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DISCUSSION

Incidental Vocabulary Learning

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This paper takes the papers in this special collection as a starting point and raises issues concerning key terms, with particular emphasis on *incidental.* It is argued that there is no clear way to show that a word has been learned incidentally, if one means that specific attention is not drawn to that word either by some external force or by the learner. I further argue that, to understand vocabulary learning, linguists cannot limit the investigation to word meaning. Essential to a study of the lexicon is the study of syntax—in particular, the incorporation of syntactic subcategorizations. Taking all of these factors into account, a more nuanced approach to the study of incidental vocabulary learning is needed.

As is apparent from many of the papers presented in this issue, questions related to vocabulary acquisition remain unsettled. What is generally agreed upon is that at least some, if not a large part, of one's second language vocabulary is acquired *incidentally*—that is, as a by-product of other cognitive exercises involving comprehension. Chief among these is reading, although listening is also implicated, in particular, in the papers by Brown, Sagers, and LaPorte, and Ellis and He. Whatever the means by which this process is accomplished, it seems likely that it is gradual and incremental, requiring repeated exposure to the same words in various collocations and in various situations, a point made specifically by Paribakht and Wesche, Huckin and

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Coady, Wode, and to some extent Brown, Sagers, and LaPorte. In many respects, this is similar to first language models of vocabulary acquisition, which posit repeated exposure to words (cf. Huckin & Coady; Wode) in meaningful collocations as the key to sound-meaning or, in the case of reading, form-meaning associations. However, I will argue below that definitions of all of the key words in the title of this special collection, *incidental*, *vocabulary*, and *acquisition*, are as yet substantially unclear. Given the lack of clarity, it is difficult to support the notion of incidental vocabulary learning as laid out in many of the papers in this special issue.

DEFINITIONS

Incidental

To begin, I will focus on the matter of definitions, addressing this question primarily from an SLA perspective. I am not alone in raising the issue of definitions; it is one also touched upon in a number of the papers in this issue, either explicitly or implicitly.

The topic of this special issue is "Incidental L2 Vocabulary Acquisition" yet researchers do not always have agreed-upon or overtly stated definitions of any of these three words. Let us first examine *incidental*. One of the difficulties in coming up with a good definition of incidental learning stems from the fact that there is no way to show that a given word was incidentally learned. The concern is, after all, with cognitive processing and of course it is not possible to have direct access to what a learner is doing.[1] The *American Heritage Dictionary of the English Language* defines *incidental* as "occurring as a fortuitous or minor concomitant." In other words, it appears to be something that is a by-product of something else.[2] But what is the something else?

Most of the papers in this special issue have taken incidental as something that is learned without the object of that learning being the specific focus of attention in a classroom context,[3] that is, incidental learning is a by-product of the classroom focus. Wode is the most specific about this when he provides the following operational definition: "language learning as a by-product of language use by the teacher or anybody else in the classroom, without the linguistic structure itself being the focus of attention or the target of teaching maneuvers" (p. 245). Huckin and Coady present a similar operational definition when talking about *secondary learning*. They state that it is a "by-product, not the target, of the main cognitive activity, reading" (p. 182). In other words, it is ancillary to the main pedagogical activity. In all of these definitions, the intended focus of learning is elsewhere, but these definitions, whether operational or real, tend to bypass the active role of the learner. Fraser also talks about learning with a focus on something else, although she, interestingly, talks about L2 vocabulary learning occurring through incidental reading. But here too it is attention that is supposedly focused elsewhere—in particular, on overall meaning of a text rather than on the specific items within the pas-

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sage, that is, the vocabulary. Although these may be useful definitions for investigating the concept, they implicitly suggest that, outside a classroom context, there is only incidental learning, and this is clearly not what one eventually wants to say.

A slightly different approach is taken by Paribakht and Wesche in their study. They bring the learner centrally into the picture by discussing the notion in terms of learner attention. A related position is taken by Ellis and He, who constructed a task in such a way that learning the items is a potential outcome of performing it. However, as will be seen below, in the task that Ellis and He found to be the most successful, the learner made the vocabulary words in question the focus of attention. Hulstijn (1996) argues that there is only a negative definition: "learning in the ABSENCE of an intention to learn." This is not unlike the work of Ellis (1994b), who talks about incidental vocabulary learning as learning without intending to learn. Again, *intentional* seems to be the operative word. This does not mean that the learner does not notice the word in question; only that his or her attention is focused on "understanding the passage as a whole, and memory for the new word comes as a natural result of this process, a conscious effort to learn being unnecessary" (p. 219). Ellis differentiates this from *implicit learning*, an essentially behaviorist notion "with the meaning of a new word being acquired totally unconsciously as a result of abstraction from repeated exposures in a range of activated contexts" (p. 219).

When one introduces the concept of attention, in particular by talking about the teacher making specific vocabulary the focus of attention, additional difficulties arise. It is clear that learners are also their own teachers—they have their own focus of attention. It is in this context that the definition and perhaps even the concept of attention are somewhat problematic. The crucial assumption is that attention to a particular vocabulary item is either teacher- or researcher-driven or materials-driven. Sharwood Smith (1993), in an article on input enhancement, argued that input can be made salient in one of two ways: (a) by the teacher, materials, books, and so forth, or (b) by the students themselves. In other words, salience can be externally or internally driven, each type being equally important. Gass (1988, 1997) has argued that salience can come about by a number of factors, some of which are internal to the learner and some of which are external. When talking about incidental learning with an implicit or explicit role for attention, it is important to clarify that one is talking about learner attention because pedagogically induced attention may or may not fit in with learner attention. As Ellis (1994a, p. 7; 1994b, p. 219) explicitly stated, "That we have not been taught vocabulary does not entail that we have not taught ourselves." In other words, it is crucial in all considerations of attention (which implicitly or explicitly underlies any discussion of incidental learning) that both the existence of and the important roles of externally (i.e., researcher, teacher) and internally (i.e., learner) driven attention are recognized.

I have so far dealt with issues of incidental learning and have brought into

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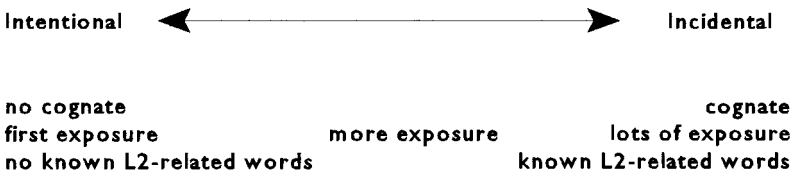


Figure 1. Intentional versus incidental learning.

the discussion the concept of attention. In what follows I relate these issues to general issues of second language acquisition.

If one takes a view of second language acquisition that incorporates attention as a crucial component (although I am not convinced that this is a necessary condition, see below), then one would not expect incidental vocabulary learning to be conceived of as dichotomous because attention itself is not dichotomous. Rather, the ease with which a vocabulary item might be learned will depend on a number of factors as schematized in Figure 1.

The continuum in Figure 1 suggests that words are more likely to be learned incidentally if (a) there are recognized cognates between the native and the target languages, (b) there is significant L2 exposure (cf. Nagy, Herman, & Anderson, 1985), or (c) other L2 related words are known. In Fraser's study, higher retention rates occurred when words were noticed and potentially highly salient. She notes that this occurs with L1 cognates, L2 word association, and frequently encountered words. As she states (p. 238), "There is a cognitive hook to hang the new item on." In other words, there is a "facilitating effect of existing memory structures" (p. 238). The rationale behind the categories established on this continuum is that they require differing degrees of conscious processing. A discussion of these issues goes beyond the scope of this paper (see Gass, 1997, for further elaboration). Briefly, however, unconscious processes "are not under voluntary control and are difficult to modify, but are fast, efficient, and accurate, and are responsible for skilled performance and most details of cognitive processing" (Schmidt, 1990, p. 138). On the other hand, conscious processes are "the experiential manifestation of a limited capacity central processor" (Schmidt, 1990, p. 138); they are slow and often deliberate. The features proposed to be associated with incidental versus intentional learning rely on a notion of learning that distinguishes between learning that requires a significant amount of effort and learning that is relatively effortless. Features associated with incidental learning (i.e., [+cognate], [+exposure], [+known L2 words]) are those that suggest a greater amount of background knowledge or information, allowing the learner to access them with greater ease and less deliberation. On the other end of the continuum are features that would suggest the necessity of a greater amount of deliberate learning. To illustrate further, consider a native Italian speaker learning English. Such a learner might be predicted to learn the word *inform* incidentally because (a) there is a recognized cognate in the native language (*informare*), (b) the learner has heard or read the word *inform* numerous times, and

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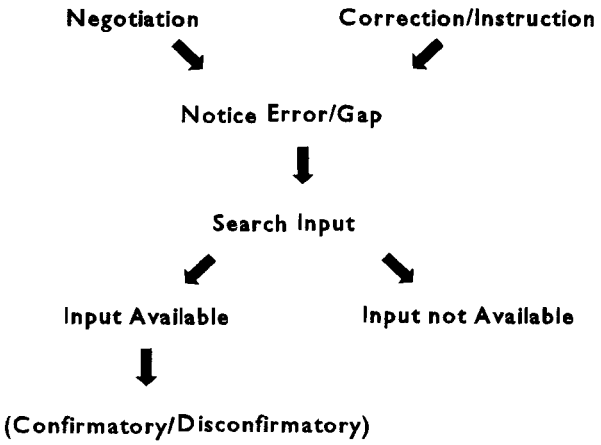


Figure 2. The function of input enhancement (negative evidence or instruction, explicit correction).

(c) the learner knows the word *information* (L2 word association). In this instance, all of these factors would conspire to a high likelihood of incidental learning. On the other hand, a word like *happen* would have a low likelihood of incidental learning because it does not satisfy criterion (a) or (c) and it may or may not satisfy (b). This word might require intentional learning, that is, more deliberate, effortful learning.

Another layer to the learning curve relates to the learners' need for a particular word as they are attempting to express a particular meaning. Brown et al. use the term *gap acquisition*, which refers to the likelihood of acquisition as a function of a gap that has been created by the need to express a particular concept. In looking at data from dialogue journals, they found that there is often immediate uptake of an available word after the learner demonstrates a need for the word through, for example, circumlocution. The idea of a need to learn influencing later learning parallels discussions in the second language literature unrelated to vocabulary acquisition.[4] Learning is facilitated by one's readiness to learn (see Pienemann & Johnston's [1987] notion of developmental stages and Mackey's [1995] empirical study of the relationship between interaction and development). Similarly, Gass (1997) discusses the "need to mean" (taken from work by Samuda, 1993), arguing, within the context of classroom instruction, that learning is promoted in just those instances in which a recognizable knowledge gap is created for learners. Once this occurs, in this case through instructional manipulation, learning is promoted. Figure 2 (taken from Gass, 1997) presents a model that highlights the role of gaps in second language learning. This model is intended for all aspects of second language learning.

The schematization in Figure 2 attempts to demonstrate the relationship between (a) various means of providing information to learners about prob-

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lems in their language and (b) ultimate learning outcomes. Recognition of a need to learn (i.e., a gap) is the first step in actual learning. Whether that need is internally driven, as in the case described by Brown et al., or externally driven (e.g., by a teacher or textbook) is not important (see Sharwood Smith's [1993] concept of input enhancement). What is important is that a gap is present and that the gap is noticed or recognized by the learner. Noticing a knowledge gap then prepares the learner for learning, or, as discussed more fully by Gass (1997), sets the scene for learning.

Can incidental vocabulary learning take place? In what follows, I discuss incidental learning in the context of syntax learning—not because syntax learning is necessarily related to the precise way in which vocabulary learning takes place[5] but because it is illustrative of what I consider a more appropriate example of incidental learning. Incidental learning takes place in all areas of life, and it is therefore reasonable to assume that it takes place in the realm of vocabulary learning as well. I further argue that the way in which it is defined in most of the papers in this collection (i.e., when the object of learning is not the focus of deliberate attention) is reasonable. However, with vocabulary learning, the criterion of not being the focus of deliberate attention is difficult to show.

To give an idea of what I do believe to be an example of incidental learning, I present two studies drawn from the domain of syntax, one by Gass (1982) and the other by Eckman, Bell, and Nelson (1988). The justification for considering these as examples of incidental learning is that, in each study, learning could only have occurred without attention because there was no exposure to the learned structures. New learning thus resulted from the learning of something else. In the first of these studies, two groups of second language learners were given specific instruction on relative clauses. One group was instructed on subject and direct object relatives, the second group on object-of-preposition relatives.[6] After the period of instruction, both groups were tested on all relative clause types, even on those to which there had been no exposure. The group that had received subject and direct object instruction performed well only on those two relative clause types but no others, whereas the second group performed well not only on their instructed relative clauses (objects of prepositions) but also on certain other relative clause types. This was predictable from the linguistic relatedness of these structures. The study by Eckman et al. was similar in both design and results, although in their study there were four groups of learners (i.e., a control group and three experimental groups), each of which received instruction on one of three relative clause types: subject, direct object, and object of preposition.

The results of these studies suggest that learners not only learned what was presented to them, but they also learned incidentally even when no input was provided. In other words, as a by-product of focused attention on one aspect, other aspects, to which there had been no exposure, were learned incidentally.[7] Of course this type of incidental learning in which there is no exposure needs to be distinguished from the incidental learning that is the

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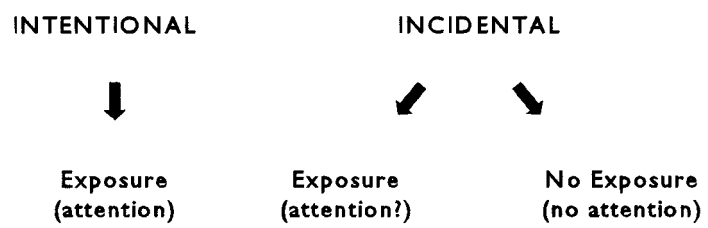


Figure 3. Intentional and incidental learning.

subject of most of the papers in this issue, in which there is exposure, although learning is presumably nonintentional. This is diagrammed in Figure 3.

Work by Schachter, Rounds, Wright, and Smith (in press) provides evidence for the role of nonattentional learning, which one might want to call incidental learning. In their controlled study, learners whose attention was not drawn to a given grammatical structure, but who were exposed to that structure, showed evidence of learning. It is important to point out, however, that all of these studies relate to syntax learning and not to vocabulary learning. The extent to which it is possible to draw from research on syntax to account for vocabulary learning is not clear. However, considering definitions vis-à-vis syntax provides those conducting research in vocabulary acquisition with a framework within which to better understand what incidental learning might consist of.

Vocabulary

I turn now to the second definition to be dealt with, that of vocabulary. It has been said that learning a second language means learning its vocabulary. What this suggests is that knowing a lexical item means knowing a number of things—most often, meaning. In fact, this is what is commonly intended when one is talking about or measuring vocabulary knowledge. However, a deeper and more complete knowledge involves syntactic information and, in particular, the subcategorization of words—that is, the syntactic frames that words fit into. This is clearly discussed in the paper by Henriksen, who talks about depth of knowledge, pointing out the many different facets of vocabulary knowledge. If one takes as an example two synonyms from the Wode study, *fetch* and *carry*, it is not enough to know that both refer to the transporting of something from place to place. One must additionally have knowledge of the syntactic frame within which they are used. Both Fraser and Paribakht and Wesche used the five-point Vocabulary Knowledge Scale developed earlier by Paribakht and Wesche (1993, 1997). The advantage of this scale is that stage 5 gives insight into the syntactic information that is contained in the lexical item; the disadvantage is that, in order to gain that information, subjects are asked to write a sentence using the vocabulary item. To return to the *fetch* and *carry* example, if a learner writes *John is fetching the bucket* and *John is*

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carrying the bucket, one has no way of knowing if the learner has knowledge of the subtle differences between *John is fetching the bucket for Jim*, *John is carrying the bucket for Jim*, and *John is carrying the bucket to Jim*, and, further, that *John is fetching the bucket to Jim* is not possible. In other words, production information may provide us with at best partial information about linguistic knowledge, but it does not inform us about a learner's knowledge of what is not possible—clearly an important part of the entire picture of what a learner knows. In general, then, it seems that significant attention needs to be paid to grammatical information encoded in lexical items, a factor that turned out to be the most important source of knowledge used in inferencing according to the data from the Paribakht and Wesche study.

If, as some of the papers here show (particularly the paper by Paribakht & Wesche), syntactic knowledge and lexical knowledge (in the sense of meaning) are not separate and isolated parts of vocabulary knowledge, the research agenda must incorporate an attempt to understand the relationship between syntactic and lexical information in the acquisition of vocabulary, a point raised in the paper by Wode. This relationship was the object of investigation of a study by Gass and Ard (1987), in which they looked at changes over time (as measured in a cross-sectional design with early and later learners of English). The design was such that results were compared across syntactic frames and across lexical items within those frames. It was found that low-level learners did not differentiate lexical items within a single frame—that is, different lexical items within the same lexical frame did not affect learners' judgments of sentences. For example, sentences such as *The teacher demonstrated the students the new machine* and *The teacher showed the students the new machine* were treated similarly by low-level students. Higher proficiency students showed a greater degree of semantically based differentiation. In other words, there is evidence that differential responses to sentences correlate with overt semantic differences in lexical items. In terms of a learning curve, Gass and Ard proposed that learning takes place as follows:

1. Learners learn a particular syntactic pattern to account for all cases of what appears to them to be a particular structural type.
2. A second step occurs when a second pattern becomes available to learners; they can then either alternate these patterns or replace the first with the second until the correct pattern is established.

Thus, when additional information becomes available to learners as a function of proficiency, destabilization occurs. Destabilization of initial syntactic patterns is observed in the greater sensitivity of the more advanced learners to the relationships that exist between and among lexical items. In fact, learners acquire syntactic information through the lexicon. They may first learn lexical items as unique bits of language information with syntactic generalizations as a result, not a cause. As an initial approach to a particular lexical item, learners conceivably have a general idea of the meaning of the word and

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a general idea of the kinds of syntactic structures in which words occur. Increased proficiency means refinement in both of these areas.

The point to be made here is that lexical acquisition needs to be considered broadly and needs to include the semantics of lexical items as well as syntactic information. A version of this point is made by Paribakht and Wesche, who note that sentence-level grammatical knowledge is important in word processing. Additionally, as Henriksen points out, one needs to acquire the packaging of lexical items (i.e., the range of meaning or the appropriate references) and one needs to learn to build appropriate networks (i.e., which words are related to other words, and how, including antonyms and synonyms, semantic intensity, etc.). These are dynamic processes that continue as vocabulary learning continues and one's lexicon matures.

Acquisition

The third definition to think about is learning, or acquisition, two terms that I am using interchangeably in this paper.[8] Inherent in the term *acquisition* itself is a degree of ambiguity. On the one hand, acquisition is viewed as an endpoint. This would be the case when referring to something having been acquired (e.g., the past tense, the passive). Here varying criteria have been used in second language acquisition research (e.g., percentage accurate, first occurrence). On the other hand, acquisition can be viewed as a process beginning with input and culminating with integration of new linguistic information into an existing linguistic system, output then being the manifestation of newly integrated or acquired knowledge (see Gass, 1988, 1997).[9] Learning in this view is a dynamic and lengthy process. A similar view is articulated in the paper by Paribakht and Wesche with specific regard to vocabulary. They point out that learning a vocabulary item is a process that begins with the first meaningful encounter with a previously unknown word and continues through the successful integration of key features of that word into their mental lexicon. They further note that vocabulary acquisition is an incremental and probably recursive process, involving the integration of different kinds of knowledge, as well as the achievement of different levels of ability to use that knowledge in communication. This view of vocabulary acquisition is consistent with the model described by Gass (1988) and elaborated further by Gass (1997). This argument supports the notion reflected in the task types suggested by Paribakht and Wesche (1996, 1997). A first encounter with a word may draw a learner's attention to that item. Subsequent encounters provide learners with opportunities to determine relevant semantic and syntactic information. But importantly, it is a process, and a recursive one. Henriksen also raises the issue of the definition of acquisition using the phrase "intake for learning" (p. 310). She makes the important point that vocabulary learning can be conceived of as multistaged, with different vocabulary items situated at different points of several related continua at any given time. As she notes, vocabulary acquisition must be seen as a system in flux.

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STRATEGY USE

I now return to a discussion of the strategies that learners appear to use. A number of general strategies learners seem to rely on for comprehending second language texts were cited in the papers in this issue. Among these are inferring from context, consulting dictionaries (or proficient speakers), and ignoring unknown words. Clearly, ignored words are not acquired, but what is not known is in what sense the words were ignored and, consequently, in what sense they do or do not play a role in acquisition. One possibility is that these words were truly ignored—learners paid no attention to them whatsoever. On the other hand, the so-called ignored word may not have been ignored at all. In fact, it is plausible that hearing or seeing a word represents the first exposure in the long process of acquisition, with that exposure drawing the learner's attention to that word as the first step in gaining appropriate information about it. But ignoring some words may be a useful strategy in another way—that is, it may be helpful in acquiring other words that are not ignored. Viewed in this way, ignoring is really just another learning strategy. It seems reasonable to assume that learners infer that certain words are unnecessary for general comprehension and thus ignore them while they concentrate on making sense of the rest of the text (see Ard & Homburg, 1992). This issue is raised in the Paribakht and Wesche paper. Ostensibly, dictionaries should be the easiest method of learning about words but, interestingly, learners seem to prefer inferring, as Fraser points out. Moreover, Fraser finds that inferring results in higher rates of acquisition than do appeals to direct definitions. She suggests that this is because learners have to do some problem solving to make inferences, which in turn strengthens the cognitive associations between the word and its meaning.[10] This finding supports the notion that vocabulary acquisition is incremental and at the same time lends it some explanatory force. It is incremental precisely because word meanings are not neatly contained in concise definitions but instead are conglomerates of associations with other words and collocations of words (see Henriksen, this volume; Tinkham, 1997).

There are at least two broad ways in which words in a text may be related—semantically and syntactically. When readers are working at comprehension, it is natural for them to concentrate on semantic relations, and this is what is meant by inferring from context. However, learners also rely heavily on sentence-level grammar (i.e., syntax) as a key to lexical comprehension. In the data presented by Paribakht and Wesche, word order knowledge in particular seems to be of great importance to learners because it helps them to distinguish modifiers from heads in phrases. Of course, there is a semantic element here—and quite probably it is this element that learners are aware of most when they employ this strategy.

Another strong linguistic heuristic that learners apply is morphological knowledge. Stems, derivational affixes, and grammatical inflections are all cited as cues that learners use although, unfortunately, these studies did not

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attempt to determine how sophisticated the learners were in their application of these cues.

A key point that is not clear, however, is how metalinguistic knowledge interacts with the strategies reported on in these papers, strategies that presumably arise naturally in the course of learning. For example, some students learn syntactic category analysis and other analytical skills in language classes. One question to be asked is whether these students work at comprehension in a distinctly different way than untrained students and whether they have a discernible edge in vocabulary acquisition. There seems to be some evidence from the Paribakht and Wesche paper that metalinguistic knowledge does help learners in comprehension tasks; however, this extra knowledge may simply reinforce natural strategies rather than provide new ones. Again, this is an important question for further research.

As far as comprehension goes, the strategies employed seem to be fairly successful. However, one should not assume too readily that word comprehension facilitates full, nativelike vocabulary acquisition in second language learners. The problem is that it is possible to have completely accurate semantic associations with a given word and yet have a deviant syntactic subcategorization frame for it. Consider example (1) taken from a Thai speaker learning English.

(1) *his wife said the baby's name is Tom ah why did he upset?* (Philp, 1998)

Given the context of this utterance (a picture description task), this learner has understood the meaning of the word *upset*. In fact, in the previous discourse leading up to this utterance, she had heard it used (in the context of *look upset*) and had used it herself with the appropriate semantic connotations. Hence, her semantic representation is more or less accurate. However, the appropriate English syntactic features are lacking. Most likely at this point she has taken the word *upset* to be a verb. Additionally, she did not understand the appropriate subcategorization of *upset*, which in its verb form requires two arguments rather than one.

Indeed, as many language teachers can attest, the learner's behavior described above seems to be the norm for many learners. A credible explanation for this phenomenon is that learners already have sophisticated semantic networks built up for most of the words they encounter in the target language; hence, semantic acquisition involves, as the initial step, the transferring of these associations to the new target language word. However, when this happens, it is often the case that native language syntactic frames are dragged along, which creates a problem of inappropriate nativelike syntax.[11] This is an area where second language acquisition is glaringly different from first; with first language acquisition, there are no competing subcategorization frames and quite possibly there is a drive to create original frames. With second languages, however, learners must acquire new subcategorization frames and the goal then is to make them aware of differences between first and second lan-

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guage syntactic frames. Importantly, comprehension exercises do not appear to be sufficient for this task (see Paribakht & Wesche, this volume) in that they do not require accurate syntactic frames (see Swain, 1985, 1995). Conceptually, this conundrum presents some difficulty for the concept of incidental learning, which by definition comes from oral or written input (listening or reading). The difficulty is as follows: (a) Incidental learning comes as a result of input with no attention, (b) comprehension of input can take place without an understanding of syntax, and (c) lexical knowledge includes knowledge of syntactic factors. Therefore, if learners are focused on meaning and not on form (as required for incidental learning), as in the case of comprehension, then how does incidental learning take place?

This same conceptual difficulty is also called into question by Huckin and Coady in their discussion of the learning of collocations incidentally (i.e., through exposure only). One might then assume that there are aspects of phrase structure that serve no purpose (i.e., no semantic, phonological, or pragmatic end) other than to satisfy the syntax module. It may be that the demands of this syntax module are satisfied in native speakers as a consequence of some innate mechanism and it may be that, once satisfied, the syntax module assumes a mature state in which further modification is unnecessary for native speakers and possibly resisted for learners of a second language. This state of affairs does not exist in the case of semantics. Because the world of meanings is very large, or possibly infinite, human languages need to be able to grow as new meanings are construed. This being the case, the semantics module remains quite flexible, whereas the syntax module becomes rather rigid at an early age.[12] One would therefore expect that learners would not be able to acquire syntactic frames incidentally, if by *incidentally* the concept of attention is also invoked (see Gass, 1988, 1997; Robinson, 1997; Schmidt, 1990, 1994, 1995), although they might very well acquire enough semantic knowledge to successfully negotiate second language texts.

If this characterization is correct, it suggests that most learners need to consciously notice syntactic details to acquire them, although it is not clear how the eventual incorporation of these details is worked out. In other words, it might be the case that some conscious attention is necessary but that innate devices are still capable of organizing the knowledge.

How noticing might come about is explored in the contribution by Ellis and He. In their study, they considered three modes of incorporating exposure to lexical items: (a) premodified input, (b) interactionally modified input, and (c) modified output. Vocabulary was best learned in terms of both comprehension and production in the modified output condition. In this condition, learners themselves focused on particular lexical items. They claim that this allowed the learners to process the new words more deeply (see also Gass, 1997). However, as their examples show, the notion of incidental learning is lost inasmuch as in the modified output group, attention, through negotiation, is focused on the lexical items in question.

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In sum, these papers have stimulated deeper thinking about what is meant by incidental learning, the extent to which it is a viable concept, and what it means to acquire a second language lexicon. Whatever answers have emerged, it is still necessary to recognize that there are multiple and often simultaneous factors involved in learning a second language lexicon, be they incidental or intentional.

NOTES

1. This is clearly not the first time in our field that researchers have found themselves arguing for or even saddled with a particular concept without direct evidence for that concept. A notable example comes from Krashen's (1980) notion of comprehensible input, which was defined as being input at the $i+1$ level without any precise measure for determining what i is or what $i+1$ could therefore be.

2. In a recent study, Robinson (1997), like many of the authors in this issue, operationally defines incidental learning (in Robinson's case, of grammatical rules) as learning that results from a focus on meaning but not a focus on form.

3. Brown et al., although never explicitly defining *incidental*, are careful in their qualification of the term *incidental learning* by using the term *covert*.

4. I make the assumption that general learning principles, such as those discussed here, apply to all domains of language and are not particular to the domain of vocabulary.

5. An anonymous reviewer points out, and rightly so, that what happens with syntax learning may be quite different from what happens with vocabulary learning. As mentioned, the point here is not to equate the two types of learning but to demonstrate what incidental learning might look like, borrowing from another area of language learning. Although the differences between vocabulary learning and syntax learning are obvious (e.g., for vocabulary learning, there is no question of an innate system), there are similarities as well. In fact, I see shared aspects of all parts of language learning whether they be syntax, semantics, vocabulary, or pragmatics. Notably, for all areas of second language learning, a learner has prior knowledge that figures prominently in the learning process. To use arguments from one to bolster arguments for another is therefore justifiable. This does not mean that the two are identical; only that what happens in one area may happen in another as well.

6. The relationship between these relative clause types is linguistically motivated (see Gass, 1979).

7. Similar situations might prevail in terms of parameters within the Principles and Parameters framework in that, if instruction occurred on one aspect of syntax, incidental learning might take place even without exposure to other parts (see White, 1989, for a discussion of this framework in an SLA context).

8. The fact that I am using these terms interchangeably in no way implies that it is not possible to operationalize them in such a way as to allow for testing of the differences (see Schwartz, 1993; Zobl, 1995, for examples).

9. This is somewhat simplified because output is also claimed to have a role in the actual learning process (in particular, see Swain, 1985, 1995; Swain & Lapkin, 1995, 1998).

10. Fraser notes that inferring followed by consulting a dictionary is an even more powerful learning tool than either of these strategies used alone.

11. These remarks should not be taken as a claim that the only way inappropriate subcategorization frames can come about is through the native language. Rather, the native language is one source of information that L2 learners use in trying to understand the interface between the lexicon and syntax.

12. I am grateful to Nevin Leder for making this point.

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