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Down from the Pedestal!

—*A Chronological Look at the Philosophy of SLA*

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Abstract

Second language acquisition (SLA) is viewed as the appropriation of several voices reflecting different perspectives. To make a major shift in our understanding of what the domain of SLA should be and what kind of theory should be developed entails thorough understanding of what happens in the history of SLA and relinquishing our absolute trust in the epistemology of a given school of thought. The purpose of present paper is to have a chronological review of the three main schools of scientific movements in SLA in harmony with their related philosophy.

Keywords

anti-positivism, behaviorism, cognitivism, materialism, positivism, socioculturalism

1. Introduction

Larsen-Freeman and Long (1991) maintain that "at least forty theories of SLA have been proposed" (p. 227). What Larsen-Freeman and Long state refers to about thirty years ago, and now probably more theories are suggested. Nonetheless, none of these theories is going to provide a thorough explanation for SLA. To several scholars (e.g. Long, 1997), SLA is predominantly a cognitive enterprise, while to Firth and Wagner (1997), for instance, it is a social enterprise involving social beings interacting in social settings for social purposes (Ellis, cited in Lengeling, Hernanez, & Carvajal, 2011). Moreover, new theories do not generally succeed in replacing their predecessors, but continue to coexist with them uncomfortably (Spolsky, 1990).

Although there is a relative consensus among scholars regarding what a theory is, the emergence of contending theories in the realm of language learning reveals that there is not a universal unanimity among researchers to adopt a theoretical perspective. In this regard, several scholars (e.g. Beretta, 1991; Gregg, 2003), in favor of rationalism, take issues with the multiplicity of theories in SLA. To them, too many theories are problematic and need to be culled (Maftoon & Shakouri, 2012), while the others, among them Lantolf (1996) compatible with relativist perspective in theory construction, metaphorically claims "let all flowers bloom" (p. 713).

From historical point of view, three scientific theories can be traced: behaviorism, cognitivism, and

dialogicalism (Johnson, 2004). The epistemology of these three *isms* can be linked to three branches of philosophy, that is, positivism, anti-positivism (constructivism), and materialism. The present paper is not an attempt to get some theories off the map and let some poise to blossom. To the present writers, understanding the history of SLA entails understanding its philosophy. As Hanson (1962) states, "history of science without philosophy of science is blind" (p. 580). More importantly, philosophy has penetrated into every important decision made about SLA. In fact, philosophy and history are part and parcel of each other (Maftoon & Shakouri, 2013a). In sum, philosophy of SLA without history of SLA is empty.

More importantly, any history is subjective (Littlejohn, 2012). In this regard, Maftoon and Shakouri (2013b) assert "in any subjective understanding of the world, there is a high amount of uncertainty and unpredictability" (p. 308). Thus, to the current paper, due to uncertain nature of SLA, prediction is hazardous. However, subjective understanding of the theories proposed can pave the way towards safe prediction. Henceforth, the current work makes an attempt to show that historically there are three major scientific movements in SLA that are deeply rooted in the related philosophy.

2. Behaviorism and Positivism

Behaviorism has its roots within positivism (Williams & Burden, 1997). The term positivism, as a version of empiricism (Richards & Smiths, 2002), was first coined by the French Philosopher Auguste Comte who believed reality can be observed. In fact, positivism defines knowledge solely on observable facts and does not give any credence to non-observable entities such as feelings and values. In other words, they rely on objective reality (Cohen, Manion, & Morrison, 2007). To behaviorists, scientists are the discoverers of the reality rather than the constructors of the reality (Mack, 2010).

In a sense, according to positivists, knowledge and facts exist in the world and can be discovered by setting up experiments in which conditions are carefully controlled, and where hypotheses are tested. Thus, the purpose of positivist school of thought is "to prove or disprove hypothesis" (Mack, 2010, p. 2). Furthermore, positivists believe that the knower and the known are independent and that the research enquiry is value free (Borg & Gall, 1989).

In sum, the significant features of positivism, according to Cohen et al. (2007), can be outlined as: (1) positivists are *reductionist*; the views that entities of one kind are reducible to entities of another; (b) they rely upon the *quantification of knowledge*; positivism is closely tied to quantitative methodologies and experimented method to data collection and analysis; (3) they are *determinist*; they rely on the cause and effect relationship between events, and their mission is to discover the link; (4) they are *empiricist*; there is certain kind of knowledge that only originate in experience; and finally (5) they are *parsimonious*; the phenomena should be explained in the most economical and simple way.

As declared, it goes strong that behaviorism is inspired by the work of positivist philosophy. A notable figure in this regard is Karl Popper (1959). In his famous book, *The Logic of Scientific Discovery*, Popper declares there are no absolute truths. Moreover, he claims that scientific theories cannot be

confirmed but only falsified. In effect, theories proposed in SLA, as to a positivist, need to be corroborated with empirical evidence. In this regard, Jozef (2001) holds for the purpose of corroboration, the hypotheses raised in this regard need to be tested and entail repeated attempts at falsification.

2.1 Mind is off the Map

Behaviorists develop theories about the behavior of an organism with no reference to what might be happening in its mind (Brown, 2000). The founder of behaviorist school of learning, Watson (1913, cited in Birjandi, Mossallanejad, & Bagheridoust, 2006), rejects the techniques of introspection. To Watson, there was no such a thing as memory, and people just learned ways of behaving (Birjandi et al., 2006). In fact, people are born with limited reflexes; no differences exist initially, and the difference among people is the function of their experience rather than the related genetics. Watson (1913, cited in Weegar & Pacis, 2012) makes use of Pavlov's findings on animal responses to stimuli as a basis for his work. Undeniably, his work *The Behavioral Learning Theory* was responsible for the movement towards behaviorism and away from functionalism. As Overskeid (2008) asserts, Watson's work is concerned with the relationship between organisms and their environment.

Gass and Selinker (1994), in the same vein, state that the founding stones of behaviorist framework are *mimicking* and *analogizing*. That is, we say or hear something and analogize from it. Basic to this view is the concept of habits. We mimic the speech of others and analogize from what we already know. Drawing on the concept of habit, Demirezen (1988) illustrates the operating principles of behaviorism as follows: (1) behaviorism dwells upon spoken language; (2) learning is the mechanical process of habit formation; (3) learning is the result of stimulus-response conditioning; (4) all learning is the establishment of habits as the result of reinforcement and reward; and finally (5) learning can be the same for the individual, due to its socially conditioned nature.

Nevertheless, among behaviorists, there appears to be no absolute consensus. Still, such unanimity was more or less in the direction of corroboration rather than contradiction. Ivan Pavlov who coined the term respondent conditioning claims organism responds to the environment, while Skinner's (1957) operant conditioning connotes the organism operates on the environment. According to Skinner, as the father of operant conditioning, human beings are likened to a machine with multiple working parts. His work is inspired by Thorndike's law of effect; however, a new term was introduced into it—reinforcement. As it is implied, behavior which is reinforced tends to be repeated (i.e. strengthened); behavior which is not reinforced tends to die out or be extinguished (i.e. weakened).

According to Skinner, the idea of Pavlov's S-R associations is just a theoretical fantasy. He criticizes Pavlov's experiments in that his theory might be true about animals not human beings. Skinner deemphasizes the role of stimulus and puts stress on the role of reinforcement and an operant response. As to Skinner, much human behavior is operant, nor respondent (Woolfolk, Winne, & Perry, 2002). Accordingly, Pavlov's respondent conditioning describes only how existing behavior might be paired with new stimuli; it does not explain how a new operant behavior is acquired (Woolfolk et al., 2002).

More comprehensively, Skinner, in corroborating his operant conditioning, identifies three types of responses or operants that can follow behavior: (1) neutral responses (i.e. responses from the environment that neither increase nor decrease the probability of a behavior being repeated), (2) reinforcers (i.e. responses from the environment that increase the probability of behavior being repeated. Reinforcers can be either positive or negative), and (3) punishers (i.e. responses from the environment that decrease the likelihood of a behavior).

As to behaviorists, learning is defined as a permanent change in one's behavior (Birjandi et al., 2006). However, such a view of learning, deeply embedded in positivism, suffers from some pitfalls. Johnson (1990, as cited in Molenda, 1997) was among the first who has criticized the objective epistemology of positivism, for it does not emphasize the ability of the individual to construct meaning. Demirezen (1988), accordingly, touches upon the following counter-arguments that can be made upon the working principles of behaviorist theory: (1) no innovation is observed on the part of learners since the role of organism is kept to minimum; (2) learning is done through the process of analogy rather than analysis; (3) the rate of social influence on learning is totally ignored; (4) each person cannot learn equally well in the same conditions in which learning takes place, for the background and the experience of the learners make everybody learn differently; (5) the main strategies of the behaviorist theory can only be true for the early stages of learning which take place when kids are in infancy and in early childhood periods; and (6) many of the learning processes are mostly too complex, and for this reason there are intervening variables, which cannot be observed between stimulus and response.

Cohen et al. (2007), also, report that the precise target of the anti-positivists' attack on behaviorism has been on its mechanistic and reductionist view of positivism that exclude notions of choice, individuality, and moral responsibility. Quantification has become an end in as much as some claim it is a branch of mathematics rather than human study.

3. Cognitivism and Anti-Positivism

The constructivist (also interpretivist) perspective can also be called the anti-positivist paradigm (Mack, 2010) since it emphasizes the ability of individuals to construct meaning. Along the same vein, according to cognitive theorists, learners are far from equal; it is the pre-existing network of concepts, strategies, and understanding that makes learning meaningful and learners different (Brown, 2000). To cognitivists, children come to the world with pre-determined innate capacities which enable them to acquire their linguistic system. Put simply, language is a part of cognitive development; to be able to learn a new word, for example, a learner has to understand a concept a word represents.

As Ratner (2005, cited in Trawinski, 2005, p. 12) states, "it is logical that before children can converse about something, they need to know what it is". Similarly, Piaget (1929, 1970), the father of cognitive constructivism, believes that language is just one aspect of human cognition. To him, cognitive development means experimenting with the environment and constructing one's personal meaning of it. In fact, learning is the result of conflict between what a person knows and what a person is going to

learn (Richmond, 1970). This is what Piaget called disequilibrium or in Dewey's terminology, perturbation. Likewise, Brown (2007) sees cognitive development as a process of moving from states of doubt to certainty, or in Piaget's (1970) vocabulary, from disequilibrium to equilibrium. Piaget's concept of equilibration, according to Sullivan (1967, cited in Brown, 2007) is defined as "a progressive interior organization of knowledge in a stepwise fashion" (p. 67). Piaget (1970) declares that equilibration is accomplished by two complementary processes: assimilation (i.e. modifying incoming information to fit our knowledge) and accommodation (i.e. modifying our knowledge to include new information). And finally, these two processes contribute to what Piaget called adaptation. In sum, as put by Boeree (2006), assimilation and accommodation act like a pendulum that swings at increasing our linguistic and background knowledge of the world.

As Botha (1989) writes, "Piaget…considers both empiricist and rationalist theories of the genesis of knowledge to be devoid of concrete truth" (p. 45). Seen from this stance, Piaget's cognitivism, per se, is constructivist in nature as he believes in constructing one's own personal understanding of the world. In this regard, Molenda (1997) contends that constructivism shares the anti-positivists' dissatisfaction with positivist assumptions that all knowledge is socially constructed; knowledge is not there but is constructed in the mind of the knower. Molenda, further, adds, "truth is made, not discovered" (p. 9). Mack (2010), also, holds that truths can never be objectively observed from the outside rather it must be observed from inside through the direct experience of people.

In much the same way, Cohen et al. (2007) maintain that the role of the scientist in the constructivist paradigm is to, "understand, explain, and demystify social reality through the eyes of different participants" (p. 19). Researchers in the same paradigm seek to understand rather than explain (Mack, 2010). Mack continues that the constructivist or interpretivist paradigm is heavily influenced by *hermeneutics* and *phenomenology*. Hermeneutics is the study of meaning and interpretation in historical texts. This meaning-making cyclical process is the basis on which the interpretivist paradigm was established (Ernest, 1994). And as Ernest asserts, phenomenology is concerned with the need to consider human beings' subjective interpretations, their perceptions of the world as our starting point in understanding social phenomena.

However, Mack (2010), in the same line, claims constructive perspective towards education suffers from several shortcomings. First, they ignore the political and ideological influences on knowledge and social reality. Second, the ontological assumption of interpretivism is subjective rather than objective. And also, as it abandons the scientific procedures of verifications therefore results cannot be generalized to other situations.

3.1 Mind is Poised to Blossom

According to Mitchell and Myles (2004), generally speaking, cognitive theorists fall into two main groups: processing approaches and emergentist approaches. Processing approaches have in common the fact that they are interested in the way in which there are some mechanisms in the brain that deal with SLA. Such processes, as Mitchel and Myles claim, are modular and can be studied independently.

Two of these processing approaches are *information-processing models* and *processibility theory.* The former, information-processing model, investigates how different memory stores deal with new second language information, and how this information is automatized and restructured through repeated activation, while the latter, processibility theory, deals with the processing demands made by various aspects of the second language.

McLaughlin's (1987) attention-processing model and Anderson's (1985) active control of thought are among information-processing models. The basic tenets of McLaughlin's attention-processing model are based on the idea of processing limitation and the need for restructuring (Arroitia, 2005). Put differently, learners are not capable of attending to all the information available in the input both for the nature of the task and the limitations of their own information-processing ability. Learners are able to focus on a part of the input while the rest remains unattended or attended to peripherally. To McLaughlin (1990), human knowledge is organized and that everything new that is learned is integrated into this structure. New information is learned and the existing information might have to be changed or restructured. Accordingly, learning is seen as the acquisition of skills. For one to become proficient, sub-skills of this complex task must be practiced, automatized, integrated, and organized into one's mental systems that are constantly restructured.

Although influential with the field of SLA over the past few decades, McLaughlin's (1987) theory, as to Ellis (1994), suffers from several pitfalls. Ellis claims that McLaughlin's theory does not account for why some rules and items are learned earlier, while some later. Moreover, as to Ellis, McLaughlin talks about practice, but he never defines the notion; and more importantly, McLaughlin's attention-processing model does not explain which linguistic features are restructured, while it does not give information regarding the causes that lead learners to restructure.

Anderson's model, known as active control of thought, makes a distinction between declarative and procedural knowledge. Declarative knowledge is "knowledge that can be declared, usually in words" (Farnaham-Digggory, 1994, cited in Woolfolk et al., 2002, p. 234). Declarative knowledge is *knowing that* something is the case (Woolfolk et al., 2002). Procedural knowledge, in contrast, is *knowing how* to perform a task such as washing an engine. Here, declarative knowledge must be demonstrated. To Anderson (1985), declarative and procedural knowledge are different kinds of knowledge that are stored differently. As Anderson (1985) goes on to hold, practice enables declarative knowledge to become preoceduralized. To him, all knowledge starts out in declarative; however, such declarative-to-procedural concomitance was not later generalized by Anderson, especially in SLA.

Anderson, later, formulates three stages to explain how skill learning takes place, or better to say, how declarative knowledge is turned into procedural knowledge: the cognitive stage (i.e. a description of procedure is learnt, e.g. singular -s must be added to the verb preceded by a singular subject); the associative stage (a method for performing the skill is worked out); and the autonomous stage (the skill becomes more and more rapid and automatic). Although Anderson's model favors the flexibility to explain the learner's acquisition of both formal and informal rules of language (O'Malley & Chamot,

1990), it suffers from some limitations. The theory is rule-bound. In a word, Anderson relies heavily on rules to explain language learning; it is evident in his belief that declarative knowledge can become automatic through practice. There are many rules unknown by learners and many known rules now have been learnt not in the class, outside of the class through individuals' experience.

The second group of theorists whose interest in mind is poised to blossom are the adherents of processability theory. Processability theory, as a model of SLA, is developed by Peinemann (1998). Peinemann assumes that there are predictable stages of acquisition. Put simply, Pienemann, in his theory, asserts that learners restructure their L2 knowledge systems in an order which they are capable of handling at their stage of development. Such a processing, as to Pienemann, is constrained by the strategies available to the learner at any time, and development consists of the gradual removal of these constraints which allows the processing of a variety of structures gradually more complex. As stated in Jordon (2004), in Peinemann's view, there are three universal strategies: (a) c*anonical order strategy*. The sentences produced by learners follow a simple canonical order assumed to be actor, action, and acted upon, (b) the initialization-finalization strategy. This occurs when learners notice discrepancies between the rule and input, and finally (c) the subordinate clause strategy. The learner has to produce a hierarchical structure.

Though several scholars (e.g. Baten, 2011; Kawaguchi, 2005) are compatible with processability theory, it is also criticized from several dimensions. Several scholars (e.g. Ellis, 1994; Gregg, 1999) constantly question its limited scope to just production. Bonilla (2004), meanwhile, maintains that processability is limited to the acquisition of speech processing procedures; hence, the construction of an internal grammar is left unexplained.

Like processing approach, emergentism also has an influential role in SLA. According to emergentist point of view, the second language is acquired through usage, by extracting patterns and regularities from the input and building ever-stronger associations in the brain (Mitchel & Myles, 2004). While several philosophers associate emergentism with a philosophical doctrine which had its heydays in 1920s, that is, positivistic reductionism (Stephan, 1997), Brown (2007) declares emergentism "oddly hearkens back to the spirit of behavioral approaches" (p. 32). Emergentism is the name that has recently been given to a general approach to cognition that stresses the interaction between organism and environment and that denies the existence of predetermined, domain specific faculties or capacities (Gregg, 2003).

The root of emergentism can be traced back to the work of Mill (1930) who took an anti-reductionist perspective towards a system. That is, the whole is not equal to the sum of the parts. As to Van Lier (2004), in a non-reductive system, the lower levels cannot explain the higher levels because they are radically different. Emergentism favors simplicity in theory construction. Ellis (1988) puts forth, "emergentists believe that the complexity of language emerges from relatively simple developmental processes being exposed to a massive and complex environment" (p. 644).

A notable model of emergentism is connectionism. "Connectionism offers a challenge to traditional

symbolic models of cognition" (Gasser, 1990, p. 180). Connectionism is an approach in cognitive science that employs neural networks. This neural network, or connectionist system, is composed of a set of nodes or units, so-called activation vectors. Units in a net are usually segregated into three classes: (1) input units, which receive information to be processed, (2) output units where the results of the processing are found, and (3) units in between called hidden units. Each node directs connections to other nodes so that the nodes send and receive excitatory and inhibitatory signals to and from one another. The pattern of activation is determined by weights or of connections between the units. Weights may be both positive or negative. A negative weight represents the inhibition of the receiving unit by the activity of a sending unit, while the positive weight represents the exciting or activation of the units (O'Brien & Opie, 2006).

The prevailing connectionist approach, parallel distributed processing (PDP), is a neural network approach that stresses the parallel nature of neural processing. The capacity of PDP relies on the plasticity of connection weight between processing units. Such a system must satisfy two conditions if they are to count as computational devices. First of all, such a system needs to implicate representing vehicles of some kind; and the context of those vehicles must shape the causal processes that occur in connectionist processing (O'Brien & Opie, 2006).

The literature also contains arguments against connectionism. Jasdzewski (1998) puts that "there is the charge that connectionism is in essence behaviorism or associationism, and so the arguments against associationism should apply to connectionism as well" (p. 9). Fodor (1988, cited in Jasdzewski, 1998) still asserts that parallel distributed processing cannot take account of the rationality of mind.

4. Dialogism and Materialism

Language is the product of interaction. Human beings are inheritably destined to interact with others to gratify their needs. As to Firth and Wagner (1997), "language is acquired and learned through social interaction and should be studied in interactive encounters" (p. 287). Elsewhere, Ellis (1999) defines interaction as "the social behavior that occurs when one person communicates with another" (p. 1).To better appreciate the concept of the interaction in dialogism, it is worth a moment briefly reviewing Vygotsky's (1981) socio-cultural theory and Bakhtin's (1981) dialogical perspectives. They undeniably have tremendous effects on flourishing socially-oriented perspectives of language development.

To a certain extent, Vygotsky's (1981) psychology is inspired by the work of Karl Marx. Vygotsky, objecting to Cartesian Dualism, attempts to resolve the mind/body problem by drawing upon Marx' theory of dialectical materialism. There is not much space in this paper to do more than maintain that Cartesian dulalists posit that there is a divisible, material body and an indivisible, immaterial mind which interact with one another; neither mind nor body can be reduced to each other in any way. In dialectical materialism, matter precedes thought. In sum, to solve the mind/body problem, materialists came to claim that the world is material and all phenomena are in motion; all things are interdependent and interconnected and develop according to natural law.

According to Haught (2006), Vygotsky believes that mind is not in opposition to the material world, but embedded in social activities and mediated by the tools people employ in their activities. To sum up, Vygotsky's dialectical materialism argues that human beings do not act directly on the physical world but rely, instead, on tools, which allow us to change the world (Lantolf, 2000). The tools may be physical as well as symbolic. Included among symbolic tools are numbers, music, and language. We use such tools to mediate and regulate our relationships with others and with ourselves, and thus change the nature of relationship. Seen from this distance, the goal of Vygotsky's psychology is to understand how human social and mental activity is organized by means of culturally constructed artifacts (Lantolf, 2000). Vygotsky (1981) holds that language is first used in interaction between adults and children as a means of communication. Little by little, it is internalized into a means of child's thought. In fact, internalization is in essence the process through which higher forms of mentation are created (Lantolf, 2000).

Bakhtin's (1981) dialogical perspective emphasizes *the sociality of intellectual processes*. To Bakhtin, language lies on the border between oneself and the other. What Bakhtin calls dialogism connotes mutual participation of speakers and hearers in the construction of utterances and the connectedness of all utterances to past and future expressions. In other words, as to Bakhtin, the language comes to us already dialogized, already spoken out. Bakhtin views our use of language as an appropriation of words that at one time existed in other people's mouths before we make them our own. As Hall (2002, cited in Zungler & Miller, 2006) claims, in such a view, an utterance can be understood fully by considering its history of use by other people, in other places for other reasons.

Based on the dialogic principles deduced from Vygotsky's socio-cultural theory and Bakhtin's dialogic heteroglossia, it can be discerned that second language classroom is more than a mere physical place in which students are regarded as empty vessels waiting to be filled with information by knowledgeable teachers. Students are not viewed as passive sponges waiting to soak up facts. Instead, second language classrooms are dynamic environments that provide unique semiotic resources for students to interact with (Khatib, 2011). Such an environment is equipped with tangible resources such as computers, televisions, whiteboards, chalkboards, teachers and students and intangible resources such as learning tasks, and classroom discourse in different forms and shapes. As Khatib holds, it is through these resources that students can acquire most of their second language. In a nutshell, the mediating role of these resources in the class is undeniable. Classroom teaching, to Khatib (2011), "can influence learner awareness of external learning opportunities and can encourage and give the learner the skills necessary to seek out and take advantage of such opportunities" (p. 52).

5. Conclusion

There is not a unanimous perspective regarding what an SLA theory is. As a result, the "disagreement among SLA (theories)…frustrates second language (L2) practitioners" (Yazan, 2012, p. 1). Nevertheless, one of the virtues of the so-called theories is their abilities to provoke oppositions. In sum,

so many theories come in vogue, but no one has provided us with a strong justification to push us towards one particular theory. However, most theorists agree on the notion of falsifiability as a necessary condition for a theory; a theory must make a definite prediction that can be proven right or wrong. But what makes them distinct is how many theories we should have that raises the notion of theory proliferation. The notion of theory proliferation makes theorists to find their position either in rationalist or relativist camps. Rationalists, in contrast with relativists, are against the notion of theory proliferation. Their major claims are that the number of SLA theories should be decreased from many to few in that the SLA theories have to be complementary rather than contradictory in nature. The relativists, however, hold a contradictory stance in that we can have as many theories as possible.

More importantly, as the leaders of classroom, teachers face not with students but with boys and girls learning differently before their eyes. Progress in L2 classrooms can be achieved by making more intelligent use of all the theories and resources that we have at our disposal. In the study done by Swan (2009), it can be claimed that we need, therefore, no so many theories in SLA, but take stock of the existing ones and integrate them into more ideologically neutral and comprehensive approaches. In effect, raising headlong questions in the air breeds incoherent theories. Swan, in this regard, goes on to hold, "in the face of some of the more extravagant methodological views which are currently in the air, we need perhaps to bring our feet back into contact with the ground" (p. 133).

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