

Responses to Recasts: Repetitions, Primed Production, and Linguistic Development

Kim McDonough
Northern Arizona University

Alison Mackey
Georgetown University

Although a number of studies have associated recasts with second language development, the actual mechanisms by which recasts work to impact learning are still little understood. In particular, researchers have sought to gain a deeper understanding of the connections among recasts, learners' responses to recasts, and subsequent development. To this end, the current study examines the impact of recasts and different types of responses on English as a second language (ESL) question development. In a pretest/posttest design, 58 Thai English as a foreign language university students carried out a series of communicative tasks with native English speakers and completed four tests over a 9-week period. The learners' treatment task data were analyzed for the occurrence of recasts and responses to recasts that targeted developmentally advanced question forms. Their test data were examined for evidence of advancement to a higher stage in the developmental sequence for question formation. Results indicate that recasts were a significant predictor of ESL question development. Learners' responses in the form of primed production of the question

Kim McDonough, Department of English; Alison Mackey, Department of Linguistics.

Correspondence concerning this article should be addressed to Kim McDonough, Department of English, Northern Arizona University, P.O. Box 6032, Flagstaff, AZ 86011. Internet: kim.mcdonough@nau.edu

forms targeted in the recasts were also predictive of ESL question development, but responses in the form of immediate repetitions of recasts were not associated with development.

Recasts are more targetlike ways of saying what a learner has already said. Various empirical studies have demonstrated that recasts are facilitative of L2 development for several linguistic forms: noun-adjective gender agreement in Spanish (Leeman, 2003), the past tense in English (Han, 2002; McDonough, *in press*), verbal morphology in Japanese (Ishida, 2004; Iwashita, 2003), and question development in English (Mackey & Philp, 1998).

Recently, research into whether recasts facilitate L2 development has been expanded to include a greater focus on understanding the relationship between specific features of recasts and developmental outcomes. For example, investigators have raised questions about the relationships among recasts, learner responses, and development. Numerous descriptive studies conducted in both laboratory and classroom contexts have shown that recasts are less likely to result in learners modifying their previous utterances than other types of interactional feedback, such as clarification requests (Anton, 1999; Linnell, 1995; Lyster, 1998; Lyster & Ranta, 1997; Oliver, 1995, 2000; Panova & Lyster, 2002; Pica, 1988; Pica, Holliday, Lewis, & Morgenthaler, 1989; Shehadeh, 1999, 2001; Van den Branden, 1997). This is probably because, as Oliver (1995) has argued, learners might not have a discursively appropriate opportunity to modify their utterance after a recast and might respond by simply acknowledging the recast, as shown by a number of researchers (Braidi, 2002; Linnell; Loewen & Philp, *in press*; Mackey, Oliver, & Leeman, 2003; Oliver, 1995; 1998; 2002; Van den Branden). These findings have led many researchers to question whether the absence of learner responses limits the effectiveness of recasts and whether interactional feedback that elicits responses is more developmentally helpful than recasts (Ellis, Loewen, & Erlam, 2006; Havranek, 2002; Havranek & Cesnik, 2001; Lyster, 2004).

For example, Lyster's (2004) comparative study examined the differential effects of prompts and recasts using a pretest, immediate posttest, and delayed posttest design in a fifth-grade-classroom French immersion setting in Canada. A form-focused instructional unit on grammatical gender in French was carried out by three immersion teachers, allowing comparisons of three oral feedback options: prompts, recasts, and no feedback. A comparison group received neither form-focused instruction nor any preplanned feedback on grammatical gender. Lyster analyzed eight proficiency measures showing that the group receiving prompts to modify their output outperformed the comparison group on each measure. The recast group significantly outperformed the comparison group on five of the eight measures, and the no feedback group significantly outperformed the comparison group on four of the eight measures. Lyster argued that his findings suggest that prompts that result in learner responses are more beneficial than recasts, which do not. However, because the study investigated the impact of interactional feedback on learners' subsequent test performance, the analysis was not intended to clarify the relationship between interactional feedback type and the type of learner response.

Havranek's (2002) classroom research on English as a foreign language (EFL) learners similarly reported that interactional feedback that elicits responses might have a greater impact on test performance than recasts. She studied 207 EFL learners at different age and proficiency levels who received 1,700 instances of interactional feedback from their teachers. After the observation period, she administered class-specific tests that elicited the learner's knowledge of the linguistic forms that had been targeted in the feedback. She found that learners were less likely to remember the linguistic forms that had received recasts than forms that had received feedback that directed their attention to form in a more overt way. However, the learners were more successful at remembering recast forms that had been followed by immediate repetition. Her findings confirm those of Mackey, Gass, and McDonough (2000), who reported that learners were more likely to perceive the corrective intention of recasts when

they had repeated them. She concluded that recasts without learner response might be the least effective type of interactional feedback.

Finally, Ellis and colleagues (2006) compared the effects of different types of interactional feedback on learners' performance on tests of explicit and implicit knowledge of regular past tense in English. English as a second language (ESL) learners ($N = 34$) enrolled in three classes carried out two story narration tasks and several tests over a 3-week period. One class received interactional feedback in the form of metalinguistic information and an opportunity to respond, whereas the second class received recasts and the third class did not receive any interactional feedback. The results of the explicit knowledge test (a grammaticality judgment task) indicated that the metalinguistic information group scored higher than the recast group only on the delayed posttest. The results of the implicit knowledge test (an oral imitation task) indicated that the metalinguistic information group scored higher than the no-feedback group and the recast group only on the delayed posttest. The authors suggest that interactional feedback in the form of metalinguistic information with learner response might have been more effective than recasts because learners might be more likely to perceive it as overtly corrective.

These classroom-based studies seem to suggest that interactional feedback that elicits learner responses might have a more positive impact on learners' test performance than recasts, which rarely elicit responses. However, other classroom-based studies have shown that some learners respond to recasts by repeating the targeted forms (Ellis, Basturkmen, & Loewen, 2001; Sheen, 2004) and that those responses to recasts are associated with subsequent learning (Loewen, 2005). So far, however, experimental research has not clarified the relationship between different sorts of responses to recasts and development. Several experimental studies have demonstrated the effect of recasts on second language (L2) development, but they either provided recasts without opportunities for responses (see, e.g., Leeman, 2003; Long, Inagaki, & Ortega, 1998) or did not compare the effects of different

types of responses (Mackey & Philp, 1998). There is also the fact that despite an absence of learner responses, recasts have been associated with short-term development in a number of studies, suggesting that responses are not necessary for learners to benefit (although there is the possibility that responses might provide some additional or combinatory benefit). Although a few experimental studies on recasts and L2 development have provided opportunities for learners to respond, such as by modifying their linguistic output, these studies did not track whether learners did in fact modify their output or how the output was modified, and they also did not track output in the context of specific forms (e.g., Han, 2002; Iwashita, 2003). Consequently, additional research is necessary to systematically study the features of learners' responses to recasts and to clarify the relationship between responses and subsequent development.

This issue of whether a response is beneficial for learning is an interesting one. Some researchers, including Mackey and Philp (1998), found that learners' immediate responses to recasts were not significantly related to L2 development. Others, including Nabei and Swain (2002), have reported the opposite. Complicating the issue further are the suggestions that recasts might have delayed effects on language development, that the efficacy of recasts should not be discounted due to the absence of an overt oral response or modification in the next turn (Gass & Varonis, 1994; Mackey, 1999; Ohta, 2000) and that responses might be delayed beyond the next turn because learners are not cognitively or developmentally ready to produce an immediate response containing the recast form (Lightbown, 1998). Several researchers have pointed out that learners' immediate responses might be dependent on setting and context (Oliver & Mackey, 2003). It is also possible, according to Gass (2003), that learners' immediate responses to recasts might not indicate any developmental progression because the learners might simply be "mimicking or repeating without true understanding" (p. 236). Importantly, learners responses might also be constrained by their working memory capacities, rendering the immediate response to recasts less interesting than subsequent production, when they are not

trying to hold the recast in memory as they make a comparison between the recast and their previous utterance and then produce the targetlike form (Mackey, 2006).

So far, research has not undertaken a nuanced exploration of learners' responses to recasts. For example, it might be useful to separate responses that are simple repetitions of a recast from responses that are reformulations of a previous utterance and to look for evidence of responses to a recast that occur beyond the immediate response turn. Immediate responses in the form of repetitions, for example, might be simple imitations that do not indicate developmental progression. However, learners' responses to recasts might also occur as syntactic priming (also referred to as structural priming). This is a phenomenon characterized by a speaker's repeated production of a previously spoken or heard structure across successive utterances (Bock, 1995). In an interaction context, a learner who produces a nontargetlike utterance and hears an interlocutor reformulate that utterance into a developmentally advanced structure might produce that same syntactic structure across subsequent utterances. The learner might produce that syntactic structure repeatedly, even if the initial and subsequent utterances have different content words, closed-class elements, and thematic compositions and share no topical or pragmatic similarities (Bencini, Bock, & Goldberg, 2002, cited in Gries & Wulff, 2005; Bock, 1986, 1989, 1990; Bock & Loebell, 1990; Bock, Loebell, & Morey, 1992; Hare & Goldberg, 1999). To investigate the role of responses to recasts in development, interaction research might profit from extending traditional analyses of learners' responses to recasts to include the possibility of syntactic priming. In summary then, we investigate responses to recasts as follows: (a) when a learner immediately repeats some or all of the recast in the third turn and (b) when a learner produces a new utterance using the syntactic structure that was provided in the recast, either immediately or a few turns later. This second type of response, which we refer to here as primed production, might impact development differently than immediate repetition of a recast.

Purpose of the Study

In summary then, the literature indicates that the relationships among recasts, responses to recasts, and L2 development warrant further investigation. To explore these relationships, the current study examined the impact of recasts and different types of responses to recasts (repetitions and primed production) on ESL learners' question development. The study addresses the following research question:

What is the relationship between recasts, learners' responses to recasts, and their development of ESL question forms?

Because recasts and development have been associated even when responses were not possible (Leeman, 2003; Long et al., 1998), it was expected that recasts would be predictive of ESL question development. Because learners' immediate responses to interactional feedback have been associated with development (Lyster, 2004; McDonough, 2005) and syntactic priming has been associated with subsequent production (McDonough, 2006), it was expected that both types of responses to recasts would also be predictive of ESL question development.

Method

Participants

English as a foreign language learners. The EFL participants were 98 students enrolled in the English department at a large public university in northern Thailand. Learners who missed treatments or tests were excluded from the analysis ($n = 31$). As discussed below, in order to ensure that the participants represented the same population, only learners who were classified as being at the same developmental stage (stage 4) in Pienemann's developmental sequence for ESL question formation (Pienemann & Johnston, 1987; Pienemann, Johnston, & Brindley, 1988;

illustrated in the Appendix) on the basis of their pretest performance were included in the study. Learners at stage 3 or stage 5 ($n = 9$) were removed from the analysis. The resulting participant pool consisted of 58 EFL learners, 47 women and 11 men, who were all native speakers (NSs) of Thai. Their ages ranged from 17 to 20 years, with a mean of 18.3 years, $SD = 0.75$, and the length of their previous English study ranged from 7 to 15 years, with a mean of 11.3 years, $SD = 2.09$. Only seven learners reported having lived for longer than 2 weeks in a country where English was spoken as a native language or was used as a medium of communication.

NS interlocutors. In addition to one of the researchers, there were nine NS interlocutors, five women and four men, who were NSs of American and British English. They were working as lecturers in the English department at the same Thai university as the EFL learners, and their length of residence in Thailand ranged from 2 months to 2 years. They did not have undergraduate or graduate degrees in linguistics, TESOL, or education. Most of them were recent graduates of bachelor's degree programs who intended to work in Thailand for 1 or 2 years before returning to their home countries to begin their careers or enroll in graduate degree programs. They met with one of the researchers, individually or in small groups, to discuss the purpose of the research study and the nature of recasts and to review the treatment tasks. They were provided with a written description of each treatment task and suggestions about how to give recasts to the learners. They were shown transcripts of a NS providing recasts while interacting with Thai students and were given opportunities to ask questions and discuss the discourse and situational factors that can influence whether an interlocutor provides recasts. They were asked to participate in task-based interaction with the learners and to focus on the communication of meaning. If learners produced nontargetlike questions during the task-based interaction, the NS interlocutors were asked to either (a) respond to the learners' nontargetlike question forms using a recast or (b) provide no recast or any other feedback, depending on the

treatment group they were assigned to, as outlined below. In order to minimize the possibility that an individual interlocutor's nonverbal behavior during the treatment sessions could influence the findings, each learner was assigned to interact with three different interlocutors.¹

Design

The study employed a pretest/posttest design to examine the relationships among recasts, learners' responses to recasts, and ESL question development. It is difficult to isolate learners' responses to recasts as an independent variable in treatment conditions because responses are learner-generated and therefore difficult to control during conversational interaction. Instead, the current study devised a treatment condition and materials that allowed opportunities for learners' responses to arise naturally and appropriately in the discourse. Learners assigned to the treatment group, rather than the control group, received recasts. These were operationalized as in much of the literature to date, as reformulations of the learners' utterances that corrected the learners' problematic forms while preserving meaning. Two thirds of the participants were randomly selected for the recast group and the remaining participants were assigned to the control group. Each group is described in more detail in the following subsections.

Recast group (n = 39). The NS interlocutors responded to learners' nontargetlike question forms by providing recasts as they deemed appropriate in the discourse. This included either pausing after a recast, which allowed the learners to respond, or continuing to speak, depending on which response they felt was most contextually appropriate and natural. There was no attempt to artificially control response opportunities provided by the NS interlocutors, because the intention was to preserve interaction that was as authentic as possible. To this end, the NSs sometimes repeated the learners' error before they provided a recast. Again, the intent was to keep the interactions as naturalistic as possible

because the goal of this study was to examine learners' responses to recasts.² Recasts were overwhelmingly the most common feedback type provided. Examples of recasts and response opportunities provided to the learners in the recast group are shown in (1) and (2) (turn numbers are provided in brackets).

(1) Recast with opportunity to respond

[43] Learner: why he must say it like that? Stage 3 question

[44] NS: why did he say that? Recast (stage 5)

[45] Learner: yeah

(2) Recast without opportunity to respond

[18] Learner: how many sister you have? Stage 3 question

[19] NS: how many sisters do I have? Recast (stage 5)

I have one sister

No-feedback (control) group ($n = 19$). The NS interlocutors ignored the learners' nontargetlike questions. If a breakdown occurred in the communication of meaning, the NS interlocutors were instructed to direct the conversation to another topic. The no-feedback condition is illustrated in (3).

(3) No feedback

[49] Learner: where your sister live? Stage 3 question

[50] NS: in San Francisco with my parents.

Materials

The treatment materials were information-exchange and information-gap activities that elicited a variety of questions and that were adapted from commercial textbooks (Ford, 1997; Hadfield, 1987; Jones, 1992; Mackey, 1994; Mackey & McDonough, 1999; Maggs & Hird, 2002; Soars & Soars, 1986; Ur, 1988; Ur & Wright, 1992; Wright, Betteridge, & Buckby, 1983; Zaorob & Chin, 2001). Three sets of treatment materials were created, and each set consisted of two communicative activities that targeted questions.³ The testing materials were one-way information-gap tasks that the learners carried out individually

in a language laboratory. Each test contained a warm-up activity (questions about the learners' recent activities) and two activities that elicited questions from the learners (story completion and brainstorming of interview questions).

Procedure

Each learner completed an oral production pretest in week 1, participated in three treatment sessions during weeks 2 and 3, and completed four oral production tests during weeks 3, 6, and 9. The oral production tests were administered in a language laboratory using a prerecorded audiotape that gave instructions and controlled the amount of time for each activity. The learners were seated at individual carrels equipped with boom microphones. The treatment and test sessions took approximately 20 min to complete. The learners met the NS interlocutors for three sessions during which they carried out communicative tasks that elicited questions and opportunities for recasts. As noted earlier, the NSs provided recasts in response to the learners' nontargetlike questions when and how they felt that it was contextually appropriate. They only provided recasts for the learners' nontargetlike questions; any other nontargetlike forms were ignored. They did not manipulate the learners' opportunities to respond to the recasts, but allowed such opportunities to occur naturally as part of the activities.

Measure of Development

As noted earlier, each learner was assessed for developmental stage according to Pienemann and Johnston's (1987) scale for question development (the Appendix shows examples of this developmental sequence taken from data collected for the current study). A conservative emergence criterion was used to assess the learners' developmental stages: Each learner was assigned to the highest level on the scale for which the learner produced

two questions with unique lexical items in different tasks during each test. This is similar to the criterion used in other acquisition studies involving question development (e.g., Mackey & Philp, 1998; McDonough, 2005; Philp, 2003; Silver, 2000; Spada & Lightbown, 1993). However, whereas previous research operationalized development as the production of higher level questions on two posttests, the current study operationalized development as the production of higher level questions on all three post tests. This strengthened the likelihood that development had occurred, as well as facilitated comparisons with the findings of previous research carried out at this Thai university as well as other published interaction studies (for discussions of operationalizing development in this way, see Mackey, 2006). Alpha was set at .05 for all statistical tests.

Analysis

Oral production tests. The audiotapes of the oral production tests were transcribed by research assistants and checked by one of the researchers. A research assistant coded all of the questions produced by the learners according to the stages in the developmental sequence for ESL question formation. One of the researchers checked all of the question coding (simple percentage agreement = 98%) and determined each learner's stage assignment for each test. The following types of questions were removed from the data: (a) questions that could not be coded in Piennemann and Johnston's (1987) sequence—for example, *what about the present?* and *which program?*; (b) echo questions; (c) multiple exemplars of the same question on the same task; and (d) formulaic chunks, such as *where are you from?*

Treatment performance. The audiotapes of the interactions between the learners and the NS interlocutors were transcribed by the researchers and research assistants. The interaction was coded for the occurrence of nontargetlike questions, question stage assignment, recasts, and learners' responses to recasts.

Responses to recasts were operationalized in two ways: (a) repetitions and (b) primed production. Repetition was operationalized as a learner's repetition of the recast in the immediately following turn, as shown in (4).

(4) Repetition of a recast

[61] Learner: when it happen?	Stage 3 question
[62] NS: when did it happen?	Recast (stage 5)
[63] Learner: when did it happen?	Repetition (stage 5)

Primed production was operationalized as a learner's use of the question form provided in the recast to ask a new question. Primed production either occurred immediately following a recast, as shown in (5), or within several turns of the recast, as shown in (6).

(5) Primed production (immediate)

[34] Learner: why he hit the deer?	Stage 3 question
[35] NS: why did he hit the deer? he was driving home and the deer ran out in front of his car	Recast (stage 5)
[36] Learner: what did he do after that?	Primed production (stage 5)

(6) Primed production (delayed)

[23] L: where where where you work this job?	Stage 3 question
[24] NS: where did I work?	Recast (stage 5)
[25] L: yeah	
[26] NS: I worked in America/it was my part time job during high school for three years	
[27] L: why did you like it?	Primed production (stage 5)

Primed production always involved the production of a new question rather than the repetition of a recast or the reformulation of a previous utterance. In the case of delayed primed production, the new question always occurred within six turns of the recast.⁴ Each learner response was also classified according to the developmental stage of the question. One researcher coded 100% of the data, and a second coder coded a subset (25%) of the data. Simple percentage agreement between the two coders was 94% for

recasts, 97% for learners' responses, and 99% for question stage assignment.

Results

Description of the Data

As shown in Table 1, the 19 learners in the no-feedback group produced a total of 244 nontargetlike questions, $X = 12.84$, $SD = 2.87$, while interacting with the NSs. The 39 learners in the recast group produced a total of 561 nontargetlike (NTL) questions, $X = 14.38$, $SD = 5.24$. Whereas the learners assigned to the no-feedback group did not receive any recasts following their NTL question forms as planned, the learners assigned to the recast group all received recasts that targeted developmentally advanced questions (i.e., stage 5 questions). In terms of the learners' performance on all three posttests, only 2 of the 19 learners in the no-feedback group advanced to stage 5. In contrast, 23 of the 39 learners who received recasts advanced to stage 5.

Recasts, Responses, and ESL Question Development

Our research question asked whether recasts and different types of responses to recasts were predictive of ESL question

Table 1

Interaction and development by group

	Nontargetlike questions			Developmental outcome	
	Sum	Mean	<i>SD</i>	Stage increase	No change
No-feedback group ($N = 19$)	244	12.84	2.87	2	17
Recast group ($N = 39$)	561	14.38	5.24	23	16

development. To address this question, the relationship between each learner's treatment task performance and their subsequent development was analyzed using logistic regression. We chose logistic regression over tests commonly used to examine the relationship between treatment group membership and developmental outcomes (such as chi-square or Fisher's exact tests) in order to identify which independent variables best predict the observed distribution (for a detailed discussion of logistic regression in SLA research, see Saito, 1999).

The binary dependent variable was question development, which was operationalized as advancement to stage 5 on all three posttests. Because the learners were at stage 4 on the pretest, only the recasts and responses that involved stage 5 questions were considered having potential to drive development. Therefore, the independent variables considered for inclusion in the model were the stage 5 recasts provided by the NSs (numeric variable), the learners' repetitions of those recasts (numeric variable), and the learners' primed production of stage 5 questions (numeric variable). As described previously, primed production was operationalized as a learner's production of a new stage 5 question within six turns of a stage 5 recast, which was independent of any immediate repetition of a recast. Pearson's correlation coefficients for the dependent variable and the three independent variables were calculated to determine their strength of association. Pearson's correlation coefficients showed that ESL question development was significantly correlated with recasts, $r = .49$, $p < .05$, and primed production, $r = .50$, $p < .05$. However, question development was not significantly correlated with repetition, $r = .21$, $p > .05$.

Based on the results of the correlation analysis, two independent variables—recasts and primed production—were included in the logistic regression model using an enter selection method. The results of the logistic regression indicated that the model was significant, $\chi^2(2, 58) = 24.68$, $p < .05$. The model was also evaluated based on its goodness of fit and its success at predicting group membership. In terms of goodness of fit, the model explained 47%

of the pseudovariance (Nagelkerke $R^2 = .465$), which estimates how much of the variance in the dependent variable is accounted for by the model. For group membership, the model successfully predicted 78% of group membership, which refers to its effectiveness at accurately predicting a developmental outcome for each learner. In contrast, simply predicting group membership based on the largest category of the dependent variable, which was no development, can only account for 57% of group membership. Following the evaluation of the model, each independent variable was analyzed to determine the strength of its relationship to question development. Tests of significance showed that both recasts and primed production were significant predictors of development, $\beta(1, 58) = .421, p < .05$ and $\beta(1, 58) = 2.14, p < .05$, respectively. Whereas the effect of recasts on the odds of development was $(\text{Exp})\beta = 1.52$, the effect of primed production on the odds of development was $(\text{Exp})\beta = 8.49$.

To summarize the findings, recasts and primed production were found to be significantly correlated with stage advancement, and the logistic regression model identified both variables as significant predictors of development. Thus, as expected, recasts and primed production were predictive of ESL question development. A more unexpected finding was that repetition of recasts in the next turn was not significantly correlated with ESL question development.

Discussion

This study is more nuanced than previous research, which has either found a significant relationship between responses following interactional feedback and development (e.g., Lyster, 2004; McDonough, 2005) or has not implicated responses to recasts in development (Mackey & Philp, 1998). Like many other studies (see Long, 2006, and Mackey, 2006, for reviews), we also found recasts and development to be significantly associated. The new finding of the current research, however, is that we isolated

different types of learner responses and found a relationship between primed production of the developmentally advanced structures provided in recasts and L2 development. Whereas previous research has generally explored learners' responses to recasts in terms of immediate repetition, the current study analyzed both immediate repetition and primed production, which was distinct from repetition of a recast. Again, by primed production we meant production of the syntactic structure provided in a recast within up to six turns of the recast. The current study provides evidence that productively using a form in one's own way a short time after hearing it, rather than immediately repeating or mimicking it, is associated with development. It is important to note that in the current study, this primed production followed recasts, a form of interactional feedback. We did not make a comparison between primed production following recasts and primed production following other forms of interactional feedback. In addition, we did not look at primed production that might occur in response to models as opposed to interactional feedback. These are interesting questions that are being addressed in our ongoing research.

Although our finding that one type of response to recasts is predictive of development differs from Mackey and Philp's (1998) study that did not find a relationship between responses and learning, there is an important difference between the two studies. Mackey and Philp did not analyze their data at the same level of granularity. That study only examined four types of immediate responses to recasts: *continue*, where the learner carries on with the interaction and does not repeat or use the recast; *repeat*, where the learner repeats the recast; *modify*, where the learner modifies the recast by using it in a new question; and *other*, where there is no opportunity for the learner to produce anything in response to the recast because the NS carries on with the interaction. Their category of *modify* is similar to our category of immediate primed production, but they did not look at delayed primed production. In their data, modifying a recast happened in 5% or fewer of the cases, for each of their groups. In order to better

understand our results in comparison with Mackey and Philp's, we carried out a post hoc analysis of the data in the current study, which showed that immediate primed production occurred less frequently (sum = 14) than delayed primed production (sum = 25). This pattern confirms Mackey and Philp's findings and suggests that reanalysis of their data might be interesting. As they pointed out in their discussion, recasts might provide learners with a larger database for later use.

In order to illustrate the relationship between different types of responses to recasts and their associated developmental outcomes, we provide excerpts of the interaction between two learners who received stage 5 recasts, but showed opposite response patterns. When the learner in (7) had opportunities to respond to stage 5 recasts, she typically repeated the recast, as shown in turn [38]. However, a few turns later when she asked her next *wh*-questions, she produced more stage 3 questions, as shown in turn [43]. Thus, although her immediate response was to repeat the recasts, she did not produce new stage 5 questions in subsequent turns, and she did not advance to stage 5.

(7) Recast followed by immediate repetition only

- | | |
|---|----------------------|
| [36] Learner: where you live in Vietnam? | Stage 3 question |
| [37] NS: where did I stay in Vietnam? | Recast (stage 5) |
| [38] Learner: where did you stay? | Repetition (stage 5) |
| [39] NS: I started in Hanoi and went down
the coast to Hui and Danang
and I ended in Saigon | |
| [43] Learner: where the event take place? | Stage 3 question |

In contrast, the learner in (8) immediately responded to stage 5 recasts by simply acknowledging them, as shown in turn [6]. However, in subsequent turns, he produced *wh*-questions that used the stage 5 question forms provided in the recasts, as shown in turn [8]. Unlike immediate repetition, the primed production response pattern was associated with development, and this learner advanced to stage 5.

(8) Recast followed by primed production

[4] Learner: why he get divorced?

Stage 3 question

[5] NS: why did he get divorced?

Recast (stage 5)

[6] Learner: yeah

[7] NS: because he knew his wife was having an affair so he didn't want to be with her anymore

[8] Learner: so where did Mr. Smith live?

Stage 5 question

[9] NS: with his friend

In contrast to the learners in the recast group, the learners in the control group did not receive feedback when they produced questions. Consequently, they had no opportunities to respond to recasts. However, the NS interlocutor's use of stage 5 questions created opportunities for primed production. As described in the introduction, syntactic priming refers to a speaker's tendency to produce a previously heard or produced structure across subsequent utterances. Even though the NS interlocutors did not recast the control group's problematic question forms, they did produce questions when carrying out the treatment activities. However, close examination of the treatment task data between the NS interlocutors and the learners in the control group indicated that primed production involving advanced-level questions did not occur. Obviously, the current study was not designed to investigate the occurrence of syntactic priming during interaction without interactional feedback and our current research is investigating this issue more systematically.

Because primed production of recast forms was associated with question development, it is interesting to consider how primed production comes about. For example, are some types of recasts more likely to result in this type of response than others? Claims made in some of the literature (e.g., Han, 2002; Loewen & Philp, *in press*) suggest that different types of recasts might have a range of outcomes in terms of responses. For example, more explicit recasts that include stress or emphasis on the feature being corrected might be more likely to elicit learner responses. Philp (2003) has reported that shorter recasts and recasts with

just one or two changes were more likely to elicit learner responses. Similar findings have also been reported by Bigelow, delMas, Hansen, and Tarone (in press), who found that recast features such as the number of changes, intonation, and morpheme length were predictive of responses for nonliterate learners. Having reported here on a relationship between primed production and question development, our next report will discuss the relationship among different types of recasts, response patterns, and development.

Some people might argue that if primed production is predictive of development, recasts are not the only way to produce this effect. Other ways could include explicit corrections containing the form or prompts that direct learners to consider their own output and come up with forms. In our opinion, this would be to miss the point of the current study, which finds, like many others, that there is more than one route to learning and that both recasts and primed production were facilitative of development. In looking at responses to recasts, this study has contributed the fact that there is no "one size fits all" claim to be made about responses, again in parallel to the recent claims about different types of recast. This difference in types of responses might also be responsible for the results reported here and those reported by Panova and Lyster (2002). As they explained,

Uptake consisting of a repetition may not have much to contribute to L2 development because of its redundancy in an error treatment sequence in which the teacher both initiates and completes the repair within a single move. Yet uptake involving learner-generated repair may indeed contribute to language development. (p. 579)

The literature suggests that recasts and other interactional feedback moves, such as clarification requests, might lead to different kinds of response and that each feedback move might facilitate learning for different reasons. We likewise suggest that recasts might lead to different kinds of responses and these responses might be associated with development in different ways.

Conclusion and Limitations

There has been considerable debate in the past 10 years concerning the effectiveness of recasts. More finely grained analysis of more factors—such as recast type and level of explicitness; different types of learner responses, including immediate repetition and primed production, as well as opportunities; and different target linguistic items with varying levels of saliency—will need to be addressed in order to drive the field forward. The results reported here, of course, need to be interpreted with caution due to the fact that only one target linguistic item was investigated. As previous research (e.g., Havranek & Cesnik, 2001; Ishida, 2004; Iwashita, 2003; Leeman, 2003) has suggested, recasts might have differential effects on different types of structure and future research would profit from investigating a larger array of linguistic targets, as well as target languages. Because there was a variety of recasts in the current study, some preceded by a repetition of the learners' errors, some as a complete reformulation of the learner's utterance, and some as a shorter, only partial reformulation of a learner's utterance, further analysis of the relationship between recast type and response type would be interesting, as would be a discussion of the relationship between recast type and development. In addition, because the current study examined only university-level learners of English (all of whom were NSs of Thai), future studies would also benefit from examining diverse learners—not only in terms of proficiency, setting, and first language but also in terms of other individual differences that might mediate the interaction-learning relationship noted in the literature, such as working memory capacity. The current study was conducted in a university-level program in a foreign language setting, and as such, the results might not be easily generalizable to other learners and settings. The treatment period was also relatively short, and it would be interesting to carry out longer term studies. Despite these limitations, the present study has contributed a few more pieces to the interesting puzzle surrounding recasts, responses, and development, showing that both recasts

and learners' primed production of the syntactic structures targeted in the recasts are predictive of subsequent development.

Revised version accepted 24 April 2006

Notes

¹Recent research has shown that learners rarely look for nonverbal cues during interaction and interlocutors rarely provide them (Carpenter, Jeon, McGregor, & Mackey, 2006).

²The dataset, which is multifaceted, was collected not only to address questions about responses to recasts and development but also to better understand the relationship between different types of recast and development. In the current article, we report our findings on responses and development. We are working on a subsequent article that focuses on different types of recast (and responses they engendered) and development. Although we included some of those data in an earlier version of the current article, it was not easy to work out the logical order in which to present our findings, and after the initial *Language Learning* reviews, we decided to narrow the scope of the current article to the relationship between response type and development and to focus on the relationship between recast type and development in the second article. We are grateful to the reviewers for their comments, and we believe the resulting reframing has led to a clearer article.

³Each set also contained two treatment tasks that elicited past tense verb forms, which were used in a study with a different focus, reported elsewhere (McDonough, in press).

⁴Syntactic priming research with first language speakers has demonstrated that syntactic priming occurs when up to 10 sentences intervene between the initial and subsequent utterances (Bock & Griffin, 2000).

References

- Anton, M. (1999). The discourse of a learner-centered classroom: Sociocultural perspectives on teacher-learner interaction in the second-language classroom. *Modern Language Journal*, 83, 303–318.
- Bigelow, M., delMas, R., Hansen, K., & Tarone, E. (in press). Literacy and the processing of oral recasts in SLA. *TESOL Quarterly*, 40(4).
- Bock, K. (1986). Syntactic persistence in language production. *Cognitive Psychology*, 18, 355–387.
- Bock, K. (1989). Closed-class immanence in sentence production. *Cognition*, 31, 163–186.

- Bock, K. (1990). Structure in language: Creating form in talk. *American Psychologist*, *45*, 1221–1236.
- Bock, K. (1995). Sentence production: From mind to mouth. In J. Miller & P. Eimas (Eds.), *Speech, language & communication* (pp. 181–216). San Diego: Academic Press.
- Bock, K., & Griffin, Z. (2000). The persistence of structural priming: Transient activation or implicit learning? *Journal of Experimental Psychology: General*, *129*, 177–192.
- Bock, K., & Loebell, H. (1990). Framing sentences. *Cognition*, *35*, 1–39.
- Bock, K., Loebell, H., & Morey, R. (1992). From conceptual roles to structural relations: Bridging the syntactic cleft. *Psychological Review*, *99*, 150–171.
- Braidi, S. (2002). Reexamining the role of recasts in native-speaker/nonnative-speaker interactions. *Language Learning*, *52*, 1–42.
- Carpenter, H., Jeon, K., MacGregor, D., & Mackey, A. (2006). Recasts and repetitions: Learners' interpretations of native speaker responses. *Studies in Second Language Acquisition*, *28*, 209–236.
- Ellis, R., Basturkmen, H., & Loewen, S. (2001). Learner uptake in communicative ESL lessons. *Language Learning*, *51*, 281–318.
- Ellis, R., Loewen, S., & Erlam, R. (2006). Implicit and explicit corrective feedback and the acquisition of L2 grammar. *Studies in Second Language Acquisition*, *28*, 339–368.
- Ford, C. (1997). *Bright ideas: ESL activities for all ages*. Boston: Addison-Wesley.
- Gass, S. M. (2003). Input and interaction. In C. Doughty & M. H. Long (Eds.), *Handbook of second language acquisition* (pp. 224–255). Oxford: Blackwell.
- Gass, S. M., & Varonis, E. (1994). Input, interaction, and second language production. *Studies in Second Language Acquisition*, *16*, 283–302.
- Gries, S., & Wulff, S. (2005). Do foreign language learners also have constructions? Evidence from priming, sorting and corpora. *Annual Review of Cognitive Linguistics*, *3*, 182–200.
- Hadfield, J. (1987). *Advanced communication games*. Essex: Longman.
- Han, Z. (2002). A study of the impact of recasts on tense consistency in L2 output. *TESOL Quarterly*, *36*, 543–572.
- Hare, M., & Goldberg, A. (1999). Structural priming: Purely syntactic? In M. Hahn & S. Stones (Eds.), *Proceedings of the 21st annual meeting of the Cognitive Science Society* (pp. 208–211). Mahwah, NJ: Erlbaum.
- Havranek, G. (2002). When is corrective feedback most likely to succeed? *International Journal of Educational Research*, *37*, 255–270.

- Havranek, G., & Cesnik, H. (2001). Factors affecting the success of corrective feedback. *EUROSLA Yearbook*, 1, 99–122.
- Ishida, M. (2004). Effects of recasts on the acquisition of the aspectual form *-te i-(ru)* by learners of Japanese as a foreign language. *Language Learning*, 54, 311–394.
- Iwashita, N. (2003). Negative feedback and positive evidence in task-based interaction. *Studies in Second Language Acquisition*, 25, 1–36.
- Jones, L. (1992). *Communicative grammar practice: Activities for intermediate students of English*. Cambridge: Cambridge University Press.
- Leeman, J. (2003). Recasts and second language development: Beyond negative evidence. *Studies in Second Language Acquisition*, 25, 37–63.
- Lightbown, P. M. (1998). The importance of timing in focus on form. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 177–196). Cambridge: Cambridge University Press.
- Linnell, J. (1995). Can negotiation provide a context for learning syntax in a second language? *Working Papers in Educational Linguistics*, 11, 83–103.
- Loewen, S. (2005). Incidental focus on form and second language learning. *Studies in Second Language Acquisition*, 27, 361–386.
- Loewen, S., & Philp, J. (in press). Recasts in the adult L2 classroom: Characteristics, explicitness, and effectiveness. *Modern Language Journal*, 90(4).
- Long, M. H. (2006). *Problems in SLA*. Mahwah, NJ: Erlbaum.
- Long, M. H., Inagaki, S., & Ortega, L. (1998). The role of interactional feedback in SLA: Models and recasts in Japanese and Spanish. *Modern Language Journal*, 82, 357–371.
- Lyster, R. (1998). Negotiation of form, recasts, and explicit correction in relation to error types and learner repair in immersion classrooms. *Language Learning*, 48, 183–218.
- Lyster, R. (2004). Differential effects of prompts and recasts in form-focused instruction. *Studies in Second Language Acquisition*, 26, 399–432.
- Lyster, R., & Ranta, L. (1997). Corrective feedback and learner uptake. *Studies in Second Language Acquisition*, 19, 37–66.
- Mackey, A. (1994). *Using communicative tasks to target grammatical structures: A handbook of tasks and instructions for their use*. Sydney: Language Acquisition Research Center.
- Mackey, A. (1999). Input, interaction, and second language development: An empirical study of question formation in ESL. *Studies in Second Language Acquisition*, 21, 557–587.
- Mackey, A. (2006). Feedback, noticing and second language development: An empirical study of L2 classroom interaction. *Applied Linguistics*, 27, 405–430.

- Mackey, A., Gass, S. M., & McDonough, K. (2000). How do learners perceive interactional feedback? *Studies in Second Language Acquisition*, 22, 471–497.
- Mackey, A., & McDonough, K. (1999). *Communicative tasks: Thai*. East Lansing, MI: Center for Language Education and Research.
- Mackey, A., Oliver, R., & Leeman, J. (2003). Interactional input and the incorporation of feedback: An exploration of NS-NNS and NNS-NNS adult and child dyads. *Language Learning*, 53, 35–66.
- Mackey, A., & Philp, J. (1998). Conversational interaction and second language development: Recasts, responses, and red herrings? *Modern Language Journal*, 82, 338–356.
- Maggs, P., & Hird, J. (2002). *Timesaver speaking activities*. London: Scholastic.
- McDonough, K. (2005). Identifying the impact of negative feedback and learners' responses on ESL question development. *Studies in Second Language Acquisition*, 27, 79–103.
- McDonough, K. (2006). Interaction and syntactic priming: English L2 speakers' production of dative constructions. *Studies in Second Language Acquisition*, 28, 179–207.
- McDonough, K. (in press). Interactional feedback and the emergence of simple past activity verbs in L2 English. In A. Mackey (Ed.), *Interactional feedback and second language acquisition: Empirical research*. New York: Oxford.
- Nabei, T., & Swain, M. (2002). Learner awareness of recasts in classroom interaction: A case study of an adult EFL student's second language learning. *Language Awareness*, 11, 43–63.
- Ohta, A. (2000). Rethinking recasts: A learner-centered examination of corrective feedback in the Japanese classroom. In J. K. Hall & L. Verplaetse (Eds.), *The construction of second and foreign language learning through classroom interaction* (pp. 47–71). Mahwah, NJ: Erlbaum.
- Oliver, R. (1995). Negative feedback in child NS-NNS conversation. *Studies in Second Language Acquisition*, 17, 459–481.
- Oliver, R. (1998). Negotiation of meaning in child interactions. *Modern Language Journal*, 82, 372–386.
- Oliver, R. (2000). Age differences in negotiation and feedback in classroom and pairwork. *Language Learning*, 50, 119–151.
- Oliver, R. (2002). The patterns of negotiation for meaning in child interactions. *Modern Language Journal*, 86, 97–111.
- Oliver, R., & Mackey, A. (2003). Interactional context and feedback in child ESL classrooms. *Modern Language Journal*, 87, 519–533.

- Panova, I., & Lyster, R. (2002). Patterns of corrective feedback and uptake in an adult ESL classroom. *TESOL Quarterly*, 36, 573–595.
- Philp, J. (2003). Constraints on “noticing the gap”: Nonnative speakers’ noticing of recasts in NS-NNS interaction. *Studies in Second Language Acquisition*, 25, 99–126.
- Pica, T. (1988). Interlanguage adjustments as an outcome of NS-NNS negotiated interaction. *Language Learning*, 38, 45–73.
- Pica, T., Holliday, L., Lewis, N., & Morgenthaler, L. (1989). Comprehensible output as an outcome of linguistic demands on the learner. *Studies in Second Language Acquisition*, 11, 63–90.
- Pienemann, M., & Johnston, M. (1987). Factors influencing the development of language proficiency. In D. Nunan (Ed.), *Applying second language acquisition research* (pp. 45–141). Adelaide: National Curriculum Resource Centre, AMEP.
- Pienemann, M., Johnston, M., & Brindley, G. (1988). Constructing an acquisition-based procedure for second language assessment. *Studies in Second Language Acquisition*, 10, 217–243.
- Saito, H. (1999). Dependence and interaction in frequency data analysis in SLA research. *Studies in Second Language Acquisition*, 21, 453–475.
- Shehadeh, A. (1999). Non-native speakers’ production of modified comprehensible output and second language learning. *Language Learning*, 49, 627–675.
- Shehadeh, A. (2001). Self- and other-initiated modified output during task-based interaction. *TESOL Quarterly*, 35, 433–457.
- Sheen, Y. (2004). Corrective feedback and learner uptake in communicative classrooms across instructional settings. *Language Teaching Research*, 8, 263–300.
- Silver, R. (2000). Input, output and negotiation: Conditions for second language development. In B. Swierzbin, F. Morris, M. Anderson, C. Klee, & E. Tarone (Eds.), *Social and cognitive factors in second language acquisition: Selected proceedings of the 1999 Second Language Research Forum* (pp. 345–371). Somerville, MA: Cascadilla Press.
- Spada, N., & Lightbown, P. (1993). Instruction and the development of questions in L2 classrooms. *Studies in Second Language Acquisition*, 15, 205–224.
- Soars, J., & Soars, L. (1986). *Headway intermediate*. Oxford: Oxford University Press.
- Ur, P. (1988). *Grammar practice activities: A practical guide for teachers*. Cambridge: Cambridge University Press.
- Ur, P., & Wright, A. (1992). *Five-minute activities: A resource book of short activities*. Cambridge: Cambridge University Press.

- Van den Branden, K. (1997). Effects of negotiation on language learners' output. *Language Learning*, 47, 589–636.
- Wright, A., Betteridge, D., & Buckby, M. (1983). *Games for language learning*. Cambridge: Cambridge University Press.
- Zaorob, M., & Chin, E. (2001). *Games for grammar practice*. Cambridge: Cambridge University Press.

Appendix

Developmental stages in ESL question formation with data from the current study (stages adapted from Pienemann & Johnston, 1987, and Pienemann et al., 1988).

Examples of developmental stages and question forms

Stages	Constructions	Examples
3: Fronting	Do + SVO?	Do they dislike him? Does this boy like to have a cake? Do you like Thai foods?
	<i>Wh</i> + (be/do) SVO?	*Does she has a test tomorrow? *Why this room have a lot of clocks? *How I get the right pronunciation? *How did the girl is feeling? *Where did you have been in Chiang Mai?
	Be + SVO?	*Are they are mother and son? *Is they like rock music?
4: Pseudo-inversion; Yes-no inversion	(<i>Wh</i>) + copula + S	Who is the girl in the yellow blouse? *Why are she so shy? How hard is English to understand? Is it the department store?

Appendix: (continued)

Stages	Constructions	Examples
	Aux/modal + SV	Will he support the children? Can you tell me your reasons for choosing Thailand? *Have you ever join some festival in Thailand? Would you like to go out with us?
5: Aux 2nd	Wh + aux / do	*What do he feel about his life now? When will they give the present to her? What are they carrying? *What were the man going to eat? How often do you go shopping? How long have you been in Thailand?
6: Cancelled inversion; Negative questions; Tag questions	Cancelled inversion Negative questions Tag questions	Could you tell me what the differences are between Thai culture and your culture? Would you mind telling me why you have chosen Thailand for your vacation? Wasn't it funny for them at the concert? Why didn't you choose another country to travel to? The boy with the glasses is looking for her isn't he? *You dislike rock music isn't it?

A vertical bar on the left side of the page, consisting of a series of yellow and orange rectangular segments. A small red diamond is located at the top of this bar.

COPYRIGHT INFORMATION

TITLE: Responses to Recasts: Repetitions, Primed Production,
and Linguistic De

SOURCE: Language Learning 56 no4 D 2006

PAGE(S): 693-720

WN: 0633501954009

The magazine publisher is the copyright holder of this article and it is reproduced with permission. Further reproduction of this article in violation of the copyright is prohibited. To contact the publisher:
<http://www.blackwellpub.com/>

Copyright 1982-2007 The H.W. Wilson Company. All rights reserved.