
SECOND LANGUAGE ACQUISITION: RECONCILING THEORIES

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Abstract

This article makes the case that earlier explanations of SLA shouldn't be discounted. Instead, when combined, they offer a more comprehensive and in-depth understanding of the acquisition process. The ability of second language acquisition (SLA) to naturally adjust to various situations present in both internal and external settings provides evidence in favor of the assertion that SLA is a sophisticated adaptive system. On the basis of this comprehension, frequently debated second language theories, such as behaviorism, will be viewed as explanations for individual components of SLA. Excerpts from a few English language learning histories are given as examples of how students explain their learning processes in order to support this idea. The last assertion is that SLA should be seen as a chaotic/complex system.

Keywords: Second Language Acquisition; Language Learning Histories

INTRODUCTION

At least forty "theories" of SLA have been offered, according to Larsen-Freeman and Long, but in my opinion, none of these efforts to explain SLA provide a comprehensive explanation for the phenomenon. Language learning is not a linear process, like any other kind of learning, hence it cannot be said to be as predictable as many SLA models have suggested. Numerous ideas have been created to explain SLA, however the majority of these theories disregard other crucial factors in favor of concentrating solely on the acquisition of syntactic structures. The basic SLA theories are briefly reviewed in the next section, after which I discuss the current propensity to see SLA as an emergent phenomenon.

Theories of Second Language Acquisition

I will only briefly touch on eight of the many SLA theories and hypotheses, despite the fact that there are a ton of them: behaviorism, acculturation, universal grammar hypothesis, comprehension hypothesis, interaction hypothesis, output hypothesis, sociocultural theory, and connectionism. These, in my opinion, are the ones that have had the greatest influence on the field.

1) Behaviorism

A stimulus-response (S-R) theory that views language learning as a process of habit building was developed out of behaviorism. It considers the linguistic environment and the stimulus it provides, ignoring any internal systems. Learning is a visible habit that develops spontaneously through stimulus and response in the form of mechanical repetition. Thus, learning a language

entails developing unconscious linguistic patterns. Behaviorism, according to Johnson, "undermined the significance of mental processes and saw learning as the capacity to inductively find patterns of rule-governed behavior from the examples offered to the learner by his or her environment". Larsen-Freeman and Long consider that S-R models offer "little promises as explanations of SLA, except for perhaps pronunciation and the rote-memorization of formulae".

This theory of language acquisition gave rise to research on contrastive analysis, particularly mistake analysis with the interference of the first language on the target language as its main focus. It also sparked the development of interlanguage studies because a straightforward comparison of first and second languages was unable to adequately explain or characterize the language used by SL learners. Other SLA views include interlanguage studies because this field has focused mostly on the acquisition of grammatical morphemes or particular language structures.

2) Acculturation

Schumann offers another idea that focuses on the environment. In his well-known ten-month longitudinal study on a few syntactic features with six learners (two children, two adolescents, and two adults), Schumann used questionnaires, recorded natural conversation, and applied a quantitative analysis to the data. The participant that learned the least English was the one who was the most socially and psychologically removed from the TL group, he discovered.

According to him, acculturation, or "the social and psychological integration of the learner with the target language (TL) group," is what leads to SLA. According to the acculturation paradigm, students will succeed in SLA if there are fewer social and psychological gaps between them and the speakers of the second language.

3) Universal Grammar Hypothesis

Chomsky's supporters attempt to comprehend SLA in the context of his universal grammar (UG) hypothesis, which contends that human beings are born with certain abilities. Inquisitive about the nature of language, Chomsky believes that language is a reflection of the mind. Although he is not interested in SLA, our area's studies have been influenced by his work. His theory holds that every human being is born with a language capacity, also known as a language acquisition mechanism, which is what causes language to develop in its infant stage.

The UG theory holds that language acquisition cannot be explained by environmental input alone. In the same perspective, White says that "if it turns out that the L2 learner acquires abstract properties that could not have been induced from the input, this is strongly indicative that principles of UG constrain interlanguage grammars, parallel to the situation of L1 acquisition". As Mitchel and Myles remind us, "The universal Grammar approach is only interested in the learner as a processor of a mind that contains language" and not as a social being. The research supported by UG theory works mainly with experiments in the form of grammaticality and acceptability judgments.

4) Comprehension Hypothesis

Influenced by Chomsky's assumptions on language as an innate faculty, Krashen, developed an influential proposal with emphasis on the contrast between learning and acquisition to explain SLA. First, he named it as monitor model, then he called it input hypothesis, focusing on the data which feed acquisition, and more recently, comprehension hypothesis emphasizing the mental process as responsible for acquisition. According to Krashen, The Comprehension Hypothesis is closely related to other hypotheses. The Comprehension Hypothesis refers to subconscious acquisition, not conscious learning. The result of providing acquirers with comprehensible input is

the emergence of grammatical structure in a predictable order. A strong affective filter (e.g. high anxiety) will prevent input from reaching those parts of the brain that do language acquisition.

Krashen's model views acquisition in a linear perspective which not only establishes a cause and effect relation between input and acquisition but also states that the grammatical structure is acquired in a predictable order. In addition to that, as in the other theories discussed so far, his theory does not go beyond the acquisition of grammatical structures. Krashen's model lacks research evidence. As Cook points out "it makes sense in its own terms but is not verifiable". The next three theories can be named Interactionist SLA theories as all of them conceive language and language learning as social practices.

5) Interaction Hypothesis

Other attempts to explain SLA are the different versions of the interaction hypothesis defended by Hatch and by Long, to name but two who did not accept Krashen's Input Hypothesis. Both Hatch and Long consider that input alone is not sufficient to explain SLA. Hatch disagrees that learners first learn structures and then use them in discourse. She considers the reverse possibility. "One learns how to do conversation, one learns how to interact verbally, and out of this interaction syntactic structures are developed".

Based on an empirical study, Long observed that in conversations between native and non-native speakers, there are more modifications in interaction than in the input provided by the native speakers. He does not reject the positive role of modified input, but claims that modifications in interactions are consistently found in successful SLA. Long suggests that negotiation for meaning, especially negotiation work that triggers interactional adjustments by the NS or more competent interlocutor, facilitates acquisition because it connects input, internal learner capacities, particularly selective attention, and output in productive ways.

Larsen-Freeman and Long argue that the interactionist views are more powerful than other theories "because they invoke both innate and environmental factors to explain language learning". I would add that they are the first to view language not only as a matter of syntactic structures but also as a matter of discourse. The interactionist research uses data recorded from free conversation or controlled conversation tasks.

6) Output Hypothesis or Lingualization

Swain likewise rejects Krashen's radical viewpoint on the importance of input and advances the output hypothesis, which was afterwards referred to as lingualization. According to her, speaking the language regularly enables students to watch their own creation, which is crucial to SLA. According to her argument, "output may drive learners to progress from the semantic, open-ended non-deterministic, strategic processing prominent in comprehension to the comprehensive grammatical processing needed for accurate production". Learners "may perceive a gap between what they wish to express and what they can say, leading them to recognize what they do not know, or know just partially," according to her explanation. She highlights that "noticing" is essential to SLA and also hypothesizes that output has other two functions: to test hypothesis and to trigger reflection, a metalinguistic function. She explains that learners "may output just to see what works and what does not" and that they reflect upon the language they produce when negotiating meaning because the content of negotiation is the relation between the meaning they are trying to express and the language form.

As far as research is concerned, the investigations in this perspective have been using experiments with control groups, pretests and posttests. Think-aloud was also used in Swain and Lapkin to see the impact of output upon the learners' thought processes.

7) Sociocultural Theory

According to the sociocultural theory (SCT), which is founded on Vygotskian ideas, language acquisition is a socially mediated process. Language is a cultural product that mediates social and psychological activity, and mediation is a fundamental premise. Children's early language learning, according to Mitchell and Myles, "arises through processes of meaning-making in collaborative engagement with other members of a particular culture". The SLA can benefit from the SCT's guiding principles, according to Lantolf and Thorne. "SCT is grounded in a perspective that does not divorce the individual from the social and in fact argues that the individual develops from social interaction and as such is always fundamentally a social being," they say. It is in the social world that the language learners observe others using language and imitate them. It is also with the collaboration of other social actors that learners move from one stage to another.

One of the main concepts borrowed from Vygotsky is "scaffolding", understood as the assistance one learner gets from another person (e.g. teachers, relatives, class-mates) and which enables him or her to perform a learning task. This phenomenon has been in the agenda of collaborative learning research and the data has been mainly collected by means of audio and video recordings of classes and peer interaction. Recall protocols and interviews are also used.

8) Connectionism

While disproving the intrinsic endowment hypothesis, connectionism attempts to explain SLA in terms of mental representations and information processing. Elman et al. concur that there are universal traits, but they do not necessarily follow a straight genetic pathway. Any learning is said to involve neural networks. The connections between nodes are strengthened or decreased as the networks learn in a parallel distributed processing. Learning a language is viewed as the consolidation of links between experiences through processing and repetition. The initial state of SLA is no longer a plastic system; it is one that is already tuned and committed to, according to Ellis, who notes that "our neural apparatus is very plastic in its initial condition", but "the initial state of SLA is no longer a plastic system; it is one that is already tuned and committed to the L1". He adds that "in the L2 situation, forms of low salience may be blocked by prior L1 experience, and all the extra input in the world may not result in advancement".

In contrast with the linearity of behaviorism, connectionism presupposes that some mental processes can occur in a parallel or simultaneous way and that knowledge is distributed among the various interconnections. Thus, learning does not occur in sequenced stages, but rather in parallel, *i.e.*, in different parts of the brain simultaneously.

Connectionism, along with other attempts to explain SLA, can be situated in the philosophical and scientific tradition known as emergentism, whose studies are inspired in the studies of the complex systems. Ellis explains emergentism as language representations which emerge "from interactions at all levels from brain to society". He adds that "simple learning mechanisms, operating in and across the human systems for perception, motor-action and cognition as they are exposed to language data as part of a social environment, suffice to drive the emergence of complex language representations".

Connectionism studies have been employing computer technology either by simulating neural networks in computers or by resorting to computerized corpora. In the first case, researchers create artificial networks, feed them with linguistic input and then compare their output to human output. Corpora, such as CHILDES, an electronic corpus of child language that is freely available on the internet (<http://www.cnts.ua.ac.be/childes/>), have also been used in the study of the

acquisition of lexical items. In the next section, I present my own interpretation of SLA acquisition as an emergent phenomenon, namely as a chaotic/complex system.

Second Language Acquisition as a Chaotic/Complex System

We still don't understand how languages are taught in spite of all the studies. It is challenging to disprove any of the aforementioned theories because they all seem plausible. However, because they only cover a portion of the SLA phenomena, they also appear to be lacking. Language learning is not a linear process like other types of learning, hence it cannot be assumed to be as predictable as some of these models of acquisition have suggested. Very different outcomes can occur from slight variations in the starting circumstances. However, I believe that prior attempts to explain SLA should still be taken into consideration since, when combined, they offer a more comprehensive understanding of the phenomena. In this new perspective, a SLA model should be considered as a set of connections within a dynamic system that moves in the direction of the "edge of chaos" considered as a zone of creativity with the maximum potential for learning.

Chaos theory and the studies on complexity have been influencing many different research fields, including Applied Linguistics. Larsen-Freeman, in her inaugural work in this new perspective, sees "many striking similarities between the science of chaos/complexity and language and SLA". She presents several arguments for the understanding of language and SLA as complex, non-linear dynamic phenomenon, dynamic meaning growth and change. Larsen-Freeman sees complexity as "a metaphorical lens through which diverse perspectives can be accommodated, indeed integrated".

Thornbury also argues that language and language learning share some features with other complex systems. It is dynamic and non-linear; adaptive and feedback sensitive; self-organizing; and emergent. He observes that the learner's grammar restructures itself as it responds to incoming data. There seems to be periods of little change alternating with periods of a great deal of flux and variability, and even some backsliding. In this way, process grammars are not unlike other complex systems which fluctuate between chaotic states and states of relative stability. There is evidence to support the claim that SLA is a complex adaptive system due to its inherent ability to adapt to different conditions present in both internal and external environments. As pointed out by van Lier, we can neither claim that learning is caused by environmental stimuli (the behaviourist position) nor that it is genetically determined (the innatist position). Rather, learning is the result of complex (and contingent) interactions between individual and environment. A complex model can accommodate apparently op- posed elements in an effort to explain SLA. **Figure 1** partially describes the way I see SLA. I say partially because it does not show the dynamic interaction among the elements and neither shows the changes. Besides that, many other factors (e.g. motivation, learning strategies, political constraints, etc.) are in interaction in a SLA system and they are not represented in **Figure 1**. At the same time a complex model can admit the existence of innate mental structures and sustain that part of the language is acquired by means of repetition and the creation of automatic linguistic habits. It can acknowledge the importance of language affiliation understood.

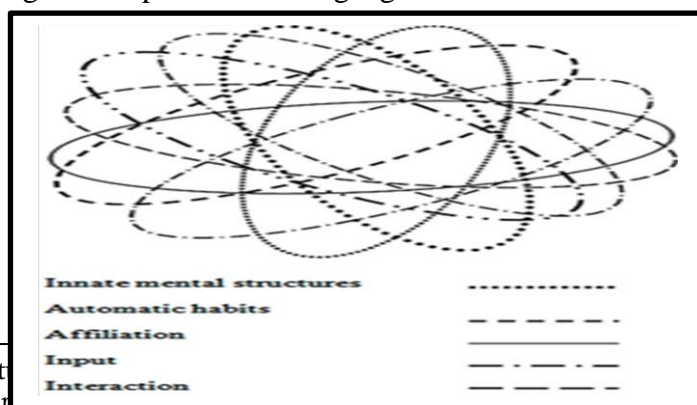


Figure 1. Second Language acquisition as a complex system

I prefer affiliation due to the derogatory meaning of acculturation as the level of relationship between the learner and the second language. Cultural or personal affiliations with the second language work as a potent fuel to move the SLA system. In addition, in such a model, input, interaction and output are also considered of paramount importance for language acquisition as they trigger both neural and sociocultural connections. Each component works as a subsystem embedded in the SLA system.

In this perspective, language must be understood as a non-linear dynamic system, made up of interrelated biocognitive, sociocultural, historical and political elements, which enable us to think and act in society. Language is not a static object, but a system in constant movement. Its interacting elements influence and are influenced by each other. As language is in evolution, so too is SLA and any change in a subsystem can affect other elements in the network. It develops through dynamic and constant interaction among the subsystems, alternating moments of stability with moments of turbulence. As complex systems are in constant movement, after chaos, understood here as the optimal moment for learning, a new order arises, not as a final static product, but as a process, *i.e.*, something in constant evolution.

Human beings are different, their contexts are different and so are SLA processes which are mediated by different human agents and cultural artifacts. As a consequence, unequal learning experiences may occur in very similar situations. When we turn our observation to language teaching practices, we see that no matter how much teachers plan and develop their classes, students will react in different ways and unforeseen events will inevitably be part of their learning experiences. The seemingly orderly world of acquisition is in fact chaotic and chaos seems to be fundamental in such a process.

Out of chaos emerges a new language which is a product of all the elements involved in the process and which can be placed in a cline which has first and second language as two opposing poles (energies or forces), the first language being the initial condition for SLA. First and second languages are both live complex systems which change over time. As Larsen-Freeman and Cameron explain, “We change a language by using it”.

The first and second languages work as attractors. An attractor is “a region of a system into which the system tends to move” and language development swings between these two poles. The language learner is attracted or repelled by one of these poles and out of this cycle of attraction and repelling emerges a third, namely, interlanguage. Interlanguage works as a strange attractor, highly sensitive to initial conditions. Small changes in the initial conditions result in unpredictable shifts in language development. Each interlanguage phase yields similar but never identical patterns or strange attractors.

Language Learning Histories and SLA Theories

As pointed out by Larsen-Freeman language learners have been seen from an etic perspective. By choosing to work with language learning histories (LLHs) and listening to language learners, we aim at changing the etic perspective into an emic approach. In doing that, we try to make a shift from objectivism/subjectivism to ex-perientialism as we can count on learners’ experiences to understand how languages are learned.

The Edge of Chaos

Order and chaos coexist in a dynamic tension. According to Ockerman, the system is capable of remarkable things when operating in the narrow zone between order and chaos which is called “edge of chaos”. Ockerman explains that The edge of chaos is a paradoxical state, a spiral chance between order and chaos, a humming oscillation between the two extremes, characterized by risk, exploration, experimentation. Here is where the system operates at its highest level of functioning, where the information processing takes place, where risks are taken and new behavior is tried out. And when new behavior emerges that is somehow beneficial to the system, where the system’s primary task and operating rules are modified in such a way that the system’s overall levels of “fitness” is improved relative to other systems, we say that the change is innovative; the system has learned or evolved. Ockerman adds that There are five factors, or control parameters, that determine whether a system can move into the edge of chaos (or beyond into disintegration): the rate of information flow, the degree of diversity, the richness of connectivity, the level of contained anxiety, and the degree of power differentials. In human systems, these factors combine into a kind of creative tension where people are linked to others in paradoxical relationships of cooperation/competition, inspiration/anxiety, and compliance/individuality (group of initiative to illustrate the process)

Conclusions

Understanding SLA as a complex system theory can explain why a learner remains in equilibrium, for a certain amount of time and suddenly a fast change occurs, showing an advance in acquisition. That is, in learning we have periods of stability followed by “explosions” and change. It can also explain why the same teaching and learning strategies do not have the same effects for all learners and that small stimuli can have unpredictable consequences, dramatically negative or positive. Thus, in formal contexts, the teacher can not only activate learning mechanisms, but also construct insurmountable barriers.

It is the role of the teacher to encourage constant contact of the student with as many forms of input as possible and to promote interactions among various speakers (learners, competent speakers and native speakers). Language learning is also a social process and depends on interactions among speakers. In this way, our role is to “disturb” a zone of stability and provoke the chaos that results in a zone of creativity (edge of chaos) where small changes can occur, creating significant effects on learning processes.

References

- D. Larsen-Freeman and M. H. Long, “An Introduction to Second Language Acquisition Research,” Longman, New York, 1991.
- M. Johnson, “A Philosophy of Second Language Acquisition,” Yale University Press, New Haven, 2004.
- J. H. Schumann, “The Acculturation Model for Second Language Acquisition”, In: R. C. Gingras, Ed., *Second Language Acquisition and Foreign Language Teaching*, Center for Applied Linguistics, Washington, 1978, pp. 27-50.
- L. White, “Second Language Acquisition and Universal Grammar,” Cambridge University Press, Cambridge, 2003. <http://dx.doi.org/10.1017/CBO9780511815065>

- R. Mitchell and F. Myles, "Second Language Learning Theories," 2nd Edition, Arnold, London, 2004.
- M. Swain and M. Lapkin, "Problems in Output and the Cognitive Processes They Generate: A Step towards Second Language Learning," *Applied Linguistics*, Vol. 16, No. 3, 1995, pp. 371-391. <http://dx.doi.org/10.1093/applin/16.3.371>
- J. Lantolf and S. Thorne, "Sociocultural Theory and Second Language Learning," In: B. VanPatten and J. Williams, Eds., *Theories in Second Language Acquisition: An Introduction*, Lawrence Erlbaum, Mahwah, 2007, pp. 201-224.
- D. Larsen-Freeman, "Second Language Acquisition and Applied Linguistics," *Annual Review of Applied Linguistics*, Vol. 20, 2000, pp. 165-181. <http://dx.doi.org/10.1017/S026719050020010X>
- S. Thornbury, "Uncovering Grammar," Macmillan Heinemann, London, 2011
- D. Larsen-Freeman and L. Cameron, "Complex Systems and Applied Linguistics," Oxford University Press, Oxford, 2008.
- D. L. Gilstrap, "Strange Attractors and Human Interaction: Leading Complex Organizations through the Use of Metaphors," *Complicity*, Vol. 2, No. 1, 2005, pp. 55-69. <http://ejournals.library.ualberta.ca/index.php/complicity/article/view/8727>
- V. L. M. O. Paiva, "Modelo Fractal de Aquisição de Línguas," In: F. C. Bruno, Ed., *Reflexão e Prática em Ensino/Aprendizagem de Língua Estrangeira*, Editora Clara Luz, São Paulo, 2005, pp. 23-36.