LEARNING THEORIES AND SECOND LANGUAGE LEARNING

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Abstract
This article critically examines three most influential learning theories that underlie the instruction and learning environments in second language learning (SLL). Evaluation follows the description of each theory. The point is to understand the impacts of different theories on second language learning. The paper argues that an integrated approach which combines the three theories is needed.

Key words
second language learning, SLL, behaviourism, cognitive learning theory, sociocultural theory

1 Introduction
Theories of second language learning (SLL) have drawn great attention as researchers in the field of applied linguistics have attempted to substantiate the validity of different theoretical perspectives. In this paper, three learning theories will be examined in the context of SLL.

Obviously, no universal agreement exists on how learning occurs. How psychologists have viewed the principles of learning has changed significantly throughout the 20th century.

In the middle of the 20th century, learning theory was dominated by the principles of behavioural psychology, exemplified by the work of B.F. Skinner (1938, 1957, 1974) which maintains that learning should be described as changes in the observable behaviour of a learner made as a function of events in the environment.

In the 1970s, the behavioural paradigm began to be expanded by the ideas of cognitive psychology which maintains that a complete explanation of human learning also requires recourse to non-observable constructs such as memory and motivation.

Over the last 20 decades, sociocultural theory has challenged the cognitive approach which holds that human development cannot be viewed separately from social context. Development occurs as a result of meaning verbal interactions between novices and experts in the environment.

No universal agreement exists in the field of SLL. Among the various learning theories, the three theories mentioned above have greatest influence on SLL. Behaviourism focuses on the formation of second language (L2) habits. Cognitive focuses on a single hypothetical learner. Internal information processing and transmission of L2 input and output. Sociocultural theory attempts to capture the context, action and motives of second language events between individuals who are simultaneously social and cognitive.

I will in the following sections overview the basic ideas of the three theories and evaluate their application in SLL.
2 Learning theories and their impact on SLL

2.1 Behaviourism and SLL

2.1.1 Behaviourism

Behaviourism focuses only on objectively observable behaviours and discounts mental activities [8]. Behaviourism holds that all learning, whether verbal or non-verbal, takes place through the establishment of habits [9]. It emphasizes the role of environment in learning and development [10]. In behaviourism, the learner is viewed as passively adapting to their environment [11]. The instruction focuses on conditioning the learner's behaviour [12].

B.F. Skinner [13] in his book Verbal Behaviour in 1957 associates behaviourism in general psychology with language learning [14]. Skinner [15], together with many of his contemporaries, interpret all learning is considered to be the result of habit formation through imitation [16], positive reinforcement and practice [17]. Language learning as first or second is considered to be habit formation [18].

The behavioural SLL approach holds that speech habits are most efficiently established through the production of correct responses. Thus in practice only linguistically correct student responses could be rewarded and hence reinforced. As a consequence, a teacher should try to ask only questions that the students could handle correctly [19]. Behaviourism stresses repetition of the item under study [20] and relies on the conditioning process. It assumes that "an analogy provides a better foundation for foreign language learning than analysis" [21], Mueller [22].

Behaviourism is usually connected to Contrastive Analysis Hypothesis [23]. According to behaviourism [24], in contrast to a first language learner, the second language learner already has a set of habits [25]. The L1 habits are namely assumed to be so well established and so appealing to use that they constantly get in the way of the L2 habit formation process [26]. Ladd [27] assumes that the transferred L1 habits either facilitate or inhibit the process of L2 habit formation. Where there are similarities between the first and the second language the student will acquire easily but where there are differences it would be difficult [28]. As a consequence a detailed comparison of contrastive analysis of the native and the target language would suffice to reveal areas of differences and similarities. These in turn would allow predicting where errors would and where they would not occur. Thus transfer was a key concept of CAH [29]. Sayehli [30].

Behaviouristic leaning theory leads to the implementation of audiovisual techniques and the practice of oral skills in a controlled environment. This instructional approach emphasizes the formation of habits through the practice, memorization, and repetition of grammatical structures in isolation. Mechanic pattern drills are the result of this influence [31].

2.1.2 Evaluation of behaviourism in SLL

Though some features of language, such as pronunciation and collocations, may successfully be acquired through repetition and memorization, the audiovisual method has come under severe criticism as being overly mechanical and theoretically unjustified [32].

Although CAH was very influential and inspired many productive investigations, it soon became apparent that the CAH was not compatible with the empirical and theoretical findings that emerged [33].

Empirical problems with CAH [34]

A) Underpredicted, not all similarities guarantee a simple and error-free acquisition [35]. Larsen-Freeman [36], Long [37] A review by Ellis [38] quoted in Mitchell [39] and Myles [40] of studies scrutinizing the proportion of errors ascribed to L1 reports that only about 30% of errors have been attributed to L1.

B) Overpredicted, not all contrasts between L1 and L2 lead to learning difficulties.

Theoretical problems with CAH [41]

Chomsky [42] argues that a speaker of a language can produce and understand an infinite number of well-formed utterances and thus language competence could not possibly be explained by a model based on imitation and habit formation. According to Chomsky [43], The development of
an individual laminatesystem was guided by innate cognitive structures instead of behavioural reinforcement.

In addition, CAH could not explain another type of errors --- developmental errors. Different from transfer errors, developmental errors are learner internal and rule-based. An example is an utterance like “he goed” by an English L2 learner (Mitchell and Myles 1998). It can be analyzed as being the result of an internalized rule — add “ed” to the verb to express past.

Though CAH is questioned and criticized by many researchers, it still has influence on SLL since anyone who has tried to learn a second language will appreciate how the language which is already known influences the second language. Therefore, it should not be readily dismissed.

2.2 Cognitive learning theory and SLL

2.2.1 Cognitive learning theory

The dominance of behaviourism began to wane in the 1970s and cognitive psychology began to overtake it as the dominant paradigm of learning psychology. Cognitive psychology places emphasis on unobservable constructs such as the mind, memory, attitudes, motivation, thinking, reflection, and other presumed internal processes. In cognitive theories, changes in behaviour are observed, but only as an indicator of what is going on in the learner’s head. The learner is viewed as an active participant in the knowledge acquisition process.

Cognitivists do not believe that language is separate from other aspects of cognition. They argue that the human mind is geared to the processing of all kinds of information and linguistic information is just one type, although highly complex. On the basis of these principles, greater importance is attached to acquiring conscious control of the language patterns through study and analysis than through analogy. Greater importance is given to understanding the language structure than to facility in using it (Mueller 1971). Accoding to this view, the best way to understand both L1 and L2 learning is through understanding the processes used by the learner to learn new information and skills (Mitchell and Myles 1998).

Cognitivists are primarily interested in the learner as an individual as opposed to the Social culturalists and on the processes involved in learning a second language. Cognitive learning theory views SLL as the acquisition of a complex cognitive skill. Some of the sub-skills involved in the language learning process are applying grammatical rules, choosing the appropriate vocabulary, following the pragmatic conventions governing the use of a specific language (McLaughlin 1987).

2.2.2 Evaluation of cognitive learning theory in SLL

Cognitive approach regard language learning as the gradual automatization of skills through stages of restructuring and linking new information to old knowledge. The differences between the various cognitive models make it impossible to construct a comprehensive cognitive theory of SLL. Two prominent models of cognitivist theory in SLL are examined here: one is information processing model and the other is connectionism.

McLaughlin’s information processing model (McLaughlin 1990) of SLL is as follows:

- Memory is a network of nodes. New L2 information temporarily activates nodes in short-term memory. This is controlled processing.
- When nodes are repeatedly activated, they become less a product of controlled processing and more automatic. When they are fully automatized, they are then stored in the long-term memory (LTM), which frees the short-term memory to tackle new, more complex learning. Once acquired, automatized processes are difficult to change or delete.

In this way, students can study more of the language and achieve increasing degrees of mastery in the second language (McLaughlin 1987, 1990).

In this view, SLL is a continual process from controlled to automatic processes by repeated activation of controlled processes. According to this model, fossilization is then the automatization of a controlled process before that process is native-like (Mitchell and Myles 1998).
Another model is connectionist model. According to Mitchell and Myles 1998, connectionism sees learning as establishing the strengths between the vast number of connections in the mind and the mind is seen like a computer which would consist of neural networks. Mitchell & Myles 1998 [7830]

The model holds that mental connections in the linguistic system become stronger each time the learner is exposed to linguistic input. Eventually the presence of one linguistic element will activate its match the more often two elements are heard together the more likely a learner will remember them. Consequently repeated activation strengthening links or connections and students learn the second language. For example thinking or hearing how are you one may recall fine thank you.

Some critics of connectionism e.g. Fodor Pylyshyn 1988 Pinker Prince 1988 contend that it is no more than a revival of behaviorism dressed up to look like neuroscience. They also argue that it is more likely that information is recalled because repetition made it become automatic and go into long-term memory than just because of strong connections. It is true that connectionist models share with behaviorism a focus on the learning of stimulus response or input output associations. The differences lie in the concern of connectionists with the internal representations that are constructed between the inputs from and the outputs to the environment and with the specific mental processes that are involved in the construction of these representations. Rumelhart & McClelland 1986.

Apart from the two models the influence of cognitive approaches is seen quite strongly in the teaching of reading and writing L2. Following developments in first language reading and writing research, second language educators came to see literacy as an individual psycholinguistic process. Second language writing instruction shifted its emphasis from the mimicking of correct structure to the development of a cognitive problem-solving approach focused on heuristic exercises and collaborative tasks organized in staged processes such as idea generation drafting and revising. Kern & Warschauer 2000.

Limits of cognitive learning theory are as follows.

Felix 1981 argues that the general cognitive skills are useless for language development. The only area that cognitive development is related to language development is vocabulary and meaning since lexical items and meaning relations are most readily related to a conceptual basis. The cognitive approach has undervalued the powerful principles of reinforcement.

Although cognitivists speak of collaboration communication and transfer long before sociocultural theorists they do not do a very good job of translating such principles into practice in the learning environments they create.

Sociocultural theory SCT and SLL

At about the same time that cognitively oriented perspectives on language acquisition were gaining popularity another psychocultural perspective of individual development within social and cultural contexts was applied to L2 research. Sociocultural theory (SCT) based on the work of Lev Vygotsky 1978 1986 Internalization inner speech active theory and the zone of proximal development. ZPD constitute the core concepts of SCT and in particular mediation plays a central role. Lantolf 2000.

Vygotsky maintained that higher psychological functions originate in interaction between individual interpsychological level before they are transferred within the individual intrapsychological level. And it is through the internalization of this mediation that individuals experience cognitive growth and higher order intellectual abilities.

SCT holds that language is not just a private in the head affair but rather a socially constructed phenomenon. Language learning is not only a cognitive task but more of a social activity where the process is participating in a knowledge building community a community of practice or a community of second language learners. Kern & Warschauer 2000.

To fully understand how SCT relates to L2 we will look at some fundamental concepts of Vygotsky theories.

The central concept for SCT is the mediation of human behaviour with tools and sign systems. A tool
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could be as simple as a textbook or visual materials. Donato & McCormick 1994 refers what Kozulin 1990 calls the most important of tools — symbolic language. Such tools allow us to regulate our environment. Lantolf 1994 148 Externalsocial speech was internalized through mediation. Vygotsky 1978. In this way SCT link society to mind through mediation. Language as a tool of the mind bridges the individual understanding of our selves and particular contexts and situations within the world. Driscoll 2000 also states’ “social processes” and mental processes can be understood only if we understand the tools and signs that mediate them. 2000 241 Aljaafreh and Lantolf 1994 claim that mediation needs to be contingent. This means teachers need to balance the giving and withholding of guidance and assistance in accordance with students’ progression through a task.

Regulation and the Zone of Proximal Development are the three general principles of SCT.

Regulation

In SCT there are two kinds of regulation: self-regulation and other-regulation. The first indicates the capacity for independent problem solving. The second indicates a person who needs help in solving problems. The second is mediated through language.

Scaffolding

The concept of scaffolding originates with the work of Wood et al. 1976 and it serves as a metaphor for the novice/master interaction in a problem-solving task. According to Wood et al., “scaffolding involves the expert taking control of those portions of a task that are beyond the learner’s current level of competence; thus allowing the learner to focus on the elements within his or her range of ability.” Wood et al. 1976 30

The Zone of Proximal Development ZPD

The site where the language is shared and internalized through mediation is the “zone of proximal development” defined by Vygotsky as follows.

It is the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. Vygotsky 1978 86

Once the learner has appropriated the knowledge of how to solve a particular problem the developmental level of the child grows to encompass that knowledge and the level of potential development moves ahead and the ZPD shifts. This may sound a bit behaviouristic but it really doesn’t involve habit formation as much as learning through socially interactive problem solving “in working within the ZPD it is not the successful completion of the task that is of importance but the higher cognitive process that emerges as a result of the interaction” Lantolf & Appel 1994 10.

Private speech

Private speech is when you talk to yourself. You use it in the ZPD as a kind of mediator. When control of a task moves to the stage of self-regulation rather than other regulation we no longer talk out loud to ourselves.

In sociocultural approach the individual learner is no longer viewed as a “receptacle” for knowledge nor as an individual “acquirer” who seeks and seizes new knowledge through individual effort. Rather the learner is an active participant in teaching and learning. The learner and teacher are participants in sociocultural activity.

Sociocultural linguists see language acquisition in social terms. For them L2 learning is a matter of problem solving in a master/apprentice relationship. Language learning means joining a second culture and is seen as a process of group socialization where language is a tool for teaching group traits, values, and beliefs. From this perspective language instruction was viewed not just in terms of providing comprehensible input but rather as helping students enter into the kinds of authentic social discourse.
situations and discourse communities that they would later encounter outside the classroom (Kern, Warschauer 2000).

As Antor (1999) noted, a growing number of studies have applied the sociocultural framework to the investigation of L2 learning (Lantolf 1994; Lantolf & Appel 1994; Schinke & Liano 1993). Of particular interest to the present study are those that have concern themselves with the analysis of classroom discourse. Studies of learner-learner collaborative dialogue in the production of oral (Brooks & Donato 1994; Ohta & Brookes 1995; Platt & Brookes 1994) or written tasks (Anton & DiGamilla 1998; DiGamilla & Anton 1997; Kowal & Swain 1994) have focused on uncovering how learners use speaking activity as a cognitive tool for linguistic development. Aljaafreh and Lantoft (1994) showed the negotiation of corrective feedback in the ZPD during tutorial sessions promotes learning (Donato and Adair-Hauck 1992) and Adair-Hauck and Donato (1994) studied teacher-learner interaction during the presentation of grammatical concepts, showing how formal explanations can be constructed by teacher and learners through a negotiation process quoted from Antor (1999).

Evaluation of SCT in SLL

Sociocultural researchers point out that language use is closely tied to personaerere with SLL learning (show SCT, great impact on SLL)

Interaction

According to sociocultural theory, language learning resides not simply getting the comprehensible input and the chance for output during interaction but in working collaboratively with the interlocutor and appropriating and constructing knowledge through their collaborative activities (Vygotsky 1986). Through social interaction, L2 constructs such as vocabulary and grammar appear first on the interpsychological plane (social) and then on the Interspsychological plane (personal) (Vygotsky 1981).

In the SLL classroom (using SCT and its tenets as a framework) we could see a highly interactive classroom. Teachers would employ strategies of mediation to ensure that students achieve self-regulation in communicating in another language. The more the classroom reflects the actual culture of the second language the more students would increase not only their communication skills but also their ability to transcend culture by internalizing the tools and symbols that define the culture (Alegre 2001).

Murphey and Murakami (1998) suggest that interaction with modestly advanced students can be a motivating experience for students at lesser stages of development. That is to say, for relatively novice language learners feedback from students only a year or two in advance of their present writing ability or oral ability may provide a proximal proficiency goal that interaction with native or near native instructors may not.

Culture

Learning about the culture is prerequisite for SLL. Gardiner's sociocultural model of SLL (1985) is an attempt to show how social and cultural factors determine the motivational attitudes which learners have towards the target language. Kramsch argues that if we view language in all its forms as social practice (then) culture becomes the very core of language teaching. Kramsch (1993) and Pavlenko and Lantoft (2000) found a rich source of evidence for the ways in which language learners both lose and reconstruct their identity in the second language.

For example, while in China sentences like "Where are you going?" or "Have you eaten your meal?" are used for greeting by Chinese. They don't expect any answers by saying that in UK people say "How are you?" or talk about the weather when they meet each other. If L2 Chinese greet British like "Have you eaten your meal?" British people must feel puzzled or misunderstood it. This example shows the significance of sociocultural factors in communication. The traditional models of SLL don't account for cultural learning but account for the way we acquire lexical, phonological and grammatical units of knowledge. It is the SCT model that accounts for learning as participation. In this model the learner can understand language use in context. The SCT model is appropriate for understanding language as socialisation as an ongoing process of engagement (Pavlenko & Lantoft 2000).
As Furnham [1986] remarked if the language learner can become sensitive to the opaque yet ubiquitous influences of culture and context then it seems probable that his stay abroad will be more enjoyable and less stressful.

Besides Schumann [1978] theory of acculturation is typical attempt to explain the connection between social factors and SLL.

Scaffolding

Research in L2 scaffolding has shown that learners working together and providing assistance to one another reach a higher level of performance. According to Aljaafre and Lantolf [1994] and Lantolf and Pavlenko [1995], the role of the mediator in teaching an L2 is placed on an L2 teacher whose task is to direct students in the right direction and help them reach the second stage in the ZPD.

Take L2 grammar teaching for example, students look to and ask the teacher for clarification and confirmation at the beginning. Sometimes the teacher does not give direct approval but rather catches the correct idea from a student extends it and keeps the discussion going. In some cases, some students break the established rule by answering their peers’ questions without waiting for the teacher. The teacher supported such breaks since it involved several students in the discussion thus giving equal opportunities for interaction. Sysoyev 1999.

For an account of how private speech works as a mediator to a task there is a good case from Frawley and Lantolf 1985 which is about students practicing their oral English by describing pictures.

From what have been discussed above suffice it to say that these approaches are a natural fit for assisting the process of SLL. But some challenges and limits in sociocultural instruction still need to be noticed.

The first limit is the slipperiness of some of the concepts set forth by SCT. There is no easy agreement on what is meant by social identity, the self, or even culture. Vollmer 2003.

Second, with sociocultural competence we are primarily encouraging skills and sensitivity to context that are not open to a comparative type of assessment. Whereas with vocabulary or prescriptive grammar we can easily check whether the input has been effective. Hudson 2001.

Third, L2 teachers may suffer from the dilemma of deciding whose sociocultural norms should be taught and how to analyze them systematically in the first place. Wolfson 1989.

Fourthly, while certain features of language may successfully be acquired through repetition and memorization for example pronunciation and perhaps collocations, this approach does not suit other, for example sociocultural aspects of language. Hinkel 2001.

3 Conclusion

From what have been discussed above, we could find that behaviorist learning theory and cognitive learning theory have been overshadowed by sociocultural competence in second language learning. But we also find that all three learning principles have strength and limits. They all have their unique contributions to SLL. Therefore, to make SLL more effective, the three theories should complement each other and provide an integrated approach.

References


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