

IS NOTICING VITAL FOR L2 LEARNING ?—A CRITICAL REVIEW OF SCHMIDT S “ NOTICING HYPOTHESIS ”

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Abstract

Richard Schmidt in his “noticing hypothesis” has proposed that noticing is vital for L2 interlanguage development. In line with this argument, the present paper will first attempt to explore the rationale underlying Schmidt's noticing hypothesis within the context of input theories in SLA and then to further evaluate the validity of both his own claim and that of some recent empirical studies claimed to lend support to his claim. My position is that Schmidt's own evidence proves to be inadequate for his claim. Additionally, I argue that several recent attempts to provide empirical support for Schmidt's noticing hypothesis all fall short of that particular goal. Therefore, the paper comes to the conclusion that the issue that noticing is vital for L2 learning remains unresolved and much further research efforts are still called for to reflect the complex nature of the L2 learning process.

Key words

noticing hypothesis ;L2 interlanguage development ;L2 cognitive processes

Introduction

The role of conscious and unconscious processes in L2 learning has been a controversial issue in applied linguistics for some time. There are basically three views on this: that language learning is essentially unconscious; that conscious understanding of the target language system is necessary; or, that the issue of consciousness should be avoided in SLA altogether. Recently, however, when general agreement has been reached on the importance of attention as a necessary condition for learning to take place, researchers in SLA have begun to move their battlefield to examine the role of attention in mediating input and learning, given the obvious fact that learners do not take in all of the input exposed to them. So this new round of debate centers more on whether the role that awareness plays in L2 learning is crucial for subsequent processing of L2 input data. Again as expected, researchers remain much divided as to the amount and type of attention needed for L2 processing: on the one hand, some researchers (e.g. Carr & Curran 1994; Tomlin & Villa 1994) have argued for a dissociation between awareness and learning. On the other hand, Schmidt (1990, 1993, 1995, 2001; Schmidt & Frota 1986) in his noticing hypothesis, has proposed that conscious attention to the form of input plays a crucial role for subsequent L2 development —that is, learners must first demonstrate a conscious apprehension and awareness of some particular form in the input before any subsequent processing or intake of that noticed form can take place. In order to test Schmidt's claim, the present paper will first attempt to explore the underlying rationale for his noticing hypothesis by putting it in the context of input theories of SLA and then to further evaluate the validity of his claim against some recently published empirical studies that aim to support his noticing hypothesis.

1. Input Process and Schmidt's Noticing Hypothesis

As mentioned above, several researchers have tried to argue for a dissociation between learning and

awareness. For example, Velmans (1991) postulated that task demands may appear to involve consciousness due to the need for focal attentive processing, but in some cases focal attentive processes may operate effectively without consciousness being present. Similarly, Tomlin and Villa (1994) viewed the process of attention as being too coarse grained in SLA and thus proposed a fine grained analysis of attention (namely, the attentional functions of alertness, orientation, and detection) in their model of input processing. They claimed that, though detection is the level at which acquisition takes place and the most related to awareness, none of the three attentional functions may require awareness to operate. However, as Leow (1997) pointed out, the data collection procedure (offline postexposure questionnaire) used by these researchers to measure the presence or absence of awareness has potential internal validity concerns, especially because it is unable to account for what learners actually paid attention to or became aware of during the experimental exposure. Additionally, Schmidt (1995) pointed out several other methodological problems that plagued studies cited as empirical supports by these researchers. For example, these studies failed to methodologically establish a complete absence of awareness in language learning. In other words, some participants assigned to the unaware group could have been described as somewhat aware but not completely unaware. Consequently, the categorization of the participants' levels of awareness in the different groups could lead to potential new interpretations of the same results.

For his own part, Schmidt argued for the opposite point of view: that focal attention is isomorphic with awareness and, consequently, learning cannot take place without awareness. Acknowledging that consciousness is primarily associated with the input side of the nervous system, Schmidt (1990) focused his discussion of the role of consciousness in adult L2 learning on input processing. He appeared to equate noticing with attention plus awareness and operationalized noticing as a cognitive operation that takes place both during and immediately after exposure to the input that is available for self-report (1990: 132). For Schmidt, (1) not all input has equal value and (2) only that input which is noticed then becomes available for intake and effective processing (Skehan 1998: 48). Indeed, Schmidt argued strongly against any input converting into intake without being noticed first by the learner. Therefore, the "noticing hypothesis" can also be stated as "what learners notice in input is what becomes intake for learning" (Schmidt 1995: 20).

In terms of noticing and input process of L2 data, Schmidt was mainly concerned with three issues: first, the process through which input becomes intake; second, the degree to which the learner consciously controls the process of intake; third, the role of conscious understanding in hypothesis formation (1990: 138). To illustrate his point, Schmidt (1990: 143) highlights six major factors influencing noticing when learners are processing L2 input data. Two are concerned with the input qualities: i. e. (1) Frequency of input, which (*ceteris paribus*) increases the chance of being noticed by L2 learners; (2) Perceptual salience of input, which (*ceteris paribus*) is more likely to be noticed; another two are concerned with focused input: (3) Instruction may also have a priming effect which increases the chance of noticing features in input; (4) Task demands are a powerful determinant of what is noticed and provide one of the basic arguments that what is learned is what is noticed. The remaining two factors are internal ones which have to do with individual differences of the L2 learner *per se*: (3) Expectations or readiness of the individual learner is likely to have an effect on his/her noticeability; (4) Processing capacity of the individual learner also prove to be an internal factor influencing his/her noticeability. An alternative way to understand Schmidt's idea is to incorporate all these six factors into the information processing model and connect them with operations of the working memory and long term memory (Skehan 1998), where noticing plays a mediating role between input and the operation of these two memory systems (Figure 1).

That is to say, all these six factors will exert their influence upon noticing in L2 data processing. Put in another way, before we can claim that "noticing is vital for L2 learning", we need empirical evidence from all these six factors. Obviously, at this moment, the SLA field just has not arrived there yet. The following part of the paper will critically examine some major empirical supports for the noticing hypothesis.

Figure 1 . Factors influencing noticing (adapted from Skehan 1998)

2 . Critical Review of Supports for the Noticing Hypothesis

2 .1 Schmidt s Own Evidence

To justify his own argument ,Schmidt primarily drew evidence from a diary study of his own personal attempts to learn Portuguese in Brazil (Schmidt &Frota 1986) . For example ,remarkable correspondence was found between his reports of what he had noticed when Brazilians talked to him and the linguistic forms he used . They also compared his performance on 21 verbal constructions ,and found that he had been taught 14 of these . Their later analysis appeared to suggest that presence of forms and frequency in input did play some part though not the whole part . Schmidt based his argument mainly on the evidence that there were many cases in which it was possible to match the new forms and constructions of Portuguese on the tape with comments in his own journal ,and more often than not ,he could further identify the apparent source of innovation as something very specific that someone had mentioned to him before . In this sense ,it is very likely that these forms had been present in comprehensible input all along . Besides citing from his own experience of learning Portuguese ,Schmidt also referred to several other SLA studies to support his claim ,such as :(1) enhanced input designed to draw learner s attention to specific forms in the input (e. g. Doughty 1991) ;(2) competition between form and meaning (e. g. VanPatten 1990) ;(3) “uptake ” studies ,i. e. learners claims regarding what had drawn their attention and what they had learned during the lesson (e. g. Slimani 1992) .

However ,it must be pointed out that there are several limitations inherent with these evidence when we come to talk about the role of awareness at the level of noticing :(1) In Schmidt s own example of learning Portuguese ,despite what he said ,we should also acknowledge that scenarios differ when learners process L2 input data in diary entries and in natural interactions . Obviously ,this example alone is far from enough to claim that L2 learners need to notice before they can learn anything . Even Schmidt himself admitted that ,though it [his own example] provides evidence for a close connection between noticing and emergence in production ,the study does not show that noticing is sufficient for learning (1990 :141) (author s own emphasis) ;(2) As for the other several studies cited by Schmidt ,they did not specifically set out to address the role of consciousness or awareness and therefore cannot and should not serve as evidence to support his claim . For example ,they would not be able to explain what role noticing had played in learners behaviour and in that sense ,they could only serve as anecdotal evidence (Leow 1997) . Therefore ,much more empirical evidence is needed to support the claim that “noticing is vital for L2 learning ” .

2 .2 Recent Empirical Studies of Awareness in SLA

Recently ,several SLA researchers have set up a number of empirical studies to investigate the effect of awareness on L2 learning . They have all mentioned that their findings have provided support for the facilitative role of awareness in L2 learning behaviour and consequently ,provide empirical support for Schmidt s argument that “noticing is vital for L2 learning ” . Major studies falling to this line of argument are briefly sketched in Table 1 ,followed by critical comments in the next part of the paper :

Table 1 . Recent Empirical Studies Supporting the Noticing Hypothesis

The Studies	Subjects	Target Forms	Tasks	Data Elicitation Procedures	Major Findings
Alanen (1995)	36 participants (between 18 and 45)	Semi-artificial Finnish	1 . a reading task 2 . a grammatical judgement task	TAPs and Postexposure Tests	Those learners who showed some evidence of having acquired the target structures were the ones who had noticed them and subsequently mentioned them in their TAPs .
Loew (1997)	28 adult beginning learners of Spanish	stem - changing -ir verbs in Spanish	1 . a problem - solving task (a crossword puzzle) 2 . two post - exposure tasks (recognition task & written production task)	TAPs	(a) 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 processing ; and (b) 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 .
Loew (2000)	32 adult beginning learners of Spanish	stem - changing -ir verbs in Spanish	1 . a problem - solving task (a crossword puzzle) 2 . two post - exposure tasks (recognition task & written production task)	TAPs and Retrospective Interviews	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 .
Rosa (1999) & O Neill (1999)	67 adult beginning learners of Spanish	Spanish conditional	1 . a problem - solving task (puzzle task) 2 . Multiple choice recognition task	TAPs	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 impact on the amount of intake when compared to awareness at the level of noticing .

However , my position is that , despite all the optimistic and encouraging results reported by these researchers for the facilitative role of awareness , they all fell short of their claim to have lent support to Schmidt s noticing hypothesis that “ noticing is vital for L2 data processing ” . All these recent attempts have proved to be both worthwhile and valuable in that they have helped us to gain a better understanding of the cognitive processes underlying L2 learning in one way or another , or to put it in another way , most of these studies deserve to be applauded with their obviously high internal validity in terms of their robust research design (in particular , Loew s 2000 study and Rosa and O Neill s study) . I am more ready to accept , however , that they have demonstrated to us the different degrees of attention paid to L2 input can lead to more or less learning (Simard & Wong 2001) , but not in the sense that they proved that noticing is the pre requisite for all subsequent L2 data processing . When we refer back to the six factors

influencing noticing in the earlier part of the paper, these studies have only mentioned lightly one or two factors (e.g. task demands, instruction), while all the other aspects have not been touched upon. All these studies combined together would seem so minimal when we are searching for the answer to account for the fact that when there is no noticing, L2 learning does not take place. Besides, these studies are not without limitations themselves, a deeper look at some aspects of them will do justice to my standpoint here:

Firstly, the narrow subject base and target forms. Even if we agree that the number of subjects in most cases are relatively adequate (except that, maybe in Leow's 1997 study which involved about 28, less than statistically satisfactory as he admitted himself), they still present a number of other more serious concerns: (a) Subject base. Their linguistic backgrounds are rather narrow in the sense that only Spanish and Finnish are involved (by these, I do not mean that these two languages themselves present any problem), and these are just NOT enough to represent the realistic world of L2 learning. A broader subject base that involves more diverse L2 linguistic backgrounds is definitely called for before we can reach a more solid conclusion on L2 learning itself. (b) Target forms. The subjects' linguistic proficiency is so low that I cannot resist casting much doubt on all these findings when researchers claimed that these learners have acquired the (simple morphological, or semi-artificial structures in Alanen's case) target forms simply because they had noticed them previously. Additionally, while these target structures are so prominent and tend to have meaning potential, the effect of saliency was not measured. Another point in Leow's two studies (1997 & 2000) is particularly worth mentioning, viz., these subjects had only been exposed to Spanish for about three weeks (roughly about 7-8 hours of formal exposure in the classroom), but the medium of instruction for these Spanish beginners was Spanish through which ideas, new information, and so forth were exchanged in the oral, aural, and written modes (2000: 562). Should this be possible for these groups of beginners? I have my own reservations. In both Leow's 1997 and 2000 studies, he himself admitted that "the findings clearly cannot be extrapolated to other linguistic forms or structures" (1997: 494; 2000: 573), and all the other studies in this group have made similar comments at the end of their papers.

Secondly, the methodological issues themselves, i.e. the data collection procedures and the data analysis procedures that were administered in these studies. As already shown in Table 1, the data collection procedures used in these studies is mainly the online elicitation measures of think-aloud protocols (TAPs). Though TAPs have been claimed to be able to far outperform offline elicitation measures such as postexposure questionnaires, they are not as perfect as they may seem. In Schmidt (2001: 19) own comments about Leow's 1997 study, "it is difficult to see how such techniques could show that subjects did not attend to or notice something, since verbal reports (TAPs) (even when concurrent) cannot be assumed to include everything that is noticed". Still, there are several other concerns that need to be addressed in terms of TAPs used in these studies, i.e. the issue of reactivity effect (Leow & Morgan-Short 2004; Bowles & Leow 2005). Such reactivity effect might result from (1) learner's prior knowledge of the target forms due to the fact that these morphological structures are so salient and tend to have meaning-bearing potential; (2) task demands, i.e. text modes (written or oral), text length etc.; (3) multiple exposure. They were not addressed in all these studies while we do not have empirical studies in SLA to preassume their absence.

Conclusion

Therefore, we can come to the conclusion that, though the facilitative role of awareness has generally been confirmed by several studies, Schmidt's noticing hypothesis that "noticing is vital for L2 learning" remains unresolved, given such inadequate evidence in SLA so far. However, as Truscott (1998) suggests, the problems inherent with this hypothesis can be "eliminated or greatly reduced" if it can be reformulated as "noticing is necessary for L2 learning". Much further empirical studies are crying out to be done to show the effects of such factors as frequency, saliency, instruction, individual differences (such as processing capacity) as learners are interacting with L2 input data. However, despite all these limitations inherent in this hypothesis, implications for teaching instructions and learners can still be demystified in the light of insights drawn from such analysis carried out in the present paper, for example, input enhancement, focus on form (FonF) etc. The SLA field is looking forward to the next wave of research within this framework.

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