Intake in Second Language Acquisition

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Abstract
This paper explores the concept of intake and its relation to input in second language acquisition (SLA). While numerous studies explain the concept of intake and its relation to input and SLA, it appears that most researchers use the term intake in a general sense. This usage leaves a void in the literature where a more detailed and comprehensive view of input-intake processing in SLA might be formulated. Meanwhile, some researchers have quite specific views on this issue and categorize intake into preliminary and final intake, both of which are necessary in SLA. This paper is based on the analysis of the views of a wide range of researchers. It takes as its aim a better understanding of the concept of intake and the relationship between input and intake in SLA. The paper also provides pedagogical illustrations of ways to support learners’ intake formation based on suggestions of researchers in the field and the writer’s teaching experience.

Introduction
Since Corder’s (1967) early description of intake, the concept has been extensively investigated (Chaudron, 1983, 1985; Gass, 1988, 1997; Liceras, 1985; Reinders, 2005, 2012; Schmidt, 1990, 1995, 2010). However, it seems that many researchers’ remarks on the concept of intake have been limited to a high level of generality. The result is that the investigation into how intake is derived from input has been so far inadequate. This is particularly striking because the relation holding between input and intake has been one of the foremost concerns in SLA (Liceras, 1985). Hence, this paper will explore (1) what intake means, (2) how it is formed from input, and (3) what factors can influence input-intake processes. The paper concludes with practical examples of language teaching materials designed in light of research findings.

Definitions of Intake
While researchers have developed a wide range of conceptualizations of intake, Chaudron (1985) and Reinders (2005, 2012) believed that this research establishes the need to understand the notion of intake through varied definitions. Chaudron (1985) further claimed that intake has not been adequately investigated. Because views of intake are varied, it is necessary to identify what
particular view of intake is being employed in a given context (Reinders, 2012). The definitions of intake are commonly grouped into the following categories: product, process, and a combination of product and process (Reinders, 2005, 2012). I will outline each group of definitions in this section.

When researchers define intake as a product, they mean that intake is a selected part of input that is *processed*. Researchers in this group include Corder (1967), Sato and Jacobs (1992), and VanPatten (2002). Corder (1967) established a relation between input and intake and stated that not all input provided to learners will be absorbed because learners need to control and decide what to take in for their language development. Corder (1967) viewed intake as what goes in. Sato and Jacobs (1992) viewed intake as the product of *information processing* on input. Ying (1995) and VanPatten (2002) maintained similar though more detailed definitions of intake. For instance, Ying (1995) claimed that intake is a subset of input which has been internalized by learners after processing. He further asserted that mere exposure to input is not sufficient for intake. VanPatten (2002) defined intake as “the linguistic data actually processed from the input and held in working memory for further processing” (p. 757). Similarly, Sharwood-Smith (1993) saw intake as the “part of input which has actually been processed by the learner and turned into knowledge of some kind” (p.167). According to this view, learners are controllers in this input-intake process. This claim relates to Beebe’s (1985) belief that learners are not passive when they encounter input. Rather, learners are active in deciding what parts/aspects of input will be processed to become intake. Beebe (1985) described this dynamic as learners’ *preferences* and argued that it is crucial to understand the various factors and individual differences that shape learners’ preferences.

Other researchers see intake as a process rather than a product. Chaudron (1985) described intake as “referring not to a single event or product, but to a complex phenomenon of information processing that involves several stages” (p. 2). Chaudron (1985) further described intake as “the mediating process between the target language available to learners as input and the learners’ internalized set of L2 rules and strategies for second language development” (p.1). Leow (1993) distinguished input and intake by maintaining that the latter is “an intermediate process between the exposure to input and actual language acquisition” (p. 334).

In contrast, Alcon (1998) asserted that both points of view of intake, as a process or as a product, in fact have some limitations. If intake is seen as a product or a subset of input, then there is no explanation left for how that product or subset is created or processed from input. If intake is seen as a process, then the fact that “a small proportion of the learners’ intake can go beyond the boundaries of the input they are exposed to” is ignored (Alcon, 1998, p. 345). Therefore, Alcon (1998) suggested a combination of both viewpoints, stating that intake is a product of a process. In other words, intake is both the part of the input that learners attend to and process as well as the product gained after processing is complete. After reviewing different definitions of intake, Reinders (2012) developed what he calls “working definitions” of intake. According to these definitions, intake is “a subset of the detected input (comprehended or not), held in short-term memory, from which connections with long-term memory are potentially created or strengthened” (p. 28). From all of the above, it is clear that intake is not created solely
by exposure to input; input needs processing for intake, and intake is a stage between input and acquisition.

The lack of precision in discussions of intake and its role in language acquisition seems to be the result of researchers using the term intake in an overly general way. One way to introduce more clarity is to posit two types of intake defined as preliminary and final intake (Chaudron, 1983, 1985). Preliminary and final intake have distinct roles but are also related to each other; each is a sequence in the language acquisition process. Building on this perspective, it is not only necessary to categorize intake as a product, process, or both, but also important to distinguish how intake functions in the overall SLA process. The following section will discuss the classifications of intake and their functions in SLA.

**Intake in SLA**

Chaudron (1983, 1985) has contributed greatly to the work of classifying types of intake. Chaudron (1985) argued that input processing exists to create intake as “(1) the initial stages of perception of input, (2) the subsequent stages of recoding and encoding of the semantic (communicated) information into long-term memory, and (3) the series of stages by which learners fully integrate and incorporate the linguistic information in input into their developing grammars” (p.2). These three stages happen along a continuum. The initial part of the continuum, preliminary intake, includes the perception and comprehension of forms (Chaudron, 1983). The proceeding part of the continuum, final intake, refers “only to input on the basis of which the learner forms her hypotheses about the L2 rules and tests them out subsequently” (Faerch & Kasper, 1980, p.64 cited in Chaudron, 1985).

The view of intake presented by Chaudron (1985) has received support from other researchers. For instance, intake defined by Leow (1993) “represents stored linguistic data that may be used for immediate recognition and does not necessarily imply language acquisition” (p.334). Holding a similar view to Leow (1993) and Chaudron (1985), Alcon (1998) and Batstone (1996) classified intake of meaning as initial recognition and intake of forms as internalization of an underlying rule for language acquisition. Chaudron’s view of input processing for intake is strongly connected to Reinders’ (2005, 2012) description of the process of moving from detected input processing to short term and long term memory. Reinders (2005, 2012), for instance, described intake as the part of input that has been detected. However, it is not necessarily the case that detected input is immediately comprehended. Instead, detected input will be stored in short-term memory for comprehension and immediate recognition and then in long-term memory for further processing.

All of these views of intake and its functions establish another concern that involves the input-intake process. This concern relates to the issue of comprehension and acquisition in SLA. Sharwood-Smith (1986) emphasized a distinction between comprehension, which involves “the decoding of particular messages which have been encoded in linguistic form,” and acquisition, which refers to “the creation of new mental structures which we call grammatical competence” (p.239). According to this view, learners may make use of intake for the purposes of comprehension and communication even though intake is not adequate for acquisition. For
language acquisition, learners need to process this preliminary intake so that it becomes final intake, which includes the creation of rules that learners form from those linguistic features. This kind of intake can be used for hypothesis testing or rule strengthening. It is worth noting that although intake is a major component in SLA, there has been an imbalance in the amount of attention researchers have paid to the two types of intake. For example, Chaudron (1985) focused mainly on the notion of final intake.

**Intake Formation from Input**

Despite a great deal of engagement with the concept of *intake*, there is only limited literature that helps explain the process of how input actually becomes intake. Most researchers dealing with the input-intake relation seem to place a greater emphasis on what intake means and what roles intake plays in SLA (Corder, 1967; Sato & Jacobs, 1992). As a result, they omitted any detailed or explicit clarification of how intake is created from input. They also did not investigate whether there are particularly influential elements involved in the creation of intake. Hence, there is a need for an in-depth review of this input-intake relation along with the relations that obtain between the elements involved. In attempting to fill such a gap, Sun’s (2008) work has also proved to be valuable, as she introduces a significant number of theories and frameworks related to input processing in SLA. Among these theories, the framework of second language acquisition (Gass, 1997) and the Noticing Hypothesis (Schmidt, 1990, 1995, 2010) have been particularly important for our understanding of the input-intake relation. The significance of Gass’s (1997) contribution rests on the fact that it offers a detailed description of the process of SLA from the starting point of input to the end point of output. In so doing, Gass provides both a more holistic and more precise view of input-intake-output processes and relations. Her framework has been supported by other researchers (Ellis, 1994; Izumi, 2003; Sun, 2008; Truscott & Sharwood-Smith, 2011) who also note the importance of Gass’s (1997) coverage of the varied aspects of SLA. This support and the significance of Gass’s work in developing my own views are my main reasons for choosing her framework to underpin this paper. Consequently, I will employ Gass’s (1997) framework as a framing model to investigate the input-intake process and its key relationship in the total SLA process.

Gass’s (1997) framework identified *apperception*, *comprehension*, and *intake* as the key steps in this part of the overall process. According to Gass’s claims (1997), after being exposed to input, learners must recognize new features that they have not yet recognized or acquired. Gass (1997) categorized this stage as *apperception*. However, literature discussing the concept of *apperception* in language acquisition is limited. In fact, many researchers (Chapelle, 1998; Ellis, 1994; Lai et al, 2008) tended to immediately equate apperception with the concept of noticing presented in Schmidt’s Noticing Hypothesis (1990, 1993, 1995, 2001, 2010). Even Gass (1997) and Schmidt (1990, 2001) often treated these two concepts as one. This raises the question of how noticing is related to apperception. To more fully understand the concept of *apperception* in the framework of SLA (Gass, 1997), there is a need to explore the Noticing Hypothesis. Schmidt (1990, 2001) explained that *noticing* occurs at a very low level of awareness, and he went on to state that the notion of noticing refers only to “elements of the surface structure of utterances in the input-
instances of language, rather than any abstract rules or principles of which such instances may be exemplars” (Schmidt, 2001, p. 5). Schmidt (1990, 2001) then saw noticing as equivalent to apperception. I will in turn adopt this view of apperception and noticing throughout this paper. Although noticing occurs at a very low level of awareness and involves learners’ recognition of the language features of input, noticing is very important in the SLA process.

For Schmidt (1990, 1995, 2010), the role of noticing is so important that potential language learners will not learn if they are not able to ‘notice’ features of the target languages in the input. This view is supported by other studies that share similar views on the importance of noticing in language development (Mackey, 2006; Soleimani & Najafi, 2012). We can conclude from these studies that input contains a large number of features all of which cannot be absorbed together. It is by noticing that learners focus on certain features of input, and noticing allows for further processing. However, it is important to note that despite the acceptance of these theories, both noticing and apperception are necessary but not sufficient for language acquisition.

In Gass’s (1997) framework, after the stage of apperception, the stage in which learners recognize of the existence of specific grammatical features in the input, learners must then comprehend those features (Gass, 1997). When discussing learners’ comprehension of input, it is vital to emphasize that learners need to be able to achieve comprehension at both semantic and, more importantly, syntactic levels. Semantic comprehension refers to the general meaning of the message, while syntactic comprehension refers to understanding the linguistic features that encode that message. For Gass (1997), comprehension happens along a continuum from the semantic to the syntactic level, but only syntactic comprehension is useful for intake. Gass’s (1997) explanation of comprehension is supported by a number of researchers (Loschky, 1994; Truscott & Sharwood-Smith, 2011; VanPatten, 1990), and Gass’s explanation of comprehension may relate to what Chaudron (1985) identified as preliminary intake. This includes learners’ comprehension of input along with the comprehension of general meaning and grammatical abstractions.

The next stage in Gass’s (1997) framework is intake, which refers to learners’ generalizations of grammatical rules and their resulting hypotheses in this context. This aligns with what Chaudron (1985) identified as final intake. However, learners’ hypotheses that are generated at this stage of intake may need to be tested and modified before they become fixed and accepted. One issue that emerges from considering Gass’s study (1997) is that Gass appeared to move from comprehension to intake without an explicit explanation of how learners form a hypothesis or generate grammatical rules. In contrast, Schmidt (1995, 2010) explained this clearly through the lens of his noticing hypothesis by explicating understanding, which refers to learners’ generalizations of rules from noticed instances. This provides a significant enhancement of Gass’s (1997) framework, helping us obtain a clearer view of how learners can form a hypothesis on the basis of intake.

**Factors Influencing Input-Intake Processing**

From the aforementioned issues, it is obvious that intake is an important factor in SLA, since it leads to further stages in the SLA process (Gass, 1997; Schmidt, 1990, 1995). However, in order
to obtain intake, learners firstly need to be exposed to input, which is the very first condition for acquisition. Numerous researchers agree that learners need to be provided with sufficient input for language acquisition to occur (Gass, 1997; Krashen, 1985; VanPatten, 2002). Notably, Wode (1981, as cited in Saleemi, 1989) stated that “there is no learner on record who learned a language or even part of it without receiving some language input” (p. 302). To show the significance of input, Lightbown (1985) provided the example of question formation with the inversion of auxiliary verb and subject. Learners without exposure to input of this inversion will not be able to inverse the subject and auxiliary verb in questions. Hence, there is no doubt about the importance of input in language acquisition, particularly for the formation of intake. However, despite this crucial role, there are still conditions that input needs to meet for successful intake and further related processes. In this section, I focus on what conditions input must meet for successful intake and further language acquisition. This is vital in educational settings because teachers must pay attention to the input they supply, support language tasks, and tailor instructions to make the input more accessible to learners.

According to Krashen’s (1985) input hypothesis, the input provided to learners needs to be of a higher level than a learner’s current language level for acquisition to come about. This is expressed in the formula “i+1.” This relates to the Noticing Hypothesis (Schmidt, 1990, 1995, 2010) because learners need to be able to notice new items in supplied input for intake processing to occur. Therefore, obtaining new items which are unknown to language learners is a requirement. However, Ying (1995) made a critical point for language educators by noting that input needs to be compatible with a learner’s ability; otherwise, acquisition is impossible. If the level of input is too high with respect to a learner’s current language level, then he or she may not be able to notice the target language, comprehend the input, or acquire language. This idea is strongly supported by numerous researchers in the field and leads to a further key concern, that is, learners’ language proficiency (Gass, 1997; Leeser, 2004a; Schmidt, 1990).

Other researchers raise the issue of accuracy of input because there is a concern that inaccuracy of input may inhibit acquisition. This has been shown in both formal and natural settings. This point is of vital importance because in many language classrooms learners interact with non-native speakers who may not be highly proficient in English. For instance, Rothman and Guijarro-Fuentes (2010) as well as Nel and Muller (2010) studied cases of English learners who were taught by non-native speakers of English. These researchers found that learners still produce morphological, phonological, and syntactic errors in their output. These researchers concluded that there was a transfer of errors from teachers with limited English proficiency to learners. In a study focusing on immigrant families in an English speaking country, Paradis (2011) found that input with errors provided by family members who are not proficient in English may indeed inhibit children’s development of English. Paradis (2011) concluded that the non-target use of L2 should be limited, leaving the L1 as better option at home. The findings of these studies indicate that the inaccuracies in input negatively affect language acquisition.

As mentioned, Schmidt’s (1993, 1995, 2010) studies focusing on the noticing hypothesis are of crucial importance to the area of input-intake processing in SLA. According to the noticing hypothesis, while input is unquestionably important, it is not a guarantee for language acquisition if input goes unnoticed by learners who do not form intake. Therefore, the question
to ask is how to make input more revealing to learners for initially noticing and later forming intake. Dai and Tseng (2011) and Schmidt (1990) claimed that teachers’ can help direct learners’ attention to key points in the input by utilizing task demands. Features of a task can encourage learners to notice input in order to complete the task (Leeser, 2008; Mackey, 2006; Soliemani & Najafi, 2012; Thornbury, 1997). Leeser (2004b) noted that aural or visual input disparately influence learners’ ability to notice a form in that input. Visual input seems to create better chances for learners to notice a particular form or feature of input in cases where learners may not be able to recognize these through aural input. All of this suggests that teachers need to be aware of the kinds of input they provide for learners and design tasks that can strategically guide learners’ attention to the target language for acquisition.

In addition, the success of intake depends on learner-internal and learner-external factors. This places strong requirements on input in educational settings, since input needs to be accurate and at a suitable level for accurate acquisition. Drawing from the Noticing Hypothesis, input providers need to be conscientious in determining tasks, instructions, and input mode in order to draw learners’ attention to input. Also, educators and/or input providers need to be mindful of learners’ background knowledge and current level of language proficiency to ensure that learners are able to notice input for intake and further processes in SLA.

**Practical Pedagogical Implications**

Researchers have discussed the key factors of intake formation with a focus on the characteristics of input and learner-related factors. A central point researchers have focused on concerns the proper ways to direct learners’ focus to target features in input in accordance with both the noticing hypothesis (Schmidt, 1990, 1995, 2010) and the framework of second language acquisition (Gass, 1997). In this section, I discuss practical suggestions for making input more noticeable to learners. One suggestion is borne from my teaching experience and my observation of a general English course at a private language center in my region. In an elementary-level pronunciation session, EFL beginners need to learn how to pronounce various sounds of English. This case involves the /ɪd/ final sound of regular verbs ending with /t/ or /d/ in simple past tense. Many EFL learners miss this final sound in their speech (Low & Samosir, 2000). This is equally the case for Vietnamese learners of English due to the influence of their L1, which does not include pronunciation of final sounds (Luu, 2011).

Drawing from Mackey (2006) and Leeser (2008), language tasks may draw learners’ attention to certain features of input. Schmidt (1990, 1995, 2010) emphasized the possibility of inducing learners to notice features of input by increasing frequency of occurrence. I found the ideas of these researchers useful in my teaching experience. Regular verbs ending with /t/ or /d/ sounds require an /ɪd/ sound for their simple past tense (Hancock, 2003). To direct learners’ attention to these sounds, I provided exercises in which learners had a chance to recognize how regular verbs with /t/ and /d/ endings are pronounced in the simple past form. First, I employed a text or group of sentences containing those regular verbs. To introduce a clearer understanding of how verbs are pronounced differently with the addition of -ed, the verbs in the exercise, including those which contain /t/ or /d/, are to be conjugated to both simple present
and past tense. This is meant to help learners compare the differences of the allomorph -ed and to make the /ɪd/ more revealing to learners. The simple text below is taken from an exercise I have used in my teaching (Appendix):

Yesterday, I (want).........to go to the cinema, but I (be).........too busy. So, today, I think I (want).........to go there again. However, I (need)..........., to finish my homework first because two days ago my teachers (give) ...........me a lot of homework for the General English class. Last night, I (try)..... to do it, but it (be) ...... too hard for me to do. I (call).............one of my friends because I (need).......much help, but no one (want)........... to help me.¹

The purposes of delivering the text were to review the grammatical knowledge of simple past tense and to indicate pronunciation of past tense suffix -ed. The first and third instances of want /wɒnt/, should be changed into wanted /ˈwɒntɪd/, while the second want remains unchanged. For the case of the verb need /niːd/, it first occurs in the simple present tense and is pronounced as /niːd/. The second occurrence requires -ed, leading to needed /ˈniːdɪd/ for its past form. Keeping in mind that feedback can facilitate learners’ noticing of target features (Mackey, 2006), students are asked to read their answers aloud and then receive feedback in cases where they mispronounce the /ɪd/ sound. It is helpful to provide more verbs in this category so that the /ɪd/ sound appears more frequently. To ensure that the provided input is accurate (the teachers’ pronunciation of the suffix is correct), a supplemental recording of a native speaker who reads the task clearly is included so that learners are exposed to input with a higher level of accuracy (Nel & Muller, 2010). An additional advantage of the recording is that the speaker places stress on the /ɪd/ sound, which supports learners’ noticing (Leeser, 2004b). The written exercise is given before the listening task because students may not be able to recognize the target /ɪd/ sound through its aural mode (Leeser, 2004b). The teaching example is therefore consistent with what researchers have mentioned to be factors that can either facilitate or hinder learners’ noticing of features of input (Leeser, 2004a, 2004b, 2008; Mackey, 2006; Schmidt, 1990, 1995, 2010). More follow-up exercises are provided which are crafted to support learners’ noticing and understanding of the /ɪd/ feature (Appendix).

Conclusion

In sum, intake is the part of the process of language acquisition that is processed from input, but intake may function as immediate recognition and comprehension (preliminary intake) or can be further processed for acquisition, which requires the formation of rules for hypothesis testing or strengthening (final intake). This view of intake presented by Chaudron (1985) is useful for understanding the relationship between intake and SLA. Therefore, this paper adopts Chaudron’s (1985) view of intake when investigating input-intake processing. Although preliminary intake and final intake are described as sequences in acquisition, it is difficult to test how those types are formed by learners’ input processing. Also, the relation between intake and SLA is extremely complex. In input-intake processing, there are factors that can either enhance or hinder intake formation from input, namely learner-internal and learner-external factors. In
educational settings, educators taking on the role of input providers need to keep these elements in mind so that they can provide learners with support for input-intake processes and language acquisition.

Notes
1 The text is retrieved from the author's handout for his Review session of Simple Past tense in a General English course.

References


APPENDIX
SIMPLE PAST TENSE – REVIEW

Exercise 1. Provide the simple past tense of the following verbs.
1. Last week, I (go)…………………to Nha Trang on holiday.
2. There (be)…………..many interesting places to visit.
3. I (eat)……………….a lot of seafood at a famous local restaurant.
4. The weather (not be)…………so hot.
5. I (stay)……………in a hotel near the beach.
6. The trip (be) ……………so great.
7. I (not spend)……………..much money while I (be)…………..there.
8. My family and I really (enjoy)……………the vacation.

Exercise 2. Provide the correct tenses of the following verbs. Then listen and check your answers.

Yesterday, I (want)…………to go to the cinema, but I (be)……too busy. So, today, I think I (want)……..to go there again. However, I (need)………..to finish my homework first because two days ago my teachers (give) ………me a lot of homework for the General English class. Last night, I (try)….. to do it, but it (be) …… too hard for me to do. I (call)…………one of my friends because I (need)……..much help, but no one (want)………… to help me.

Exercise 3. Reading Comprehension
Who were they? Where did they go? What happened?

One autumn evening, Charles and Beth went to the theater. They attended a play. The play started at 7:00. Charles and Beth enjoyed the theater.
After the play, Charles and Beth walked together in the park. They walked beside the lake. The moon was bright. They talked about their future.
When Charles and Beth went home, their children were not asleep. They waited for Charles and Beth to return. They were excited to hear about the theater!
Charles told the children about the play. Then, Beth put the children to bed. Charles and Beth were very tired. It was a good night!

**Answer the following questions. Use the Simple Past tense.**

1. What did Charles and Beth attend?

2. What time did it start?

3. What did Charles and Beth do after they left the theater?

4. What did they talk about?

5. Who waited for Charles and Beth to return home?

1. What did Beth do?

**Exercise 5. Please write a short paragraph about your past event (e.g. trip or activities, etc.). Then TELL your story to a partner.**
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