

# Deconstructing the Concept of 'Incidental' L2 Vocabulary Learning

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## ABSTRACT

The present review explores the meaning of the term 'incidental' in light of how incidental learning is framed, conceptualized, and operationalized in second language (L2) vocabulary research. Three interpretations of incidental vocabulary learning that seem to appear recurrently in the literature are presented and discussed along with examples of empirical studies. These interpretations are labeled as: (1) learner-oriented, (2) method-oriented, and (3) pedagogy-oriented definitions. Significant constructs and theories in the field of second language acquisition (SLA) that motivate these interpretations are also considered. The paper concludes with a brief summary of current views on incidental learning and suggestions for future research.

## INTRODUCTION

Vocabulary acquisition was once considered a "neglected aspect of language learning" (Meara, 1980) and even called a "victim of discrimination" in L2 research (Levenston, 1979). However, over the last three and a half decades, research in vocabulary acquisition has flourished, with vocabulary gaining recognition as an important counterpart to syntax in not only language teaching but also theory-building in the field of applied linguistics. The call of early pioneers in vocabulary research (Levenston, 1979; Meara, 1980; Widdowson, 1989) for greater awareness and interest in this dimension of language has been answered with a substantial number of empirical studies investigating a wide range of questions relevant to vocabulary learning and teaching.

A particularly productive area of L2 vocabulary research has revolved around the 'incidental learning' of new words, or the process of 'incidental vocabulary acquisition.' Along with the growth of incidental learning studies, attempts to clarify this construct have been ongoing, as evidenced by the large number of theoretical papers and reviews published around this issue throughout the years (Bruton, Garcia Lopez, & Esquiliche Mesa, 2011; Ellis, 1994; Gass, 1999; Hucklin & Coady, 1999; Hulstijn, 2001, 2003; Rieder, 2003; Singleton, 1999). Drawing from these conceptual studies as well as past and current primary studies on incidental L2 vocabulary acquisition, the present review describes three ways that incidental learning has been interpreted in the literature. These descriptions are an attempt to offer an answer to the longstanding issue of what exactly is meant by the term 'incidental' in incidental learning. The

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motivation for such a review lies in the belief that attempts to dissect and unpack the meaning of the “seemingly unitary construct” of incidental learning will help “lead to a clearer and more nuanced understanding of how lexical knowledge is developed in natural contexts” (Wesche & Paribakht, 1999, p. 176).

The present review is organized in three sections. The first will be an introductory section giving a general definition of incidental learning, and presenting two major ideas in the field that most likely brought about the elevated interest that incidental L2 vocabulary acquisition has received over the years. The second and most substantial section will further deconstruct the meaning of ‘incidental learning’ by presenting three interpretations that appear recurrently in empirical studies. The third section will conclude the review with a brief summary and comments for future research.

## **PART 1: INCIDENTAL L2 VOCABULARY ACQUISITION**

### **Incidental Learning: General Definitions**

The widespread use of the terms ‘incidental’ and ‘intentional’ learning is unique to vocabulary research, as these terms appear far less frequently in other domains of SLA (Hulstijn, 2003). These terms have not been used in the domains of phonetics and phonology, and very marginally in the domain of grammar. Hulstijn (2003) notes that in L2 grammar literature, only a handful of studies refer explicitly to ‘incidental’ grammar learning (e.g., Gass, 1999; Grey, Williams, & Rebuschat, 2014; Lee, 2002; Rossomondo, 2007) and no empirical study to date has explicitly claimed to investigate ‘intentional’ grammar learning.

Incidental learning in vocabulary research, generally speaking, refers to the learning of words that occurs seemingly naturally in the context of everyday life, as opposed to its counterpart *intentional* vocabulary learning, which refers to learning as a result of deliberate effort and study. In incidental vocabulary learning, word-learning is not intended to be the primary activity (Huckin & Coady, 1999). Hence, common words used to describe incidental vocabulary acquisition include learning as a “by-product” (Huckin & Coady, 1999) or a “side-effect” (Gass, 1999) of another primary activity, and also as the unplanned and casual “picking-up” (Hulstijn, 2013; Rott, 1997) of new words during an activity. Given this general definition, certain assumptions naturally follow the incidental-intentional distinction, with the former often understood as an unconscious, effortless and fortuitous process and the latter as a relatively more conscious process. Another common assumption is that while intentional learning is limited to instructional settings, incidental learning pervades all other contexts outside the boundaries of the classroom. These assumptions help to distinguish the two terms, but they also muddy their precise semantic boundaries.

Therefore, although most researchers “minimally subscribe to the meaning of the term [incidental] as referring to new knowledge or competencies that learners acquire as a ‘by-product’” (Wesche & Paribakht, 1999, p. 176), there is considerable contention regarding its precise definition. The lack of consensus over the construct has been pointed out by several researchers (e.g., Bruton et al., 2011; Gass, 1999; Hulstijn, 2001, 2003; Rieder, 2003), including Singleton (1999) who conducted a review of a wide array of empirical studies all claiming to investigate incidental learning. This confusion is not only apparent in research, but also prevalent in L2 pedagogy, resulting in an “ill-informed understanding of the terms ‘incidental’ and

'intentional' learning" (Hulstijn, 2001, p. 261), which subsequently leads to misguided pedagogical doctrines, such as one that favors and advocates one type of learning while rejecting the other. Therefore, arriving at a thorough understanding of incidental learning in L2 vocabulary research and its conceptual and operational entailments is important if the field hopes to arrive at a coherent theory<sup>2</sup> of L2 lexical acquisition that can lead to advances in research as well as effectively inform pedagogical practice.

## Two Influential Ideas

Incidental learning seems to have received much attention in L2 vocabulary research chiefly due to two influential ideas, namely the idea that *learning from context* plays a central role in the vocabulary acquisition process, and the idea that promoting this kind of *naturalistic acquisition* is the best pedagogical method. The first idea comes from the notion that "much—if not most—lexical development in both L1 and L2 appears to occur as learners attempt to comprehend new words they hear or read in context" (Wesche & Parikbaht, 1999, p. 176). This notion can be traced back to early first language (L1) studies on vocabulary that found a surprisingly fast growth rate in children's vocabulary during their school years (Nagy & Anderson, 1984). Subsequent surveys of instruction revealed relatively little explicit focus on vocabulary (Beck, McKeown, McCaslin, & Burkes, 1979; Durkin, 1979; Jenkins & Dixon, 1983, as cited in Nagy, Herman, & Anderson, 1985, p. 234), leading researchers to conclude that children were learning most new words incidentally from context through reading and listening (Nagy, Herman, & Anderson, 1985; Nagy, Anderson, & Herman, 1987).

This 'default hypothesis' became more widely accepted when Nagy, Herman, and Anderson (1985), noting the failure of previous research to provide empirical evidence for the hypothesis, set out to prove that incidental learning from context actually occurred during reading of natural texts. They demonstrated that word learning occurred when children engaged in reading, even while they received no explicit instruction on vocabulary items. Nagy et al. (1985) furthermore introduced the notion of *incremental learning* of vocabulary, arguing that "incidental learning from context proceeds in terms of small increments, so that any one encounter with a word in text will be likely to produce only a partial increase in knowledge of that word" (p.236-237). Hence, they argued, repeated encounters with a word, provided through extensive reading, would lead to the long-term, cumulative effect of vocabulary growth. This study became a foray into numerous vocabulary studies associated with reading not only in the L1, but also the L2 context; L2 researchers likewise argued on the premises of default argumentation that L2 learners' knowledge of "such large quantities [of words] cannot have been learned solely by means of intentional word-learning activities" (Hulstijn, Hollander, & Greidanus, 1996, p. 327).

Nagy et al.'s (1985) notion of incremental learning through repeated exposures also was consequential in the realm of L2 vocabulary pedagogy. In particular, Nagy and Herman's (1987) statement that "incidental learning of words during reading may be the easiest and single most powerful means of promoting large-scale vocabulary growth" (p. 27) became a strong impetus for avid proponents of reading including Krashen, to whom can be attributed the second influential idea underlying incidental learning that *naturalistic acquisition* is the best pedagogical method for promoting L2 vocabulary learning.

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<sup>2</sup> As Schmitt (2010) notes, one of the prominent gaps in the area of vocabulary research is the lack of a unified theory of lexical acquisition.

Krashen (1987) proposed a hypothesis for language acquisition called the Input Hypothesis, which claimed that language—grammar and vocabulary alike—was acquired through understanding messages. These messages, when meeting the criteria of “comprehensible input (i+1),” was deemed the “essential environmental ingredient” (Krashen, 1989, p. 440) for acquisition to take place. The Input Hypothesis further distinguished between ‘acquisition’ and ‘learning’ as two distinct and mutually exclusive processes, with the former being an unconscious and natural process as opposed to the latter, which occurred via explicit instruction<sup>3</sup>. Krashen drew examples from reading and vocabulary learning to validate the Input Hypothesis. In reviewing research on vocabulary and spelling, for example, he claimed that spelling and vocabulary were efficiently attained by the comprehensible input provided through reading and that L2 learners could virtually acquire *all* the vocabulary they needed through extensive reading. Within the framework of the Input Hypothesis, vocabulary knowledge gained incidentally through reading was considered an example of naturalistic acquisition, and thus preferable to deliberate word learning through explicit instruction.

The favorable light thus cast on *learning from context* and *naturalistic acquisition* brought about many investigations into incidental vocabulary learning, and pedagogical trends were quick to follow suit. Sternberg (1987), for example, published a paper whose title, *Most vocabulary is learned from context*, became a catchphrase for L1 and L2 pedagogy (Hulstijn, 2001). Unlike Krashen (1989), however, Sternberg (1987) did not claim that extensive reading alone was sufficient for the acquisition of all L2 vocabulary words. He believed that learning of vocabulary through reading was contingent on cognitive processes, contextual cues, and moderating variables, and advocated a theory-based instruction that took these factors into account. Perhaps due to its catchy title, however, Sternberg’s paper contributed to disseminating the notion that incidental learning was superior to intentional learning (Hulstijn, 2001).

Moreover, these ideas were also all the more emphasized within the context of the 1970s and 80s, “in the heyday of the communicative approach to language teaching,” during which “the concept of incidental learning offered the seductive prospect that, provided learners had access to sufficient comprehensible input, L2 vocabulary acquisition would largely take care of itself, without the need for any substantial pedagogical intervention” (Read, 2004, p. 147). Although current views have changed considerably from that time, especially with regard to the relative effectiveness of incidental vs. intentional learning (discussed in Part 3 of the current paper), these two ideas succeeded in attracting a vast number of empirical studies on incidental vocabulary acquisition and reading. Incidental vocabulary learning and its relationship with reading have therefore become the foundational pillars around which the greater part of the body of L2 vocabulary research has been built.

## **PART 2: THREE RECURRENT DEFINITIONS OF INCIDENTAL LEARNING IN L2 VOCABULARY LITERATURE**

Interpretations of incidental learning in past and current L2 vocabulary literature can be categorized into one of three definitions: 1) learner-oriented definition: learning as a by-product of a primary activity in which the learner’s attention is on meaning; 2) method-oriented

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<sup>3</sup> This differentiation between ‘learning’ and ‘acquisition’ is not maintained in the current paper. In the current paper, the two terms are used interchangeably.

definition: learning that occurs in experiments where participants are not told beforehand of a test; 3) pedagogy-oriented definition: learning that occurs in a classroom when the overriding pedagogical focus is on meaning. While all three definitions share a common semantic nucleus, they highlight different aspects of the construct of 'incidental' learning. These nuances, although seeming trivial, lead to consequentially distinct framings and operationalizations of the construct in empirical studies.

### ***Learner-Oriented Definition (Learning as a by-product of a primary activity in which the learner's attention is on meaning)***

The learner-oriented definition particularly emphasizes the learner's perspective in assuming that during incidental learning, the learner's attention is fixated on something other than word-learning. Researchers' objective is to replicate as closely as possible the real-life, naturalistic conditions during which learners are engaging with language—hence, attending to meaning—without trying to deliberately learn unknown words. One way that studies fitting this learner-oriented category have sought to create incidental learning situations is through designing experimental tasks that require learners to focus on a primary activity such as reading for pleasure or reading to extract information (Chen & Truscott, 2010; Paribakht & Wesche, 1999).

For example, in Paribakht and Wesche's (1999) study of 10 English as a second language (ESL) students' vocabulary learning strategies during reading, the researchers designed two reading comprehension tasks that required participants to focus on understanding the text. These tasks included a question task and a summary task. In the question task, students read the target text, and then answered several questions based on the content. In the summary task, they read a paragraph, and then summarized the segment they had just read before going on to the next paragraph. Gains in word knowledge were measured immediately after each task, during which participants were asked to identify any unknown word they had encountered and what strategies they had used to understand each word. Hence, through the two comprehension tasks the researchers manipulated the locus of the learners' attention, directing attention to 'meaning' as opposed to 'form.' Attending to 'meaning' refers here to comprehension of the overall linguistic message without any focus on individual vocabulary items while attending to 'form' refers to focusing on aspects of the language itself, such as discrete vocabulary words, as the object of study.

Another study that subscribed to this definition of incidental learning was conducted by Chen and Truscott (2010), who were concerned with the effect of word frequency and L1 lexicalization—whether or not an L2 word has an L1 translation equivalent—on incidental vocabulary acquisition during reading. Like Paribakht and Wesche (1999), they chose reading for comprehension as the primary activity for their participants, 72 English as a foreign language (EFL) university students in Taiwan. Instead of using comprehension tasks during the reading session, however, they informed participants before the session that “there would be a reading comprehension test, to encourage them to attend to the readings and not to pay attention to the target words” (p. 701). At the end of the session participants were given a comprehension test as promised, consisting of five questions, and they were also given a 'surprise' immediate and delayed vocabulary test. Because all of the students got at least four of the comprehension questions correct, the researchers contended that learners “focused on the content of the stories” and that “any vocabulary learning that occurred was indeed incidental” (p. 702). Although one

can argue that five questions are too few to satisfactorily attest for their claim, it is evident that the researchers were attempting to create conditions for incidental learning through controlling learners' attention during the treatment.

However, some studies provide far less adequate evidence for their claims about the focus of learners' attention. Waring and Takaki (2003), for example, were concerned with whether L2 learners could incidentally acquire vocabulary through reading a graded reader, and if the frequency with which unknown words appeared affected their gains. They gave their participants, 15 Japanese EFL college students, copies of the graded reader, *A Little Princess* (Burnett, retold by Basset, 1991) with 25 target words replaced by substitute words. They asked the students to "read this story as usual and enjoy it" (Waring & Takaki, 2003, p. 141). The authors report that during reading, some participants remarked that there were a lot of unknown words but they were only told to "please enjoy it." The participants took a vocabulary test immediately after the reading as well as two delayed posttests.

Although Waring and Takaki's (2003) interpretation of incidental learning was the same as in the two studies reviewed above, in that they assumed learners were occupied with a meaning-centered activity (reading for pleasure), they did not take any measures during the reading sessions to prevent students from deliberately focusing on learning the unknown words, nor did they administer comprehension tests afterward to confirm that students were focused on the meaning of the text. The researchers did informally interview the participants after the first test about the difficulty of the text, but these measures were meant to investigate the potential effects of reading difficulty on the vocabulary test scores, rather than to ensure that participants were focused on meaning. The absence of such confirmation measures weakens their claim that students learned the target words "incidentally" as they would under real-world, natural contexts when attention is drawn to another primary activity. Moreover, given that students remarked on the presence of unknown words, it is likely that they noticed that they were not real words of English, despite the efforts that the researchers had put into carefully designing the target words. This could easily have primed participants into expecting a vocabulary test despite the researchers' discretion.

This example suggests that studies investigating 'incidental learning' with the goal of generalizing their results to naturalistic contexts should ensure that learners are occupied with a meaningful linguistic activity. Simply assuming that participants would adhere to instructions might be insufficient because the act of partaking in an experiment is enough to prime certain participants toward expecting an ensuing test. All three studies reviewed above share the assumption that learners' attention is on meaning, but a particular limitation of Waring and Takaki's (2003) study is the insufficient evidence for incidental vocabulary acquisition in the way it was conceptualized within their study.

However, in light of this learner-oriented interpretation of incidental learning that puts its emphasis on learner attention, it is important to note that 'incidental learning' does not necessarily mean that *all* of a learner's attention is on comprehension alone. Paribakht and Wesche (1999) admit that learners' use of learning strategies entails "both attention to a given new word and effort on the part of the learner to find its meaning" (p. 215). According to Schmidt (2000), any kind of learning requires *noticing*, which he defines as the subjective correlate of attention. Therefore, to simply equate incidental learning to 'attention to meaning' and intentional learning as 'attention to form' may be misleading. Ellis (1994) contends that there needs to be a secondary distinction between 'focal' and 'peripheral' attention: He describes

incidental learning as requiring focal attention to be placed on meaning but allowing peripheral attention to be directed at form.

Several researchers take a different approach and view incidental and intentional learning not as two distinct learning processes, but instead as opposite poles of a continuum. Barcroft (2004), for example, asserts that because “attention is not a dichotomous entity,” classifying a vocabulary learning situation “as purely incidental or purely intentional... does not accurately represent real-world vocabulary learning” (p. 201). According to him, reading a text for meaning while paying some attention to new words in the text cannot be described as completely incidental nor completely intentional learning. These kinds of complications that emerge regarding the role of attention in incidental learning has led many researchers to opt for the method-oriented definition of incidental learning, which will be introduced and discussed in the next section.

### ***Method-Oriented Definition (Learning that occurs in experiments where participants are not told beforehand of a test)***

The method-oriented definition of incidental learning is perhaps the narrowest definition in the literature. It describes a simple methodological protocol: Participants are not told beforehand that they will be tested for vocabulary gains. The studies fitting the learner-oriented definition also follow this protocol, but what sets the method-oriented definitions apart is that strong claims or assumptions about learner attention being mostly on meaning are left out, and the act of withholding information about an imminent vocabulary test to participants is taken to be the *only* prerequisite for an incidental experimental condition. In place of the learner being at the center of the conceptualization of ‘incidental learning,’ the method in and of itself is what determines ‘incidental learning’ within the particular study. This approach can seem rather subtractive from the more general usage in language learning and teaching. However, this usage is likely to be the original one, as its appearance in experimental psychology can be traced back to the beginning of the 20<sup>th</sup> century (Hulstijn, 2001).

Early on in the field of psychology, incidental and intentional learning conditions were differentiated based on whether or not the pre-learning instructions forewarned participants of an ensuing test in an experiment (Eysenck, 1982 as cited in Hulstijn, 2001, p. 265). There were two basic types of experimental methods for investigating incidental and intentional learning: the Type I design and the Type II design. In the Type I design, participants in the ‘incidental’ condition were given an orienting task with stimulus materials, and they were unexpectedly tested afterwards on the knowledge they were able to retain. In the intentional condition, participants were told beforehand that they would be tested. (Hulstijn, 2001)

In the Type II design, on the other hand, all participants were told to learn a specific part of the stimuli presented. However, they were not only tested on this specific part, but also unexpectedly tested on the part of the stimuli that they were not instructed to learn. Thus, in the Type II design there was no need to divide the participants into ‘incidental’ or ‘intentional’ groups because they served as their own controls based on the stimuli they were intending to learn, and the stimuli they were not intending to learn. Under these two designs, hundreds of experiments were conducted, and the incidental-intentional learning distinction was simple and straightforward in operational terms. (Hulstijn, 2001)

In line with this tradition, Hulstijn (2001, 2003) recommends employing the terms ‘incidental’ and ‘intentional’ as technical terms in the experimental literature, restricting them to

methodological procedures, rather than defining and operationalizing them with the goal of accounting for learners' attention. The rationale behind his recommendation is twofold: 1) the distinction between incidental and intentional learning with respect to attention is difficult to maintain on a theoretical level, and 2) rather than asking whether incidental or intentional learning makes a difference in learning, there is a more important and relevant construct to discuss: engagement.

Regarding the first point, the distinction between incidental and intentional learning lacks theoretical substance because these two terms cannot yet be differentiated on the basis of psycholinguistic processes. On the surface, the distinction at first appears to be referring to the notion of consciousness. As mentioned earlier, one of the assumptions commonly associated with the general definition of incidental learning is that it is an effortless and *unconscious* process. However, a closer look reveals that 'incidental' only speaks of one sense of consciousness. In his seminal paper, Schmidt (1990) claimed that "in everyday language consciousness has several senses and is used ambiguously" (p. 131). Three of these 'senses' are: *consciousness as intention*, *consciousness as awareness*, and *consciousness as knowledge*. Incidental vocabulary learning, by definition, refers only to an absence of *intention*; the confusion over incidental learning often occurs when incidental learning is interpreted as the absence of *awareness*.

When incidental learning is interpreted as the absence of awareness, it is erroneously assumed that core aspects of consciousness such as *attention* and *noticing* are also completely absent in incidental learning. This is why incidental learning is often conflated with implicit learning (Ellis, 1994; Rieder, 2003). The latter signifies acquisition that occurs "totally unconsciously as a result of abstraction from repeated exposures in a range of activated contexts" (Ellis, 1994, p. 219). Incidental learning, on the other hand, as discussed previously, allows room for consciousness in the form of 'peripheral attention.' Some argue that incidental learning can also entail 'focal attention' because "we often become aware of things we do not intend to notice" (Schmidt, 1990, p. 133). Therefore, Ellis has aptly described incidental and intentional learning as sitting "uncomfortably" between these fine points with regard to the degree of attention.

It is no wonder that psychologists who first employed these terms also struggled "in coming to grips with conceptual definitions [of incidental and intentional learning] and underlying conceptual issues for decades" (Hulstijn, 2001, p. 265); they also found it was especially difficult to prove that a certain learning condition was either incidental or intentional in the absolute sense (McGeoch, 1942, as cited in Hulstijn, 2001, p. 265). Several researchers ultimately abandoned the dichotomous distinction and instead began to focus on the interaction between the orienting task and the meaningfulness of the stimuli (Hulstijn, 2001). This reflected a change in spotlight that would eventually give rise to an alternative approach to thinking about incidental lexical acquisition.

If the incidental-intentional distinction received the spotlight in early psychological experiments during the behaviorist paradigm, the spotlight was naturally removed during the shift to the cognitive paradigm in the 1960s and 1970s. During the onset of the cognitive paradigm, Craik and Lockhart's (1972) paper introduced the Levels of Processing (LOP) theory of human memory, which posited that the learning of lexical items is determined by the different levels, ranging from shallow to deep, at which they are processed. For example, they argued that semantic processing was deeper than phonological or orthographic processing, and therefore resulted in more learning. Craik and Lockhart's contribution changed the way researchers viewed and investigated vocabulary acquisition. Before then, vocabulary acquisition had been



studied as a response to a stimulus, with the stimulus taking the form of prelearning instructions and the response being measured as outcomes of learning. In contrast to this behaviorist approach, vocabulary acquisition began to be approached from an information processing perspective. (Hulstijn, 2001)

Therefore, pertaining to Hulstijn's (2001) second point, *engagement* has emerged as the more consequential variable in predicting vocabulary acquisition. In current research, it is generally accepted that "mental activities which require more elaborate thought, manipulation, or processing of a new word will help in the learning of a word" (Schmitt & Schmitt, 1995, p. 135). Schmitt (2008) has proposed the term 'engagement' as a general cover term for this notion, which has been described in the literature with synonymous phrases such as "greater depth of processing; better, more intense quality of information processing; degree of elaboration; quality of attention; richness of encoding" (Laufer & Hulstijn, 2001, p. 12). In light of the importance attributed to engagement, the method-oriented definition of incidental learning allows the focus of research to be on investigating which specific tasks lead to greater engagement, and thus lead to greater incidental learning. In operationalizing incidental learning, the researcher starts with a task pre-labeled as incidental because participants will not be explicitly told to learn words.

For example, one approach to gauging engagement in incidental L2 vocabulary studies is Laufer and Hulstijn's (2001) Involvement Load Hypothesis. In this framework, 'task-induced involvement' is a motivation-cognitive construct that explains and predicts the degree to which learners will learn and retain unknown words. At the operational level, involvement comprises of three components: need, search, and evaluation. 'Need,' the motivational dimension, describes a learner's either externally or self-imposed need to complete the given task, and can be distinguished as moderate or strong. 'Search' is a cognitive dimension of involvement and describes how a learner might attempt to find the meaning of an unknown L2 word. Finally, 'evaluation,' also a cognitive dimension, entails how the learner engages with the word by comparing it to other words, comparing its multiple meanings, or combining it with other words to assess its role in the given context. Evaluation can also be distinguished as moderate or strong. An 'involvement load' of a task entails the combination of these three components. Laufer and Hulstijn predict that "other factors being equal, words which are processed with higher involvement load will be retained better than words which are processed with lower involvement load" (p. 15).

To validate the Involvement Load Hypothesis, Hulstijn and Laufer (2001) carried out two parallel experiments in the Netherlands and in Israel. They designed three tasks with different involvement loads and compared their effect on university EFL students' incidental vocabulary learning. All three tasks were described as incidental learning conditions "because the tests were not announced in advance" (p. 548). Each of the six groups of students (three in each country) was randomly assigned to a task. In the first task, labeled "reading comprehension with marginal glosses," students were given a reading text with 10 target words that were in bold font and glossed in the students' L1 in the margin of the text. Students were asked to read the text and answer ten comprehension questions. The second task, called "reading comprehension plus fill-in," used the same text but the target words were replaced with gaps numbered 1-10. The target words plus five additional words were listed in random order on a separate page with their L1 translations and L2 explanations. Students were asked to read the text, fill in the ten gaps with the appropriate words from the list, and answer the same comprehension questions given to students doing the first task. In the final task, students were asked to compose a letter

incorporating the 10 target words. Explanations of words and examples of their usage were provided.

Hulstijn and Laufer's (2001) study is markedly different from the previous studies reviewed because their attempt to create incidental learning conditions was not to replicate naturalistic conditions nor direct participants' attention to meaning. Rather, the incidental learning condition served simply as a platform on which researchers could look at the effect of different tasks. Multiple task features were the key vehicles through which the authors sought to manipulate degrees of learners' engagement with unknown words. Furthermore, whereas in the previous studies reviewed, the researchers had been concerned with masking the saliency of target words (for example by trying to hide the fact that they were substitute words), this was not the case in this particular study. Rather, target words were purposefully made salient. Comprehension measures were taken in order to promote learner engagement with words rather than to prevent them from focusing on the words.

While a number of studies have begun to explore incidental learning through a focus on tasks, not all studies that adopt the method-oriented definition of incidental learning are strictly limited to adopting the same approach. Godfroid, Boers, and Housen (2013), for example, investigated the role of attention in incidental L2 vocabulary acquisition by using the novel method of eye-tracking. Their participants, 28 ESL learners, read texts that contained 12 target words and a matched pseudo-word. Their eye fixations while reading were measured through an eye-tracking device. The time they spent looking at the words were taken as indicators of the degree of attention participants were paying to the words. No other comprehension measures were taken to control the degree of attention on meaning. Godfroid et al.'s conceptualization and operationalization of 'incidental learning' was purely method-based: "Vocabulary acquisition is incidental—rather than intentional—when learners commit new words or phrases to memory 'without having explicit instructions about a forthcoming memory test'" (Godfroid et al., 2013, p. 491).

While the narrow, method-oriented definition might indeed be useful in providing a 'shorthand' way for vocabulary researchers in describing their experimental conditions (Hulstijn, 2003), caution is needed in interpreting the results of these kinds of studies. It cannot be assumed that experiments subscribing to the method-oriented definition of incidental learning are generalizable to contexts of naturalistic lexical acquisition. In other words, the incidental condition described in these studies do not guarantee that participants who made vocabulary gains actually learned words as a by-product of a meaning-focused activity rather than through deliberately focusing on them.

### ***Pedagogy-Oriented Definition (Learning that occurs in a classroom when the overriding pedagogical focus is on meaning or communication)***

The final definition of incidental learning focuses on the nature of instruction, rather than the learner or the experimental method. Specifically, it pertains to studies that are concerned with indirect instructional approaches to vocabulary teaching. Incidental learning is seen to be the result of learning in classrooms where language is not the primary object of instruction. Studies that fit this category usually involve a description of the classroom setting or the underlying pedagogical goals of instruction (Coll, 2002; Wode, 1999).

Wode (1999), for example, investigated students' vocabulary learning in an English immersion (IM) program in Germany during history and geography classes. Their focus was on

whether English vocabulary learning occurred during these content courses that were taught in English. Because they were specifically interested in the extent to which incidental learning was affected by different foreign language teaching (FLT) contexts, they compared a class of students from the IM program with two controls: a class from a non-IM school and a class from the same school that was not part of the IM program. Each class consisted of 21 to 29 students. The researchers measured vocabulary gains through a communicative group task, in which students were given a hypothetical situation and told to negotiate among themselves how to best solve the dilemma posed in the situation. This test measured learners' oral production during the communicative exchange, analyzing production according to the number of lexical types and tokens, distribution of lexical items according to word classes, semantic relations, errors, within-group variation, intergroup variation, and lexical sources. The results indicated that students in the IM class used a greater range of vocabulary than students from the control groups.

The researchers argued that some lexical items that these learners used could not have come from the textbook or from other kinds of teaching materials used. They reasoned that the most likely source from which learners had 'picked up' these lexical items was from the teacher's oral production during instruction. Incidental learning was thus defined and operationalized in the context of this study as "language learning as a by-product of language use by the teacher or by anyone else in the classroom, without the linguistic structure itself being the focus of attention or the target of teaching maneuvers" (p. 245).

Coll (2002) also defined incidental learning with a pedagogy-oriented perspective in an investigation of the effect of a hypermedia-assisted instructional environment on incidental vocabulary retention among English for Special Purposes (ESP) students. His participants were 40 university students in Spain enrolled in Chemistry and Chemical Engineering English courses. He exposed them to a set of multimedia lessons containing Chemistry-related video segments. Learners were invited to engage with listening comprehension questions, using the various comprehension tools offered (such as L1 translations of questions and answers, L2 video manuscripts, translation of manuscript sentences, and more) in whichever way they wanted. Learners' actions were recorded and compiled in user logs of behavior data by the courseware, and the data were subsequently analyzed by the researcher. Both a vocabulary pretest and post-test were administered to the participants and to a control group of 40 students who were not exposed to these lessons.

Coll operationalized incidental learning as the absence of explicit vocabulary instruction, stating that "vocabulary was not taught explicitly, but rather implicitly by providing the learner with verbal (i.e., textual and auditory), as well as visual (i.e. pictorial) input" (p. 268). He found that the vocabulary achievement scores of the experimental group increased significantly from pre to post-treatment, as opposed to the control group. Based on his findings, he claimed that a hypermedia-assisted learning environment can be an especially fertile ground for promoting incidental learning in FLT contexts; it "provides a rich environment where learners gain exposure to foreign language texts by listening and reading in the target language" (p. 264).

A similarity found in both studies is that instead of being concerned with the specificities of task features (i.e., what degree of attention and elaboration are required) or test conditions (i.e., if learners told they will be tested), the researchers were more concerned with how the overall pedagogical context fostered 'incidental' word learning. Because real world classroom contexts are by nature much wider in scope than experimental contexts created by researchers for a single study, the researchers could not be concerned so much with the focus of the learner's attention moment by moment during the task or test (as in the learner-oriented perspective). Rather, they

referred to the learners' attention in general terms with relation to the general pedagogical structure and goal of instruction.

The pedagogy-oriented definition of incidental learning might ring a similar chord with instructional approaches in L2 teaching known as form-focused instruction (FFI). There are two types of FFIs: Focus on Form (FonF) and Focus on FormS (FonFs). The latter refers to the teaching of linguistic forms in isolation, with no connection to meaning and context. In contrast, FonF is a teaching approach developed primarily around meaning, with linguistic elements being attended to during communicative classroom activities (Long, 1991). FFI approaches were originally applied to the teaching of grammar, but have been applied to vocabulary learning and teaching as well (Laufer, 2005, 2006). Laufer (2006) describes FonF in vocabulary teaching as instruction that attends to lexical items within a communicative task environment in which the completion of a meaning-oriented task requires engagement with these words. The teaching of words in isolation in non-communicative and non-authentic language tasks fits the FonFs approach. Taken in this light, the FonF-FonFs distinction seems to coincide with the general gist of the incidental-intentional learning distinction.

In fact, the term 'incidental' was used in Long's (1991) original definition of FonF, with respect to the fact that attention was directed at form only when a learner's need for it arose *incidentally* during the activity. Long also stated that instruction on form should be 'implicit' and not interfere with interaction. However, these specifications have been modified after Ellis, Basturkmen, and Loewen (2002) pointed out that FonF can be *planned* or *unplanned*. The original definition is unplanned FonF, and planned FonF is when a communicative activity is purposefully designed to direct attention toward specific linguistic forms. Instruction within FonF also no longer needs to be strictly implicit. It can include a range of implicit/indirect and explicit/direct teaching techniques such as recasts, input enhancement, explicit correction, etc. The overarching context for FonF, however, is a meaning-centered environment for language teaching. Both planned and unplanned FonF therefore can be classified as an instance of incidental learning.

### **PART 3: DISCUSSION AND CONCLUSION**

The previous sections have taken a closer look at how various studies have conceptualized and operationalized the construct of 'incidental' L2 vocabulary acquisition. The three categories used—learner-oriented, method-oriented, and pedagogy-oriented perspectives on incidental learning—were meant to underscore the most significant similarities and differences among studies that all claim to investigate incidental learning. While discussing these categories, it was shown that a clear understanding of vocabulary acquisition requires an explicit teasing apart of cognitive constructs that are often invoked when discussing incidental learning. These include *consciousness*, *attention*, *awareness*, *noticing*, *explicit/implicit learning*, and *explicit/implicit knowledge*. A summary of the preceding discussion is represented in the following table.

**TABLE 1**  
**Three definitions of “incidental learning” and their key differentiating features**

	<b>Learner-Oriented</b>	<b>Method-Oriented</b>	<b>Pedagogy-Oriented</b>
<b>Main focus</b>	Learner’s attention	Learner’s engagement	Instructional approach
<b>Methodological features</b>	<ul style="list-style-type: none"> <li>• meaning-oriented primary activity</li> <li>• tests or tasks to ensure learners’ attention is on meaning</li> </ul>	<ul style="list-style-type: none"> <li>• no pre-warning of a vocabulary test</li> <li>• tasks commanding different levels of attention and elaboration</li> </ul>	<ul style="list-style-type: none"> <li>• classroom setting</li> <li>• classroom tasks</li> <li>• pedagogical goals</li> <li>• instructional methods</li> </ul>
<b>Related SLA concepts</b>	<ul style="list-style-type: none"> <li>• naturalistic acquisition</li> <li>• learning from context</li> <li>• focal and peripheral attention</li> <li>• Input Hypothesis</li> </ul>	<ul style="list-style-type: none"> <li>• task-induced involvement (Involvement Load Hypothesis)</li> <li>• depth of processing</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on Form</li> </ul>
<b>Underlying assumptions</b>	<ul style="list-style-type: none"> <li>• primary attention is on meaning</li> </ul>	<ul style="list-style-type: none"> <li>• how deeply the learner engages with a word predicts learning</li> </ul>	<ul style="list-style-type: none"> <li>• calling attention to linguistic form during meaning-oriented classroom activities fosters learning</li> </ul>

## Current Views on Incidental Learning

It seems that in current years, there has been a shift in thinking about incidental vocabulary learning through reading. Studies like those reviewed above (Paribakht & Wesche, 1999; Waring and Takaki, 2003) confirmed Nagy et al.’s (1985) claim that incidental learning through reading was an incremental process, but these studies also revealed that the process of incidental learning through reading was slow, unpredictable, and error-prone, contrary to how avid proponents of reading (Krashen, 1989) had first framed it. In fact, on the surface-level, it may seem like there has been a reversal of perspectives about incidental vs. intentional learning, with the popularity of the former being given over to the latter in terms of pedagogical recommendations. Current views hold that ‘intentional learning’ is a faster and more effective way of learning new words in a short amount of time. For example, in his recent review of instructed L2 vocabulary learning, Schmitt (2008) contends that “intentional vocabulary learning... almost always leads to greater and faster gains, with a better chance of retention and of reaching productive levels of mastery” (p. 341).

While researchers may emphasize the effectiveness of intentional learning tasks, however, their current stance reflects a more sophisticated understanding of vocabulary learning rather than a strict adherence to only one type of learning. That *engagement* is putatively the decisive factor and that it is “impossible to say that any activity is better than any other activity in all

cases” (Schmitt, 2008, p. 342) are acknowledged; promoting intentional learning is therefore due to the notion that explicit activities that draw attention to vocabulary form *generally*, although not always, tend to promote more engagement. Intentionally learning is especially recommended at the early stages of learning, while incidental learning is recommended as a means of consolidating, enhancing, and strengthening partially learned words (Pellicer-Sánchez, 2012)

Much of this knowledge has been disseminated to realms of vocabulary pedagogy. Many have pointed out that incidental and intentional learning of vocabulary need not compete for the title of the one best method. Instead, incidental and intentional learning should supplement each other. Nation (2001) and Nation and Gu (2007) outline four learning strands—meaning-focused input, meaning-focused output, language-focused learning, and fluency development—around which a vocabulary syllabus can be built, integrating both incidental and intentional learning. Moreover, they stress that four learning partners—students, teachers, materials writers, and researchers—must work together in order to foster an optimal vocabulary learning environment. In order to design a principled and long-term vocabulary learning program, the foundational tenets of vocabulary research mentioned thus far in the present paper need to be taken into account, namely, the (1) critical role of engagement in learning, and the (2) incremental nature of vocabulary learning through repeated exposures.

## Future Directions

Ellis (1994) presents a comprehensive, although not exhaustive, list in which he identifies four broad categories of factors that influence incidental L2 vocabulary acquisition: (1) intrinsic word properties: pronounceability, part of speech, distinctiveness of word form, length of word form, degree of correlation between form and meaning, imageability, and polysemy, (2) input factors: frequency, saliency through focus, contextual cues, and input complexity, (3) interactional factors: more input and elaboration of input, and (4) learner factors: existing L2 knowledge, background knowledge, procedural knowledge, immediate phonological memory, and learner’s L1. Of these four categories, it seems that the most prolific areas have been in the second category of input factors. Both word repetition (i.e., frequency of encounters) and task-induced engagement, for example, belong to this category.

Therefore, while the body of research in incidental vocabulary learning is already substantial, there seems to still be prominent gaps with respect to several of the factors that affect vocabulary learning. Furthermore, an overwhelming majority of incidental vocabulary studies to date has focused on the medium of the written text. Due to this, some researchers automatically associate “incidental learning” with the learning of words during reading (Hulstijn, 2003). Research in incidental vocabulary learning from oral or mixed input (Brown, 1993; Brown, Sagers, & LaPorte, 1999; Ellis, 1994; Ellis & He, 1999) has been growing, but is still relatively few. Therefore, studying incidental learning that occurs through listening, communicative interactions, and newer technologies such as computer-mediated communicative portals, has a lot of potential for deepening the current understanding of L2 incidental vocabulary acquisition.

A researcher embarking on an investigation in this area, however, should be wary that he or she will confront multiple interpretations of the construct of incidental learning. Each interpretation is related to the main focus of the research question. The learner-oriented perspective, for example, focuses on the question of what kind of learning can occur with minimal degrees of attention from the learner. The method-oriented definition focuses on the differential effects of tasks, often with the goal of finding out which tasks are pedagogically

more effective. Finally the pedagogy-oriented definition illuminates what kind of pedagogical contexts are especially conducive to fostering incidental learning. Whichever approach one takes, there is a need to explicitly state how the construct of “incidental learning” is defined and operationalized in the context of his or her research, as to prevent confusion and misinterpretation. Provided this, the study of incidental L2 vocabulary acquisition continues to have much to offer in uncovering, incrementally from one study to the next, the fascinating process of second language acquisition.

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