

Triggering Factors of Learners' Attention Shifts in L2 Oral Production

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Metalinguistic knowledge is said to facilitate noticing or attention to form, but some researchers argue that learners resort to using their metalinguistic knowledge when faced with difficulties in language production. To understand the nature of factors triggering attention shifts from meaning to form in detail, retrospective data from six proficient Japanese EFL learners was descriptively analyzed, focusing on the role of metalinguistic knowledge in attention shifts. Results showed that learners' attention shifted from meaning to form when they successfully monitored their speech errors and when they failed to process language. Some of the attention shifts seemed not to be triggered by learners' metalinguistic knowledge. However, when automatic and appropriate processes failed, metalinguistic knowledge was used to solve the problem after attention shifted from meaning to form. Linguistic features that may influence the two kinds of triggering factors are also discussed.

学習者の持つメタ言語的知識は、学習者が注意を意味処理から形式処理に移すきっかけとなると言われている。他方、学習者が向ける注意は、学習者が発話処理に行き詰まりを感じた時に意味処理から形式処理に移行するという主張もある。本研究では、英語に堪能な6名の日本語を第一言語とするEFL学習者を対象に、第二言語による発話時における回顧インタビューを分析することによって、学習者は形式への注意シフトにおいてメタ言語的知識をどのように使用しているかについて記述した。結果として、学習者は自身の発話を正確にモニターした時と、言語処理が困難になった時の両方において意味処理から言語形式へ注意を移すことが示唆された。また、メタ言語的知識は、自動的処理に行き詰った際に、それを補う形で、意味処理が形式処理に移った後に発動することが示された。最後に、これら二種類の注意シフトのきっかけに影響を与える可能性のある言語的要因について論じる。

STUDIES of the role of attention and noticing have been a focus of great research interest in the areas of L2 learning and teaching, both theoretically and empirically (e.g., Krashen, 1982, 1985; Leow, 1997, 2000; Rosa & Leow, 2004; Schmidt, 1990, 1993, 2001). Early on, Krashen (1982, 1985) argued that L2 acquisition takes place only as an unconscious process. Because of this, learners are not consciously aware of the rules of the target language. Krashen also argued that acquired L2 knowledge and learned L2 knowledge are utilized in different ways. Acquisition initiates learners' utterances in the L2 and is responsible for fluency, whereas learned knowledge is used only to change the form of an utterance through monitoring before or after language production. In contrast, Schmidt (1990) claimed that L2 acquisition is impossible with subliminal learning, and therefore conscious awareness of formal aspects of the target language is necessary. Later, Schmidt (2001) eased his position and stated that more attention results in more learning.



Although further studies are needed to investigate the role of attention in L2 acquisition, the two arguments are not contradictory. That is, attention to linguistic form is facilitative for L2 learning, though learning without attention may take place (N. Ellis, 2002). Some empirical studies (e.g., Gass, Svetics, & Lemeelin, 2003; Hama & Leow, 2010; Kim, 2013; Leow, 1997; Philp, 2003; Révész, 2009; Rosa & Leow, 2004; Rosa & O'Neill, 1999) also reported that participants who did more noticing during the processing of the second language demonstrated greater improvement. At present, noticing has mostly been found to be positively associated with L2 learning and also to facilitate L2 acquisition.

Triggering Factors of Attention Shifts

As a trigger for inducing attention to linguistic form, explicit knowledge developed through formal instruction (e.g., consciousness-raising activities) has been proposed (R. Ellis, 1993; Fotos, 1993). Consciousness-raising refers to “a deliberate attempt on the part of the teacher to make the learners aware of specific features of the L2” (R. Ellis, 1993, p. 109). This explicit or metalinguistic knowledge facilitates subsequent noticing and functions as an *acquisition facilitator* by providing *hooks* for subsequent acquisition (R. Ellis, 1993; Lightbown, 1985). From this point of view, R. Ellis (1993) and Fotos (1993) argued for the effectiveness of developing explicit or metalinguistic knowledge because the richness of metalinguistic knowledge increases the amount of noticing in subsequent tasks. The theoretical rationale for this assertion is that explicit knowledge is utilized for the monitoring of learners' production, and monitoring facilitates language acquisition as a triggering function of noticing. R. Ellis illustrated this with the following example: “if learners know that plural nouns have an -s, they are more likely to notice the -s on the ends of nouns they hear or read in input and also more likely to associate the -s morpheme with the meaning of

more than one” (p. 98). Note that R. Ellis also points out that the availability of relevant explicit knowledge does not necessarily guarantee the successful use of noticing and monitoring.

Other researchers (N. Ellis, 2005; Gutierrez, 2011) proposed another factor that triggers attention shifts from meaning to form during language processing. They maintained that learners resort to using metalinguistic knowledge consciously when faced with difficulties in language production, although L2 processing largely relies on implicit knowledge. This means attention shifts are triggered by the failure of automatic processing, which is followed by metalinguistic knowledge being used to solve the problem of language processing.

These accounts of the triggering factors of attention shifts (i.e., monitoring through metalinguistic knowledge and processing failures) are not mutually exclusive, and neither position negates the other, but if attention shifts are largely caused by processing failures, the amount of metalinguistic knowledge cannot predict the amount of attention to form during oral production. Moreover, previous studies have focused little on how both types of triggering factors coexist. What, then, is the main triggering factor of attention shifts? When do these triggers occur? Is either metalinguistic or explicit knowledge useless in successful focus on form? In order to answer these questions, we have to take into account the linguistic features that learners consciously pay attention to.

The relationship between attention to linguistic form and the target linguistic features has not been well studied. One of the few studies to examine this relationship is Fukuta (2013). Fukuta emphasized the importance of focusing the learners' attention on a specific linguistic form while they engage in oral production tasks, because attention to linguistic form in general does not necessarily correspond to specific items. Fukuta showed that learners who produced complex speech frequently noticed the target linguistic form, the adjectival

participial. However, this correlation can differ according to the target structure: "Relative clauses require embedding clauses, while regular past tense *-ed* does not. Instead, accurate use of the knowledge of verb inflections is required to produce regular past tense *-ed*" (p. 65).

Another aspect that is possibly associated with triggering factors related to linguistic features is linguistic complexity. Current L2 research related to noticing has proposed that the linguistic complexity or difficulty of a target structure is associated with learners' attention shifts from meaning to form (Schmidt, 1990, 2001; Skehan, 1998; Uggen, 2012). That is, a more complex structure has more saliency, and is therefore more likely to be noticed by L2 learners. Uggen's (2012) study compared three L2 learner groups. The two experimental groups were given opportunities for written output that elicited either the past or the present hypothetical-conditional (more complex vs. less complex structures), whereas the control group was asked to read a text for the purpose of comprehension. After that, all participants were directed to underline the word, words, or parts of words that they felt were particularly necessary for their subsequent task. All participants then produced a second essay and participated in a retrospective interview (stimulated recall). The results showed that scores on two posttests increased only for the experimental group that was required to produce more complex structures, but the experimental group required to produce less complex structures, as well as the control group, did not demonstrate such gains. Moreover, none of the participants in the less-complex experimental group underlined or commented on the target structure during the stimulated recall interview. Instead, they selected semantic elements in the input text rather than form. Thus, Uggen's study supported the assertion that a more complex structure is more likely to be noticed by L2 learners.

Regarding triggering factors of attention shifts, linguistic

features are possibly associated with the two types of triggering factors. The purpose of the present study was to examine triggering factors and related variables such as the roles of metalinguistic knowledge and the linguistic features of the target structure through protocol analysis induced by retrospective interviews. The research questions are as follows:

1. What are the triggering factors of attention shifts from meaning to linguistic form?
2. What is the relationship between metalinguistic knowledge and attention shifts?

The Present Study

This study is an exploratory, descriptive investigation of the triggering factors of attention to linguistic form. First, I identify attention shifts in oral production through the use of protocol analysis. Next, I explain the triggering factors qualitatively, focusing on the role of metalinguistic knowledge and processing failure. Finally, I describe and discuss the variables that affect triggering factors. I focus on linguistic features as variables in this study.

Participants

The participants were six proficient Japanese EFL learners in a masters' course, aged 22 to 24. All participants in the study reported that their first language was Japanese and English was their predominant L2. Proficiency levels were estimated from reported TOEIC (Test of English for International Communication) scores. The participants' demographic information is shown in Table 1. TOEIC scores showed that the participants had approximately an upper intermediate proficiency level of English, (B2) according to the Common European Framework of Reference (CEFR).

Table 1. Demographic Information of the Participants

Name	Age	Academic year	TOEIC score	Experience abroad	
				Place	Months
A	24	M2	755	---	0
B	22	M1	825	United States	4
C	23	M1	700	England	0.5
D	23	M2	855	United States	11
E	23	M2	935	Australia	6
F	22	M1	845	United States	1

Procedures

All participants agreed to participate in the study and signed a consent form. For each recording and activity, the participant met individually with the researcher in a quiet room. All participants engaged in a narrative task, which required them to describe a four-frame cartoon. They were allowed to plan for 30 seconds, but were not allowed to take any notes. The speech was audio recorded. Immediately after speech production, participants were asked to recall what they thought during the task while listening to the recording of themselves (stimulated recall). While learners listened to their own speech, the researcher stopped the audio when participants seemed to want to produce speech, and asked what they were thinking at those moments. The stimulated recall was conducted in the participants' first language (Japanese).

Analysis

The retrospective interviews were transcribed. In order to find patterns in the learners' disfluency markers, and the men-

tal process underlying them, the transcripts of speech and protocol data were carefully inspected and qualitatively and quantitatively analyzed. Form-focused episodes were identified in the stimulated-recall protocols of the participants. For the present study, I defined a form-focused episode as any segment of the protocol in which a learner mentioned syntactic encoding (related to word order and sentence structure, including morpho-syntactic processing), phonological encoding (phonological features in learners' production), or lexical choice (related to lexis or lexicalized phrases).

Findings and Discussion

First, a number of form-focused episodes that seemed to be triggered by processing failure were identified from the protocol analysis. Example 1 shows an episode related to syntactic processing, and Example 2 is an episode involving lexical choice.

Example 1

A: She noticed that it will be start construction in the park and she afraid of... she afraid she cannot come park and enjoy... enjoy walking.

Retrospective comment: I was wondering... what I should say. I learned *afraid of* but I thought it's easier to put "that SV [subject and verb]" after the words.

Example 2

F: She was going to do some... err... protection activities.

Retrospective comment: I intended to say *protection*, but the right words to say didn't pop into my mind.

In Example 1, participant A tried to use *she is afraid of* . . . to describe the scene in the story. However, the participant noticed that she could not say what she wanted to say using noun phrases, and instead decided to use a subordinate clause after the words *afraid of*. In the same manner, participant F (Example 2) seemed to feel difficulty accessing his mental lexicon and failed to process an appropriate meaning of the word for *protection*. This evidence shows the function of processing failure as a trigger of attention shift from meaning to linguistic form.

After these processing failures, the participants seemed to engage in further processing using metalinguistic or explicit knowledge to fix the problem. In these cases, they used metalinguistic knowledge immediately *after* shifting attention from meaning to form, although metalinguistic knowledge did not work as a trigger of the attention shift.

However, some attention shifts could not be attributed to processing failure. These are presented in Examples 3 and 4.

Example 3

B: It . . . prevent the . . . man who are using the wheelchair.

Retrospective comment: I sometimes pronounce *man* like *men*. I always feel difficulty about this pronunciation. So after I produce the word *prevent*, I checked my pronunciation [of *man*] in my head.

Example 4

D: A woman like . . . a woman like to . . . likes to . . . see the cherry blossoms in the spring.

Retrospective comment: I completely forgot to put third person singular *-s*, and thought "oh, I have to put it on the verb."

In Example 3, the participant monitored her own production and covertly repaired it before processing the pronunciation. In this case, she seemed to use explicit knowledge preceding the processing failure. The participant in Example 4 also showed this tendency. She is halfway to producing the sentence *A woman like to see the cherry blossoms*, but she noticed that she did not inflect the verb *like* with the third person singular *-s*. She succeeded in monitoring her production and successfully repaired her production grammatically. In this case, processing failure did not occur and the participant used explicit or metalinguistic knowledge through self-monitoring. This can be considered a case of metalinguistic knowledge functioning as a trigger of an attention shift.

Next, I counted the number of form-focused episodes in each linguistic category. Syntactic processes were divided into two subcategories to enable a closer look at the linguistic features that possibly affected the two kinds of triggering factors of attention shifts. The results are summarized in Table 2.

Table 2. Form-Focused Episodes of Processing Failure and Metalinguistic Monitoring ($n = 6$)

Linguistic category	Subcategory	Processing failure frequency (%)	Monitoring by metalinguistic knowledge frequency (%)
Syntactic process	Word order / Sentence Structure	6 (86%)	1 (14%)
	Morpho-syntax	0 (0%)	3 (100%)
Lexical choice	Lexis	9 (64%)	5 (36%)
Phonological encoding	Phonology	1 (50%)	1 (50%)

Although the number of episodes was very limited, there were patterns in each linguistic category. Both types of trigger were identified in lexical choice and phonological encoding. However, processing failures were very limited in terms of morpho-syntax and monitoring of attention to word order/sentence structure. The sample size of the present study was small, and therefore overgeneralization should be avoided, but several possible reasons for the processing failures can be considered from a theoretical perspective.

Processes of word order (or sentence structure) and morpho-syntax have different communicative values (VanPatten, 1996). We can express the same idea in various ways. For example, in order to express the position of events in a timeline, we can utilize tense morphology, lexical adverbs, prepositional phrases, serialization, and calendric references; verb morphology is typically of low salience compared to other forms of expression (N. Ellis & Sagarra, 2010). This redundancy and low saliency possibly allows for the avoidance of processing failure when conveying messages. This results in an absence of processing failures for morpho-syntactic processes. On the other hand, word order/morpho-syntactic processes are considered to be less redundant, and therefore result in a higher rate of processing failure than that of monitoring through metalinguistic knowledge.

It is natural that a more complex structure would be likely to be noticed by L2 learners because production of difficult sentence structures induces more processing failures in L2 speakers. However, redundant processing such as that which occurs with morpho-syntactic processes is quite unlikely to induce the same phenomenon. It is not always true that L2 learners notice more difficult structures more easily than simple ones. This low salience as processing failure may be related to the lower learnability of morpho-syntactic features. Further research is needed to investigate the relationship among triggers

of attention shifts, sentence complexity with different linguistic features such as word order/sentence structure and morpho-syntax, and learnability of linguistic features.

Conclusion

This study was designed to describe two kinds of triggering factors of attention shifts, with a focus on the roles of metalinguistic knowledge during L2 learners' attention shifts. It was found that learners' attention shifted from meaning to form when they succeeded in monitoring their speech errors or inappropriateness and when they failed to process the target language. There is also a possibility that some of the attention shifts were not triggered by the learners' metalinguistic knowledge. Furthermore, it was also observed that metalinguistic knowledge played an important role in overcoming L2 learners' linguistic problems: When automatic and appropriate processing failed, metalinguistic knowledge was used to solve the problem *after* the learners' attention shifted from meaning to form.

Lastly, the results also suggested that the two kinds of triggering factors were influenced differently by linguistic features. Future research could investigate how, when, and to what extent linguistic features affect these triggering factors of attention shifts. This line of research may reveal which kinds of linguistic knowledge is efficiently facilitated by attention and which kinds are not, as well as throw further light on the role of attention in L2 acquisition.

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Bio Data

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