

Role of Consciousness in Second Language Acquisition

Abbas Pourhossein Gilakjani

School of Educational Studies, Universiti Sains Malaysia, Malaysia

Email: abbas.pourhossein@yahoo.com

Seyedeh Masoumeh Ahmadi

School of Languages, Literacies, and Translation, Universiti Sains Malaysia, Malaysia

Email: s_m_a57@yahoo.com

Abstract—No concept raises more hackles in second language acquisition circles than consciousness. The role of consciousness in second language acquisition is currently being heatedly debated and should be particularly considered if we are to make progress in understanding how this acquisition takes place. The researchers review the previous empirical studies on the important role of consciousness in second language acquisition (SLA) through stating the views of different authors, philosophers, scholars. Then, the role of consciousness in terms of concepts such as attention, awareness, intentionality, and control comes up for review. These concepts provide growing support for the view that the role of consciousness is vital for second language learning. Finally, it is concluded that conscious awareness of language is necessary if learner wants to use it appropriately. This notion has gained wide support from research findings which state that conscious learning seems to contribute to successful second language acquisition.

Index Terms—consciousness, acquisition, role, attention, awareness, intentionality, control

I. INTRODUCTION

Consciousness is a core issue in the field of second language acquisition. The role of consciousness in SLA is of considerable importance and should be specifically considered if we are to make progress in understanding how this acquisition takes place. SLA researchers interested in consciousness should start by considering what others have to say about it. This is necessary to develop a comprehensive picture of consciousness. The debate in SLA needs to be informed by an adequate notion of what consciousness is. Only in this way can we reach an adequate view about its role. The researchers present a review of the research findings on the role of consciousness in SLA. Schmidt (1993a) provided a valuable basis for further investigation in terms of concepts of consciousness such as attention, awareness, intentionality, and control. It is argued that a multidimensional view of consciousness provides growing support that the role of consciousness is vital for second language learning. By understanding the functions and effects of the four concepts of consciousness in SLA, students will be able to use language consciously and appropriately. Finally, based on research findings and their relevance to the issues of consciousness, the researchers discuss that conscious learning can contribute to successful second language acquisition (Robinson, 2003; Leow, 2000).

II. DEFINITION OF CONSCIOUSNESS

There is no widely accepted definition of consciousness yet. Physicists attribute a different meaning to consciousness than psychologists do. Some philosophers claim that consciousness resists or even defies definition. Amit Goswani (in his book *The Self-Aware Universe* (chapter 7, p. 105) writes that the Oxford English Dictionary gives not one but six definitions of consciousness:

1. Joint or mutual knowledge.
2. Internal knowledge or conviction, especially of one's own ignorance, guilt, deficiencies, and so forth.
3. The fact or state of being conscious or aware of anything.
4. The state or faculty of being conscious as a condition of concomitant of all thought, feeling and volition.
5. The totality of the impressions, thoughts, and feelings which make up a person's conscious being.
6. The state of being conscious regarded as the normal condition of healthy waking life.

Another general definition of consciousness that accommodates most views (Vimal, 2010b) is:

'consciousness is a mental aspect of a system or a process, which is a conscious experience, a conscious function, or both depending on the context and particular bias (e.g. metaphysical assumptions)', where experiences can be conscious experiences and/or non-conscious experiences and functions can be conscious functions and/or non-conscious functions that include qualities of objects.

III. PREVIOUS EMPIRICAL STUDIES ON THE ROLE OF CONSCIOUSNESS

Nissen and Bullemer (1987) questioned participants as to whether they had noticed a sequence to report when they had noticed it. Nine out of 12 participants in the single – task repeating group reported an awareness of the sequence, and 11 out of 12 in the dual –task repeating group did not report any such awareness. Since the performance of the single – task group was superior to that of the dual – task group, Schmidt (1995) cites these awareness reports as evidence that "there was a very strong relationship between awareness and learning in this experiment" (p.21). Awareness was assessed in Curran and Keele's (1993) SRT study. One group of participants (n = 14) was explicitly informed about the pattern of the lights before the trial. Another group (n = 30) was administered an awareness questionnaire that asked them if they thought the lights appeared at random locations or according to some pattern. Those who thought there was a pattern, were asked to describe it. Participants were classified as more aware if they were able to correctly identify four of the six sequence positions, and less aware if they could identify three or fewer. Results showed that participants who were explicitly informed did better than the more aware group (n = 19), who in turn did better than the less aware group (n = 11), which suggests that awareness may play a facilitative role in learning.

Schmidt (1994) argues that consciousness of input at the level of noticing is a necessary condition for L2 development. Many other researchers support this view. They use terms like focus – on – form (Long, 1991), consciousness – raising (Ellis, 1993; Fotos and Ellis, 1991; Rutherford, 1987), and input – enhancement (Sharwood Smith, 1991). All of these terms are about directing learners' attention to grammatical form in order to help them internalize the L2 system. Teaching should include opportunities for learners to focus on form and consciously notice features of the L2 they are learning. Bialystock (1981a), Sharwood Smith (1981), R. Ellis (1993) all define explicit knowledge as conscious awareness of the formal properties of the target language, verbalizable on demand, contrasted with implicit knowledge, which is intuitive and cannot be introspected or reported. Consciousness is defined by Vygotsky as the "objectively observable organization of behavior that is imposed on humans through participation in sociocultural practices" (Wertsch, 1985, p. 187). Two roles are stressed about consciousness: organizational role and social role. Vygotsky says that consciousness forms the highest level of mental activity. In Vygotsky's view, the two subcomponents of consciousness – intellect and affect – are interconnected to each other. Therefore, it constitutes human socio – cognitive activity by means of intellectual and affective processes. The second definition of consciousness by Vygotsky is that it is an awareness of the activity of the mind (Wertsch, 1985). With regard to the first definition of consciousness, it can be said that it has definitely an important role in language learning. That is, its intellectual and affective processes are responsible for the organization of learning. Concerning the mentioned definitions of consciousness by Vygotsky, it is proposed that consciousness has certain implications for the teacher:

1. To find the suitable social interaction for learning to happen.
2. To train their students to make their own decisions. They should help them to be able to regulate their own language learning.

At first he acts as the student's "vicarious consciousness" (Bruner, 1986, p .72) and through the process of scaffolding, increasing responsibility and autonomy are given to the student and the teacher remaining on the growing edge of the student's competence. The other view of consciousness is related to Csikszentmihalyi's view (1990) on the notion of flow. He states that consciousness, while is self - directed, has developed the ability to override its genetic instructions and to set its own independent course of action. He describes function of consciousness as follows:

The function of consciousness is to represent information about what is happening outside and inside the organism in such a way that it can be evaluated and acted upon by the body. It functions as a clearinghouse for sensations, perceptions, feelings, and ideas, establishing priorities among all the diverse information. Without consciousness, we would still know what is going on, but we would have to react to it in a reflexive, instinctive way. With consciousness, we can weigh what the sense tells us, and respond accordingly. We can also invent information that did not exist before: it is because we have consciousness that we can daydream, make up lies, and write beautiful poems and scientific theories (1990, p.24).

Therefore, it means the organizing, controlling, and evaluating of experience. We might be able to respond to the environment without consciousness, but it would be more like the leaf of a plant which moves in the direction of the sunlight. Clearly, the bulk of human learning can only be accomplished by a consciously acting person. The last view of consciousness deals with its relationship with language. Vygotsky says that to become conscious of a mental operation means to transfer it from the plane of action to that of language, i.e., to recreate it in the imagination so that it can be expressed in words (1962, p.88).

Without language and without social interaction, consciousness could exist at all. This means that both consciousness and language are inextricably connected like two sides of a coin. It can be stated that the growth of language means the growth of consciousness as well and that learning equals the acquisition of consciousness. Schmidt (1990; 1995; 2001) has frequently stated that conscious awareness of the target language system is necessary if learners are to produce correct forms and use them appropriately. Schmidt (2001:26) has told that second language acquisition is driven by what learners pay consciously attention to and notice in the target language input and what they understand the significance of the noticed input to be. Leow (1997) viewed that meta – awareness appeared to correlate with an increased usage of hypothesis testing and morphological rule formation, whereas absence of meta – awareness appeared to correlate with an absence of such process and that learners of high level of awareness performed significantly better

than those with a lower level on both the recognition and written production of the targeted forms. Ellis (1993) recommended the use of grammatical consciousness – raising exercises to foster explicit knowledge, to be used as a complement to a functional or task – based syllabus intended to promote implicit knowledge. He added that explicit declarative knowledge cannot directly become implicit procedural knowledge but can foster its development through intake facilitation, causing learners to pay consciously attention to formal features of the input and to notice the gap between these features and those of their interlanguage (Schmidt; 1990; Schmidt & Frota, 1986). Rosa (1999), Rosa & O'Neill (1999) expressed that whereas both awareness at the levels of noticing and understanding contributed substantially to a significant increase of learners ability to recognize the targeted structure, awareness at the level of understanding also had a differential effect on the amount of intake when compared to awareness at the level of noticing. The Noticing Hypothesis of Schmidt (1990; 1993b; 1994; 1995a; 1995b; Schmidt & Frota, 1986) claims that conscious awareness of grammar plays an important role in the process of second language acquisition. It says that noticing is a necessary condition for learning. The Noticing Hypothesis requires conscious awareness of grammatical details rather than simply global awareness of input. It is also associated with the influential notion of consciousness raising (Rutherford, 1987; Sharwood Smith, 1981). Proponents of noticing give much attention to "noticing the gap"–learner's awareness of a mismatch between the input and their current interlanguage (Schmidt and Frota, 1986).

Leow (2000) stated that learners who demonstrated awareness of targeted morphological forms were able to take in and produce in writing significantly more of these forms, compared to learners who did not appear to be aware of these forms during exposure. De Souza (1959) argued that a conscious effort at figuring out how to say things will be rather more efficient than hoping that we will unconsciously learn how to say things if we memorize enough basic sentences. He also puts it, "we found in our experiment that the practical results, such as reading, writing, speaking and understanding, were achieved in greater proportion and in less time when the technique involved a maximum amount of conscious reasoning". Schmidt (1990; 1993b; 1995b) argued that research has found attention necessary for learning and that it can equated with awareness. Therefore, attention research supports the claim that consciousness is necessary for learning. Krashen (1982) stated that language learning is a means of developing competence in a second language. The term learning refers to conscious knowledge of a second language. So learning is a conscious process and the result of learning is a learned competence.

IV. CONSCIOUSNESS AND SLA

According to Robinson (1996), current debate in SLA is centred on the role of consciousness in L2 development. This controversy is centred in turn on the question of whether or not grammatical instruction is effective for L2 acquisition and if so what kind of grammatical instruction is best. There are researchers who argue that grammatical instruction has only minimal effect on L2 acquisition, Krashen (1981) for example.

According to him, L2 development is largely an unconscious process. Krashen does allow that there are two processes involved in L2 development, a conscious process of learning and an unconscious process of acquisition. The conscious process of learning is a system based on rules and their application, while the unconscious process of acquisition is a system responsible for language production. According to Krashen, conscious learning is limited to a small set of simple rule-governed domains. By contrast, development of the much more substantial acquired system is fostered by avoiding instruction and the provision of L2 rules. In his view, learners only have to be exposed to comprehensible language input in order to acquire grammar. On the other side, there are researchers who argue that comprehensible input alone is not enough for optimal acquisition of the different aspects of grammar and that conscious grammatical instruction is necessary if learners are to have the data they need to acquire grammar (Strozer, 1994). In particular, Schmidt (1994) argues that consciousness of input at the level of noticing is a necessary condition for L2 development. Many other researchers support this view. They use terms such as focus-on-form (Long, 1994), consciousness-raising (Ellis, 1993, Fotos & Ellis, 1991; Rutherford, 1987), and input-enhancement (Sharwood Smith, 1991). In one way or another, all of these terms are about directing learners' attention to grammatical form in order to help them internalize the L2 system. According to these researchers, teaching should include opportunities for learners to focus on form and consciously notice features of the L2 they are learning.

V. CONCEPTS OF CONSCIOUSNESS

There are four concepts of consciousness. They are as follows: attention, awareness, intentionality, and control.

A. Attention

Attention is of key importance for learning. Learning should pay particular attention to the feature of language and this can be an essential condition for learning a second language (Schmidt, 1993b). Psychological theories say that consciousness is the product of an attention mechanism (Posner & Rothbart, 1991). It can be voluntarily controlled; that is, we can force ourselves to attend to one stimuli rather than another for a short time. Therefore, we can see a relationship between this sense of consciousness and that of as intention, but attention is not completely under voluntary control (Vander Heijden, 1992). Pieneman (1984) has expressed that attention capacity is a limited resource and deals with psychological constraints. Based on the studies among children in the L1 have demonstrated that children identify

interest as a condition for attending to any learning task (Miller, 1985), and affect as a recognized relevance to attention (van Lier, 1991). It is widely argued in psychology that learning without attention to what is to be learned is impossible (Nissen & Bullemer, 1987) and in applied linguistics, attention is necessary for the conversion of input to intake (Schmidt, 1993a, 1993b; Scovel, 1991). Tomlin and Villa (1994) suggested four elements of attention in SLA. The first is related to the limited capacity system. Brain is presented with an over-whelming number of stimuli and it is impossible to process them all. The limitations of attention refer to both the amount of attention that may be given to a single stimulus and the number of stimuli that may be attended to simultaneously. The second is pertinent to the process of selection. The overwhelming amounts of incoming stimuli force the attention system to be selective. The third involves controlled rather than automatic processing of information. That is, some tasks require more processing effort than others. A person may perform two tasks at the same time, particularly if one requires automatic processing (low attention). It is more difficult to perform two tasks if both require controlled processing (high attention). The fourth involves the process of coordination among competing stimuli and responses. Attention must be established, maintained, discontinued, and redirected in order to perform different actions.

Tomlin and Villa (1994) propose a model of attention in language learning that is based on research conducted in the fields of cognitive psychology and neuroscience. According to them, attention involves alertness, orientation, and detection. Alertness is an overall, general readiness to deal with incoming stimuli and is related to motivation. Orientation is responsible for directing attention resources to particular sensory information and is related to some input enhancement techniques in L2 tasks. Detection refers to the 'cognitive registration of sensory stimuli' (Tomlin and Villa 1994:192), and both alertness and orientation enhance the likelihood of detection. The three distinguishing features of Tomlin and Villa's model are: (1) the three functions of attention are separable; (2) detection is the most important subsystem of attention for language processing, and alertness and orientation are not required for detection; and (3) detection without awareness (i.e. preconscious registration) is possible, and thus awareness can be dissociated from attention. This suggests that awareness is not required for any of the three functions of attention (Truscott, 1998). The relationship between L2 proficiency and attention allocation has been investigated in the framework of the information processing theory (e.g. McLaughlin et al., 1983; Nation and McLaughlin 1986; Bialystok 1988, 1993, 1994; Hulstijn, 1990). Among them, Bialystok has extensively explored the relationship between learners' selective attention in L2 input processing and their proficiency in the target language.

Bialystok's (1993, 1994) model distinguishes two dimensions: the analysis dimension (related to mental representation) and the control dimension (related to executive procedures). Learner's L2 proficiency develops in accordance with the change in their knowledge representation from unanalyzed to analyzed states, and with a change in levels of control of selective attention from lower to higher levels. Of particular interest is the control dimension of the model. Bialystok's model predicts that learners with higher proficiency can allocate processing resources more efficiently than those with lower proficiency. In other words, advanced learners have at their disposal more automatized basic linguistic skills, which allow them to allocate more attention resources to more difficult tasks (Nation and McLaughlin, 1986). By specifically referring to the development of pragmatic competence, Bialystok (1993) proposes that more proficient learners are able to give selective attention to the target pragmatic features more accurately (and faster) than less proficient learners (Hassall 1997; House, 1996). The information processing model thus suggests that proficiency is among the essential determinants of learners' attention allocation in processing L2 pragmatic input.

B. Awareness

Awareness is an individual's subjective experience of a stimulus or cognitive content. Just as there are conditions on attention, so there are on the ability to notice target language features. Ellis (1993a) said that explicit knowledge prompted by grammar instruction can facilitate learners' intake, serving as an advance organizer but not feeding directly into the implicit knowledge system unless the learner is developmentally ready for it. He stated that explicit knowledge is a conscious representation which is not the same as articulated knowledge (Ellis, 1993a:93). The important issue is not just whether learners can make use of metalinguistic information in the form of rules and corrections provided by teachers, but whether awareness is differentially stimulated by oral or written language, by reference or not, by single or multiple sensory modes, by timing, by different social arrangements, by formal or functional activities involving a focus on L2 input or reflection on input (Long, 1991; Stern, 1992; Harley, 1993). Allport (1988) states that three conditions are necessary for a person to be aware of a given experience. First, the person must show a behavioral or cognitive change as a result of experience. For example, a learner might begin using *-ed* endings as a result of having been exposed to input that targets the past tense. Second, the person must report that he / she was aware of the experience at the time it took place. For example, the learner might report having been aware of *-ed* endings in the verbs at the time of exposure. Finally the person must be able to describe the experience. For example, the learner must be able to articulate the morphological rule underlying the regular past tense. Battista (1987) & Bowers (1984) have proposed that we should know different levels of awareness. The issues of learning without awareness refer to awareness at a higher level, like awareness of a rule or generalization. Philosophers distinguish between a lower level of consciousness and a higher level of consciousness. The first is an awareness of immediate events that need not spill over into the generalized kind of consciousness with which we humans are so familiar, a type of consciousness shared with many organisms (Edelman, 1989). The second includes the ability to know about one's self (self consciousness) as well as to reason about the contents of primary consciousness, which may be a uniquely human attribute (Edelman, 1989; Pinker, 1992).

Consciousness as awareness embraces noticing which is the registration of the stimulus event in conscious awareness and subsequent storage in long term (Schmidt 1994: 179) and requires of the learner a conscious apprehension and awareness of input (Schmidt, 2001:26). To understand the role of awareness in learning, Paradis (1994) identifies two types of knowledge. The first is implicit knowledge, which is acquired without awareness, unavailable to conscious memory even after competence and put to use spontaneously without conscious control (e.g., linguistic competence). The second is explicit knowledge, which is knowledge that the learner is aware of and can access on demand (e.g., linguistic competence). Schmidt (1990) argues that learners have to pay some kind of attention to language forms in order for the acquisition of accuracy. Consciousness – raising in one term, according to Andrews (2007), which has come to the fore in relation to reassessment of the role of consciousness – raising and explicit knowledge of grammar in L2 acquisition. Rutherford and Sharwood Smith (1985) believe that consciousness – raising activities are those which are on a continuum range from the intensive promotion of conscious awareness via the articulation of pedagogical rules through to exposing the learner to special grammatical phenomena. Considering the subjects' satisfaction with being informed of their mistakes observed by the researcher, language teachers are suggested to try to increase the learners' attention to any kinds of the forms which will improve their fluency and accuracy. Andrews (2007) confirm that consciousness – raising places significant demands on the L2 teacher's language awareness. Consciousness – raising tasks are designed to cater to explicit learning. They are intended to develop awareness at the level of understanding (Ellis, 2003, p.162). Therefore, the designed outcome of a consciousness – raising task is awareness of how some linguistic features work. He adds that the rational for the use of consciousness – raising tasks draws on the role of explicit knowledge as a facilitator for the acquisition of implicit knowledge.

C. Intentionality

Intentionality refers to desires, beliefs and other propositional attitudes. It is pertinent to the notion of creature – consciousness; that is, people are capable of having desires, aims, beliefs while stones, planets, and computers are not. Hatch (1983) argues that learners intend to learn only to converse and interact and learn grammar in the process. Krashen (1989) has reviewed the evidence supporting incidental approaches to the teaching of spelling and vocabulary, arguing that extensive reading is as effective as focused study, although intentional subjects generally do somewhat better than incidental subjects in controlled studies. Various theorists in applied linguistics have argued that intentional and incidental learning do result in different knowledge types. Paradis argues that incidental acquisition of grammar leads to an implicit competence that is used automatically, while deliberate learning leads only to explicit knowledge that is not available for automatic use. The incidental learning can make heavier demands on individual learner's prior knowledge and skill, leading to greater diversity of outcomes than an intentionally-oriented instructional approach that is designed to preorganize the language data and the learning tasks.

D. Control

Learning a second language is like learning to drive a car: it has both a skill aspect and a knowledge aspect. In early stages, learners are aware of using mental translation, trying to remember paradigms they have been taught in class and grouping for words and structures to express their intentions. As learning progresses, there is a gradual shift to a stage in which more attention is devoted to what one wants to say, with the process of grammaticization becoming more and more automatic. Another aspect of control in language use is evident in code-switching. There are cases in which bilingual speakers control their choice of language, but there are other times when learners have no conscious reason for speaking one language rather than another, do not control their switches and are not aware of which language they are speaking. The activation of new knowledge in language processing may involve conscious mental effort and an important pedagogical issue is how to facilitate the transition from highly controlled processing to the point of relative automaticity. The other point is how to match the processing requirements of different kinds of tasks not only with the learners' level of skill, but also with the learning goals concerned. Language teaching should avoid placing undue processing demands on learners and it may be that the application of some mental effort is facilitative in language learning as is stated by Tomasello and Herron (1989):

A teaching approach which makes few control demands on the L2 learner is not necessarily conducive to continued L2 progress. Once learning reaches the stage of automaticity, it may become less accessible to conscious control and therefore resistant to change (Mc Laughlin, Ross and McLeod, 1983). Many theories like the Shiffrin and Schneider (1977) theory of the development from controlled to automatic processing, the notion of restructuring (Mc Laughlin, 1990b), and Anderson's account of the mechanisms responsible for the transition from declarative to procedural knowledge (Anderson, 1989) state that spontaneous performance derives from an earlier stage of consciously guided performance.

Baddeley (1976) argues that a continuum of consciousness mediates our selection of input and that it ranges from being a largely unconscious process to a highly conscious one. Once we have selectively attended to informative stimuli, our subsequent storage decision can range from a quick perusal with immediate forgetting or a highly conscious attempt to remember the stimuli. Schmidt (1990) proposed that conscious cognitive effort involving the subjective experience of noticing is a necessary and sufficient condition for the conversion of input to intake in SLA. Schmidt's noticing hypothesis was the theoretical motivation for subsequent research efforts, both in laboratory experiments (Hulstijn and Dekeyser, 1997) and in the classroom, into the role of consciousness in SLA. The primary conscious involvement in

SLA is the explicit learning involved in the initial registration of pattern recognizers for constructions that are then tuned and integrated in to the system by implicit learning during subsequent input processing. Explicit memories can guide the conscious building of novel linguistic utterances through processes of analogy. Formulas, slot – and – frame patterns, drills, and declarative pedagogical grammar rules all contribute to the conscious creation of utterances whose subsequent usage promotes implicit learning and proceduralization. It is the results of thinking that come to consciousness, not thinking itself, but consciousness then broadcasts these results throughout the brain to the vast array of our unconscious sources of knowledge (Ellis, 2005).

VI. CONCLUSION

Some level of consciousness is necessary for second language acquisition. The review presented in this paper on consciousness has certainly important implications in SLA. Consciousness provides an opportunity to unite useful concepts from cognitive psychology in SLA. Research on the general nature of learning including work on its relations to consciousness, forms an important source of information and ideas, a source the SLA theory cannot afford to ignore. Throughout the discussion, we stated that conscious awareness of language is a necessary condition for its acquisition. We reviewed the four concepts of consciousness: (a) consciousness as attention. It claims that learning without some form of attention is not possible; (b) consciousness as awareness. It says that conscious awareness of language is necessary if learners want to use it appropriately; (c) consciousness as intentionality. It deals with the distinction between intentional and incidental L2 learning; and (d) consciousness as control. It says that automatic, fluent output processing should not be under full conscious control. And finally, it is concluded that consciousness and language are inextricably interconnected; the development of one goes in hand with the development of the other.

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Abbas Pourhosein Gilakjani is a Ph.D. student of SLL at Universiti Sains Malaysia, Malaysia. He is also a faculty member of English Translation Department at Islamic University of Lahijan, Iran. He has taught English courses for over 11 years at 3 open universities in Guilan, Iran.

Seyedeh Masoumeh Ahmadi received her B.A. degree from Islamic Azad University of Lahijan, Iran. She will start her education in M.A. in Computer Network at Universiti Sains Malaysia, Malaysia 5 months later.