Guest editors' introduction

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GUEST EDITORS' INTRODUCTION

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Theme
Questions concerning the role of consciousness in second language (L2) learning and learning in general are central to practical concerns in applied linguistics, including the appropriateness of grammar instruction techniques in language pedagogy ranging from attention focusing devices to decontextualized explanations of grammar, as well as to attempts to construct theories of second language acquisition (viz. the strong, weak and non-interface positions taken by various theorists). Questions concerning the role of conscious and unconscious processes in applied linguistics also connect to current discussions in experimental psychology, connectionist modeling, linguistics, and other disciplines of cognitive science, as well as philosophy. However, at the present time, formation of a coherent research program is hampered by terminological vagueness and confusion and lack of agreement on appropriate research paradigms.

Readership
Since questions concerning consciousness are central to practical as well as theoretical concerns, this issue of the AILA Review intends to raise the interest of three types of readers:

a) theorists, especially those working in the fields of linguistics and cognitive psychology;
b) empirical researchers investigating L2 learning in laboratory, classroom, or natural settings;
c) educationalists, especially those working in the field of foreign and second language pedagogy.

Processes of second and foreign language learning and teaching constitute a multifaceted and therefore multidisciplinary domain. Theorists, empirical researchers and educationalists must take notice of new developments in each others' work. The papers in this issue clearly show how each perspective alone does not provide a full account of second language learning: all authors give evidence of the need to combine insights from linguistics, cognitive psychology, and pedagogy and evaluate them against the results from empirical investigations based on data obtained in classroom as well as laboratory settings.

Procedure
Most of the papers in this issue (except those by van Lier and DeKeyser) originate from a symposium on consciousness in second language learning organized by Hulstijn and Schmidt in the framework of the 10th World Congress of the International Association of Applied Linguistics (AILA), held in August 1993 in Amsterdam. The purpose of the symposium as a whole (and this collection of papers) is to show the necessity of combining multiple perspectives on consciousness and explicit grammar teaching and showing to what extent new views can and should be put to the test, thus giving fresh input to a matter of great theoretical and practical importance.

We provided each of the contributors to the symposium and to this issue with the preliminary version of Schmidt's paper and asked them to address one or several of the seven questions to be mentioned below. Schmidt's paper aimed to serve as a terminological and theoretical framework for the remaining papers. We encouraged the contributors to comment on each others' preliminary papers and to include cross-references in the final versions of their texts. We believe that this procedure has led to a collection of papers offering a coherent conception of the
The remainder of this introduction consists of a summary and discussion of the views raised by the contributors in response to our questions.

**Question 1. Can the theoretical concepts relevant to understanding issues concerning the role of consciousness in L2 learning be standardized so that researchers in the field are speaking from a common understanding?**

Following the advice of McLaughlin (1990) to avoid the ambiguous umbrella term "consciousness," Schmidt, in the opening paper proposes instead other terms to distinguish among the following four aspects of consciousness when discussing language learning processes: 1. Consciousness as intentionality. Here we are dealing with the distinction between intentional and incidental L2 learning. 2. Consciousness as attention. The basic claim here is that learning without some form of attention (or noticing or detection) is not possible. 3. Consciousness as awareness. The labels "explicit" and "implicit learning" are recommended to refer to learning on the basis of awareness at the point of learning (explicit learning) or without such awareness (implicit learning). In addition, it is emphasized that explicit and implicit learning (the process of learning) must be distinguished from explicit and implicit knowledge (products of learning) and explicit and implicit instruction (on the part of the teacher). 4. Consciousness as control. Although it could be argued that control and attention are the same from a theoretical perspective, it is useful to separate them to emphasize the contrast between input and output processing. Automatic, fluent output processing (speaking and writing) need not be and normally is not under full conscious control, though this is not by itself evidence for implicit learning (learning without awareness).

The other contributors to this issue all adopt Schmidt's fourfold distinction. DeKeyser adds that even after the adoption of Schmidt's distinctions, none of the dichotomies are perfectly clear-cut. DeKeyser points out, however, that these distinctions do help us avoid conflating different kinds of things, and they help us to avoid making overly simplistic and general claims for a single dissociation between only two kinds of cognitive mechanisms for L2 learning. Van Lier discusses additional uses of the term consciousness. He points out that the notion of consciousness should not be restricted to the intrapersonal, cognitive perspective but must be extended to an interpersonal, social perspective. This social perspective provides the framework within which experience can be organized, controlled, and evaluated. Consciousness and language are inextricably interconnected; the development of one goes hand in hand with the development of the other. This link with language is further illustrated with four features of "contingent interaction" in language classes, showing opportunities for increasing levels of symmetry in student-teacher interaction. This offers opportunities for awareness-raising work, necessary for students and teachers in taking charge of their educational activities, turning the classroom from a field of activity into a subject of inquiry and promoting deep and lasting changes in educational practices.

**Question 2. How can these constructs be operationalized in laboratory-like settings, naturalistic settings, and classroom/pedagogical settings?**

In their discussion of the operationalization of consciousness, most authors focus on attention or awareness. VanPatten takes a processing perspective on attention (attention as a processing resource) rather than a product orientation. He therefore advocates studying the effect of explicitly provided information on input processing rather than on output processing. In VanPatten's view, a question such as "Does explicit knowledge become implicit knowledge" is not the right question. A more useful focus is on the role of attention in turning input into intake, which requires that form and meaning in the input be connected. VanPatten proposes the following hypotheses: 1. Learners process meaning before form. 2. Before attending to non meaningful form, informational content must be processed without cost. (DeKeyser comments that, in principle, one could also argue that form must be processed before meaning can be processed.)

Harley reviews a number of classroom studies and points out that many of them did not specify various aspects of consciousness in second language learning, not withstanding individual differences in focus and perspective.
whether learning was intentional or incidental, what the focus of attention was, what the state of learner awareness was, or whether efforts were made to impose conscious control. Harley attempts a post-hoc analysis of these studies, using the definitions proposed by Schmidt, concluding that in general these studies show that some level of awareness is necessary for L2 learning even for young children learning a foreign language. For further research, Harley suggests that finer distinctions be made and that introspective methods be used to gain insights into the role of awareness at the point of learning.

DeKeyser also reviews a number of classroom studies, as well as some laboratory studies on the acquisition of artificial grammars, reaching the same conclusions as Harley. There is empirical evidence for the effectiveness of explicit learning. He points out that "no classroom studies have demonstrated a long-term effect of implicit learning in the sense of near-perfect rule-governed production." However, the problem with the operationalization of explicit learning through explicit teaching, as DeKeyser rightly observes, is that most studies do not use measurements that are sensitive enough to distinguish between explicit knowledge and implicit knowledge as the result of explicit learning. Hulstijn and De Graaff point out in this respect that implicit knowledge is a theoretical construct, not directly assessable by means of language tests. Fluent, automatic production, however, might be taken as the behavioral correlate of implicit knowledge.

**Question 3. Is it useful to rethink the notions of "acquisition" and "learning" in terms of current psychological models?**

None of the contributors to this issue adhere to a global definition of acquisition and learning as proposed by Krashen (1981, 1982), although VanPatten and Hulstijn and De Graaff acknowledge that Krashen's distinction can defended with pedagogical arguments. VanPatten points out an inconsistency in Krashen's definitions (Krashen, 1982: 1). Whereas acquisition is referred to as a process, learning is referred to as (conscious) knowledge. Furthermore, according to VanPatten, Krashen conflates the notions of context and purpose with those of process and product. All contributors appear to agree on Schmidt's proposal that the distinction between explicit and implicit learning offers a better conceptualization than the acquisition-learning distinction. The main reason is, as VanPatten, Ellis and Schmidt point out, that the explicit-implicit learning distinction does not conflate with associated notions (such as intentional-incidental learning, attention, explicit-implicit instruction, control, context and purpose), as the acquisition-learning distinction does.

**Question 4. How relevant are connectionist models for understanding implicit learning?**

Ellis advocates connectionist modeling for the investigation of L2 learning to the extent that L2 learning takes place implicitly. DeKeyser, following Rumelhart (1989), also states that implicit learning mechanisms, as implemented in connectionist models, are particular efficient for the acquisition of probabilistic generalizations based on similarities to prototypes. Hulstijn and De Graaff make a distinction between rule learning and item learning, referring to the role that connectionist models may play in explaining the latter type of learning (and perhaps even rule learning as well). We conclude that connectionist models are appropriate for modeling implicit learning but that the jury is still out concerning whether they are appropriate for modeling explicit learning or the interaction between explicit and implicit processes.

**Question 5. What are the linguistic dimensions of the problem? What relationships exist between UG and conscious or unconscious learning? What relationships exist between conscious and the negative evidence issue?**

All contributors appear to converge on the position that L2 learning can best be viewed from some kind of interface position. The research agenda for the near future then appears to dictate investigations into the question to what extent fluent, automatic use of L2 knowledge can be attained by implicit learning and to what extent by explicit learning and whether this may vary depending on which aspects of language are concerned. As Ellis points out, language learning is poorly defined because of its numerous facets. Some papers offer suggestions in this respect. Ellis, in his paper on vocabulary acquisition, offers evidence that formal (phonological, ortho-
graphic) features of vocabulary items can be acquired implicitly, because simple attention to the stimulus domain is sufficient for implicit induction of statistical regularities in the input, whereas meaning and the mediational aspects of vocabulary involve explicit learning processes. Schmidt, VanPatten, Harley, and Hulstijn and De Graaff all mention Schwartz's suggestion (1993) that grammar rules falling in the domain of UG can only be acquired implicitly (they "grow"), while most of the lexicon is explicitly learned. From this point of view, one might argue that providing learners with negative evidence in the form of feedback on errors may only be helpful for grammatical features that can be explicitly learned.

DeKeyser remarks that not all rules are created equal. He makes a distinction between categorical and probabilistic rules, hypothesizing that explicit learning is better than implicit learning for simple, categorical rules, whereas implicit learning is at least as good as explicit learning for prototype (probabilistic) rules. Hulstijn and De Graaff put forward hypotheses with respect to nine types of grammatical features, specifying the relative facilitating effect of explicit versus implicit learning. They also make an attempt to tackle the definition of easy versus hard rules without falling into the trap of circularity that arises if one defines easy and hard rules as early and late acquired rules and then claims that acquisition order is determined by rule complexity. Hulstijn and De Graaff try to define complexity solely in cognitive terms and further distinguish complexity from scope and reliability. Reliability is what DeKeyser calls probability and what elsewhere has sometimes been called clear versus fuzzy rules. Hulstijn and De Graaff argue that, other things being equal, explicit instruction has more effect in the case of complex rules than in the case of simple rules and that explicit instruction has more effect in the case of reliable, general regularities than in the case of unreliable, fuzzy ones. What appears to emerge here is a differentiated picture of L2 learning: it is neither a wholesale matter of implicit learning (as Krashen wants it) nor purely a matter of explicit learning. The task ahead is to find out for which grammatical aspects explicit learning can facilitate L2 acquisition. As Harley points out, it is also clear that linguistic criteria alone will not predict how useful metalinguistic information will be, since learner-based conditions on noticeability also apply.

**Question 6. What research methods show the most promise for advancing our understanding of issues in this area?**

Harley argues for a variety of methods, including quasi-experimental designs in classroom setting and the inclusion of self reports in order to obtain insights concerning learning at the point of intake.

Some contributors raise objections against Reber-type studies in which subjects are shown letter strings derived from a finite state grammar, followed by assessment of the degree to which the rules underlying the strings are internalized. VanPatten argues that finite state grammars suffer from three critical deficiencies. They do not contain rules of movement or recursiveness, they do not include surface features such as agreement mapping, morphological forms, inflections or stress patterns, and they are devoid of referential and social meaning. Dismissing artificial language studies using letter strings derived from finite state grammars, however, does not mean that one should object to all artificial language learning studies. On the contrary, various authors view these studies as particularly suitable to address issues that can hardly be reliably investigated in cases of natural language learning. DeKeyser reports the results of a pilot study using Impexlan, an artificial (created) linguistic system designed to include such features of natural languages as number, case and gender, with both categorical and probabilistic rules. Hulstijn and De Graaff mention several advantages of laboratory studies. The first is that the language can be brought under control of the researcher. This can be done by using a (partly) artificial language. Second, computers can be used to replace the teacher in order to control both input quantity and input quality, e.g. explicit versus implicit instruction of grammar rules. To obtain results that are both reliable and valid, they argue in favor of a twin approach, combining "artificial" with "natural" experiments.

The papers in this issue also illustrate some of the benefits that can be obtained when useful research paradigms are imported from other fields to the study of L2 acquisition. Artificial grammar learning studies, previously developed within experimental psychology, have now been adapted and used in several L2 learning studies. In addition to the standard L2 paradigm
of test - provide instructional treatment - retest, we also note the productive adaptation to L2 research by VanPatten of divided attention tasks, one of the two basic paradigms for research in psychological studies of attention (the other being the selective learning paradigm), as well as Ellis' use in L2 research of measures of repetition priming, an experimental research tool that has been the basis of most psychological studies of implicit memory.

Question 7. What are the consequences and implications of the growing recognition of the role of consciousness in learning for L2 instruction?

One of the consequences of an increased appreciation of the role of consciousness in L2 learning for L2 instruction has already been mentioned: explicit instruction is more likely to facilitate L2 acquisition in the case of some features of language than in others. This is a moderate version of the interface position, according to which explicit knowledge can be instrumental in the acquisition of implicit knowledge. There also seems to be broad agreement among the contributors to this volume that the way in which instruction may work in L2 learning is through its role as a cognitive focusing device for learner attention, a position expressed here by VanPatten and Harley, and elsewhere by R. Ellis (1993). Explicit knowledge may also serve as what Terrell (1991) has called an "advance organizer" that aids the segmentation and comprehension of input, making more of the input available as intake.

According to DeKeyser, it remains to be seen whether feedback on production errors, another form of explicit instruction, may also help learners notice certain formal features in the target language. Monitoring the products of the learner's own speaking and writing products from a formal perspective may feed back into the intake process and hence foster language acquisition, as has been suggested by Swain (1985). However, no agreement exists concerning the effects of monitoring production through error correction.

It should be emphasized that only modest implications for second and foreign language teaching can be drawn from the papers in this issue. As VanPatten points out, there is a great danger when talking about the role of consciousness in second language learning that this will be interpreted as a reactionary call for a return to traditional language teaching methods, with decontextualized grammar explanations followed by intensive drill and an emphasis on error-free production. As Ellis points out in the conclusion to his review of vocabulary learning studies, language learning is a complex activity, and an effective learning environment must cater to all of its aspects. Naturalistic settings provide maximum opportunities for exposure and motivation, but explicit skills are necessary for deep elaborative processing of semantic and conceptual representations. Even if many controlled studies show an overall advantage for explicit over implicit instructional approaches (as shown by DeKeyser's review), Harley emphasizes that classroom based studies that speak directly to the relative merits of experiential instructional approaches and awareness-oriented approaches remain inconclusive. In addition, Van Lier reminds us of the dangers of taking an exclusively cognitive approach to the question of the role of consciousness in learning, as well as the limitations in taking a view of language that views L2 acquisition exclusively as grammar acquisition. It is probably not premature to conclude that extreme exposure-only approaches to language learning are misguided in the light of research findings reported in this issue, but it would be misleading to claim that the research to date unambiguously supports any particular approach to syllabus design (e.g. grammar-based, notional-functional, task-based, learner-centered, experiential) or any specific language teaching method.

Concluding remarks

In organizing the symposium and in collecting and editing subsequently the papers for this issue of the AILA Review, we set ourselves three main goals: - to bring some order to the terminology on issues of consciousness in second language learning; - to show that contributors with different backgrounds and working in different subdomains of second language learning can reach considerable consensus in the use of terminology and conceptual framework and use this conceptual framework to make the relevant extant literature more transparent; - to show how the various dimensions of consciousness can be used to lay out an agenda for future
research that is both theoretically and practically oriented. We are confident that, thanks to the aid of the contributors to this issue, some progress in pursuit of these goals has been achieved.

References


