

First Language Acquisition Theories and Transition to SLA

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Abstract

First language (L1) acquisition studies have been an interesting issue to both linguists and psycholinguists. A lot of research studies have been carried out over past several decades to investigate how L1 or child language acquisition mechanism takes place. The end point of L1 acquisition theories leads to interlanguage theories which eventually lead to second language acquisition (SLA) research studies. In this paper, I will show that there have been at least three theories that have offered new ideas on L1 acquisition. However, two theories of L1 acquisition have been very prominent as they have propounded two revolutionary schools of thought: Behaviorism and Mentalism. Therefore, in the first segment of this paper I will deal with the detailed theoretical assumptions on these two theories along with a brief discussion on Social Interactionist Theory of L1 acquisition. The second segment will deal with interlanguage theories and their seminal contributions to subsequent language researchers. Finally, I will briefly show how L1 acquisition theories and interlanguage theories have paved the way for new ideas into SLA research studies.

Behaviorist Theory

Behaviorism or Behaviorist Theory of first language (L1) plays a crucial role in understanding the early importance attached to the role of the first language acquisition. It was a dominant school of psychology from the 1920s to 1960s. It is basically a psychological theory and related to the development of L1 acquisition or first language acquisition (FLA). Its importance lies in verbal behavior, and it received substantial attention from the pedagogical arena in the 1950s. Therefore, it is also vital to be aware of the main tenets of the theory.

Behaviorist Theory can be traced back to J.B. Watson's (1924) *habit formation hypothesis*. The association of a particular response with a particular stimulus constitutes a habit. Hence, a habit is formed when a particular response becomes regularly linked with a particular stimulus. Skinner (1957), following Watson, set out to investigate how these habits were formed. Later Behaviorist Theory of language acquisition was fully developed and propounded by Skinner in his book *Verbal Behavior* (1957).

There are various theories regarding how this association can take place. In the classical behaviorism of Watson (ibid), the stimulus is said to 'elicit' the response. It posited that the presence of a stimulus called forth a response. If the stimulus occurred sufficiently and frequently, the response became practiced, and therefore it subsequently became automatic. In the neo-behaviorism of Skinner, a rather different account of how habits were formed can be traced. Skinner played down the importance of the stimulus on the grounds that it was not always possible to state what stimulus was responsible for a particular response. Instead, he emphasized the consequences of the response (Ellis, 1985).

Skinner tried to explain language learning in general following Watson's *habit formation hypothesis* and other behaviorists such as psychologist Ivan Pavlov who grounded his theory *classical conditioning*. The latter behaviorists developed their theories on Pavlov's studies of animal behavior in laboratory experiments with dogs and Thorndike's experiments with cats in puzzle boxes. Their claim is that all animals, including human beings, are born with a set of instinctive responses to external stimuli. Theories of habit formation were therefore theories of learning in general, and until the end of the 1960s views of language learning were derived from a theory of learning in general. Hence, they could be applied to language learning.

Skinner set out to propound language learning in terms of *operant conditioning*. Skinner's operant conditioning focuses on using either reinforcement or punishment (negative reinforcement) to increase or decrease the likelihood of behavior. Positive reinforcements are rewards whereas negative ones are punishments. An association is formed through this process between the behavior and the consequences of that behavior. He argues that it is the behavior that follows a response which reinforces it and thus helps to strengthen the association. The learning of a habit thus can occur

through *imitation* (i.e. the learner copies the stimulus behavior sufficiently often for it to become automatic) or *reinforcement* (i.e. the response of the learner is rewarded or punished depending on whether it is appropriate or otherwise, until only appropriate responses are given) (Ellis, *ibid*). The behaviorist Skinner anticipated that this theory explained language acquisition in humans. Skinner (1957) clarified his assertion with optimism saying:

The basic processes and relations which give verbal behavior its special characteristics are now fairly well understood. Much of the experimental work responsible for this advance has been carried out on other species, but the results have proved to be surprisingly free of species restrictions. Recent work has shown that the methods can be extended to human behavior without serious modification. (p.3)

To further elaborate Skinner's proposition, we can say an utterance or a part of the language acts as a *stimulus* to which a child makes a *response*. When the response is appropriate or correct, it is *reinforced* by the hearer or teacher through praise, reward, or approval. As a result, the likelihood of expected behavior increases - that is, the possibility of imitating the behaviour is positively reinforced. In contrast, if the child makes an inappropriate or incorrect response, they will be discouraged (i.e. negatively reinforced) and the likelihood of the behaviour will cease. As a result, that piece of language will not be imitated to the same situation. In other words, a child imitates a piece of language they hear. If they receive positive reinforcement, they will continue to imitate and practice that piece of language which then turns into a 'habit'. By contrast, if they receive negative reinforcement, they will cease to imitate and eventually stop.

This again can be explained by the following example. Imagine that a mother is trying to teach her son to pronounce a word. When the son successfully pronounces the word, he receives praise as a reward. However, when he fails to pronounce the word, the mother suspends the praise, or rebukes. In this process, the son forms an association between his behavior of pronouncing the word correctly and receiving the desired reward. Therefore, the major principle of the Behaviorist Theory rests on the analysis of human behavior in observable *stimulus-response-reinforcement*.

Thus, behaviorism is an approach to FLA based on the assumption that behavior can be empirically studied. It proposes that language learning is also a habit formation similar to other habits – that is, a language is learned in the way in which other habits are formed. Here environment plays a crucial role through exposure and feedback. Therefore, its basic corollary is that effective language behavior is the responses to appropriate stimuli. The stimuli and responses become habitual as a result of receiving positive reinforcement.

According to this theory, language learning is like any other kind of learning as it involves habit formation. These habits are formed when learners respond to stimuli in

the environment. Consequently, they have their responses reinforced resulting in subsequent imitation of the responses. Learning takes place when learners have the opportunity to make the appropriate response to a given stimulus.

Even though the theory fails to explain the creative aspect of language production, it helps us understand how in teaching and learning, *stimulus-response-reinforcement* can help master both grammatical and phonological patterns. To make use of this knowledge at the right time in the process of teaching depends on whether the teacher has been able to identify when stimulus-response can be used for the benefit of the learning. In this view, knowledge of language emerges as the result of interactions of innate cognitive abilities with social forces and environmental conditions that take a shaping influence on their development.

However, behaviorism has been criticized because learning cannot only happen through imitation as any language is based on a set of structures and rules. Ellis argues that behaviorists emphasize only on what can be observed and neglect what goes on in the learner's mind. Extrapolating from such animal experiments, behaviourists claim that language learning too is the result of habit formation by reinforcement of successful behaviour. A child imitates language behaviour of their parents and other members of their social group. Therefore, some routine or regular aspects of language might be learned through the process of *stimulus-response-reinforcement*, but this does not seem to account for more grammatical structures of the language. In addition, behaviourists cannot explain how a child learns to produce grammatically correct sentences which they never heard anyone to say before. Hence, this theory fails to account for the creativity of language use by the child, and gives scopes for criticism which led to Chomsky's mentalist account of FLA.

Mentalist Theory

Noam Chomsky's (1959) criticism of Skinner's theory of language acquisition led to a reassertion of mentalists' views of FLA in place of the empiricist approach of the behaviorists. Chomsky and others argued that extrapolating from studies of animal behavior in laboratory condition, as Skinner did, could show nothing about how human beings learn language in natural conditions. He stressed rather active contribution of the child, and minimized the importance of imitation and reinforcement. In his famous article 'Review of *Verbal Behaviour*' (1959), Chomsky criticized the behaviorists on the grounds of novelty and creativity of child language use that a child never heard before and proposed a completely different view of language acquisition. His mentalist account of FLA was a challenge to existing behaviorist view of acquisition, and initiated a debate whether language exists in mind before experience. This has led to an explanation of human-specific language learning faculty.

A number of linguists and psychologists - including two prominent proponents Chomsky and Lenneberg - and their claims and observations serve as a framework for

Mentalist Theory. Chomsky's claim is that the child's knowledge of their mother tongue is derived from a *Universal Grammar* (UG) which specifies the essential form that any natural language can take. As it has been argued that:

The facts of language acquisition could not be as they are unless the concept of a language is available to children at the start of their learning. The concept of sentence is the main guiding principle in child's attempt to organize and interpret the linguistic evidence that fluent speakers make available to him. (McNeill, 1970, p.2)

The universal grammar thus exists as a set of innate linguistic principles which comprises the *initial state* and which controls the form which sentences of any given languages can take.

Chomsky called this biological ability as the language acquisition device (LAD) which contains a set of universal grammar principles common to all possible human languages. He called this set of common rules as UG. Infants universally possess an innate grammar template or UG that allows them to select and construct the grammar of their own native language. His suggestion is that a child constructs grammar through a process of hypothesis testing. The past tense of verbs, for instance, is formed by adding '-ed' after the main verbs, so the child says "goed" what psycholinguists call *overgeneralization* (e.g. they over generalize the use of the regular past suffix -ed to irregular verbs). Eventually, the child revises their hypothesis to accommodate exception of the past tense of irregular verbs. Children create sentences by using rules rather than by merely repeating what they have heard.

Needless to say that Chomsky's proposition has been translated into second language acquisition, and termed *Universal Hypothesis*. This hypothesis is based on the assumption that there are 'core' and 'language-specific' rules in all languages. The core rules are those which are present in all natural languages. But the language-specific rules may be found in only one or two languages. According to the universal hypothesis, a second language learner learns core rules with ease. However, the language-specific ones appear to be much harder to master. It has also been suggested that when a learner comes across language-specific rules, they will tend to refer to L1. Thus, if a learner discovers that an L2 rule is not in accordance with a universal rule, they will attempt to interpret that rule by means of the equivalent rule in their L1 (Ellis, 1985, pp. 191-93).

Experience of language input is only necessary to activate the LAD. Mentalist or Innatist Theory of language acquisition emphasizes the learner's innate mental capacity for acquiring a language. Chomsky hypothesizes that infants must be born with some special built-in mental capacity to learn language. Thus, this theory claims that the ability to learn language is inborn to a child. It also asserts that only *Homo sapiens* has access to language developing qualities which are processed innately.

Consequently, this theory minimizes the contribution of behaviourists' notion of linguistic environment. Here 'nature' is more important than 'nurture'.

In addition, psychologist Eric Lenneberg (1967) further bolstered the claim of mentalists by emphasizing the biological prerequisites of language learning. His assertion is that only human species can learn a language. He cited example that even though severely retarded human beings were able to develop the rudiments of language, the most socially and intellectually advanced of the primates - chimpanzees - were incapable of mastering the creativity of language. His argument is that child's brain is especially adapted to the process of language acquisition. Therefore, Lenneberg's work provided empirical and theoretical support for the concept of a built-in mental capacity for FLA as part of human beings biological endowments.

The argument for the existence of Lenneberg's built-in mental capacity or Chomsky's LAD in human brain is that when a child acquires language, they are usually exposed to poor or incorrect forms, e.g. slips of the tongue, interruptions, false starts, lapses, etc. Yet, they are able to acquire the language and use it correctly, and surprisingly produce sentences they never heard before. This happens because children deduct rules from the received input rather than only imitating the language being used around them. Thus, when a child is exposed to a language, they, with the aid of LAD, will unconsciously identify what sort of language they are dealing with, and adjust their grammar to the correct one. This linguistic faculty of accommodation is thought to be innate to all human beings. It is placed somewhere in the brain and consists of linguistic universals. Its existence enables children to acquire the grammar of a language to which they are exposed to, and understand the input they receive from the environment.

Social Interactionist Theory

Social interactionist theory is a compromise between the behaviorist and mentalist approaches, and is based on views from both the theories. Acknowledging that the development of language comes from the early interactions between infants and caregivers, the theory takes a social factor into account, including the ideas from the two previous opposing theories.

Social interactionist theory is an approach to language acquisition that stresses the environment, and the context in which the language is acquired. It focuses on pragmatics of language rather than grammar which should come later. In this approach, the beginner speaker and the experienced speaker exist in a negotiated arrangement where feedback is always possible.

Bruner (1978), one of the most known theorists in this arena, gives more significance to pragmatics rather than development of grammar. He suggests that turn taking of a conversation between a caregiver and an infant is necessary for language development. In addition, Snow (1976) theorizes that adults play an important part in child's

language acquisition and suggests *proto-conversations*, which she calls conversational exchanges between the caregiver and the infant.

Therefore, social interactionist theory emphasizes the joint contributions of the linguistic environment and the learner's internal mechanisms in language development. According to this theory, learning results from the interactions between the learner's mental abilities and the linguistic input. This theory gives a fresh idea, which is to a great extent related to social terms, and does not exclude either behaviorist or mentalist views. However, the social interactionist theory is concerned more with pragmatics of the language, unlike Chomsky who gives a greater deal of significance to the development of grammar and Skinner who pays more attention to active linguistic environment.

The social interactionist theory does not neglect the previous theories, but it gives an additional social perspective of language acquisition as a compromise bridge. Even though behaviorist and mentalist theories can be related to the social interactionist theory, the divisions of all three are different whereas social interactionist theory is social constructivist - where the acquisition of language has its roots in the earliest infant-caregiver conversations.

Interlanguage Theories

In his article 'Interlanguage' (1972), Selinker coined the term interlanguage to describe the linguistic stage second language learners go through during the process of acquiring the target language. Since then interlanguage has become a major concept of SLA research studies.

As the name suggests, it is an intermediate or transitional language between the learner's first language and target language. Richards, Platt, and Weber (1985) have defined interlanguage as:

The type of language produced by second-and foreign-language learners who are in the process of learning a language.... Since the language which the learner produces differs from both mother tongue and the target language, it is sometimes called an interlanguage, or it is said to result from the learner's interlanguage system or approximate system. (pp.145-46)

Thus, interlanguage is the interim grammar constructed by second language learners on their way to target language. It is a temporary grammar which is composed of rules. It is also the systematic knowledge of a language which is independent of both the learner's L1 and the target language they are trying to learn.

Many characteristics of SLA have been developed by studies on interlanguage. Studies on interlanguage emphasize the dynamic qualities of language change. As it is the learner's developing second language, it has some characteristics of the learner's native language, second language, and even some characteristics which seem to be

very general and tend to occur in all or most interlanguages. Interlanguages have also some common characteristics with first language acquisition because both share similar developmental and sequential stages. According to research studies carried out by Brown (1973) on child's FLA and Dulay and Burt (1975) on SLA, the findings show remarkable analogous grammatical morpheme developmental stages.

Interlanguage theories play a crucial role in arriving at a decision on how second language learners move from their mother tongue to the second language. To understand the nature of FLA, researchers have tried to explain how children progress from no language to mother tongue. The process is more complicated in SLA as learners already have knowledge of their first language. Therefore, that we cannot talk about the interlanguage of a child, but we can talk about the interlanguage of a second language learner.

Selinker (1972) has pointed out the following five principle processes in interlanguage:

- **Language transfer:** Some of the rules of the interlanguage system may be the result of transfer from the learner's first language.
- **Overgeneralization:** Some of the rules of the interlanguage system may be the result of the overgeneralization of specific rules and features of the target language.
- **Transfer of training:** Some of the components of the interlanguage system may result from transfer of specific elements taught in the second language.
- **Strategies of L2 learning:** Some of the rules in the learner's interlanguage may result from the application of language learning strategies "as a tendency on the part of the learners to reduce the TL [target language] to a simpler system" (Selinker, 1972, p. 219).
- **Strategies of L2 communication:** Interlanguage system rules may also be the result of strategies employed by the learners in their attempt to communicate with native speakers of the target language.

Selinker's description of the interlanguage system has a cognitive emphasis and a focus on the strategies that learners employ when they learn a second language.

The second approach to the theory of interlanguage was adopted by Adjemian (1976) in his attempt to describe the nature of the interlanguage systems. Adjemian argues that interlanguages are natural languages, but they are unique in sense that their grammar is permeable. He also differentiates between the learning strategies that learners employ and the linguistic rules that are "crucially concerned in the actual form of the language system" (Adjemian, 1976, p.302). Adjemian concludes that the description of these linguistic rules, that reveal the properties of the learner's grammar, should be the primary goal of linguistic research.

The third approach with regard to the influence of mother language was investigated by Zobl. The role of the 'mother tongue' in the acquisition of the target language was re-examined under the scope of interlanguage theories and predictions were made about the influence of first language. Zobl (1980a, 1980b) investigated the first language influence on second language acquisition and argued that it is "the formal features of second language that control the formal aspects of its acquisition, including the activation of L1 transfer" (Zobl, 1980a, p.54).

The fourth approach to the description of interlanguage was initiated by Tarone (1982). She describes interlanguage as a continuum of speech styles. Learners shift between styles according to the amount of attention they pay to language form - from the super ordinate style in which attention is mainly focused on language form to the vernacular style in which the least attention is paid. The new target language forms first appear in more careful style, and progressively move toward the vernacular style. The systematic variability of interlanguage systems is reflected in the variable effects which the different tasks and different linguistic contexts have on the learners' use of syntactic, phonological, and morphological structures. Even though Tarone does not deny that other theories can provide explanations of second language acquisition, she argues that "any adequate model of SLA must take IL [interlanguage] variation into account" (Tarone, 1990, p.398).

Finally, different approaches were employed for explaining the acquisition of interlanguage and how learners discover and organize form-function relationships in a second language. Ellis (1985) argues that learners begin with forms which are used in free variation during the early stages of SLA (i.e. non-systematic variability) until more organizing and restructuring has taken place (i.e. systematic variability). In contrast to Ellis's claim, the functional approach to the analysis of interlanguage describe that discourse functions develop before grammatical functions, and evidence is provided by the acquisition of function occurring without the acquisition of form (Pfaff, 1987).

The above approaches to the study of interlanguage agree on three basic characteristics of interlanguage systems: interlanguages are *permeable*, *dynamic*, and *systematic*. The L2 learner's interlanguage systems are 'permeable' in sense that rules that constitute the learner's knowledge at any stage are not fixed, but they are open to amendment as the learner goes on developing the target language system.

They are also 'dynamic' because they go on changing constantly until the target language system is fully acquired. However, they do not jump from one stage to the next - rather they revise the interim systems slowly to accommodate new hypotheses about target language system. Morpheme studies, for instance, were employed to describe the systematic function of interlanguage systems. They also show various stages of interlanguage development until the target form is acquired.

Finally, they are ‘systematic’ in sense of learning strategies that the learners employ or linguistic rules that govern the learners’ grammar. Thus, it is possible to detect the rule-based nature of the learners’ use of the L2 (second language) system. They do not select haphazardly from the repertoire of interlanguage rules, but in predictable ways. They base their performance plans with the existing rule system in much the same way as native speakers base their plans with their internalized knowledge of the L1 system. Therefore, the guiding mechanism of these approaches is also common: interlanguage is seen as a kind of interim grammar gradually progressing toward the target language grammar.

FLA Theories and Interlanguage Theories - Directions to SLA

Each theory offers FLA from a distinctive perspective, and all the theories provide some fresh ‘insights’ into the psychology of language learning. Although they are molded from different standpoints, they explain possible language learning mechanisms. Recently, psychological research studies have regarded human beings as a mixture of genetically determined capabilities and knowledge gained by experience. It might be possible that children require a biological trigger for language acquisition, but this biological trigger cannot be activated if there is nobody around them, e.g. language acquisition requires situational stimuli and LAD. Therefore, the two main theories of FLA should be seen as complementary - rather than contradictory - for a broad understanding of how language acquisition takes place.

In addition, it is interesting to postulate the fact that FLA theories lead to ‘insights’ into SLA, and some SLA theories have been based on L1 theories and interlanguage theories. That is, Schumann’s Acculturation Theory (1978) is partly based on Behaviorist Theory of FLA, and Krashen’s Monitor Model of SLA is based on Mentalist Theory of FLA. The correlation between FLA theories and interlanguage theories leads to the foundation of SLA research studies where interlanguage is an intermediate language between FLA and SLA. Furthermore, SLA studies follow sequential developments of FLA theories and interlanguage theories. It is needless to say that language teaching anticipates certain theories on language learning because language learning is a fruitful area that embodies the working of human behavior and mental processes of the learners. Although each theory may not be a complete model for investigation of language acquisition, each of them offers a unique perspective of language acquisition.

Interlanguage is a theoretical construct which underlies the attempts of SLA researchers to identify the stages of development through which L2 learners pass on their way to L2 (or near L2) proficiency. The research studies indicated that there are strong similarities in the developmental route followed by different L2 learners. As a result, it was suggested that SLA follows a ‘universal’ route that is largely uninfluenced by such factors as age of the learners, the context in which learning takes place, or the learners L1 background. According to this view of SLA, the controlling factor is the faculty for language that all human beings possess and that is

responsible for FLA. Therefore, researchers have sought to answer to what extent the order of development in SLA parallels to that of FLA. The fact that SLA equals FLA hypothesis has been a recurrent issue in subsequent SLA research studies.

Conclusion

In summary, behaviorism was the prevailing psychological theory of the 1950s and 1960s. It was developed according to experiments on animals when behaviorists noticed that animals could perform different tasks by encouraging habit formation. Behaviorist Theory of FLA, on the other hand, is based on the premise that language behavior consists of producing appropriate responses to correct stimuli. The stimuli and responses are correlated, and the link between them becomes habitual as a result of positive reinforcement. In contrast, Chomsky's mentalist proposition theorizes that the child from birth is exposed to language that functions as a trigger for the activation of LAD. The LAD has the mental capability to formulate hypotheses about the structure of the language a child is exposed to, and the child is unconscious about all this process. While social interactionist theory bridges the gap between the above two viewing social interaction (to some extent similar to behaviorism), as exposure, as a triggering input for the activation of LAD. Finally, Selinker's (1972) paper on interlanguage was seminal in directing a smooth transition from FLA to SLA studies. It has brought forth some relevant issues and directed studies from FLA research studies to SLA. Yet, all of these theories are involved with some forms of mechanism - either language acquisition support system-directed, language acquisition device-directed, or child-directed speech.

References:

- Adjemian, C. (1976) 'On the nature of interlanguage systems.' *Language Learning*, vol. 26, pp. 297-320
- Brown, R. (1973) *A First Language: The Early Stages*. Cambridge, Mass.: Harvard University Press
- Bruner, J.S. (1978) 'From Cognition to Language: A Psychological Perspective.' In: Markova, I. (ed.) *The Social Context of Language*. New York: Wiley and Sons
- Chomsky, N. (1959) 'Review of *Verbal Behavior* by B.F. Skinner'. *Language*, vol. 35, pp. 26-58
- Dulay, H. and Burt, M. (1974b) 'Natural sequences in child second language acquisition'. *Language Learning*, vol. 24, pp. 37-53
- Ellis, R. (1985) *Understanding Second Language Acquisition*. Oxford: Oxford University Press.

Ellis, R. (1994) *The Study of Second Language Acquisition*. Oxford: Oxford University Press.

Lenneberg, E. (1967) *Biological Foundations of Language*. New York: Wiley and Sons

McNeill, D. (1970) *The Acquisition of Language*. New York: Harper Row

Pavlov, I. P. (1927) *Conditioned Reflexes*. London: Oxford University Press.

Pfaff, C. (1987) *First and second language acquisition processes*. Cambridge, Mass.: Newbury House.

Richards, J., Platt, J., and Weber, H. (1985) *Longman Dictionary of Applied Linguistics*. London: Longman

Selinker, L. (1972) 'Interlanguage.' *International Review of Applied Linguistics*, vol. 10, pp. 209-230

Skinner, B.F. (1953) *Science and Human Behavior*. New York: Macmillan

Skinner, B.F. (1957) *Verbal Behavior*. New York: Appleton Century Crofts

Snow, C. (1976) 'The language of mother-child relationship.' In: Rodgers, S. (ed.) *They Don't Speak Our Language*. London: Edward Arnold

Tarone, E. (1982) 'Systematicity and attention in interlanguage.' *Language Learning*, vol. 32, pp. 9-82

Tarone, E. (1990) 'On variation in interlanguage: A response to Gregg.' *Applied Linguistics*, vol. 11, pp. 392-400

Watson, J. (1924) *Behaviorism*. New York: Norton

Zobl, H. (1980a) 'The formal and developmental selectivity of L1 influence on L2 acquisition.' *Language Learning*, vol. 30, no. 1, pp. 43-57.

Zobl, H. (1980b) 'Developmental and transfer errors: Their common bases and (possibly) differential effects on subsequent learning.' *TESOL Quarterly*, vol. 14, no. 4, pp. 469-479.

