it is possible to effectively increase short-term memory for low-information-content items by mentally recoding them into a smaller number of high-information-content items.

Regarding chunking theory, two major problems have remained unresolved. First, even half a century after Miller's paper (1956), the definition of a chunk is still surprisingly tentative (Mathy & Feldman, in review). Different researchers have defined chunks in different ways. Second, there are many different terms used for the same concept of 'chunks' in the literature. There does not exist a unanimous term on which all scholars and linguists agree. Most researchers and linguists have coined their own idiosyncratic terms to refer to 'chunks' in language acquisition studies.

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