Reexamining the Effect of Output on Second Language Acquisition

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According to VanPatten (2003), output refers to just about anything that emerges from something else, normally something that is purposefully produced. In Second language acquisition, output refers to the language that a learner produces. It is certain that, in order to acquire an L2, it is necessary for learners to produce output as well as to receive input.

Key Words : output, input, The Output Hypothesis, Processability Theory, pushed output

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1　Introduction

Mitchell and Myles (2004) state that most language learning researchers agree that output is necessary to increase fluency, that is, learners must practice producing second language utterances if they are to learn to use their interlanguage system confidently and routinely in addition to receiving a lot of input. However, the *Output Hypothesis* advanced by Swain (1985, 1995) makes a number of claims which go beyond this practice function of output, and which have to do with the development of the interlanguage system.

In this paper, we will reexamine the effect of output on second language acquisition.

2　What Is Output?

2.1 The Weakness of Input

Gass and Selinker (2008) propose that input alone is not sufficient for second language acquisition (hereafter, SLA), because when one hears second language (hereafter, L2), one can often interpret the meaning without the use of syntax. For example, if one hears only the words *dog, bit, girl,* regardless of the order in which those words occur, it is likely that the meaning *The dog bit the girl* is the one that will be assumed rather than the more unusual *The girl bit the dog*. Similarly, if one hears a sentence such as *This is bad story*, one can easily fill in the missing article. Little knowledge, other than knowing the meanings of the words and knowing something about real-world events, is needed. However, this is not the case with language production or output, because one is forced to put the words into some order. Production then may force the learner to move from semantic processing to syntactic processing.

Ellis and He (1999) worked with low-proficiency English SL learners, using a pool of unfamiliar furniture vocabulary (*lamp, cushion*, etc.). All the learners carried out a design task, placing small pictures of the furniture items around the plan of an apartment, but one group received pre-modified instructions that they could not negotiate. A second group received the same instructions but could negotiate if meanings were not clear, while the third group were required to give the instructions to an interlocutor (that is, the third group were pushed to produce output). In this study, pre-tests and post-tests of the selected vocabulary showed that the third, output group outperformed the others both receptively

and productively. This study seems to show clear benefits arising from pushing students to produce SL output.

To sum up, it is certain that, in order to acquire L2, it is necessary for learners to produce output as well as to receive input.

2.2 The Definition of Output

Richards and Renandya (2002) state that output refers to the observed results of the learners' efforts. They (2002) say that, although some theorists have proposed that output (active use of the language resulting in the production of language) is not essential to acquisition, that is, that input is sufficient (for example, Krashen, 1985), others (for example, Swain, 1985) have proposed that output is essential to acquisition and is more likely to facilitate acquisition when the learners are pushed, that is, required to reshape their utterances and to use the target language more coherently and accurately. This is confirmed by examples of L2 users who speak a language relatively fluently but use a very restricted lexicon and syntax and show no evidence of improvement in accuracy over time (for example, taxi drivers and vendors in EFL settings), since the restricted purposes for which they use the language do not push them to expand or restructure their linguistic resources.

According to VanPatten (2003), output refers to just about anything that emerges from something else, normally something that is purposefully produced. In SLA, output refers to the language that a learner produces; however, output is not just any language. For example, we know that parrots don't really talk, that is, don't produce output. They imitate speech, but they don't understand what's coming out of their mouths. They simply know that if they produce sounds in a certain way, they get rewarded. Like parrots, L2 learners can imitate sounds and phrases; they can produce language and yet not understand what they are saying. In an episode of the 1970s television show *M*A*S*H*, Hawkeye takes over an English class and gets a group of native Korean speakers to repeat after him, "Frank Burns eats worms." (Frank and Hawkeye did not like each other.) They repeat the words dutifully after him, but they have no idea what they are saying nor that Hawkeye is using them to make fun of Frank. This is not output. Output is not language production without meaning. Output in SLA means language that has a communicative purpose; it is language that learners produce to express some kind of meaning. It can be the output of an immigrant in a grocery store or bakery, an ESL student trying to register for classes in Kansas, a learner of German on a study abroad experience who is trying to buy a certain medication, an foreign language student in a classroom who is answering the question, "Who did you interview and

what did that person say?" and so on.

Thus, as VanPatten (2003) points out, when we discuss issues related to output, we are talking of the same kind of language that we speak of when we talk about input—language that has some kind of communicative intent.

2.3 The Way to Make Output

According to VanPatten (2003), when we speak in our first language (hereafter, L1), we have to do two things minimally: Think of what we want to say and then put that thought into speech (although we might be thinking that some people don't always think before they speak). L2 learners have to do the same, but they also have to learn how to do it. In addition, at least two more processes are involved in output processing: access and production strategies.

VanPatten (2003) states that whenever we speak, we draw upon our vast network of lexical connections to retrieve words and forms to express a meaning. For example, if we want to express the concept *DOG*, we search our mental lexicon and access the word *dog*. But we must also access grammatical forms. If there is more than one dog, we also have to access the morphological inflection to express plurality, *-s* (as well as the phonological rule that makes it sound like the z in *zebra*). In short, the access refers to activating the lexical items and grammatical forms necessary to express particular meanings. In our L1, we access words rather quickly, in fact in milliseconds, so that when we speak, we are thinking, accessing, and producing output all at the same time. We are producing something while at the same time accessing something that is coming next or later and also thinking about what needs to come after that. This ability is something that the L2 learner has to develop. We have all experienced either as learners ourselves or as instructors with our students that initially, learners produce halting speech, full of pauses, in an effortful search to access the mental lexical-form network to express a concept. But of course, in addition to finding the lexical items and forms, we also have to put them together in some kind of sentence or utterance. Here production strategies come into play. In our L1, these strategies are well rehearsed and we most likely speak effortlessly and easily. We have one set of strategies (actually, they are called *mechanisms* or *procedures*) and only one set. L2 learners, however, have access to two different sets: One they bring to the task of acquisition and the other they must develop. The former consists of the L1 production strategies and the latter of the appropriate L2 strategies. According to the particular theory in which the concept of production strategies has been developed, the actual procedures that underlie L1 and L2

production are probably the same. What the L2 learner does, it seems, is to reconstruct the procedures with appropriate L2 rules and constraints. L2 learners use the L1-based production strategies when they have not built up the appropriate L2 strategies and yet have to communicate beyond their current L2 abilities. In this case, the learner may access lexicon and form from the developing L2 system, but then use the L1 production strategies to put everything together. In a real sense, this is a communication strategy, a way of using what we know to express ourselves when we really can't. The result, as many of us know, is something that sounds like the L2 but has the structure of the L1. A classic example occurs when English speakers learning French attempt to express their ages. English uses *be* as the verb to express age whereas French uses *have* as the verb. Thus, learners produce *Je suis vingt ans* instead of *J'ai vingt ans* to express *I'm twenty years old*. In such cases, some might say the learner's L1 is interfering in the learning and that practice will help the learner overcome this. The problem may actually be that learners are simply asked to do something they can't, so they resort to what they can. Because the system has not incorporated a rule to express age, the learner generates a syntactic structure and inserts word equivalents between the two languages. Unlike children who are allowed to babble, speak in one- and two-word phrases, and so on, beginning L2 learners are often pushed (by themselves or those around them) to speak in larger phrases and utterances. The communicative pressure, in short, makes the output look the way it does.

According to VanPatten (2003), in this way, L2-based production strategies must develop over time. How this happens is one of the least-studied aspects of SLA, but one theory has been articulated and enough research has been conducted to support it so far. This theory, called *Processability Theory*, hypothesizes that speech production rules or procedures exist in an implicational hierarchy. This means that some procedures must be in place before others can be acquired in an L2. That is, in speech production, certain procedure must emerge and come under some kind of control before later procedures can be applied. If the L2 is English, the appearance of third-person *-s* in spontaneous speech would not happen until learners reached the processing stage of carrying grammatical information across or between phrases (the S-procedure stage[1]). Attempting to have learners master this grammatical form before regular past tense forms, for example, is again regarded as asking them to do something that is beyond their processing abilities. Research applied to instructed L2 settings has confirmed that learners who have not built up the procedures required for a stage cannot move on to that stage during instruction. They might perform a controlled task in the short run, but their spontaneous output tends not to show ability to use what was taught.

Learners can only move on to the next stage in the hierarchy for which they are ready. It is important to point out here that in speech production models such as this one, no claims are made about the developing system. It is simply assumed to exist (in some form or another). Speech processing models are concerned only with how learners (or any speakers, for that matter) go about making output; they are not concerned with input or how learners create an implicit linguistic system. With this said, it is probably safe to assume that there may be some symbiotic relationship between the growth of the developing system and the emergence of the production procedures for learners.

Thus, VanPatten (2003) states that the sets of processes and procedures involved in creating output are summarized visually as follows: First, learners generate a message or thought. The access of appropriate forms and lexical items is then activated. As these forms and lexical items are accessed, production procedures (either L1-based or L2-based, possibly a blend at some time) are activated to put the items together in a serial manner, that is, they produce output in an L2.

3　The Output Hypothesis

3.1 The Outline of the Output Hypothesis

According to VanPatten and Williams (2007), Swain's (1985, 1993, 1995, 1998, 2005) observations about the importance of output emerged from her research that took place in the context of immersion programs in Canada. Based on this research, she formulated the *Output Hypothesis*. Swain observed that children who had spent years in immersion programs still had a level of competence in the L2 that fell significantly short of native-like abilities. She hypothesized that what was lacking was sufficient opportunities for language use. She claimed that language production forces learners to move from comprehension (semantic use of language) to syntactic use of language. Swain (1995) states that output may stimulate learners to move from the semantic, open-ended non-deterministic, strategic processing prevalent in comprehension to the complete grammatical processing needed for accurate production. Output, thus, would seem to have a potentially significant role in the development of syntax and morphology.

Gass (2003) states that Swain (1985, 1995), and Swain and Lapkin (1995, 1998) discuss what Swain originally referred to as comprehensible output. Her argument for the need for output was based initially on observations of immersion programs in Canada and, most notably, dealt with the lack of target-like abilities of children who had spent years in such

programs. She hypothesized that what was lacking was sufficient opportunities for language use (producing output). Language production moves learners' sufficient opportunities for language from a primarily semantic use of language (as takes place in comprehension) to a syntactic use. In other words, through production, learners are forced to impose syntactic structure on their utterances. In addition to the argument of imposing syntactic structure on utterances, it is through production that one is able to receive feedback (either implicit or explicit) by means of the numerous examples of negotiation.

As Gass (1997) points out, input alone is not sufficient for L2 acquisition, because when one hears language, one can often interpret the meaning without the use of syntax. For example, as we have already mentioned in section 2.1, if one hears only the words *dog*, *bit, girl*, regardless of the order in which those words occur, it is likely that the meaning *the dog bit the girl* is assumed rather than the more unusual *The girl bit the dog*. Little knowledge, other than the meanings of the words and something about real-world events, is needed. This is not the case with production, for which one is forced to put the words into some syntactic structure. Production then may force the learner to move from semantic processing to syntactic processing. In fact, the impetus for Swain's original study (1985) was the lack of L2 development by immersion children even after years of academic study in that second language. Swain studied children learning French in an immersion context, hypothesizing that what was lacking in their development as native-like speakers of French was the opportunity to use language productively as opposed to using language merely for comprehension. She compared results on a number of different grammatical, discourse, and sociolinguistic measures of sixth-grade children in a French immersion setting with sixth-grade native French-speaking children. The lack of proficiency of the immersion children coupled with their apparent lack of productive use of French led Swain to suggest the crucial role of output in the development of a second language.

To sum up, it is obvious that not only input but also output is vital for acquiring L2.

3.2 Three Functions of Output

3.2.1 The Noticing Function

According to Izumi and Bigelow (2000), Schmidt (1990, 1993, 1994, 1995) and Schmidt and Frota (1986) have proposed the *Noticing Hypothesis*, which claims that noticing is the necessary and sufficient condition for the conversion of input to intake for learning. Noticing, according to Schmidt (1993), requires focal attention and awareness on the part of the L2 learner, and subliminal learning cannot account for SLA processes. The Noticing

Hypothesis further claims that what must be attended to and noticed is not just the input in a global sense but whatever features of the input are relevant for the target system. Thus, attending to and noticing specific aspects of the input are considered to be of primary importance in learning those aspects.

Swain (2005) claims that while attempting to produce the target language (vocally or silently [subvocally]), learners may notice that they do not know how to say (or write) precisely the meaning they wish to convey. In other words, under some circumstances, the activity of producing the target language may prompt L2 learners to recognize consciously some of their linguistic problems: It may bring their attention to something they need to discover about their L2 (possibly directing their attention to relevant input). This awareness (i.e., noticing) triggers cognitive processes that have been implicated in L2 learning—ones in which learners generate linguistic knowledge that is new for them, or that consolidate their current existing knowledge.

Swain (2005) also says that *depth of processing* refers to the degree of analysis and elaboration carried out on input (paraphrasing rather than mere repetition), with greater depth being associated with longer term and stronger memory traces. This implies that quantity of attention is less important than the quality of it, with deeper and elaborate processing being key. Izumi (2002) suggests that within this framework, input enhancement may have caused mere recirculation or rehearsal at the same, relatively shallow processing level, which led the learners to experience only a short-term retention of the attended form. On the other hand, the greater learning evidenced by the output subjects suggests that output triggered deeper and more elaborate processing of the form, which led them to establish a more durable memory trace.

In this way, output elicits students' noticing and enhances them acquiring new linguistic items of the target language.

3.2.2 The Hypothesis Testing Function

Swain (2005) says output may sometimes be, from the learner's perspective, a trial run reflecting their hypothesis of how to say (or write) their intent. Mackey's (2002) study has an excellent example of hypothesis testing from a learner's perspective. The learner is reacting to an interaction episode in which she, another learner, and a teacher are involved. During this episode, among other things, the learner is trying to figure out both the meaning of *suite* and how to say it. If learners were not testing hypotheses, then changes in their output would not be expected following feedback from the teacher.

Swain (2005) also states that research has shown that learners do modify their output (that is, test their hypothetical output) in response to such conversational moves as clarification requests or confirmation checks. For example, in a laboratory setting, Pica et al. (1989) found that over one third of learners' utterances were modified either semantically or morphosyntactically in response to the feedback moves of clarification and confirmation requests. In communicatively oriented L2 classroom settings, Loewen (2002) found that almost three quarters of learners' utterances were modified in response to teachers' on-the-spot (incidental) feedback (focus on form). The difference between the two settings clearly plays a key role here, a communicative classroom being a context in which learners would more likely feel comfortable to test out their hypotheses than in a test-like situation with a stranger. Important in this argument is the assumption that the processes in which learners engage to modify their output in response to feedback are part of the L2 learning process.

Gass (1997) also proposes that the notion of hypothesis testing has been central to research in SLA for a number of years. She (1997) insists that output, in particular when part of a negotiation sequence, is a way of testing a hypothesis. This is not to say that hypotheses are being consciously tested every time an L2 speaker produces an utterance. However, through negotiation and through feedback, L2 learners can be made aware of the hypotheses that they are building up as they produce language. That is, the activity of using language helps create a proficiency at analysis that allows learners to think about the target language.

3.2.3 The Metalinguistic (Reflective) Function

Swain (2005) claims that using language to reflect on language produced by others or the self, mediates L2 learning. This idea originates with Vygotsky's sociocultural theory of mind.

According to Wertsch (1980, 1985, 1991), sociocultural theory is about people operating with mediating tools. Speaking is one of such tools. Swain (2000, 2002) tentatively relabeled output as speaking, writing, collaborative dialogue, and/or verbalizing in order to escape the inhibiting effect of the *conduit metaphor* implied in the use of terms such as input and output. Speaking is initially an exterior source of physical and mental regulation for an individual—an individual's physical and cognitive behavior is initially regulated by others. Over time, however, the individual internalizes these regulatory actions—actions such as reasoning and attending. Stetsenko and Arievitch (1997) point out that psychological processes emerge first in collective behavior, in cooperation with other people, and only subsequently become internalized as the individual's own possessions. This means that the

dialogue learners engage in (speaking) takes on new significance. Some researchers (Donato & Lantolf, 1990; Lantolf, 2000; Swain, 2002) say that, in the dialogue, we can observe learners operating on linguistic data, operations that move inward to become part of the participants' own mental activity. In dialogue with others, we see learning taking place.

Johnson (2001) also states that, when a learner interacts with someone—it may be another learner or a teacher (a native speaker or otherwise)—the learner receives input, and produces output. It is in the interaction process that language acquisition occurs: learners acquire through talking with others, that is, through collaboration with others. Because learners do not know the language perfectly, it is natural that their attempts to interact should sometimes go wrong. Misunderstandings may occur. When these happen, those involved in the interaction have to try and repair it by a process known as *negotiation of meaning*. This will involve saying things again, perhaps using other words and simpler structures, using lots of gestures, and in general employing the strategies with simplified codes. A number of applied linguists have suggested that the process of negotiating meaning may be particularly useful to language acquisition.

According to Swain (2005), these claims provide a basis for having students work together —eventually students are expected to engage in solo mental functioning, and that solo mental functioning has its source in joint activities. In those joint activities language is used, initially to externally and collaboratively mediate problem solution. Swain and Lapkin (1995, 1998, 2002) have called this joint problem-solving dialogue collaborative dialogue, which is taken in, so to speak—recreated on the intramental plane—by the learner, and serves later to mediate problem solution by him/herself. Collaborative dialogue is thus dialogue in which speakers are engaged in problem solving, knowledge building and reflecting their language —in the case of L2 learners, solving linguistic problem—and building knowledge about language.

4　The Use of Output in L2 Teaching and Learning

4.1 The Role of Output in the Creation of the Learners' Linguistic System

VanPatten (2003) states that most people believe that the way we learn language rules is by practicing them—and that kind of practice must be output practice. However, the L2 developing system also builds up as a result of learners' engagement with the input (plus other internal factors). In fact, every current theory in SLA posits some role for input as a critical ingredient in the entire process of acquisition. For example, *Processability Theory*

focuses on the procedures required for making output and not on the source of linguistic information that the procedures draw from. So, what is the role of output in the creation of the developing system? According to VanPatten (2003), the role that has been suggested for output in terms of the development of the internal linguistic system is that by speaking we may be forced to process input better. Note that the input processing strategies begin with a major principle that the learner processes input for meaning before anything else. Why would learners process formal elements of little communicative value if they did not have to? VanPatten (2003) states that, according to at least one scholar, knowing that we have to speak pushes us to pay more attention to what is in the input. If we never have to speak, we might be content with always processing the input only for meaning. But if we know that there will be production pressures on us at some point, we may become a more active processor of how something is said and not just what is said. This is called moving from purely semantic processing to more syntactic processing as we pay attention. As we can see from this discussion, the current position is that output plays a facilitative role in SLA, at least in terms of the developing L2 system and its contents. It is theoretically possible that some aspects of the input would not be processed or noticed if learners did not have experience making output. Making output may push them to be better processors of input, something they might not do otherwise. In this case, output may be necessary for continued linguistic growth. It is important, however, to note that we are not talking about learners practicing a form or structure in their output; we are talking about learners coming to the awareness that they need a form or structure because of their output. According to Izumi and Bigelow (2000), in the following suggestions, all use learner-output in coordination with target language input: meaning remains the primary focus of the task—or at least so it should to focus on form in Long's (1991) sense: 1) Learners may complete awareness-raising activities (Thornbury, 1997) targeted at noticing strategies. These activities may include training learners in text-scanning skills (e.g., spotting the difference between two similar texts) and proofreading skills (e.g., marking the differences between first and revised drafts and reporting on the differences noted); 2) Output can be followed by enhanced input (e.g., the target form typographically enhanced through boldface and underlining in the written mode or intonationally enhanced by stress in the oral mode) to draw learners' attention more explicitly to the target form (Izumi, 2000); 3) Learners can complete a reconstruction task collaboratively, as in Kowal and Swain's (1994) study. In this task, after listening to and taking notes on the input passage, students work together to reconstruct the text they have heard. The reconstruction phase may be followed by a whole-class analysis and correction of

the reconstructed texts (Wajnryb, 1990); 4) After the production attempt, the teacher can give the learners feedback on the success of their production in terms of content and grammar (Swain, 1985, 1993, 1995); 5) In some contexts, the target language model can be juxtaposed sentence by sentence onto the *Interlanguage output* to increase the salience of the gap and thus make comparing the two forms easier. Notice that such a condition is similar to that of providing recasts to learners' errors, as tested by other researchers (e.g., Doughty & Varela, 1998; Doughty et al., 1999; Long, Inagaki, & Ortega, 1998; Mackey & Philp, 1998).

Izumi and Bigelow (2000) propose that teachers and researchers should monitor and examine carefully the efficacy of any of these techniques during their implementation.

4.2 Pushed Output

Swain (1985) states that the sense of negotiating meaning needs to be extended beyond the usual sense of simply getting one's message across. Simply getting one's message across can and does occur with grammatically deviant forms and sociolinguistically inappropriate language. Negotiating meaning needs to incorporate the notion of being pushed toward the delivery of a message that is not only conveyed, but also that is conveyed precisely, coherently, and appropriately. Being pushed in output is a concept parallel to that of the *i+1* of comprehensible input. Indeed, one might call this the *comprehensible output hypothesis*. According to Swain (2002), Mackey (2002) provides evidence of the reality of the notion of pushed output. Mackey had adult ESL students watch videotapes of themselves interacting with others and asked the ESL students to recall what they were thinking at the time when the original interaction occurred. Mackey (2002) found out a high degree of agreement between learners' perceptions and the researchers' interpretation that an interaction episode involved learners being pushed to make modifications in their output.

Nation (2011) states that pushed output occurs when learners have to produce spoken language in tasks that they are not completely familiar with. That is, *pushed* means having to perform beyond their normal comfort level. There are several features of tasks that can result in pushed output. First, learners may need to speak on topics that are not completely familiar to them. In speaking courses, it is well worth planning a range of topics that learners will need to speak about, in order to make sure that they cover what needs to be covered, and that they have the opportunity to be pushed. The difficulty of topics is related to learners' previous experience and knowledge of the content matter of the topics. Previous content work can help support speaking tasks, and linked skills activities, where, for example, learners read about a topic, write notes about it, and then speak about it. This can

provide useful support for speaking as learners deal with new topics.

Second, learners may need to use different text types in their speaking. According to Nation's (2011) and Biber's (1989) researches, there is a range of different text types that are distinguished from each other on the basis of the grammatical features and kinds of vocabulary that occur in the texts. Covering a range of text types results in learners meeting a range of different grammatical features and vocabulary. Learners can use them when they have output. The biggest distinction in text types for speaking will be between formal prepared talks and informal interaction. Formal prepared talks typically involve the use of long turns, non-narrative subject matter and transactional speech which conveys important information. Third, learners output can be pushed by the performance conditions under which they have to talk. According to Ortega (1999), having time for preparation can affect the performance of a task. Research on the effect of preparation typically shows that it can result in improvements in fluency and grammatical complexity in output, but seems to have unpredictable effects on accuracy. Repetition of a task is a kind of preparation. That is, by having to perform the task several times, learners can improve their performance. The early presentations to be pushed can be seen as a form of preparation for the final presentation.

Nation (2011) states that, so far, we have looked at features that mainly apply to formal speaking, particularly monologues. Being able to sustain a long turn, that is, being able to have long output, is an important speaking skill and one that deserves classroom practice. Planning for a formal talk to be pushed out can involve a group planning activity where learners in the group suggest ideas and help the speaker to organize them and have output. Jordan (1990) suggests that a useful way to practice such pushed talks (output) is to use the pyramid procedure. In this procedure, the learner prepares the talk individually and then delivers the talk to a partner. Then the talk is given to a small group of perhaps four people. After that, it is delivered to the whole class. The pyramid procedure involves the movement from individual to pair to group to the whole class.

According to Nation (2011), pushed output is not confined to formal speaking, but, as we have mentioned so far, formal speaking provides very useful conditions to make pushed output manageable.

5　Conclusion

According to VanPatten (2003), output is language the learner produces with a communicative intent. Learners must develop two important sets of procedures in order to

produce such output: access and production strategies. *Access* refers to retrieval of lexical items and grammatical forms to express particular meanings. *Production strategies* describe how learners string the lexical items and forms together to create utterances. We have reviewed one theory of such strategies, Processability Theory, that posits an implicational hierarchy for production strategies (actually called procedures in the theory) in the sections 2.3 and 4.1. This hierarchy suggests that learners must develop procedures one at a time and in a particular sequence over time in order to use their implicit system for production in communicative contexts. VanPatten (2003) also states that output does not play the same role as input; that is, only by practicing a rule, one does not acquire it. Instead, in communicative contexts, interaction with other speakers may allow learners to notice things in the input that they haven't noticed before, or the interaction (pushed output) may push learners to realize their system is missing something. Thus, output may play an important role but not a direct one in the creation of the linguistic system. As we have discussed in the section 4.1, learners must still process input, and their internal mechanisms must still work on the processed input, in order for that implicit system to develop. Although there is probably some aspect of skill theory (i.e., we first learn rules; we practice them; and then we gain expressive control over them in our output) useful for describing the development of fluency and accuracy, we cannot use the theory to describe how the implicit system develops. What is more, we must also account for the possible use of explicit knowledge to monitor one's output. If the task situation is conducive to monitoring, then learners may edit their output as they go, drawing upon rules and forms they have stored in their explicit knowledge.

As Ortega (2009) points out, optimal L2 learning must include opportunities for language use that is slightly beyond what the learner currently (i.e., comprehensible output) can handle in speaking or writing and production which is meaningful. The demands which exceed the learner's current abilities is the kind of language use most likely to destabilize internal interlanguage representations. By encouraging risk-full attempts (i.e., pushed output) by the learner to handle complex content beyond their current competence, such conditions of language use may drive L2 learning onward.

Note

1. VanPatten (2003) defines S-procedure as follows: exchange of information between internal constituents, for example, between noun phrases and verb phrases. This procedure accounts for the ability to produce subject-verb agreement among other things. Subject-verb agreement involves holding information about the subject (e.g., third-person

singular) and carrying it over to the verb phrase to produce a correct verb form.

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