The Roles of Output in English Language Learning: A Theoretical Review

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Abstract

For many second language (L2) learners and teachers, producing language is generally considered to constitute an important part of L2 learning. However, how beneficial it is to produce language is often not so clear. Proponents of the Noticing Hypothesis of Second Language Acquisition (SLA) state that intake is the part of the input that the learner notices, and it requires focal attention and awareness on the part of the learner. It is hypothesized that output promotes noticing, and stated that the importance to learning of output could be that output pushes learners to process language more deeply, with more mental effort, than does input. This academic paper discusses the roles of output in SLA in noticing. With output, the learners are in control and can play more active, responsible roles in their learning. It constitutes a potentially important factor in the acquisition process. This is important if there is a basis to the claim that noticing a form in the input must occur in order for it to be acquired. Thus,

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it is interesting to obtain a more precise understanding of whether output promotes noticing of a grammatical form in the second language.

Keywords: Metalinguistic awareness, Roles of output, SLA, Noticing hypothesis

Introduction

In SLA, the global consensus that has emerged from decades of research is that input plays a crucial role in driving learners' acquisition of a second language (Krashen, 1985). Current research goes beyond a general interest in the need for comprehensible input (Krashen, 1985), which is considered necessary but insufficient (Ellis, 1994). Recent research in cognitive psychology and SLA has examined the role of attention in mediating input and learning (Izumi, 2002). Simply put, people learn about the things that they attend to and do not learn much about the things they do not attend to (Schmidt, 2001). For many second language (L2) learners and teachers, producing language is generally considered to constitute an important part of L2 learning. However, how beneficial it is to produce language is often not so clear. Schmidt (1990, 1995, 2001) states that intake is the part of the input that the learner notices, and it requires focal attention and awareness on the part of the learner. Swain (1985) hypothesized that output promotes noticing, and stated that the importance to learning of output could be that output pushes learners to process language more deeply, with more mental effort, than does input. With output, the learners are in control and can play more active, responsible roles in their learning. Output may play a role in promoting noticing (Wang & Castro, 2010). It constitutes a potentially important factor in the acquisition process (Izumi, 2002). This is important if there is a basis to the claim that noticing a form in the input must occur in order for it to be acquired (Ellis, 1994; Schmidt, 1990, 1992).

Potential Roles of Output

The Output Hypothesis evolved out of criticism of the Input Hypothesis by Swain (1985). Swain argued for the insufficiency of comprehensible input based on the results of her studies of Canadian students in immersion

programs. It is reported that students in such programs have ample opportunity to receive comprehensible input, yet a number of grammatical errors are observed in their output even after as long as 12 years. Swain claims that for grammatical development, learners need to be pushed onto making their output: more precise, coherent, and appropriate. Swain argued that while comprehension of a message can take place with little syntactic analysis of the input, production forces learners to pay attention to morphosyntax. Swain (1985) has further revised the Comprehensible Output Hypothesis and suggests three functions which output serves in the Output Hypothesis. The three functions are (1) a noticing function, (2) a hypothesis formulation and testing function, and (3) a metalinguistic function.

Noticing

Swain (1995) hypothesized that under certain circumstances, output promotes noticing. The sense in which Swain and Lapkin (1995) have used noticing coincides with that of Schmidt and Frota (1986), who state that by noticed, they mean "in the normal sense of the world, that is conscious". There are several levels of noticing. Learners may simply notice a form in the target language due to the frequency or salience of the features themselves. Or learners may notice not only the target language form itself but also that it is different from their own interlanguage (Schmidt and Frota, 1986). Or, learners may notice that they cannot say what they want to say precisely in the target language (Swain, 1985). Under some circumstances, the activity of producing the target language may prompt second language learners to recognize consciously some of their linguistic problems: It may bring to their attention something they need to discover about their second language. This may trigger cognitive processes that might generate linguistic knowledge that is new for the learner (Swain & Lapkin, 1995).

Hypothesis Formulation and Testing

A second way in which producing language may serve the language learning process is through hypothesis formulation and testing (Swain, 1985). In normal circumstances, learners are able to obtain useful information for

testing their hypotheses from other sources. When external feedback has been available, learners have also modified or reprocessed their output (Birkner, 2016). The fact that learners modify their speech in one-third of their utterances suggested that they were testing out only some things and not others. It may be that the modified output can be considered to represent the leading edge of a learner's interlanguage. Thus, learners may use their output as a way of trying out new language forms and structures as they stretch their interlanguage to meet communicative needs; they may use output just to see what works and what does not (Swain, 1985). That immediate external feedback may not be facilitative or forthcoming does not negate the value of learners having experimented with their language resources.

Metalinguistic Function

A third function of output is its metalinguistic function. In this case, the learners' own language indicates an awareness of something about their own, or their interlocutor's, use of language. That is, learners use language to reflect on language use (Swain, 1985). Thus, by encouraging metatalk among second and foreign language students, it is helpful for students to make use of second language acquisition processes. It is essential that this metatalk is encouraged in contexts where the learners are engaged in making meaning, that is, where the language being used and reflected upon through metatalk is serving a communicative function. Otherwise, the critical links between meaning, forms, and function may not be made (Swain, 1985).

Consistent with what Swain suggests, Izumi (2002) states that the current popular view of output posits that it constitutes not just the product of acquisition or the means by which to practice one's language for greater fluency, but also a potentially important causal factor in the acquisition process. The importance of output in learning may be construed in terms of the learners' active deployment of their cognitive resources. In other words, it is posited that the output requirement presents learners with unique opportunities to process language that may not be decisively necessary for simple comprehension. In proposing the Output Hypothesis, Swain (1985)

expresses that producing the target language may serve as the trigger that forces the learner to pay attention to the means of expression needed in order to successfully convey his or her own intended meaning.

In psycholinguistic terms, it may be assumed that grammatical encoding and monitoring mechanisms play particularly important roles for learning purposes by functioning as an internal printing device for grammatical consciousness-raising for the language learner ((Levelt, 1989; Izumi, 2000). Research to date has provided descriptive evidence of the existence of learning processes stimulated by output (Leeser, 2008). Of the three functions of output (noticing, hypothesis formulation, testing, and metatalk) specified in the current version of the Output Hypothesis (Swain, 1985), the present study focuses on its noticing function. The noticing function of output posits that learners may notice the gap in their target language knowledge in an attempt to produce the target language, which then prompts them to solve their linguistic deficiency in ways that are appropriate in a given context. For instance, if learners are left on their own to solve the immediate production difficulties, they may engage in various thought processes that can consolidate existing knowledge or possibly generate some new knowledge on the basis of their current knowledge (Swain & Lapkin, 1995). On the other hand, if relevant input is immediately available, the heightened sense of problematicity during production may cause the learners to process subsequent input with more focused attention; they may try to examine closely how the target expresses the intention that they just had difficulty in expressing on their own. In either case, learning is believed to be enhanced through the act of producing language, which, by its mechanisms, increases the likelihood that learners become sensitive to what they can and cannot say in the target language, which leads to the reappraisal of their interlanguage capabilities.

Noticing in Second Language Acquisition

In the strong form of the noticing hypothesis, favored by Schmidt, noticing is a necessary condition for learning. The noticing hypothesis has acknowledged the role of consciousness in language learning and argued

that learners must first consciously notice—that is, demonstrate a conscious apprehension and awareness of some particular form in the input—before any subsequent processing of that form can take place. In other words, noticing is the necessary and sufficient condition for the conversion of input to intake for learning. Noticing is often associated with the influential notion of consciousness raising (Rutherford, 1987; Sharwood Smith, 1981) or input enhancement (Sharwood Smith, 1991) and focus on form (Long & Robinson, 1998). According to Schmidt (1990), learners select specific parts of the input they are exposed to which then become available for further processing. Indeed, Schmidt argues strongly against any intake of input that the learner has not noticed. He appears to equate noticing with attention plus awareness. To support his argument for the role of consciousness in the sense of awareness at the level of noticing in SLA, Schmidt cites primarily a diary study of his own personal attempts to learn Portuguese (Schmidt & Frota, 1986) and SLA studies that have addressed (a) enhanced input designed to draw learners' attention to specific forms in the input; (b) discourse studies demonstrating limited occurrences of acquisition-enhancing negotiation sequences; (c) factors such as saliency of forms; (d) competition between form and meaning; and (e) uptake studies, that is, learners' claims regarding what had drawn their attention and what they had learned during the lesson. He operationalized noticing as a cognitive operation that takes place both during and immediately after exposure to the input that is available for self-report.

Proponents of noticing also give much attention to noticing the gap—learners' awareness of a mismatch between the input and their current interlanguage. Schmidt and Frota presented noticing the gap as an adjustment of Krashen's (1985) theory, the only difference being their additional claim that conscious awareness of the gap is a requirement. For example, noticing has been described as the part of the attentional system that involves the detection and consequent registration of stimuli in memory (Posner & Peterson, 1990). Noticing of stimuli makes it potentially available for inclusion in long-term memory and for further processing, hence Schmidt's (1995) claim that noticing is requisite for learning. Noticing may then be conceived as detection accompanied by lesser and greater degrees

or levels of awareness (Leow, 2000; Philp, 1998). There are several levels of noticing. Learners may simply notice a form in the target language due to the frequency or salience of the features themselves. Schmidt and Frota (1986) propose in their "notice the gap principle," that learners may notice not only the target language form itself but also that it is different from their own interlanguage. In other words, L2 learners will begin to acquire the target-like form if and only if it is present in comprehended input and 'noticed' in the normal sense of the word that is conscious. Their hypothesis is that output is one of the triggers for noticing. That is to say, in producing the target language, learners may encounter a problem leading them to recognize what they do not know, or know only partially. The activity of producing the target language may prompt L2 learners to consciously recognize some of their linguistic problems; it may bring to their attention something they need to discover about their L2 (Swain, 1995). Simply stated, learners may notice that they cannot say what they want to say precisely in the target language (Swain, 1995). The important issue is that it is while attempting to produce that target language that learners may notice that they do not know how to say (or write) precisely the meaning they wish to convey (Swain, 1985). This may trigger cognitive processes that might generate linguistic knowledge that is new for the learner or consolidate the learner's existing knowledge (Swain & Lapkin, 1995).

The output hypothesis is that even without implicit or explicit feedback provided about the learners' output, learners may still on occasion notice a gap in their own knowledge when they encounter a problem in trying to produce the L2. A study by Nobuyoshi and Ellis (1993) was suggestive. Their study indicated that pushing learners to improve the accuracy of their production resulted not only in immediate improved performance but also in gains in accuracy over time. Other research has described what learners do linguistically when pushed to modify their output. These studies indicated that during the process of negotiating meaning, learners indeed modified their output in response to such conversational moves as clarification requests or confirmation checks. The communication strategy literature (Kellerman, 1991) provided evidence that learners do notice problems as they speak, and do try to do something about them. But what

do they do when they notice a problem? I would like to examine these processes as they are revealed through their text reconstruction produced by L2 students while writing.

Operationalizing and Measuring Awareness

The terminological and theoretical confusion in the current psycholinguistic theory of attention in SLA appears to be mirrored in current empirical studies. There has been considerable controversy regarding the role of awareness in language learning, inconclusive evidence for its effects on L2 learners' behavior, and two methodological problems in addressing its role in language learning: namely, defining precisely what constitutes awareness and operationalizing or measuring it (Leow, 1995). Operationalizing and measuring awareness in language learning have been largely problematic due to (a) different definitions of what constitutes awareness; (b) the rapidity of learner's subjective experience of cognitive registration; and (c) the potential inability to verbalize one's awareness (Schmidt, 1995).

Schmidt (1995) states that L2 learning must entail awareness and particularly that the noticing hypothesis claims that learning requires awareness at the time of learning. In short, according to Schmidt's noticing hypothesis, consciousness, in the sense of awareness of specific forms in the input at the level of noticing (conscious attention), is necessary for language learning to take place. Tomlin and Villa (1994) provide a restricted definition of awareness derived from SLA (Schmidt, 1990) and cognitive science (Schacter, 1995): Awareness refers to a particular state of mind in which an individual has undergone a specific subjective experience of some cognitive content or external stimulus (Tomlin & Villa, 1994). In the review of the operationalization of awareness, Curran and Keele (1993) provided several methodological assessments of awareness that include noting changes in learners' behavioral patterns together with some form of meta-awareness; that is, reporting on their cognitive registration of the incoming stimuli. However, the timing of operationalizing awareness while exposed to L2 data or after such exposure appears crucial in addressing its role in language learning. If it is assumed that learners create a mental

representation of a detected or noticed form while interacting with such a form, then their level or degree of awareness should have an impact on what they encode and later retrieve from their memory. In measuring what role awareness plays during learners' actual interaction with L2 data, the use of text reconstruction should provide a clearer of learners' allocation of cognitive resources, the role of awareness, and potential levels or degrees of awareness while processing L2 forms.

Research Issues

In a series of studies on the noticing function of output, Izumi and Bigalow (2000) investigated whether output would alter the learners' subsequent input processing and promote their IL development. Focusing on the English past hypothetical conditional, these studies compared a group that was given output opportunities and subsequent exposure to relevant input and a group that received the same input for the sole purpose of comprehension. This basic format of the treatment was instantiated in two types of tasks—a text-reconstruction task and a guided essay-writing task—that were delivered in reverse order in the two studies. The results of both studies indicated a significant improvement on the form only after the second phase of the treatment, which suggested the importance of extended opportunities to produce output and receive input in effecting substantial learning. In terms of task effects, both studies found that the essay-writing task was more susceptible to individual variation than was the text-reconstruction task. It seemed that the greater freedom in production in the essay-writing task makes the IL output-TL input comparison difficult vis-à-vis the target grammatical form, leading different learners to attend to vastly different aspects of the input. On the other hand, the reconstruction task may have an advantage in promoting noticing the gap when a specific form is targeted as these tasks maximize the similarities between the learner's production and the TL model. In general, however, output opportunities in these studies had variable effects on noticing and learning of the form for different learners, which resulted in blurring the overall between-group advantages of the output group.

As mentioned, recent years have seen a growing concern with the role of conscious processes in SLA. This concern is frequently centered on the noticing hypothesis (Schmidt, 1990; 1995; Schmidt & Frota, 1986). The hypothesis is a claim about how input becomes intake-that part of the input that is used for acquisition. It claims that conscious awareness of grammar plays an important role in the process. However, several researchers have preferred to omit any role of consciousness in language learning and have argued for a dissociation between learning and awareness (Velmans, 1991). Studies cited to lend empirical support for the dissociation between attention and awareness at the level of detection in language learning include studies that have used semantic priming tasks (Marcel, 1983), or a serial reaction time task to address learning sequences of input (Curran & Keele, 1993). However, these studies have several methodological problems (Schmidt, 1995) that plagued both studies with the categorization of participants' levels of awareness and the potential for other interpretations of the findings. Additionally, operationalizing and measuring the dissociation between attention and awareness at the level of detection remains a problematic and thorny issue.

Conclusion

In summary, previous empirical studies on the noticing function of output have produced mixed findings (Izumi, 2002). There is a paucity of research that demonstrates whether these output-oriented processes are facilitative of second language learning. Moreover, at present, operationalizing or measuring the potential for dissociation between awareness and detection in language learning poses difficulties. As a consequence, the effects of output need to be further investigated to contribute to the broader debate of the usefulness of explicit focus on form. It will be interesting to examine whether output promotes noticing of a grammatical form in the second language. It seeks to obtain a more precise understanding of how learners process, or interact with input to develop their interlanguage competence.

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