No Implicit Learning is Possible without Awareness! In Favor of Noticing Hypothesis

Parviz Maftoon[1], Nima Shakouri [2]

College of Foreign Languages and Literature, Science and Research Branch, Islamic Azad University, Tehran, Iran
pmaftoon@srbiau.ac.ir[1], shakouri.ni@gmail.com[2]

Abstract: To be fair, one's ability to use what was learned is the product of filtering out what was attended to. Accordingly, learners must attend to and notice any source of variation that matters, whatever makes a difference in meaning. Those types of learning attended to are the by-product of what is consciously going to be investigated. Henceforth, something which is explicitly memorized and learned can promote individuals' implicit learning, in future. In this regard, it is claimed explicit learning can have a subtle effect on enhancing implicit learning; however, this impact may not be smooth. The paper is an attempt to resolve some misunderstandings in favor of Schmidt's (1990) Noticing Hypothesis; furthermore, this paper is to revisit the claim that attention is a matter of degree to be interpreted in a relative rather than in an absolute sense.
[Parviz Maftoon, Nima Shakouri. **No Implicit Learning is Possible without Awareness! In Favor of Noticing Hypothesis.** *J Am Sci* 2012;8(1s):56-63]. (ISSN: 1545-1003). http://www.jofamericanscience.org. 10

Key words: attention, implicit learning, awareness, consciousness

1. Introduction

Second language acquisition (SLA) has had an oscillating history between implicit and explicit approaches to language learning (Celce-Murcia, 1991). The explicit end of grammar translation method is always considered as the opposite end of communicative approach found at the implicit end. According to Otto (2007), the swinging of the pendulum is currently stopping midway. From one side, researchers have come to the point that individual's sensitivity to and conscious awareness of the nature of language is not enough; and from other side of the coin, practitioners have realized that many students left communicative classrooms with fossilized errors in their interlanguage. To provide a remedy for communicative language approaches, practitioners turn into focus on form instruction; however, explicit discussion of grammatical rules is still avoided; visual and other cues are utilized to draw attention to various grammar points in order to facilitate noticing (Schmidt, 1990) and appropriate language use (Otto, 2007).

In this regard, the demarcation made by Long (1991) between focus on form (FoF) and focus on forms (FoFs), was an attempt to incorporate form-focused instruction into meaning-oriented communicative language teaching. To Long and Robinson (1998), FoF instruction can be considered mainly as a reactive responses to communication problems, as it is learner-centered, compatible with learner's internal syllabus and is need-sensitive (Long, 2000). However, Doughty and Williams (1998), recommended that FoF can also be achieved proactively; that is, the teacher can also plan in advance to introduce a grammatical point.

To better appreciate the difference between FoF and FoFs, let us put differently. FoFs is based on the assumption that linguistic elements are preselected and presented to learners in an isolated manner. In sum, the approach to language teaching is synthetic (Wilkins, 1978). That is, language is broken down into its constitutive elements. A quintessential example of a FoFs lesson is one conducted by 'PPP' (Khatib & Derakhshan, 2011). PPP is a three stage lesson typical in situational language teaching, encompassing the presentation of a grammatical structure, its practice in controlled drills, and the provision of opportunities to produce it freely. In FoF, in contrast, the attention is directed towards meaning and communication. In the same vein, FoF involves drawing learners' attention to linguistic forms "as they arise incidentally in lessons whose overriding focus is on meaning or communication" (Long, 1991, p. 46).

The stance of attention in SLA raises many challenging issues among scholars (Schmidt, 1990; Trsuscott, 1998). We think two sources of this challenge refer to whether there is consensus among practitioners on what attention is meant and where the study of it must be allocated. Schmidt (1990) was among the first who questions the unconscious nature of learning processes. What he insists is that no one could move from unacquired to acquired status. Elsewhere, Schmidt (2010) concludes, "at least in the case of adult learning of grammar, wholly unconscious learning of a language is probably not possible" (p. 723). Also, he asserts "adults do seem to have lost the still mysterious ability of children to acquire the grammatical forms of language while apparently not paying attention to them" (1983, p.

172); thus, "some level of conscious attention to form is required" (Schmidt, p. 723).

In this regard, this is a commonly held belief that there is some level of consciousness in the process of learning. Nevertheless, there is not so much consensus among scholars whether attention and consciousness run in parallel or not, whether consciousness is prerequisite to attention or vice versa. There is not much space in the paper to discuss the distinction between consciousness and related terms attention, awareness, and intention. A consensus among researchers that attention and consciousness are inextricably interwoven (Koch & Tsuchiya, 2006) is undeniable. Put similarly, when we attend to an object, we become conscious of its attributes; when we shift attention away, the object fades from consciousness. In a nutshell, attention requires consciousness (Mole, 2008).This implies that, though not identical, they are quite interconnected. However, to several scholars (i.e., Iwasaki, 1993; Koch, 2004), consciousness and attention are quite distinct phenomena and employ quite distinct mechanisms. Along the same line, Koch and Tsuchiya (2006) continue if it were assumed these two are interwoven, what would be the nature of their causal interaction. In sum, these two were dissociated, but the question is whether the availability of one is a prerequisite for the other to occur. Accordingly, Koch and Tsuchiya argue that "there are events or objects that can be attended to without being consciously perceived" (p. 16). In outlining some evidence of attention without consciousness, Koch and Tsuchiya (2006) assert, "subjects can attend to a location for many seconds and yet to fail see one or more attributes of an object at that location" (p. 17).

In quite the same par, the frame based on consciousness proposed by Schmidt (1990) connotes that consciousness is a broad and slippery term. He investigated it from three perspectives: Consciousness as intention, consciousness as attention, and consciousness as awareness. *Consciousness as intention* is reflected in the distinction between *incidental* learning, referring to the fact that people can learn things without having any particular intention to learn them, and *intentional* (goal-directed) learning. *Consciousness as attention* (whether intentional or not), then, seems to be heart of the matter, but, like many psychological constructs, is based initially on common experience; attention does not refer to a single mechanism but to a variety of mechanisms or subsystems, including alertness, orientation, detection within selective attention, facilitation, and inhibition (Schmidt, 2001). What these have in common is the function of controlling information processing and behavior when existing skills and routines are inadequate. The role played by *consciousness as awareness* in SLA is most controversial. On the one hand, awareness and attention are closely linked —what we are aware of is what we attend to, and what we attend to determines what enters our phenomenal consciousness (Baars, 1988) — so if attention is required for learning, then perhaps awareness is as well.

We are not in an attempt to define some key terms, but the main orientation of this paper is in favor of Schmidt's (1983) Noticing Hypothesis, and a response to those (e.g., Gass, 1997) who claim that attention may be necessary for some kinds of learning not others. Schmidt (2010), in response to Gass (1997) who asks, "if no input existed, how could attention to input be a necessary condition for all aspects of learning" (p. 16), asserts, "the Noticing Hypothesis needs to be more carefully formulated" (p. 728). Schmidt continues, when there is no input to become intake, "the Noticing Hypothesis is irrelevant rather than wrong" (Schmidt, 2010, p. 728).

Carroll (1999) also claims that the Noticing Hypothesis has not explained how L2 knowledge is instantiated in L2 learners' mind. Elsewhere, Carroll (2006) argues attention to environmental stimuli does not play a direct role in acquisition because most of what constitutes linguistic knowledge (i.e., mental constructs) is not in the input to begin with. Such generativist perspectives presuppose that if the mental constructs are not present in the external environment, there is no possibility of noticing them. Again, Schmidt (2010), in response to scholars (Carroll, 2010; Schwartz, 1993; Truscott, 1998) who suggest that noticing is metalinguistic rather than linguistic, claims that Noticing Hypothesis is more compatible with instance-based, construction-based and usage-based theories than with generative theories.

To be more specific, let's direct the paper towards this thesis that for input, whether observable or unobservable, to turn into intake needs to be noticed or attended to. Inspired by the tenets of postmodernism, we think the concept of attention must not be interpreted in an absolute sense. It is quite relative. Furthermore, the same degree of reletiveness is much affected by many factors. Even, something which is explicitly attended to, memorized, and finally learned can promote individuals' implicit learning, for instance. Thus, the degree of attentiveness in something explicitly learned and is conducive to a new learning is totally different from something going to be learned, without any background knowledge. Furthermore, it is suggested that the role of attention in implicit learning needs to be formulated meticulously. To do

this, we need a deep knowledge regarding the philosophy of implicit and explicit learning.

2. Implicit learning versus explicit learning

Psychological studies about implicit/explicit learning in language acquisition have undoubtedly reached its climax in discussions over grammar acquisition (Ivady, 2007, p. 1). The term implicit learning was first employed by Reber (1967), typically defined as acquisition of knowledge about the underlying structure of a complex stimulus environment by a process which takes place naturally, simply, and without conscious operation, while explicit learning is said to be characterized by more conscious operation where the individual makes and tests hypotheses in a search for structure (R. Ellis, 1994). With regard to implicit learning, there is a root of contention among scholars (Bialystok, 1978; Krashen, 1981; Schmidt, 1991). To Bialystok (1978) a role is assigned to conscious knowledge, while Krashen (1981) and Seliger (1983) hold learning is essentially unconscious and occurs at unconscious level. In fact, a long-standing interest in implicit and explicit learning on the part of several scholars (N. Ellis, 1994; Rebuschat, 2008) seems to have been sparked by Krashen's (1981) learning/acquisition hypothesis. As to Krashen (1981), there are two different kinds of knowledge: learning and acquiring. Learning, as a conscious process, takes place in artificial situations and is less permanent. Acquiring, in contrast, is a subconscious process and it takes place in naturalistic situations and is more permanent. Krashen asserts language acquisition is an incidental process that results in tacit linguistic knowledge, while language learning is an intentional process that results in conscious metalinguistic knowledge.

Accordingly, the role of learned (explicit) knowledge is to monitor utterances in order to remove mistakes, while acquired (implicit) knowledge is the linchpin of language development. These two knowledge stores cannot interface; that is, knowledge learned may not be converted into acquired knowledge. This is why learners may know the rules but are unable to use them. Like Chomsky (1965), Krashen believes that humans have an innate ability to acquire language through sufficient input and exposure. In fact, Krashen's monitor model strictly denotes that explicit knowledge of rules does not add anything to the acquired knowledge of language (Ivady, 2007). However, this perspective was never safe.

Gregg (1984) and McLaughlin (1987) were among the first impressive figures who criticize Krashen's non-interface model. Gregg in reaction to Krashen's (1981) monitor hypothesis, holds "if 'learning' cannot become 'acquisition', and if…most of our knowledge of a second language is necessarily subconscious, then it makes little sense to call 'learning' one of two distinct and independent ways of developing competence in a second language" (p. 81). McLaughlin (1987) also argues that, "Krashen's theory fails at every juncture" (p. 56). To him, Krashen never adequately defines acquisition, learning, conscious or subconscious; thus the lack of precision in Krashen's definition makes it difficult to determine if one is really learning or acquiring language. Put another way he finds no point in explicit teaching. Accordingly, in Krashen (1981), the stance of attention in shifting input to intake is not well elaborated. Henceforth, what is learned explicitly cannot turn into implicit knowledge. To Krashen, learning is respected as conscious process that results in knowing about language, while acquisition is a subconscious process that results in tacit linguistic knowledge. These two, to him, cannot change into each other.

Bialystok (1978), in contrast with Krashen (1981), was among the first who insists that there should be an interface between explicit and implicit knowledge. Having elucidated two types of output—spontaneous-immediate and deliberate-delayed—she supposes that the ideal way is to move from metalinguistic knowledge which is explicit and highly analyzed towards linguistic knowledge which is implicit and highly unanalyzed. She seems not to be in favor of Krashen's (1981) monitor model that emphasizes that explicit knowledge of certain rules does not add anything to the acquired knowledge of a language; rather it creates a monitor to notice and correct errors in one's output. Unlike Krashen, Ellis (1994) claims that interaction is possible; however, it has a more subtle effect in enhancing performance. Explicit knowledge is an aid in monitoring and in noticing (either errors or lack of knowledge) but cannot in itself contribute to smooth performance (Ivady, 2007).

In this regard, out of an explicit learning, hypothesis testers and hypothesis formers (R. Ellis, 1994) are born. This is in stark contrast with implicit learning which considers learners as an unconscious knowledge absorber (R. Ellis, 1994). The word subconscious seems to be flickering, as one might interpret it in favor of some scholars including Cleeremans, Destrebeeqz and Boyer (1998) who define implicit learning, "the ability to learn without awareness" (p. 406). Put the same way, Winter and Reber (1994, cited in Rast, 2008) describe implicit learning as the human ability to derive information about the world in an unconscious, non-reflective way. Moreover, to Ellis (1994), besides being memory based and also being abstract and structured,

learning is implicit if it is easily accessible and occurs closely adhering to natural language behavior.

In explicit learning, a hypothesis tester uses metalinguistic knowledge. In much the same way, Ivady (2007) asserts learning is termed as explicit "when rules are emphasized as a type of metalinguistic knowledge: anything that makes learners aware of rules is explicit" (p. 1). Schmidt (1995) also views explicit knowledge as reflected by the ability of learners to explain grammar rules verbally or in writing. It follows then that metalinguistic knowledge is a form of explicit knowledge. In a nutshell, what makes implicit learning distinct from explicit learning is that implicit learning is exemplar based and requires the memorization of prefabricated language chunks, while explicit learning is hypothesis-testing based (Ivady, 2007, pp. 1-2).

3. Noticing Hypothesis is irrelevant!

An individual's ability to use what has been learned is the product of filtering out what was attended to. Those types of learning not attended to are the by-product of what is being investigated. Thus, there is no input, and when there is no input Schmidt (1995) Noticing Hypothesis is irrelevant to be argued, not wrong. As Schmidt repeatedly declares "noticing" is a necessary step in turning input into intake. Furthermore, the degree of attention decreases when something which is explicitly memorized and learned is used in order to learn something new. Accordingly, Ellis (1994) claims explicit interaction can have a subtle effect in enhancing performance; however, this performance may not be smooth (Ivady, 2007).

There is not much consensus what consciousness means (Brown, 2001). The term consciousness is ubiquitous, and, as Schmidt (1994) declares, it is slippery. The interwoven connection between consciousness and attention does not imply that in all types of learning consciousness and attention are together. Thus, to get rid of the slippery feature of consciousness, a central role for focal attention is postulated by several scholars (R. Ellis, 1994; Schmidt, 1990). To Schmidt's noticing hypothesis, focally attending to a linguistic data present in input is a prerequisite to convert input into intake. Put simply, he states that features of language cannot be learned unless they have been noticed. However, during the ups and downs of language teaching, people have proclaimed that language should never be learned under conditions of conscious awareness (Brown, 2001; Krashen, 1981). Nevertheless, elaborating on the relationship between implicit learning and the Noticing Hypothesis is a complex issue (Truscott, 1998).

To better appreciate the notion of noticing in implicit learning let us compare implicit learning with subliminal learning. In subliminal learning, the role of consciousness is degraded. That is, learners acquire items without consciously observing them in the input (Truscott, 1998). What Schmidt's noticing hypothesis adopts is the rejection of the subliminal learning. However, some scholars (e.g., Truscott, 1998) argue that there is no support that conscious awareness of the information to be acquired is necessary. To Truscott, Schmidt's noticing hypothesis is not testable and is too vague to offer any principled means of determining what learners must notice. Nevertheless, Truscott never rejects the phenomenal existence of attention and awareness in learning.

4. Attention, awareness, consciousness

No one has yet found to support the claim that learning without consciousness is possible (Otto, 2007). Accordingly, Gass (1997) has also claimed that "attention to input is a necessary condition for any learning at all" (cited in Schmidt, 2001, p. 29), though Schmidt in support of his Noticing Hypothesis claims that "some learning does not even depends on input" (Schmidt, 2001, p. 29). But to what extent consciousness and awareness are equated. In the same line, if consciousness is equated with awareness, then we can support the notion that being aware of something means knowing about it. To better appreciate this equality, it is worth citing Schmidt (1995) and Van Lier (1996) who link language awareness with the ability of mastering languages. What is implicit in 'knowing about' is that one thinks about or just notices it. Regarding the connection between awareness and noticing, from a psycholinguistic perspective, Ying (2003) holds that learners' talking about language promotes the "noticing" of language forms. The shift from the focus on forms to meaning in communicative language teaching approaches connotes that what is "noticed" is more likely to be retained in memory, and "noticing" is a necessary step in turning input into intake (Schmidt, 1995).

Several practitioners (Schmidt, 1995; Van Lier, 1996) claim learning is only possible if there is attention. Accordingly, Jiang and Chun (2001) maintain, "attention influences the extent of implicit learning" (p. 1106). Thus, attention is a key factor for learning to occur. Although there is a bidirectional interaction between attention and implicit learning, according to Nisson and Bullemer (1987), what is learned is partly determined by how much attention is allocated to it (cited in Jiang & Chun, 2001, p, 1106). Along the same line, it is reported that talking about language raises learners' awareness [attention] of

language to an explicit level (Borg, 1994, as cited in Ying, 2003, p. 12), and the process of making knowledge explicit requires learners to deepen their cognitive processing to better digest, as well as to co-create, joint knowing (Van Lier, 1998). What is inferred from Schmidt (1995) and Van Lier (1998) shows language awareness relies on noticing the language around us and examining it in a critical manner. To have a critical look, it is necessary to say that in promoting language awareness, students should not be considered as empty vessels to be filled up. In fact, language awareness is a learned ability to analyze one's internalized language. Along the same line, what is necessary to be cognizant of is some misconceptions about developing language awareness that makes it equated with traditional approaches to language teaching. Accordingly, Bourke (2008) claims that two important features of language awareness that make it distinct from traditional grammar are (1) language awareness is multifaceted and (2) language awareness is data driven. It is multifaceted as it goes beyond the raising of grammatical consciousness to include all linguistic components—vocabulary, morphology, phonology, and discourse—and language awareness is data driven because learners are not told the rule, but are given a set of data which they infer the rule or generalization in their own way (Bourke, 2008).

It is probably impossible to separate attention and awareness completely because of the common assumption that attention and awareness are two sides of the same coin. Accordingly, Schmidt (2001), argues that attention as a mechanism controls access to awareness. However, Schmidt (2001) separates noticing and metalinguistic awareness by assuming that "the objects of attention and noticing are elements of the surface structures of utterances in the input, instances of language, rather than any abstract rules or principles of which such instances may be exemplars"(p. 4). Schmidt (1990; 1995; 2001) also asserted that attention is necessary for learning and that, for all practical purposes, attention can be equated with awareness. As he puts from these premises it would follow that attention research supports the claim that consciousness is necessary for learning (Truscott, 1998). Moreover, those who emphasize the importance of attention do not claim that attention is necessary for all learning; likewise, VanPatten (1994, cited in Schmidt, 2001, p. 7) has argued that attention is both necessary and sufficient for L2 structure.

However what is problematic is to find an answer to the question how much attention is needed to produce implicit learning? Studies have found inconsistent results, with some implicit learning tasks requiring virtually no attention, while others rely on attention. Attention, though does not affect implicit process, has a graded effect on the quality of conscious perception and memory. Although no one denies the existence of attention in implicit learning, all types of implicit learning do not entail attention because different implicit learning tasks engage different cognitive processes; their reliance on attention also varies (Rausei, Makovski, & Jiang, 2007). Thus, having a positivist perspective toward the notion of attention is not plausible. Claiming that input must be observable in order to be noticed is rooted in a trend of thought which is inspired by empiricism. The term positivism, as a version of empiricism (Richards & Schmidt, 2002), was first coined by the French philosopher, Auguste Comte who believes reality can be observed. In other words, Comte's concept of positivism was based on scientific objectivity and observation through the five senses rather than subjective beliefs. In other words, positivism defines knowledge solely on observable facts and does not give any credence to non-observable entities such as feelings and values (Cohen, Manion, & Morrison, 2007). In fact, as Mack (2010) elucidates, positivism maintains that scientists are the observer of an objective reality, not the constructor of reality. Thus, such a mechanistic and reductionist views on the nature of input that excludes the nature of subjectivity fails to interpret individuals' experience. In fact, such views endeavor to understand the whole as a function of its constituent parts, which, in turn, are subjected to quantitative analysis. By concentrating only on the weighable and measurable, the reductionist researcher increasingly excludes from consideration the qualitative aspects of senses, feeling, values etc.

In quite the same par, much concern about implicit learning is to explain how implicit knowledge can be transferred. Generally there are two main theories—the implicit/abstractionist framework and the explicit/instance-based framework (Cleeremans, 1997). The former implies that participants learn abstract information, such as the rules applied directly to what is going to be transferred. The second theory, the explicit/instance-based framework, ignores the existence of implicit learning and claims that participants acquire instance-based representations rather than rule-based representations. Much the same way, the implicit framework assumes that there is an unconscious mind similar to a conscious one, only minus consciousness. What is inferred is argued by Reber and Lewis (1991) who contend participants in implicit learning experiments are capable of acquiring abstract, rule-like knowledge implicitly. In this regard, Searle (1996) contends that since rules are accessible to consciousness, there is nothing that could prevent us

from reporting the rules. Thus, this automatically rules out unconscious rules since rules are accessible to consciousness. In much the same way, Cleeremans (1997) asserts if a system behaves in a rule-like fashion, but is unable to report the rule that it uses, then it probably does not have the rules at all. The explicit/instance based framework, in contrast, totally ignores the existence of implicit learning. Brooks (1978) asserts that one can understand his/her performance by assuming that they have acquired instance-based representations. In this regard, implicit learning is not implicit only because our tests of explicit knowledge are poorly designed.

The lack of willingness to participate in implicit learning emanates from this perspective that "such learning is not necessarily measureable and naturally can deviate from the program of objectives outlined in any curriculum" (Hewitt, 2008, p. 11). In fact, implicit learning experiments, as Cleeremans, Destrebecqz and Boyer (1998) declare, use a dissociation paradigm to show that the knowledge was gained unintentionally and without awareness by the participants. Thus, the measures of awareness are subjective including verbal reports, and subjective tests. Moreover, Truscott (1998) asserts that, "unfortunately, no firm conclusions can be drawn about implicit learning, due to continuing controversy" (p. 109). There is not much space to deal with what types of learning is efficacious, nor does the discussion question whether one type is better than the other, since there is universal agreement that both implicit and explicit learning offer advantages (and disadvantages) (Brown, 2001) But how can we measure the degree of implicitness? What is obvious, however, is that attempting to become aware of the intricacies hidden in implicit learning is not that easy. The picture of such intricacies gets worse when we tend to debate how the degree of consciousness is going to be measured. According to Jimperz and Mendez (1999), implicit learning relies on selective attention. Put similarly, "selective attention dictates conscious perception and explicit memory" (Rausei, Makovski, & Jiang, 2007, p. 1321). For example, when asked to sort out new shapes from previously exposed ones, observers often pick out previously attended shapes but not previously ignored shapes (Rock & Gutman, 1981). Along the same line, Jiang and Chun (2001) hold "implicit learning is sensitive not just to attention to dissociable dimensions, but to selection by objects" (p. 1122). They go on to state that "Robust implicit learning is found only when the invariant information is attending" (p. 1122).

5. Conclusion

What makes learning implicit depends on one's ability to learn new information without intending to; however, this type of learning is difficult to express. Undeniably, implicit learning may be considered as an inevitable phenomenon that one can know more than what he/she can tell. Thus, the quality and quantity of input learners are exposed to play a significant role in promoting implicit learning. In the same line, attention is a matter of degree. It cannot be interpreted in an absolute sense. The success in implicit learning is highly dependent on the frequency of exposure provided that the quality and the quantity of input is regarded, although no one denies that there are many variables involved in learning, and attention is not the only factor. In much the same way, success in language learning goes beyond what is available in input. Thus, ignoring the concept of attention, even in implicit learning, seems to be illogical. Depending on the cognitive processes one gets involved, the presence of attention is plausible.

Others consider the hypothesis to be undesirably vague, lacking empirical support, or incompatible with well-grounded theories. To us they fail to make a distinction between noticing and understanding. Schmidt (2001) maintains that noticing as a technical term is limited to the conscious registration of attended specific instances of language, and "understanding," a higher level of awareness includes generalizations across instances. In the same line, Schmidt continues that "knowledge of rules and metalinguistic awareness of all kinds belong to this higher level of awareness" (p. 725). He concluded that "noticing is necessary for SLA, and that understanding is facilitative but not required" (p. 726).

Corresponding Author:
Nima Shakouri
Science and Research Branch,
Islamic Azad University, Tehran, Iran
Email: shakouri.ni@gmail.com

References

1. Baars, B. J. (1997). In the theatre of consciousness: Global workspace theory, a rigorous scientific theory of consciousness. *Journal of Consciousness Studies, 4*, 292-309.
2. Bialystok, E. (1978). *A theoretical model of second language learning. Language Learning, 28*, 69-83.
3. Bourke, J. M. (2008). *A rough guide to language awareness. English Teaching Forum, 1,* 12-21.
4. Brooks, L.R. (1978). Nonanalytic concept formation and memory for instances. In E. Rosch

& B.B.Lloyd(Eds.), *Cognitionand categorization*. New York: Wiley.
5. Brown, H.D. (2000). *Principles of language learning and teaching*. Longman: Person Education Company.
6. Carroll, S. (1999). Putting "input" in its proper place. *Second Language Research*, 15, 337-388.
7. Carroll, S. E. (2006). Salience, awareness and SLA. In M. G. O'Brien, C. Shea, & J. Archibald (Eds.), *Proceedings of the 8th generative approaches to second language acquisition conference (GASLA 2006)* (pp. 17-24). Somerville, MA: Cascadilla Proceedings Project.
8. Celce-Murcia, M. (1991). Language teaching approaches: An overview. In M. Celce-Murcia (Ed.), *Teaching English as a second or foreign language* (pp. 3-10). New York, NY: Newbury House.
9. Chomsky, N. (1965). *Aspects of the theory of syntax*. Cambridge: MIT Press.
10 Cleeremans, A. (1997). Principles for implicit learning. In D. Berry (Ed.), *How implicit is implicit learning?* (pp. 196-234), Oxford: Oxford University Press
11. Cleeremans, A., Destrebecqz, A., & Boyer, M. (1998). Implicit learning: News from the front. *Trends in Cognitive Sciences*, *2*, 406-416. doi:10.1016/S1364-6613(98)01232-7
12. Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education*. London: Routledge
13. Ellis, N. C. (1994). Vocabulary acquisition: The explicit ins and outs of explicit cognitive mediation. In N. C. Ellis (Ed.), *Implicit and explicit learning of languages* (pp. 211–282). London: Academic Press.
14. Ellis, R. (1994). A theory of instructed second language acquisition. In N. C. Ellis (Ed.), *Implicit and explicit learning of languages* (pp. 79-114). London: Academic Press.
15. Gass, S. M. (1997). *Input, interaction, and the second language learner*. Mahwah, NJ: Erlbaum.
16. Gregg, K. (1984). Krashen's monitor and Occam's razor. *Applied Linguistics, 5,* 79-100.
17. Hewitt, D. (2008). *Understanding effective learning: Strategies for the classroom*. New York: Open University Press.
18. Ivady, R. E. (2007). Implicit learning and second language acquisition. *Periodicals of implicit cognition, 1,* 1-8.
19. Iwasaki, S. (1993). Spatial attention and two modes of visual consciousness. *Cognition 49,* 211–233
20. Jiang Y. & Chun, M. M. (2001). Selective attention modulates implicit learning. *The Quarterly Journal of Experimental Psychology, 54*, (4), 1105-1124.
21. Jimenez, L., & Mendez, C. (1999). Which attention is needed for implicit sequence learning? *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *25*, 236–259.
22. Khatib, M., & Derakhshan, A. (2011). A complementary-compensatory approach to teaching focus on form/s in EFL/ESL classroom. *Theory and practice in language studies, 1* (7), 865-874.
23. Koch, C. (2004). *The quest for consciousness: a neurobiological approach*. London: Roberts and Publishers
24. Koch, C., & Tsuchiya, N. (2006). Attention and consciousness: Two distinct brain processes. *TRENDS in Cognitive Sciences, 11* (1), 16-22.
25. Krashen, S. D. (1981). *Second language acquisition and second language learning*. Oxford: Pergamon.
26. Long, M. H. (1991). Focus on form: A design feature in language teaching methodology. In K. de Bot, R. Ginsberg, & C. Kramsch (Eds.), *Foreign language research in cross cultural perspective* (pp. 39–52). Amsterdam: John Benjamins.
27. Long, M. H. (2000). Focus on form in task-based language teaching. In R. Lambert, & E. Shohamy (Eds). *Language policy and pedagogy: Essays in honor of A. Ronald Walton*. Philadelphia: John Benjamins.
28. Long, M., & Robinson, P. (1998). Theory, research and practice. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 15–41). Cambridge: Cambridge University Press.
29. Mack, L. (2010). The philosophical underpinnings of educational research. *Polyglossia, 19*, 1-11.
30. McLaughlin, B. (1987). *Theories of second language learning*. London: Edward Arnold.
31. Mole, C. (2008). Attention and consciousness. *Journal of Consciousness Studies, 15* **(**4), 86–104.
32. Otto, I. (2007). Implicit learning and instructed SLA. *Periodicals of implicit cognition, 1,* 1-8.
33. Rast, R. (2008). *Foreign language input: Initial processing*. Ontario: Multilingual Matters Ltd.
34. Rausei,V., Makovski, T., & Jiang, Y. V. (2007). Attention dependency in implicit learning of repeated search context. *Q, J. Exp Psychol (Hove), 60* (10), 1321-1328. doi 108/17470210 701515744
35. Reber, A. S. (1967). Implicit learning of artificial grammars. *Journal of Verbal Learning and Verbal Behavior, 6* , 317-327.

36. Rebuschat, P. (2008). Implicit learning of natural language syntax. Ph.D. thesis, University of Cambridge, Cambridge.
37. Richards, J. C., & Schmidt, R. (2002). *Longman dictionary of language and applied linguistics*. London: Longman
38. Schmidt, R. (1983). Interaction, acculturation, and the acquisition of communicative competence. In N. Wolfson & E. Judd (Eds.), *Sociolinguistics and language acquisition* (pp. 137-174). Rowley, MA: Newbury House
39. Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics, 11*, 129-158.
40. Schmidt, R. (1995) Consciousness and foreign language learning: A tutorial on the role of attention and awareness in learning. In R. Schmidt (Ed.), *Attention and awareness in foreign language learning (pp.1-63).* Honolulu: University of Hawai'i Press.
41. Schmidt, R. (2001). Attention. In P. Robinson (Ed.), C*ognition and second language instruction* (pp. 3-32). Cambridge: Cambridge University Press.
42. Schmidt, R. (2010). Attention, awareness, and individual differences in language learning. In W. M. Chan, S. Chi, K. N. Cin, J. Istanto, M. Nagami, J. W. Sew, T. Suthiwan, & I. Walker, *Proceedings of CLaSIC 2010*, Singapore, December 2-4 (pp. 721-737). Singapore: National University of Singapore, Centre for Language Studies.
43. Schwartz, B. D. (1993). On explicit and negative data effecting and affecting competence and linguistic behavior. *Studies in Second Language Acquisition, 15*, 147-163
44. Searle, J. (1996). *Consciousness and language*. Cambridge: Cambridge University Press
45. Seliger, H. (1983). The language learner as linguist: of metaphors and realities. *AppliedLinguistics 4,* 179-91
46 Truscott, J. (1998). Noticing in second language acquisition: A critical review. *Second Language Research, 14*, 103-135.
47. Van Lier, L. (1996). *Interaction in the language curriculum*. London: Longman
48 Van Lier, L. (1998). The relationship between consciousness, interaction and language learning. *Language Awareness, 7*(2), 128-143.
49. Ying, Y. (2003). Language awareness work for Chinese EFL learners. *STETS Language & Communication, 2* (1), 11.
50. Wilkins, D. (1976). *Notional syllabuses*. Oxford: Oxford University Press.

12/5/2012