

EXPLICITNESS OF RECASTS, LEARNER RESPONSES,
AND L2 DEVELOPMENT OF KOREAN RELATIVE CLAUSES:
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Dedicated to my devoted and faithful mother, Bok-joo, Ryu

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ABSTRACT

In the previous research on recasts, two interesting claims have been made. First, the absence of learners' immediate responses following recasts may limit the effectiveness of recasts, and therefore other interactional feedback moves that encourage uptake, such as prompts or negotiation, would be more beneficial for learners than recasts. In response to this claim, some researchers have argued that recasts might have delayed effects on L2 development, and thus the efficacy of recasts should not be discounted due to the lack of immediate responses (Mackey & Philp, 2003; McDonough & Mackey, 2006). The second claim is that, among the many operational definitions of recasts utilized in previous studies, the more explicit ones may be more effective than the more implicit ones (Ellis & Sheen, 2006; Nicholas, Lightbown, & Spada, 2001), since the former lead to a higher rate of learner uptake and repair (Loewen & Philp, 2006; Sheen, 2006) as well as greater noticing of the recasts (Egi, 2007; Kim & Han, 2007).

These two issues are investigated in this study examining the effects of explicit (i.e., declarative) and implicit (i.e., interrogative) recasts on L2 development of Korean relative clauses. In total, 63 KSL/KFL learners at the beginning-high to intermediate level participated in this study. The impacts of explicit and implicit recasts are examined with respect to various learner responses in the discourse (i.e., immediate uptake and primed production) as well as subsequent L2 development, measured on two different occasions (i.e., immediate and delayed posttests) by employing three different tasks (i.e., an oral production task, a sentence combination task, and a grammaticality judgment task). The results showed that all three groups (i.e., declarative, interrogative, and control groups) significantly improved over time as a result of the interaction they engaged in during the experiments, regardless of the explicitness of the recasts and even the presence or absence of recasts. However, significantly higher repair rates followed declarative recasts, supporting the argument that declarative recasts are more explicit than interrogative ones. With regard to the relationships between the various learner responses and L2 development, only primed production was significantly associated with posttest scores.

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LIST OF ABBREVIATIONS

| | |
|------------------|------------------------------|
| CNT | control group |
| DCT | draw the circles task |
| DEC | declarative recasts |
| DO | direct object |
| DPT | delayed posttest |
| FCT | find the circles task |
| FFE _s | focus on form episodes |
| GJT | grammaticality judgment task |
| INT | interrogative recasts |
| IPT | immediate posttest |
| OBL | oblique relative clauses |
| OPT | oral production task |
| RC | relative clauses |
| SCT | sentence combination task |
| SU | subject |

CHAPTER 1

INTRODUCTION

Recasts have been one of the focal interests among researchers in second language acquisition, and a considerable amount of research has been conducted on: (a) the relationship between recasts and learner uptake (Egi, 2010; Ellis, Basturkmen, and Loewen, 2001; Lyster & Ranta, 1997); (b) the effect of recasts on second language (L2) development (Doughty & Varela, 1998; Han, 2002; Ishida, 2004; Long, Inagaki, & Ortega, 1998; Mackey & Philp, 1998); (c) learners' perception of recasts as negative feedback (Carpenter, Jeon, MacGreger, & Mackey, 2006; Egi, 2004, 2007, 2010; Mackey, Gass, & McDonough, 2000; Nabei & Swain, 2002), and (d) the effectiveness of recasts compared to the effectiveness of other types of negative feedback, such as metalinguistic explanations (Ellis, 2007; Ellis, Loewen, & Erlam, 2006), prompts (Ammar & Spada, 2006; Lyster, 2004), and negotiation strategies (Mackey, 2006; Oliver, 1995, 2000). In addition, although recasts have been viewed as an implicit type of feedback, it has been suggested that they vary in terms of explicitness depending on features such as mode, intonation, stress, and length that may be incorporated in a particular recast (Ellis & Sheen, 2006).

In the previous research on recasts, two interesting claims have been made. The first is that the absence of learners' immediate responses following recasts may limit the effectiveness of recasts, and therefore, other interactional feedback moves that encourage uptake, such as prompts or negotiation, would be more beneficial for learners than recasts. In response to this claim, some researchers have argued that recasts might have delayed effects on L2 development, and thus the efficacy of recasts should not be discounted due to the lack of immediate responses (Mackey, 1999; Mackey & Philp, 2003; McDonough & Mackey, 2006). The second claim is that, among the many operational definitions of recasts utilized in previous studies, the more explicit ones may be more effective than the more implicit ones (Ellis & Sheen, 2006; Nicholas, Lightbown, & Spada, 2001), since the former lead to a higher rate of learner uptake and

repair (Loewen & Philp, 2006; Lyster, 1998a; Sheen, 2006) as well as greater noticing of the recasts (Egi, 2007; Kim & Han, 2007; Philp, 2003).

These two issues will be investigated in this study examining the effects of explicit and implicit recasts on L2 development of Korean relative clauses. The explicitness of recasts will be investigated by operationalizing the degree of explicitness in terms of mode, taking declarative recasts as explicit and interrogative ones as implicit. In Korean, since no word order change is involved in question formation, the only difference between an interrogative sentence and a declarative sentence lies in intonation, which makes the Korean language ideal for investigating the precise effects of intonation on recasts while controlling other factors. The impact of explicit and implicit recasts will be examined with respect to various learner responses in the discourse as well as subsequent L2 development on posttests. In order to explore the issue of delayed versus immediate effects of recasts, two approaches will be adopted. First, with respect to learners' immediate responses to recasts, various learner responses—including uptake in general, simple acknowledgement, repetition (of recasts), repair (of the initial errors that prompted the recasts), and primed production—will be compared in terms of both their occurrences and their relationships to L2 development. Following McDonough and Mackey (2006), who identified primed production as a potential measure of benefits, two types of responses will be the primary foci of interest: (a) immediate repetition of the recasts and (b) primed production, which is a learner's new utterance using the target form provided in the recast. Second, in terms of delayed effects of recasts, posttest score gains will be examined on (a) an immediate posttest right after the treatment and (b) a short-term delayed posttest a week after the treatment. In each pretest and posttest, three different task measures will be employed, each aiming to gauge a different type of knowledge or skill with Korean relative clauses: (a) a grammaticality judgment task to measure explicit knowledge of Korean RCs; (b) a sentence combination task to measure written production skill; and (c) an oral production task to measure immediate oral production skill.

The organization of the dissertation is as follows. Chapter 2 provides an overall review of the previous literature on recasts, focusing on the arguments for and against the efficacy of recasts as corrective feedback. The chapter will begin by introducing various

definitions of recasts proposed in the research, and will then describe the unique, inherent characteristics of recasts that have inspired many L2 interaction researchers and teachers to carry out a considerable amount of research on recasts and to prefer recasts over other types of feedback in the classroom. Next, the chapter will discuss empirical studies with a focus on immediate responses (i.e., uptake) to recasts, learners' perception of recasts as corrective feedback, and their subsequent effects on L2 development. The second half of Chapter 2 will mainly deal with the first claim. In particular, the theoretical grounds and rationales of the arguments for and against the delayed effects of recasts will be discussed in detail. Before jumping into these arguments, definitions and various categorizations of uptake will be presented, as the debates are centered on the issue of whether uptake can serve as a valid measure of the effectiveness of recasts.

Chapter 3 will address the issues related to the second claim, which is that among the many different ways that recasts are operationalized in L2 research and in L2 classrooms, explicit recasts are more effective than implicit recasts for L2 acquisition. This chapter will begin by discussing the various features that have been identified in the previous descriptive classroom studies as affecting the position of different types of recasts on a spectrum of explicitness. These features include but not limited to mode (or intonation), prosodic emphasis (or stress), length, scope, and number of changes involved. Next, previous empirical studies that have compared explicit and implicit recasts in terms of immediate uptake rates, learners' noticing of recasts, and their subsequent effects on L2 acquisition will be examined, and their major findings and limitations will be outlined. Chapter 3 ends by delineating how explicit and implicit recasts will be operationalized in this study and providing the rationales and practical reasons for selecting mode over other features of recasts.

Chapter 4 will describe the methodology of the main experiment carried out in this study. The research questions developed for the experiment will be presented first. Next, the chapter will discuss particular characteristics of the Korean relative clauses, the linguistic target of the study, and will compare them to English relative clauses. Previous studies on first and second language acquisition of Korean RCs will then be briefly reported with their major findings. The chapter will conclude with detailed descriptions of each methodological decision and the overall experimental procedures.

The results of the main experiment will be presented in Chapter 5. First, the effects of the explicit and implicit recasts on L2 development of Korean RCs will be compared for each posttest measure employed on two different occasions. Second, various learner responses prompted by the two different types of recasts will be reported, including uptake, acknowledge, repetition, repair, and primed production. Third, the relationships between the different types of learner responses and posttest scores will be explored for each recast condition, with the purpose of identifying which among the various learner response types are the stronger indicators of Korean RC development, with a focus on immediate repetition of recasts and primed production (i.e., delayed response). In addition, the overall production of Korean RCs by learners that occurred during the interactions of the experiment will be examined with respect to the hierarchical developmental order proposed by Keenan and Comrie (1977).

In Chapter 6, a general discussion of the major findings will be provided. The chapter will first answer the study's three research questions based on the findings, and possible explanations will be sought for the unexpected outcomes that are in conflict with the predictions. Next, the two major claims in the previous literature that are presented in Chapters 2 and 3 will be discussed in light of the major findings of the current study, and this study's contributions to the field as well as its limitations will be outlined. The shortcomings of the current study and suggestions for future research will follow the general discussion, and some final remarks will conclude the dissertation.

CHAPTER 2

RECASTS, LEARNER RESPONSES, AND L2 DEVELOPMENT

Feedback, which can be defined as “reactive information that learners receive regarding the linguistic and communicative success or failure of their utterances” (Mackey & Goo, 2007, p. 14), has been one of the main foci of investigation in interaction research (Long, 1981, 1983, 1996), which has argued for the beneficial role of interaction in language learning. In particular, researchers have claimed that feedback given during interaction facilitates learners’ noticing of the gap between their interlanguage and the target language, and consequently leads to L2 development. In addition, researchers have suggested the usefulness of feedback in drawing learners’ attention to form (i.e., focus on form) while they are engaged in meaningful interaction (i.e., negotiation of meaning).

Early descriptive studies examining feedback that occurs during classroom interaction have identified various types of feedback moves, such as explicit correction, recasts, clarification requests, metalinguistic clues, elicitation, repetition, and translation (Lyster & Ranta, 1997; Panova & Lyster, 2002). Among these types of feedback, recasts are the one most favored by teachers (in the case of L2 learning) and also have received the greatest amount of attention from second language researchers due to unique characteristics that distinguish recasts from other types of feedback. The particular characteristics of recasts will be explained in the next section, following the various definitions of recasts found in the literature. Then the previous studies conducted on recasts will be discussed, outlining their major findings and limitations.

2.1. Recasts

Recasts have been defined in different ways by researchers, as Ellis and Sheen (2006) pointed out in their paper as one of the fundamental issues yet to be resolved in the recasts research. For instance, Long (1996) defined recasts as “utterances that rephrase a child’s utterance by changing one or more sentence components (subject, verb or object) while still referring to its central meanings” (p. 434), later revising this to “a

reformulation of all or part of a learner's immediately preceding utterance in which one or more non-target-like (lexical, grammatical, etc.) items are replaced by the corresponding target language form(s)" (Long, 2007, p.101). Lyster and Ranta's definition of recasts, "the teacher's reformulation of all or part of a student's utterance, minus the error" is also in line with Long's definition (1997, p. 46). On the other hand, Sheen (2006) provided a narrower definition of recasts, confining it to recasts that occurred in the classroom during communicative activities between a teacher and a student. According to her, recasts are "the teacher's reformulation of all or part of a student's utterance that contains at least one error within the context of a communicative activity in the classroom" (p. 365). From these various definitions of recasts, the two most important and essential features of recasts can be summarized as (a) an interlocutor's providing of a reformulation of a learner's nontarget-like utterance, while (b) keeping the central meaning of the learner's utterances. This dissertation, as it purports to examine the recasts occurring in dyadic interaction between native speakers and learners, recasts will be defined as "target language reformulations by the interlocutor of a learner's nontarget-like utterances that retain the central meaning while changing the form of the utterance," as Loewen and Philp (2006, p. 537) phrased it following Long's definition.

2.1.1. Characteristics of Recasts

The occurrence of recasts is not limited to L2 learning contexts. Actually, the term "recast" originally came from the child L1 acquisition research (Nelson, Carskaddon, & Bonvillian, 1973; Nicholas et al., 2001), and recasts are frequently observed in L1 acquisition as well. A considerable amount of research has been carried out to examine the incidences and characteristics of recasts occurring in child language acquisition (Nelson et al., 1973; Nelson, Denninger, Bonvillian, Kaplan, & Baker, 1983). Such research has showed that recasts are indeed most commonly provided by caregivers to children when the children have produced erroneous utterances. In particular, researchers (Bohannon & Stanowicz, 1988; Demetras, Post, & Snow, 1986; Farrar, 1992; Hirsh-Pasek, Treiman, & Schneiderman, 1984; Saxton, 1997) have paid attention to the

role of recasts as a source of negative evidence (i.e., correction) that indicates that the child's original utterance is unacceptable in the language (Leeman, 2003).

In second language acquisition, research has been vigorously conducted on recasts, in many cases comparing their relative efficacy to that of other types of feedback but also focusing on the inherent nature of recasts. The unique features of recasts, which have drawn a tremendous amount of interests from L2 researchers, can be summarized as follows. First of all, recasts are an implicit type of feedback (Long & Robinson, 1998). Unlike explicit types of feedback, which treat the language as an object and take the learner's attention from meaning to form, recasts do not interrupt the communication flow by isolating the linguistic feature out of context, and therefore promote form-function mapping more effectively. For these reasons, recasts have been claimed to be more desirable in the classroom context. Second, recasts provide both positive and negative evidence in an implicit way (Iwashita, 2003; Leeman, 2003), unlike other types of feedback moves, which either provide negative evidence only (i.e., prompts or elicitation) or provide both kinds of evidence but rather explicitly (i.e., metalinguistic feedback or explicit correction).¹

(2.1) Recast

L: Why he get divorced?

NS: Why did he get divorced? ← *Recast*

L: Yeah. ← *Uptake*

(from McDonough & Mackey, 2006, p. 711)

As shown in excerpt (2.1), the native speaker does not only provide the target-like form but also at the same time implicitly indicates the ill-formedness of the learner's previous speech in the recast. Although it is yet unknown to what extent the negative evidence conveyed in recasts is perceived as such by learners due to the implicit nature of recasts, recent studies on learners' perception of recasts seem to add supporting evidence for

¹ Positive evidence is "models of what is grammatical or acceptable" in the target language, and negative evidence is "direct or indirect information about what is ungrammatical...in the L2" (Long, 1996, p. 413).

recasts as negative evidence (Carpenter et al., 2006; Egi, 2004, 2007; Mackey et al., 2000). The third feature that has caught L2 researchers' attention is that recasts are provided contingent upon the learner's erroneous utterances and thus the correct forms (i.e., recasts) are usually juxtaposed with the incorrect forms (i.e., previous learner utterances). Such contingency and juxtaposition of recasts has been claimed to make the linguistic target more salient and consequently promote learners' noticing of the gap between their interlanguage and target language, which is crucial for L2 acquisition (Schmidt, 1990, 1993, 1995, 2001).

Besides these cognitive and psycholinguistic features of recasts that have attracted many L2 researchers, language teachers also have favored recasts over other types of feedback moves for practical reasons as well (Loewen & Philp, 2007). According to early descriptive classroom studies (Chaudron, 1997; Lyster & Ranta, 1997; Panova & Lyster, 2002; Roberts, 1995; Sheen, 2004), recasts are indeed the most frequently given type of feedback in the language classroom context. Teachers seem to prefer recasts because they are, above all, time saving compared to other types of feedback moves that elicit learner responses (i.e., repair) or provide metalinguistic comments or explanations switching learners' attention from meaning to form. Furthermore, recasts, being implicit in nature, do not intimidate or discourage learners from speaking, unlike other, more explicit types of corrections. In addition, recasts do not interrupt the flow of communication, and they allow teachers to provide feedback while maintaining control of the discourse (i.e., keeping the floor).

In summary, recasts are an interlocutor's target-like reformulations of a learner's nontarget-like utterances that retain the central meaning. Recasts are observed in both L1 and L2 acquisition, and they are the most frequently given type of feedback in L2 classrooms as well as in child L1 acquisition. A considerable amount of research has been conducted on recasts, and researchers have particularly focused on several aspects of recasts. First of all, recasts are an implicit focus on form procedure, which do not take learners' attention from meaning to form. Second, they provide both positive and negative evidence at the same time. Third, recasts promote learners' noticing of the mismatch between their interlanguage and the target language by increasing the salience of the target form through contingency and juxtaposition. Recasts are favored by

language teachers for the practical reasons that they are (a) not time-consuming, (b) not intimidating to the students, and (c) not interruptive of the flow of the conversation. In the following section, previous empirical studies conducted on recasts will be discussed, followed by a closer look at the two interesting claims made by researchers with regard to: (a) the employment of learner uptake as a measure of the effectiveness of recasts and (b) the intrinsic features of recasts that make some of them more explicit or implicit.

2.1.2. Empirical Studies on Recasts

The early studies conducted on recasts in both classroom (Lyster, 1998a, 1998b; Lyster & Ranta, 1997; Panova & Lyster, 2002; Sheen, 2004) and dyadic settings (Braid, 2002; Oliver, 1995, 2000) reported not only that recasts occurred in both settings, but also that they were by far the most frequent form of negative feedback provided in the classroom settings. These findings prompted second language researchers to conduct extensive research on the effectiveness of recasts, and a considerable amount of research has been conducted on: (a) recasts and learner uptake (Egi, 2010; Lyster & Ranta, 1997, Panova & Lyster, 2002; Sheen, 2004, 2006); (b) learners' perception of recasts (Egi, 2004, 2007, 2010; Mackey et al., 2000; Nabei & Swain, 2002; Ohta, 2000); (c) recasts and L2 development (Doughty & Varela, 1998; Han, 2002; Ishida, 2004; Long et al., 1998; Mackey & Philp, 1998); and (d) recasts and other types of negative feedback (Ammar & Spada, 2006; Carroll & Swain, 1993; Ellis et al., 2006; Lyster & Ranta, 1997, Nassaji, 2007, 2009).

2.1.2.1. Recasts and Uptake

Learners' immediate response to recasts, which is called *uptake*, has been predominantly employed as an indicator of learners' noticing of recasts in investigations of the effectiveness of recasts. In the example in excerpt (2.1), an error was made by the learner with question formation in turn 1, and it was corrected by the native speaker in turn 2 in the form of a recast. In turn 3, the learner acknowledged the recast saying "Yeah." Such immediate response of the learner following the recast is called an uptake. Uptake can be made in the form of a simple acknowledgement of the recast as shown in the example (i.e., "Yeah"), or it can also include a learner's repetition of the recast (i.e.,

repetition). In the case of repetition, the error committed in the learner's original utterance can be either repaired (i.e., successful repair) or still remain erroneous (i.e., unsuccessful repair).

Studies have been conducted on the relationship between recasts and learner uptake in general, and repair more specifically (Chaudron, 1977; Egi, 2010; Loewen & Philp, 2006; Lyster, 1998a, 1998b; Lyster & Ranta, 1997; Nassaji, 2007, 2011; Panova & Lyster, 2002; Sheen, 2004, 2006). The findings have revealed that learners indeed acknowledged (i.e., needs repair) or incorporated (i.e., repair) recasts in their subsequent utterances. Nonetheless, compared to other types of feedback moves (such as elicitation or clarification requests), recasts produced the least amount of learner uptake and very little repair (Lyster & Ranta, 1997; Panova & Lyster, 2002; Sheen, 2004). It also has been pointed out that unlike other feedback moves that inherently require learners' responses, learners are not often provided with opportunities to produce uptake following recasts due to immediate topic continuation or change, which considerably lowers overall uptake or repair rates for recasts (Oliver, 1995).

2.1.2.2. Learners' Perception of Recasts

With respect to the relatively low uptake rate associated with recasts, recasts are often criticized because learners might not perceive recasts as corrective feedback in many cases, and this is why recasts have been shown to induce the least amount of uptake (Lyster, 1998b). Researchers (Carpenter et al., 2006; Egi, 2004, 2007, 2010; Kim & Han, 2007; Mackey, Al-Khalil, Atanassova, Hama, Logan-Terry, & Nakatsukasa, 2007; Mackey et al., 2000; Nabei & Swain, 2002; Ohta, 2000) have inquired into this issue by tapping into learners' perception of recasts, employing various introspective methods such as stimulated recall (Egi, 2007, 2010; Kim & Han, 2007; Mackey et al., 2000, 2007), immediate retrospective verbal reports (Egi, 2004, 2007), and think-aloud protocols (Carpenter et al., 2006). Findings revealed that learners were relatively accurate in their perception of the target of recasts, and that they noticed recasts on lexical and phonological errors more accurately than recasts on morphosyntactic errors (Carpenter et al., 2006; Kim & Han, 2007; Mackey et al., 2000).

2.1.2.3. Recasts and L2 Development

A considerable number of studies have examined the effectiveness of recasts on L2 acquisition of various languages, such as English (Doughty & Varela, 1998; Han, 2002; Mackey & Philp, 1998), Spanish (Leeman, 2003; Ortega & Long, 1997), Japanese (Inagaki & Long, 1999; Ishida, 2002; Iwashita, 2003), and Korean (Jeon, 2004, 2007; O'Grady & Lee, 2006). Studies have investigated diverse linguistic target structures as well, including tense and aspect (Doughty & Varela, 1998; Han, 2002; Ishida, 2004; Iwashita, 2003), question formation (Mackey, 1999; Mackey & Philp, 1998), relative clauses (Jeon, 2004, 2007), adjective-noun agreement (Leeman, 2003), and even honorifics (Jeon, 2007). In addition, both teacher-led classroom settings and dyadic or small group interaction settings were involved in these studies.

Although classroom studies have reported somewhat moderate or weak effects of recasts on L2 development based on accuracy score gains (Ammar & Spada, 2006; Havranek, 1999; Loewen & Philp, 2006; Lyster, 2004), most of the studies conducted in dyadic experimental settings have demonstrated the beneficial role of recasts in promoting second language acquisition (Han, 2002; Ishida, 2004; Mackey & Philp, 1998). Although most of the experimental studies conducted on dyadic interactions have been limited to exploring the short-term effects of recasts, relatively long-term effects of recasts (which lasted over periods of a month to seven weeks) have been demonstrated in two longitudinal studies (Han, 2002; Ishida, 2004). Recent meta-analysis studies (Li, 2010; Mackey & Goo, 2007) also have confirmed the immediate and delayed (or long-term) effects of recasts on L2 acquisition.

2.1.2.4. Recasts and Other Types of Feedback

Recasts have been often compared to other types of negative feedback including: (a) metalinguistic feedback (Ellis, 2007; Ellis et al., 2006; Loewen & Nabei, 2007; Loewen & Philp, 2006; Sheen, 2007), (b) explicit correction (Lyster, 1998b; Mackey et al., 2007), (c) prompts (Ammar, 2008; Ammar & Spada, 2006; Loewen & Nabei, 2007; Loewen & Philp, 2006; Lyster, 2004; McDonough, 2007), and (d) negotiation (Mackey, 2006; Mackey et al., 2007; Oliver, 1995, 2000), with respect to the occurrences of learner uptake and repair in early studies and to L2 development in recent studies. Examples of

metalinguistic feedback (2.2), explicit correction (2.3), prompts (2.4), and negotiation strategies (2.5) are displayed below.

(2.2) Metalinguistic Feedback

L: He kiss her.

NS: Kiss – you need past tense. ← *Metalinguistic Feedback*

L: He kissed.

(from Ellis, 2007, p. 349)

(2.3) Explicit Correction

L: The day...tomorrow.

NS: Yes. No, the day before yesterday. ← *Explicit Correction*

(from Panova & Lyster, 2002, p.584)

(2.4) Prompt

L: The title of the story is girl had blood in her scalp.

T: Blood? ← *Prompt (Repetition)*

L: Bloot

T: Bullet bullet

(from Loewen & Philp, 2006, p. 540)

(2.5) Negotiation

NNS: Here and then the left.

NS: Sorry? ← *Negotiation (Clarification Request)*

NNS: Ah here and one ah where one ah one of them on the left.

(from Mackey & Philp, 1998, p. 339)

Metalinguistic feedback or clues refer to comments, information, or questions from teachers that relate to the well-formedness of the student's previous utterance. Teachers often provide metalinguistic feedback or clues by saying, for example, "Can

you find your error?"; "No, not X."; or simply "No" (Lyster & Ranta, 1997, p. 47). Metalinguistic clues or feedback usually provide grammatical metalanguage related to the nature of the error rather than just providing the correct form, as shown in example (2.2). On the other hand, explicit correction, as shown in (2.3), occurs when the teacher provides the correct form, explicitly or overtly indicating to the learner that his/her previous utterance contains an error (e.g., "Oh, you mean..." or "You should say...").

Prompts and negotiation refer to a set of feedback moves or strategies rather than a single type of feedback. First of all, *prompts* refer to a "variety of signals, other than alternative reformulations, that push learners to self-repair" (Ranta & Lyster, 2007, p. 152), and various types of signals such as clarification requests, repetitions, metalinguistic clues, and elicitation belong to this category. An example of prompts is shown in (2.4), where the teacher repeats the erroneous part of the learner's previous utterance in order to prompt the learner to self-repair his/her problematic utterance instead of providing the correct form. On the other hand, *negotiation* refers to the strategies used by interlocutors to resolve communication breakdowns, and it encompasses various techniques as well, including clarification requests, confirmation checks, and repetitions (Oliver, 2000). In the example of negotiation in (2.5), the teacher responds with a clarification request (i.e., "Sorry?") to signal to the student that his/her previous utterance was misunderstood or ill-formed in some way. Utterances like "Pardon me" or "What do you mean by X?" are typical examples of clarification requests. Although negotiation and prompts seem to be overlapping categories (and indeed they are), it should be noted that these two categories stem from different lines of research and accordingly have been examined in distinct ways in the field.

Early descriptive studies (Lyster, 1998b; Lyster & Ranta, 1997; Oliver, 1995, 2000; Panova & Lyster, 2002; Sheen, 2004) were focused on the natural occurrences of different types of negative feedback mainly in L2 classroom settings and investigated their relative effects on subsequent learner uptake and repair. The findings revealed that although recasts were the kind of feedback most frequently offered by teachers in classroom settings, other types of feedback that were more explicit (e.g., metalinguistic feedback and explicit correction) or had stronger illocutionary force (e.g., elicitation and repetition) were more successful in eliciting learner uptake and repairs than recasts.

Recent studies have compared the effectiveness of recasts on L2 development measured by pretest/posttest score gains in both classroom and dyadic settings to those of other feedback types, most frequently metalinguistic feedback (Ellis, 2007; Ellis et al., 2006; Loewen & Nabei, 2007; Loewen & Philp, 2006; Sheen, 2007) and prompts (Ammar, 2008; Ammar & Spada, 2006; Loewen & Nabei, 2007; Loewen & Philp, 2006; McDonough, 2007). Although the findings are still inconclusive, preliminary results of these studies have supported stronger effects of explicit types of feedback such as metalinguistic explanation (Ellis, 2007; Ellis et al., 2006; Sheen, 2007) and prompts (Ammar, 2008; Ammar & Spada, 2006; Lyster, 2004) over recasts. In addition, it has been shown that learners' perception of feedback was more in line with the teacher's intention when more explicit types of feedback were provided (Mackey et al., 2007). Recent meta-analyses also have obtained greater effects from explicit correction (Li, 2010) and prompts (Lyster & Saito, 2010) over recasts. The only exception was a meta-analysis conducted by Mackey and Goo (2007), who reported both that recasts had stronger immediate effects over negotiation and metalinguistic feedback and that the effects of recasts increased to a great extent in the short-term delayed posttests and were well-maintained in the long-term delayed posttests.

To sum up, the previous classroom and dyadic studies on recasts have demonstrated that recasts are indeed the most frequent type of feedback given by teachers in classroom contexts, although relatively lower rates of uptake and (successful) repairs were induced from recasts in comparison to other feedback types (such as explicit correction or prompts) in these studies. Nevertheless, these studies have further shown that learners were quite accurate in their perception of recasts, suggesting that low uptake rates should not be taken as evidence to discount the effectiveness of recasts as corrective feedback. Furthermore, although the other types of feedback such as metalinguistic feedback or prompts had greater immediate effects on L2 development, the effects of recasts were found to be well maintained or increased over a period of time.

2.1.3. Two Interesting Claims on Recasts

Based on the previous research on recasts, two interesting claims have been made that are of immediate concern to this study. The first claim is that the absence of learners'

immediate responses, as shown in the descriptive classroom studies, limits the effectiveness of recasts as corrective feedback, and thus interactional feedback moves such as prompts or negotiation strategies would be more beneficial for learners than recasts, mainly because they push learners to produce the correct structure on their own (Ellis, et al., 2006; Havranek, 2002; Havranek & Cesnik, 2001; Lyster, 1998a, 2004). The second claim is that, although recasts have been regarded as a monolithic construct, recasts tend to vary on a continuum of explicitness (Ellis & Sheen, 2006; Nicholas et al., 2001; Sheen, 2006), and the more explicit ones are more effective than the more implicit ones. In other words, it has been predicted that more explicit recasts will lead to greater uptake rates (Chaudron, 1977; Loewen & Philp, 2006; Lyster, 1998a; Sheen, 2006), improved learners' noticing of recasts (Egi, 2007; Kim & Han, 2007; Mackey et al., 2007; Philp, 2003), and even larger accuracy score gains (Loewen & Philp, 2006).

These two claims will be discussed in detail in the following sections. The argument concerning the employment of uptake as a measure of the effectiveness of recasts will be examined first in Section 2.2, and a discussion on the second claim in regard to explicit and implicit recasts will be presented in Chapter 3.

2.2. Uptake as a Measure of the Effectiveness of Recasts

Before we delve into the heated debate among L2 researchers regarding whether learner responses (often called uptake) can serve as a valid indicator of learners' noticing and/or subsequent learning, as has been widely accepted in the previous studies investigating the efficacy of corrective feedback including recasts, it will be worthwhile to first examine the definitions and characteristics of uptake found in the literature.

2.2.1. Definitions of Uptake

In the literature, two very different definitions of recasts can be found. Although uptake was initially defined as "what learners claimed to have learned from a particular lesson" (Slimani, 1992, see also Allwright, 1984), Lyster and Ranta (1997), drawing on speech act theory, were the first to use uptake to describe a turn in the error treatment sequence that occurs during classroom interaction. According to them, uptake can be defined as "a student's utterance that immediately follows the teacher's feedback and that

constitutes a reaction in some way to the teacher's intention to draw attention to some aspect of the students' initial utterance" (p. 49). Later, Ellis, Basturkmen, and Loewen (2001) suggested a somewhat broader view of uptake, in which uptake can not only occur following a teacher's corrective feedback (i.e., reactive focus on form), but also even when the previous teacher's move did not contain any corrective feedback (i.e., following student-initiated, preemptive focus on form). According to their definition, uptake can be characterized as follows: (a) "uptake is a student move"; (b) "the move is optional"; (c) "the uptake move occurs in episodes where learners have demonstrated a gap in their knowledge (e.g., by making an error, by asking a question, or by failing to answer a teacher's question)"; and finally (d) "the uptake move occurs as a reaction to some preceding move in which another participant (usually the teacher) either explicitly or implicitly provides information about a linguistic feature" (p. 286). Despite this recent, expanded definition of uptake, which includes uptake following preemptive focus on form, uptake has been predominantly defined and understood in the field as a learner's immediate response following reactive focus on form (i.e., feedback prompted by a previous learner error), following Lyster and Ranta's definition.

2.2.2. Categorization of Uptake

As mentioned earlier, uptake is a comprehensive term, which refers to any type of learners' immediate response to feedback, ranging from simple acknowledgement of the feedback (such as "Yeah") to learners' repetition of feedback, reformulating their original utterance(s) (Egi, 2010). Researchers have attempted to classify different forms of uptake into subcategories, mainly focusing on whether the original error(s), which triggered the corrective feedback, was repaired or not. Lyster and Ranta (1997) divided uptake into: (a) repair in which the error that the feedback focused on was successfully repaired, and (b) *needs-repair* which still contained the error and thus needed repair. According to their classification, simple acknowledgement of the feedback that shows the acceptance of the feedback (such as "Yeah") or unsuccessful repetition (of the feedback or the original erroneous utterance), which does not result in the repair of the error(s), belongs to needs-repair. Only when the original error is successfully repaired, can the move be called repair. Adopting Lyster and Ranta's (1997) definition, Ellis, Basturkmen, and Loewen

(2001) later went on to separate simple acknowledgement from needs-repair and proposed three categories of uptake (only for responding focus on form episodes): (a) *acknowledge*, (b) *repair*, and (c) *needs-repair*. They then made a further distinction between (a) *successful uptake* where the linguistic feature that prompted the feedback was correctly repaired (i.e., equivalent to Lyster & Ranta's repair category) and (b) *unsuccessful uptake* in which no attempt was made to repair or an attempted repair failed (i.e., equivalent to Lyster & Ranta's needs-repair category).

Recently, some researchers have approached uptake from a slightly different perspective, emphasizing the beneficial role of producing a modified output, as this is claimed to promote L2 learning (Swain's Output Hypothesis, 2005), rather than just focusing on the quality of repair made in the uptake (i.e., successfulness of the correction). Egi (2010) defined modified output as "a particular type of uptake where learners correctly or incorrectly modify problematic language" (p.3) and suggested the classification of uptake shown in Figure 1, which integrates modified output into the existing taxonomies of uptake.

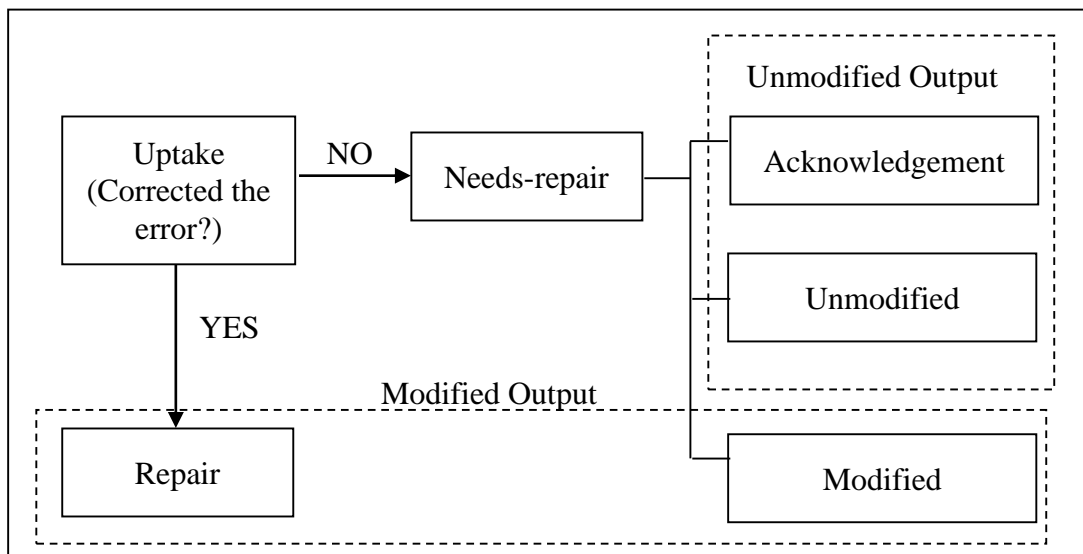


Figure 2.1. Categorization of Uptake (Egi, 2010)

Following Lyster and Ranta (1997), Egi also divided uptake into repair and needs-repair first. However, in her classification, needs-repair is further classified into three subcategories: (a) *needs-repair acknowledgement*, (b) *needs-repair unmodified*, and (c) *needs-repair modified* (Egi, 2010, p. 2). The distinction between unmodified and modified is made depending on whether the learner reformulated the problematic form that triggered the feedback or not. According to whether learners modify their initial problematic utterance, needs-repair modified and repair were reclassified into a *modified* category, and needs-repair unmodified and acknowledgement into an *unmodified* category.

2.2.3. Claims for Uptake as a Measure of the Effectiveness of Recasts

In L2 interaction research, uptake has been widely accepted as an indicator of learners' noticing of feedback and L2 development and also adopted as a measure of the relative effectiveness of corrective feedback (Chaudron, 1977; Egi, 2010; Loewen & Philp, 2006; Lyster, 1998a, 1998b; Lyster & Ranta, 1997; Nassaji, 2007; 2011, Panova & Lyster, 2002; Sheen, 2004, 2006). The theoretical grounds for employing uptake as such an indicator of learner noticing and subsequent L2 learning stemmed from Swain's Output Hypothesis (1985, 1995, 2005). The major claim of the Output Hypothesis is that comprehensible input, although it is crucial for acquisition, is not sufficient to attain native-like fluency. Thus, learners need to be pushed to produce output modifying their problematic utterances. Swain outlined three major functions of pushed output, which are assumed to contribute to acquisition. First of all, pushed output promotes learners' noticing of the gap between their interlanguage and the target language. Second, output provides learners the opportunity to try out new language forms (i.e., hypothesis testing). Third, using the language forces learners to move from semantic processing to syntactic processing, as they are engaged in producing the language, as opposed to merely comprehending the language. Some researchers have advocated the beneficial role of modified output (i.e., pushed output), even when the modified output is equally or less grammatical than the original utterance (i.e., the error was not corrected), claiming that the process of producing modified output is as important as the outcome produced (Egi, 2010). In addition to these beneficial roles of modified (or pushed) output, uptake was

also suggested to help learners automatize the linguistic item and therefore make the retrieval of the item faster (Gass, 2003; Lyster & Ranta, 1997).

Based on these theoretical assumptions, researchers have widely assumed that uptake promotes noticing and thus is facilitative to acquisition (Ellis et al., 2001). They also have depended upon uptake as a measure of the effectiveness of corrective feedback in their studies, often comparing recasts with other types of feedback moves, even before enough empirical evidence was gathered to demonstrate a clear link between uptake, noticing, and acquisition. Although it is yet too early to reach a firm conclusion due to the limited number of studies conducted so far, some evidences that suggests associations between uptake and learner noticing and/or L2 development can be garnered from the previous studies that have inquired into this issue directly (in a few cases) or examined it in a post-hoc analysis of their findings.

2.2.3.1. Uptake as a Measure of L2 Development

Examining incidental focus on form episodes (FFE, Ellis et al., 2001, p. 294)) that occurred in natural classroom discourses and their relative effects on learning measured by tailor-made, individualized posttests, Loewen (2005) reported that only successful uptake (i.e., repair) was a strong predictor of correct test scores whereas uptake in general was not. Based on the findings, he concluded that it is not the occurrence of uptake but the quality of uptake (i.e., repair) that matters. Replicating Loewen's study in an online chatting (SCMC) setting, Shekary and Tahririan (2006) also obtained similar results; successful uptake was again the only factor that significantly predicted correct test scores, confirming Loewen's claim.

In a series of studies inquiring into the relationship between negative feedback and learner responses, McDonough (2004, 2005) also reported the beneficial role of modified output for English question form development. With an aim of examining whether participation in the interaction contributes to L2 acquisition, she divided her participants into two groups: a high-participation group and a low-participation group, based on the occurrences of negative feedback and modified output episodes during the interaction. It was shown that the high-participation group gained higher test scores on both immediate and delayed posttest measures compared to the low-participation group, which can be

interpreted as meaning that receiving negative feedback and reformulating their original utterances indeed contributed to their L2 development. In her later study, McDonough (2005) attempted to distinguish the effects of negative feedback from those of modified output on L2 development. Manipulating the salience of feedback and the opportunity to modify at the same time, she included three conditions in her study: enhanced, unenhanced, and no opportunity to modify conditions. The findings reaffirmed the facilitative role of modified output for L2 acquisition; only modified output was shown to significantly predict L2 development of English question forms whereas various types of negative feedback conditions did not.

In short, the previous studies inquiring into the relationships between uptake and L2 development seem to provide supporting evidence for the facilitative role of uptake for L2 development. Nonetheless, it should be noted that it was not mere acknowledgement of feedback but rather reformulation of the original problematic utterance that really led to L2 development, regardless of its being successful or not, implying that the quality of uptake matters (Loewen, 2005).

2.2.3.2. Uptake as a Measure of Noticing

Without clear and attested associations between uptake, noticing, and L2 development, it is problematic to assume that uptake leads to L2 development. Studies have been undertaken on learners' perception of feedback in order to consider what the actual relationship is between uptake and learners' noticing of the feedback. In their examination of learners' perception of interactional feedback occurring during task-based dyadic interaction, Mackey, Gass, and McDonough (2000) were the first to suggest strong associations between modified output and learners' accurate perception of the linguistic target of the feedback. It should be noted that in their study "uptake" was defined as a "learner's modification of their original utterance following the NS's provision of feedback through recasts or negotiation" (p. 492), which is equivalent to modified output rather than uptake in general. They reported that when learners produced modified output, they tended to perceive the linguistic target of the feedback more accurately (66%) than when they did not (11%). However, linguistic targets also mattered in their study; both production of modified output and accurate perception of the

feedback were much lower with morphosyntactic errors (33%) than with lexical (82%) and phonological errors (69%).

Recently, Egi (2010) took a step forward in the investigation of uptake and learners' perception of recasts by attempting to tease apart the relationships between uptake, learners' noticing of recasts as feedback, and learners' noticing of the gap (i.e., the linguistic target of the feedback), employing a stimulated recall method. The findings revealed that uptake was related to learners' noticing of recasts as corrective feedback. On the other hand, successful repair was associated with learners' noticing of both the feedback and the gap. To put this another way, learners produced uptake more frequently when they perceived recasts as corrective feedback, whereas they repaired their problematic utterance more successfully when they understood both the corrective nature of recasts and the linguistic target of the recasts. Similar results were obtained for modified output as well; when learners interpreted recasts as corrective feedback and understood the gap in their interlanguage, they were more likely to modify their initial utterances. Conversely, when they did not produce modified output, there was a significant tendency for them to fail to report perceiving recasts as corrective feedback. An intriguing result of the study is that the learners perceived feedback and the gap in the same way, regardless of the well-formedness of the modified output (i.e., whether the learners modified their utterance correctly or not), indicating that the attempt to reformulate the original utterance was more strongly related to noticing than the successfulness of the repair. In short, the perception studies, although there are only a few, seem to suggest that uptake is related to learners' perception of feedback as correction, whereas reformulation of an initial utterance (whether successful repair or modified output) is associated with their perception of feedback as well as their noticing of the gap.

2.2.4. Claims Against Uptake as a Measure of the Effectiveness of Recasts

The findings of the previous studies discussed in Section 2.2.3 seem to corroborate the major claims of the Output Hypothesis and provide supporting evidence for using uptake (or at least modified output or successful repair) as a reliable indicator of learner perception and subsequent L2 development. Along these lines, several researchers have

made claims, discounting the efficacy of recasts due to lack of learner response and favoring explicit correction or elicitation over recasts, simply because they resulted in greater learner uptake, as noted earlier (Lyster, 1998a, 1998b, 2004; Lyster & Ranta, 1997; Panova & Lyster, 2002). However, it should be pointed out that although uptake has been shown to be predictive of learner noticing and L2 development, it does not necessarily mean that the absence of uptake (or learner responses) should be interpreted as a sign of learners' failure to notice the feedback (and/or the gap) or as an indication that no learning has occurred. This is particularly true when it comes to recasts that are more implicit in nature and thus do not inherently require learners to respond. Some researchers who have advocated for the effectiveness of recasts despite low uptake rates (Long, 2007; Mackey, 2007; Nicholas et al., 2001) also have disputed the claims made against recasts for several reasons, which are presented in this section.

To begin with, these scholars have pointed out that learners' immediate responses (i.e., uptake) are largely dependent upon the interactional context and the provision of opportunities to respond following the feedback (Oliver & Mackey, 2003). Unlike prompts or elicitation, recasts are implicit in nature and do not require learner responses. Therefore, any learner responses following recasts are optional rather than necessary discourse moves (Egi, 2010). In addition, teachers or interlocutors often continue or change the topic following recasts (Long, 2007), without giving the floor to the learners to let them acknowledge or incorporate recasts in their next utterance. Such a tendency was clearly demonstrated in Oliver's (1995) study of child native speaker (NS) and non-native (NNS) speaker dyadic interaction. When she did not exclude the cases where no opportunities were given for the children to respond, recasts were incorporated in the immediately following utterances for only 9.93% of the total recasts given. Nonetheless, when these cases were excluded, the rate of uptake soared to 33%. To put it another way, when the opportunity was given for the children to respond to recasts and it was appropriate to do so, they incorporated recasts in their subsequent utterances around a third of the time. Such a pattern was also confirmed in a study of adult NS-NNS dyadic interactions; Braidì (2002) reported that when the analysis was adjusted to consider appropriateness and opportunity to respond, the immediate incorporation rate of recasts increased from 9.5% to 34.21%. The findings of Oliver and Braidì are particularly critical

as they suggest that learners might have noticed recasts but were not able to incorporate them in their immediate utterances, because they had no opportunity to speak or it was inappropriate to do so. Such cases can easily be missed if only immediate uptake is taken as a measure of learning, and if the possibility of participants having reasons (other than failing to notice recasts) for not producing immediate uptake is not considered.

Second, researchers have cautioned that uptake itself does not constitute learning or acquisition (Long, 2007). Although uptake may be related to learners' perception of feedback and noticing of the gap at the time of the interactional feedback (Egi, 2010; Mackey et al., 2000), and producing modified output or successful repair can contribute to L2 development, as the Output Hypothesis claims (Loewen, 2005; Shekary & Tahririan, 2006), uptake alone cannot be equated with learning. Likewise, the absence of uptake should not be interpreted as evidence of no learning or noticing of feedback. Rather, it makes more sense to consider uptake as facilitative of learning (Ellis et al., 2001), but not as a necessary condition for learning (Egi, 2010). Some empirical evidence can be collected from the literature to support this claim.

First, as shown in Oliver's (1995) and Braidí's (2002) studies, learners are not often provided with opportunities to respond to recasts due to immediate topic continuation by the other interlocutor or the inappropriateness of producing such responses. In such cases, therefore, lack of response should not be interpreted as evidence that no noticing or learning has occurred, because the learners were never given the opportunity to respond. Furthermore, in a study of Japanese learners' classroom interaction, Ohta (2000) reported that learners often reacted in private speech to recasts that were not addressed to them. Private speech, which she defined as "oral language addressed by the student to himself or herself" (p. 53), is not a speech addressed to the teacher or to the whole class and is mostly inaudible to the class as a whole. When private speech, which would not qualify as uptake in the previous literature, was recorded (through individual microphones) and analyzed, a very interesting use of recasts was uncovered. It was shown that the learners, although they did not make any overt or public response to recasts, often produced private speech, making cognitive comparisons between ill-formed and correct forms in response to recasts that were not even addressed

to them. Based on these findings, Ohta concluded that “the efficacy of recasts should not be doubted based on the presence or absence of an overt oral response” (p. 66).

Some experimental studies also have reported the evidence of substantial learning taking place despite the absence of learner responses. Examining the effects of developmental readiness and modified output on L2 development of English question forms, Mackey and Philp (1998) reported that learners rarely modified their utterances following recasts but most frequently continued the topic. Nevertheless, some learners (who were developmentally ready) demonstrated development in question formation, whereas others (who were not developmentally ready) did not, regardless of whether they produced modified output or not. Based on these findings, Mackey and Philp concluded that recasts were beneficial for short term L2 development of question forms despite the lack of learners’ immediate responses or incorporation, and that immediate responses to recasts could be just red herrings. Focusing on the positive and negative evidence recasts provide, Leeman (2003) and Ayoun (2001) also showed that learners who were given recasts but not allowed to respond to them obtained significant score increases on posttests. In addition, Loewen (2005) found that the absence of uptake was slightly associated with accurate test scores, whereas unsuccessful uptake or simple acknowledgement was not, providing additional support for the claim that absence of uptake may not indicate limited the effectiveness of recasts.

Third, researchers have cast doubt on the usefulness of employing uptake as a measure of effectiveness, claiming that a learner’s immediate repetition of recasts might not indicate any learning but rather could be simple mimicking without true understanding of the purpose of the recast (Gass, 2003; Hawkins, 1985; Long, 2007). When learners self-correct their problematic utterances without a model utterance having been presented to them by the teacher or other interlocutor, as with elicitation or prompts, it may be more suggestive of genuine learning or acquisition. However, with recasts, where the target-like utterance is already provided, it is hard to determine to what extent learner uptakes indicate understanding of feedback that can lead to subsequent learning, and to what extent they just serve as negotiation of meaning. It is possible that learners, as being non-proficient speakers, simply agree with what the teacher or native speaker interlocutor says instead of pursuing their lack of understanding (Gass, 2003; Hawkins,

1985). In addition, as Long (2007) pointed out, even when learners self-correct prompted by feedback, it is still unclear whether such responses truly indicate acquisition of new knowledge or simply more accurate deployment of existing knowledge.

Fourth, researchers also have claimed that the effects of recasts might be delayed rather than immediately manifested, as shown in some empirical studies (Mackey, 1999; Mackey & Philp, 2003; Muranoi, 2000). In some studies, the effects of recasts were found to be greater in the delayed posttest than the immediate posttest (Mackey, 1999; Mackey & Philp, 2003). Gass and Varonis (1994) claimed that latent effects of feedback may be manifested when the learner has had sufficient time to process the feedback and become ready to incorporate it, and thus the possibility of long-term effects of feedback should not be disregarded merely on account of the absence of short-term effects. Researchers also have cautioned that such delayed effects of recasts cannot be fully measured when only immediate measures such as uptake or immediate posttests are employed as a measure of effectiveness.

Fifth, it has been suggested that learner responses could be delayed beyond the next turn following the recasts (Mackey & McDonough, 2006), although previous studies have been mostly confined to investigating learners' immediate responses following recasts. When learners are not cognitively and developmentally ready, they might not respond to recasts by immediately incorporating the correct forms into their utterances (Lightbown, 1998). Nevertheless, this does not necessarily mean that the learners did not notice the recasts. It is possible that learners indeed noticed the recasts and understood the target of the recasts but were not ready to respond until later turns. Adopting the notion of syntactic priming in L2 interaction research, McDonough and Mackey (2006) were the first to uncover the occurrence of learners' delayed responses beyond the next turn of recasts and their beneficial role for L2 acquisition. In the following section, such delayed learner responses of recasts, which McDonough and Mackey called *primed production* and their subsequent effects on L2 learning in comparison to uptake (or repair) will be discussed.

2.2.5. Primed Production

Syntactic priming (or structural priming) refers to “speakers’ tendency to produce sentences with previously heard or produced syntactic structures” (Ferreira & Bock, 2006, p. 1011). An example of syntactic priming is shown in (2.6).

(2.6) Syntactic Priming

Robber: ...*you’ve got to hear* and witness it *to realize how bad it is*.

Lookout: *You have got to experience* exactly the same position as me, mate, *to understand how I feel*.

(from Schenkein, 1980, cited in Bock, 1990, p. 1221)

In this conversation, which takes place between a bank robber and his lookout, a particular structural pattern is used repeatedly. The robber says “you’ve got to hear...to realize how bad it is,” and the lookout uses the same pattern in his following turn, saying “you have got to experience...to understand how I feel.”

Previous studies on L1 syntactic priming have shown that speakers produced previously heard structures in their subsequent new utterances with different lexical items, closed-class elements, and thematic roles (Bencini, Bock, & Goldberg, 2003, cited in Gries & Wulff, 2005; Bock, 1986, 1989, 1990; Bock, Loebell, & Morey, 1992; Pickering & Branigan, 1998), and even when the initial and subsequent utterances were separated by several unrelated intervening sentences (Bock & Griffin, 2000; Bock, Dell, Chang, & Onishi, 2007; Branigan, Pickering, Stewart, & McLean, 2000; Huttenlocher, Vasilyeva, & Shimpi, 2004). In addition, syntactic priming may occur between two languages among bilingual speakers (Hartsuiker, Pickering, & Veltkamp, 2004; Loebell & Bock, 2003).

Applying the idea of syntactic priming (Bock, 1995), McDonough and Mackey (2006) investigated the relationships among recasts, different responses to recasts, and subsequent language development of English question forms by 58 Thai EFL university students in a study using a pretest and posttest design. They distinguished primed production from mere repetition of recasts (i.e., repair), depending on whether the

learners simply echoed recasts or produced a new utterance incorporating the linguistic target of the recasts. Examples of repetition and primed production are shown in (2.7) and (2.8).

(2.7) Repetition

L: When it happen?

NS: When did it happen? ← *Recast*

L: When did it happen? ← *Simple Repetition*

(2.8) Primed Production (Immediate)

L: Why he hit the deer?

NS: Why did he hit the deer? ← *Recast*

He was driving home and the deer ran out in front of his car.

L: What did he do after that? ← *Primed Production*

(from McDonough & Mackey, 2006, p. 705)

As shown in (2.7), in the case of repetition the learner simply repeats the NS's recast in the previous utterance, making it questionable whether the learner truly understood the intention and the target of the recast, as mentioned earlier. On the other hand, in the example of primed production (2.8), the learner created a new sentence successfully incorporating the linguistic target (i.e., the question form) of the recast provided by the NS. Such primed production, which is creative use of the recast rather than simple repetition, can be regarded as a more reliable indicator of learners' noticing of recasts as well as subsequent learning.

In McDonough and Mackey's (2006) study, primed production was defined and operationalized as a learner's new utterance of the targeted question form provided in the recast within six turns of the recast. That is, some primed production can be "delayed" beyond the immediate turn of recasts, as shown in the example in (2.9).

(2.9) Primed Production (Delayed)

L: Where where where you work this job?

NS: Where did I work? ← *Recast*

L: Yeah.

NS: I worked in America.

It was my part time job during high school for three years.

L: Why did you like it? ← *Primed Production*

(from McDonough & Mackey, 2006, p. 705)

The results showed that learners indeed produced primed production incorporating the target structure of the recasts in their subsequent utterances. Furthermore, only primed production was found to be predictive of ESL question development whereas mere repetition of recasts (i.e., repair) was not significantly correlated with L2 development, suggesting that learners' creative incorporation of the linguistic target of recasts into their utterances is a stronger and reliable predictor of L2 learning than immediate uptake or repair, and thus the absence of a learner's immediate uptake should not be taken as evidence against the efficacy of recasts.

With respect to these two interesting claims concerning recasts, the first claim—that the absence of learners' immediate responses following recasts does not disprove the effectiveness of recasts—was discussed in detail in this section, providing theoretical rationales and empirical evidences both supporting and disputing the claim. The argument that recasts are less helpful for L2 development than other types of feedback moves is theoretically based on the Output Hypothesis. Researchers on this side have advocated uptake (or at least successful repair) as a reliable measure of the relative efficacy of feedback moves and criticized recasts as less effective on the basis of the little uptake they induced. On the other hand, the researchers who have advocated the facilitative role of recasts for L2 acquisition on account of various theoretical and practical rationales have discounted the use of immediate learner response as a yardstick to gauge the effectiveness of recasts and suggested that learners' creative incorporation of

the target form in a new utterance (i.e., primed production) is a more reliable predictor of the effectiveness of recasts than immediate repetition of recasts (i.e., repair).

In addition, it should be noted that different types of learner responses—including uptake (as a general term encompassing all types of immediate learner responses to feedback), repair, successful repair, modified output, and primed production—have been suggested and employed in the two different lines of research (in support of or against the claim) depending on the researchers' theoretical orientation. This situation has created confusion in the field and sometimes made direct comparison of research findings difficult. Therefore, the intention of this study is to first examine which type of learner response should be a better indicator of the effectiveness of recasts, repetition or primed production. Along the way, various types of immediate learner responses (i.e., uptake, acknowledge, repair, successful repair, and primed production) will be included in the analysis to allow a comprehensive examination of to what extent the quality of uptake matters for L2 learning as well.

2.3. Summary

Among the various types of corrective feedback moves that researchers have identified in classroom interaction, recasts are the most frequently provided by teachers in L2 classrooms, due to their implicit nature. In addition, recasts have drawn enormous attention from L2 interaction researchers due to their unique, inherent features (as discussed earlier), and a considerable amount of research has been conducted on recasts, mainly focusing on: (a) recasts and learner uptake, (b) learners' perception of recasts, and (c) the effects of recasts on subsequent L2 development. Research has demonstrated that learners are relatively accurate in their perception of recasts and that recasts induced both short-term and long-term L2 development; such findings have been reported in diverse contexts, including both classroom and dyadic interaction, as well as for different languages, different linguistic targets, and different age groups. Such effects of recasts on L2 development also have been confirmed in recent meta-analysis studies. Nevertheless, when recasts were compared to other types of feedback moves that are more explicit or have stronger illocutionary force, recasts were shown to elicit the least amount of uptake, which has led some researchers to criticize recasts as less effective and to insist that other

types of feedback moves that are more explicit or require learner responses are more beneficial for learning. In response to such criticism of recasts, others have claimed that the efficacy of recasts should not be discounted due to lack of learner responses, as immediate learner responses are not a reliable measure of the effectiveness of recasts.

The claims that favor explicit feedback or elicitation over recasts are theoretically grounded on Swain's Output Hypothesis, which claims that pushed output contributes to acquisition. Empirical research also has been conducted in support of this claim, focusing on the association of manifested uptake with learner noticing and L2 development. The findings have shown that successful uptake (or modified output) was significantly predictive of correct test scores, although uptake in general was not. In addition, strong associations between modified output and learners' perception of the feedback have been demonstrated as well. More specifically, it has been shown that uptake is related to learners' perception of recasts as feedback, whereas modified output (or successful repair) is correlated with both learners' perception of feedback and their noticing of the linguistic target of the recasts.

In opposition to the claim that discounts the effectiveness of recasts due to lack of immediate learner uptake, other researchers have called into question whether uptake can serve as a reliable measure of the effectiveness of recasts. First of all, they have pointed out that often learners are not provided with the opportunity to respond to recasts due to immediate topic continuation or inappropriateness. In addition, and more fundamentally, it has been claimed that uptake itself cannot be equated with learning. Therefore, uptake should not be considered as a necessary condition for learning, although it might be facilitative of learning. In support of this claim, studies have demonstrated evidence of substantial learning having taken place although learners did not respond or were not allowed to respond to recasts. Furthermore, it has been suggested that learners' immediate repetition of recasts might not be indicative of any learning or understanding of recasts. Rather, it could be a mere echoing of recasts, as typical *language-like* behavior (Long, 2007). Finally, the possibility of delayed effects or delayed responses of recasts has been suggested. Researchers have claimed that learners might incorporate recasts when they have internalized them and are ready to produce the linguistic target, rather than immediately following the recasts, which would result in latent effects as well as

delayed learner responses. As evidence of such delayed learner responses, McDonough and Mackey (2006) demonstrated the occurrence of primed production, which is learners' new utterances incorporating the target form provided in the recast; they reported that primed production was predictive of L2 development whereas simple repetition of recasts was not.

As this overview of previous studies shows, it is still in question whether uptake can be used as a valid measure of the effectiveness of recasts due to its implicit nature, and if so, which types of learner responses would be more reliable indicators of L2 acquisition, particularly between learners' immediate repetition of recasts and their creative utterances using the linguistic target in recasts (i.e., primed production). More studies are called for to address these issues, and that is what the current study purports to do.

CHAPTER 3

EXPLICIT vs. IMPLICIT RECASTS

Recasts have been defined and operationalized in various ways in previous studies, ranging from the most explicit ones employed by Doughty and Varela (1998) to the most implicit ones described in certain classroom descriptive studies (Lyster & Ranta, 1997). Some researchers (Ellis & Sheen, 2006; Nicholas et al., 2001) have suggested that recasts should be viewed as more or less implicit or explicit on a continuum of explicitness, rather than as a monolithic construct, and they have called for further studies on the various linguistic and discoursal features that distinguish implicit and explicit recasts, as Ellis and Sheen (2006) pointed out:

Arguably, recasts should not be viewed as necessarily implicit but, rather, depending on the linguistic signals that encode them and the discoursal context, they should be taken as more or less implicit or explicit. In other words, recasts can lie at various points on a continuum of linguistic implicitness-explicitness. However, precisely which linguistic and discoursal features distinguish implicit and explicit recasts remains to be discovered. (p. 583)

Along these lines, researchers (Chaudron, 1977; Doughty & Varela, 1998; Loewen & Philp, 2006; Roberts, 1995; Sheen, 2006) have identified certain features of recasts that make them more explicit or implicit, such as mode, prosodic emphasis, intonation, length, segmentation, and number of changes, and then classified them into subcategories according to these features. In this chapter, the early descriptive classroom studies, which initially suggested and identified various features of recasts, will be examined first. Then, each feature will be discussed in detail in relation to its occurrences in the classroom and its subsequent influences on learner uptake and L2 development. Finally, how explicit and implicit recasts will be operationalized in this study will be explicated.

3.1. Recasts on the Continuum of Explicitness

3.1.1. Previous Studies on Explicit/Implicit Recasts

In a study in French immersion classroom contexts, Chaudron (1977) was the first to identify different types of recasts occurred. He recognized the role that emphasis plays in recasts and classified them into two types: (a) recasts that “simply add correction and continue to other topics” and (b) recasts that “add emphasis to stress location of error and its correct formation” (p. 39). About two decades later, Lyster (1998b) examined the characteristics of the recasts occurring in communicative immersion classroom discourses and classified them into four categories differing in the mode and provision of additional information: (a) *isolated declarative recast* that provides confirmation of a learner’s message by correctly reformulating all or part of the utterance with falling intonation and no additional meaning; (b) *isolated interrogative recast* that seeks confirmation of the learner’s message by correctly reformulating all or part of the utterance with rising intonation and no additional meaning; (c) *incorporated declarative recast* that provides additional information by incorporating the correct reformulation of all or part of a learner’s utterance into a longer sentence; and (d) *incorporated interrogative recast* that seeks additional information by incorporating the correct reformulation of all or part of a learner’s utterance into a question (p.58).

More recently, in an examination of recasts that arose in communicative ESL and EFL classrooms, Sheen (2006) presented a more comprehensive taxonomy of recasts. She first separated recasts into two categories, depending on the number of moves they involve. *Multi-move recasts* entail “more than one teacher feedback move containing at least a single recast in a single teacher turn” whereas *single-move recasts* “entail only one recast move in a single teacher turn” (pp. 371-372). The single-move recasts were also classified into various subcategories based on the following features: (a) mode (declarative and interrogative); (b) scope (isolated and incorporated); (c) reduction (reduction and non-reduction); (d) length (word/short phrase, long phrase, and clause); (e) number of changes (one change and multiple changes); (f) type of change (addition, deletion, substitution, reordering, and combination), and (g) linguistic focus (pronunciation, vocabulary, and grammar). Loewen and Philp (2006) examined the characteristics of recasts occurring in adult ESL classrooms as well and confirmed that

recasts differed in terms of: (a) linguistic focus (lexical, morphological/syntactic, phonological, and combination); (b) length (fewer than five morphemes and five or more morphemes); (c) prosodic emphasis; (d) segmentation (i.e., reduction); (e) number of changes; (f) number of feedback moves; and (g) intonation (i.e., mode).

The various features of recasts that were identified in the previous descriptive studies can be summarized as (a) mode or intonation, (b) scope, (c) prosodic emphasis, (d) reduction or segmentation, (e) length, and (f) number of changes. Each feature will be examined in detail in the following section.

3.1.2. Various Features of Recasts on the Continuum of Explicitness

First of all, recasts can vary in terms of mode or intonation. That is, recasts can be provided in the form of either a declarative or an interrogative sentence. Examples of *interrogative* and *declarative recasts* are presented again in (3.1) and (3.2). Mode (or intonation) is one of the most extensively examined features with respect to explicitness or implicitness (Erlam & Loewen, 2010; Kim & Han, 2007; Loewen & Philp, 2006; Lyster, 1998a; Mackey et al., 2007), and the findings of the previous studies have revealed that declarative recasts are more frequently provided by teachers than interrogative ones in instructional contexts.

(3.1) Interrogative Recast

S: Yeah, he know Michael

T: He knows Michael? ← *Interrogative Recast*

(3.2) Declarative Recast

S: They just think hypocritic, hypocritic.

T: They are hypocritical. ← *Declarative Recast*

(from Sheen, 2006, p. 372)

Because interrogative recasts can be interpreted as confirmation checks, which confirm the intended meaning of the learners, rather than as corrective feedback (Loewen

& Philp, 2006; Lyster, 1998a; Oliver, 1995), interrogative recasts have been considered to be more ambiguous and thus more implicit than declarative ones. However, it also has been argued that declarative recasts can be interpreted as mere repetitions of a learner's previous utterance, and in such a case, the corrective nature of declarative recasts would not be perceived by learners either (Loewen & Philp, 2006).

Scope refers to "the extent to which a reformulation differs from the learner's ill-formed utterance" (Sheen, 2006, p. 372). According to this feature, recasts can be divided into *isolated recasts* in which "only a non-targetlike part of a learner's utterance is reformulated without adding new information" and *incorporated recasts* in which "the targetlike reformulation involves additional semantic content" (p. 372), as shown in the examples in (3.3) and (3.4).

(3.3) Isolated Recast

S: I think she'll travel together her boyfriend after course?

T: I think she will travel together with her boyfriend. ← *Isolated Recast*

(3.4) Incorporated Recast

S: I think he's not pride.

T: He's not proud because he cheated? ← *Incorporated Recast*
(from Sheen, 2006, p. 372)

As incorporated recasts contain additional new semantic content and tend to be longer than the learner's original utterance, they are considered to be more implicit compared to isolated recasts. Thus, the linguistic targets of incorporated recasts are expected to be less noticeable to learners. These descriptive studies also found that isolated recasts comprised most of the recasts provided in the classroom contexts they investigated (Lyster, 1998a; Sheen, 2006).

Recasts may be more explicit when prosodic emphasis, in other words stress, is added on a particular word or morpheme (Chaudron, 1977; Loewen & Philp, 2006). An example of a stressed recast is given in (3.5).

(3.5) Recast with Prosodic Emphasis

S: Some people have racism.

T: Some people ARE racist. ← *Stressed Recast*

S: Are racist.

(from Loewen & Philp, 2006, p. 541)

Because prosodic emphasis enhances the salience of recasts, which in turn increases the chances of learners' noticing the target, *recasts with prosodic emphasis* (i.e., stressed ones) are regarded as more explicit than *recasts without prosodic emphasis* (i.e., unstressed ones). Although prosodic emphasis has been used mainly for phonological problems, it can also be used for morphosyntactic errors (Loewen & Philp, 2006).

Segmentation can also increase the explicitness of recasts. *Segmented recasts* have been introduced under various names with slight definitional differences, such as *partial recasts* in which the "teacher only models the segment of the utterance in which the error occurs" (Roberts, 1994, p. 170) or *reduction* in which "the reformulation is shorter than the learner's erroneous utterance" (Chaudron, 1977; Lyster, 1998a; Sheen, 2006). Partial or segmented recasts (or reduction) were found by these studies to be provided with greater frequency than *whole recasts* (or *non-reduction*) in the L2 classrooms (Loewen & Philp, 2006; Roberts, 1994; Sheen, 2006). Examples of partial and whole recasts appear in (3.6) and (3.7).

(3.6) Partial/Segmented Recast (Reduction)

S: Yeah, Kal told me your height is rather shorter.

T: Rather short. Rather short. ← *Partial Recast*

(3.7) Whole Recast (Non-Reduction)

T: You didn't apply, they just gave it to you?

S: I am a freshman.

T: I was a freshman. ← *Whole Recast*

(from Sheen, 2006, p. 373)

The length of recasts can also greatly influence their salience. Although different criteria have been employed to categorize recasts in terms of length, such as the number of morphemes (Loewen & Philp, 2006; Philp, 2003) or word, phrase, and clause boundaries (Sheen, 2006), shorter recasts are in general predicted to be more explicit than longer ones. In these studies, shorter recasts were more frequently provided in the L2 classrooms (Loewen & Philp, 2006; Sheen, 2006), and they were more likely to be noticed by learners as corrective feedback than longer ones (Egi, 2007; Philp, 2003).

Number of changes refers to “the degree of difference between the recast and the original utterance” (Loewen & Philp, 2006). Recasts have been classified into either *one change* or *multiple changes* depending on the number of linguistic items that are altered from the original learner’s utterance, as shown in (3.8) and (3.9).

(3.8) Recast with One Change

S: He wants uh, he wants intelligent woman.

T: He wants an intelligent woman, does he? ← *One Change*

(3.9) Recast with Multiple Changes

S: The leader said, taste the alcohol, and then he said change, change the glass.

T: Exchange the glasses. ← *Multiple Changes*

(from Sheen, 2006, p. 373)

Recasts with fewer changes were shown to occur more frequently (Loewen & Philp, 2006; Sheen, 2006) and be perceived more accurately by learners (Egi, 2004; Philp, 2003, Kim & Han, 2007).

Table 3.1 summarizes the various features discussed so far that can make recasts vary on the continuum of explicitness. Besides these features, recasts also have been categorized in terms of *number of feedback moves* included (Loewen & Philp, 2006), *linguistic focus* (Loewen & Philp, 2006; Sheen, 2006), or *type of changes* involved in the reformulation such as addition, deletion, substitution, reordering, and combination

(Sheen, 2006). It should be noted, however, that the various features of recasts are not always manifested in isolation. In many cases, they work in combination, as in Chaudron's (1977) study, where recasts were provided with emphasis (i.e., stress or intonation) as well as reduction or incorporation, or as in Lyster's (1998) taxonomy of recasts (i.e., isolated/incorporated, declarative/interrogative recasts), where intonation and scope are combined.

Table 3.1.

Summary of Recast Features

| <i>Features</i> | <i>Types of Recasts</i> |
|-------------------|---|
| Mode | Interrogative vs. Declarative recasts |
| Scope | Isolated recasts vs. Incorporated recasts |
| Prosodic emphasis | Stressed vs. Unstressed recasts |
| Segmentation | Partial/segmented recasts (i.e., reduction) vs. Whole recasts (i.e., non-reduction) |
| Length | Word/short phrase, long phrase, and clause (Sheen, 2006)/ Fewer than 5 morphemes vs. 5 or more morphemes (Loewen & Philp, 2006) |
| No. of changes | One change vs. Multiple (2 or more) changes |

3.1.3. Other Contextual and Learner Factors

Recently, much attention has been paid to the roles of (a) contextual factors such as instructional settings, orientation toward language learning, stage of lessons (or type of activities), and types of error (Lyster & Mori, 2006; Mackey et al., 2000; Oliver, 2000; Oliver & Mackey, 2003; Sheen, 2004; Williams, 1999); and (b) learner factors such as learner's age, proficiency, developmental readiness, and cognitive style (Mackey & Philp, 1998; Oliver, 1995; 2000; Philp, 2003; Yoshida, 2008). They have been shown to influence teachers' provision of recasts, learners' production of modified output, and even learners' perception of recasts. Although these factors have not been directly investigated in terms of implicitness and explicitness yet, various factors such as

instructional context, types of error, and learner factors have been suggested to influence teachers' provision of more implicit and explicit recasts and their relative efficacy as corrective feedback as well.

First of all, research has shown that the instructional contexts (such as foreign vs. second language instruction or classroom vs. dyadic interaction settings) influence teachers' choice of explicit or implicit recasts. Sheen (2004) compared recasts that occurred in four different classroom settings—Canadian immersion, Canadian ESL, New Zealand ESL, and Korean EFL settings—and reported that recasts in New Zealand ESL and Korean EFL settings tended to be more explicit than in the other settings. The recasts supplied in the former settings were characterized by simplicity, reduction, prosodic emphasis, and (rising) intonation. In addition, opportunities were often provided for learners to respond to recasts. In contrast, recasts in the Canadian immersion or ESL contexts were mainly used for negotiation of meaning and thus often followed by topic continuation without giving the learners the opportunity to respond. Loewen and Philp (2006) also reported that the recasts given in New Zealand adult ESL classrooms tended to be segmented, short, stressed, and involving one change. This differs from the recasts observed in studies of dyadic task-based interaction (Mackey & Philp, 1998; Philp, 2003), in which recasts tended to involve the entire utterance, or the Canadian immersion classrooms settings (Lyster & Ranta, 1997), in which segmented recasts comprised only 24% of total recasts.

Researchers have also noticed that the types of errors contained in the original learner utterance may affect the types of recasts supplied by teachers. Recasts targeting vocabulary or phonological errors were generally short and reduced, and typically involved one change (Sheen, 2004). In addition, prosodic emphasis was often added on the recasts directed at phonological errors (Loewen & Philp, 2006). With regard to learner factors, Philp (2003) reported that high-level learners often received longer recasts (62%) whereas low-level learners were given shorter recasts. In addition, low-level learners were provided with recasts containing three or more changes slightly more often than other learners.

To recapitulate, L2 interaction researchers have noted that recasts are provided (in the case of classroom contexts) or operationalized (in experimental settings) in many

different ways, varying in diverse features that affect where they fall on the continuum of explicitness, despite the general assumption that recasts are a monolithic construct. Along these lines, researchers have suggested that recasts can be more explicit or implicit according to their particular features, and that explicit recasts should be more effective than implicit ones. Various features of recasts have been identified in the classroom interaction studies, including but not limited to mode (or intonation), scope, prosodic emphasis (or stress), reduction (or segmentation), length, and number of changes. In addition, it also has been suggested that other contextual and learner factors influence teachers' choice of explicit and implicit recasts in the classroom. Now let us turn to the discussion of the relationship between the various features of recasts that characterize the explicitness of recasts and their subsequent effects on learner uptake, L2 development, and learner perception.

3.2. Effects of Explicit/Implicit Recasts on Uptake, L2 Development, and Perception

3.2.1. Explicit/Implicit Recasts and Uptake

Although it is still in dispute whether uptake can be a valid indicator of noticing and L2 development, as discussed in the previous section, uptake is still the most predominantly employed measure in the previous studies that investigate the effectiveness of explicit versus implicit recasts (Chaudron, 1977; Loewen & Philp, 2006; Lyster, 1998a; Nassaji, 2007; Sheen, 2006). Before the notion of uptake was even introduced to the field, Chaudron (1977) examined the relationship between various features of recasts (i.e., prosodic emphasis and reduction/expansion) and successful correction (i.e., repair or successful uptake) and reported that prosodic emphasis (i.e., stress) increased the chances of successful correction. In addition, recasts with reduction elicited more successful correction than expanded recasts or recasts with no change in length.

Lyster (1998a) also examined how four types of recasts (i.e., isolated/incorporated declarative/interrogative recasts), varying in mode and scope, exerted different effects on learner uptake and repair in French immersion classroom contexts. The findings revealed that isolated declarative recasts led to the greatest amount of uptake and

repair, followed by isolated interrogative recasts. None of the incorporated recasts, however, regardless of being declarative or interrogative, resulted in successful learner uptake (i.e., repair). Furthermore, approximately 75% of all the recasts that led to successful repair in his study were characterized by reduction, falling intonation, and no additional information.

Sheen (2006) examined the relationship between the aforementioned features (i.e., mode, scope, reduction, length, number of changes, type of change, and linguistic focus) and learner uptake and repair in various L2 classroom settings. The study found that particular lengths (word or long-phrase), linguistic focus (pronunciation or vocabulary), and types of change (substitution, reordering, or combination) were significantly associated with greater uptake rates. Moreover, mode (declarative), length (word or long-phrase), reduction, the number of changes (one change), types of change (substitution), and linguistic focus (pronunciation or vocabulary) were associated with greater repair rates. Put another way, all of the features except scope were significantly related to learner repair. However, it should be noted that there were only three incorporated recasts identified in Sheen's study, which made the analysis of scope difficult. The findings of Loewen and Philp (2006) also confirmed that mode (declarative) and number of changes (one change) were related to higher repair rates, as were prosodic emphasis (stressed one) and number of feedback moves (multiple moves), in adult ESL classroom settings.

In a study of dyadic task-based interaction between teachers and learners, Nassaji (2007) compared recasts with *prompt* (additional intonational or verbal cues or signals) to recasts without such prompt and reported that recasts with prompt led to more successful repair than recasts without them. In addition, and unlike previous studies in which declarative recasts resulted in greater repair rates (Loewen & Philp, 2006; Lyster, 1998a; Sheen, 2006), in Nassaji's study interrogative recasts with additional features were shown to lead to greater successful repairs than declarative recasts.

In short, the findings of the previous studies investigating the relationship between explicit/implicit recasts and learner uptake or repair are in line with the prediction that explicit recasts should result in greater learner repair compared to implicit ones. Recasts with falling intonation, prosodic emphasis, shorter length, fewer changes, isolation, reduction, or multiple feedback moves have been shown to be associated with

greater numbers of repairs, although such a pattern was not clearly manifested in the uptake rates. Although length, linguistic focus, and type of changes were found to be associated with greater learner uptake rates, the differences between implicit and explicit recasts were not as large or they were insignificant in the case of intonation, reduction, and number of changes (Lyster, 1998a; Sheen, 2006).

3.2.2. Effects of Explicit/Implicit Recasts on L2 Development

Loewen and Philp (2006) were the first to investigate whether particular features of recasts were associated with accurate posttest scores, employing tailor-made pretests and posttests (both immediate and delayed). Their results showed that interrogative recasts led to over two times greater score gains than declarative recasts. In addition, recasts with shorter length and fewer changes were related to higher test scores. On the other hand, prosodic emphasis, number of feedback moves, and segmentation were not significant predictors of higher test scores.

Nassaji (2009) also compared the effects of *implicit* and *more explicit recasts* on the learners' scores on individualized tailor-made tests administered immediately and two weeks after the treatment. In his study, implicit recasts were operationalized as "all of the recast moves that reformulated the error within its larger context with no additional intonational or verbal signals to highlight the error, or those that expanded on it with a confirmatory tone," and explicit recasts as "all of the recast moves that isolated the error and reformulated it outside the context with a rising intonation and/or added stress and/or those that combined the feedback with additional more explicit verbal prompts to push the learner further to respond to feedback" (p. 429). The study found not only that explicit recasts resulted in higher test scores on both immediate and delayed posttests, but that the implicit recasts group had a greater decrease in scores between the immediate and the delayed posttests.

With so few studies having investigated the effectiveness of various features of recasts on test score gains, and with the conflicting findings of those studies, it seems to be too early to reach any firm conclusion about the effectiveness of different features. Furthermore, the fact that various features were manipulated or investigated at the same time in most of the studies, instead of particular features being isolated, makes it hard to

understand to what extent a particular feature contributed to the score increases. Therefore, more studies are called for along these lines. In particular, studies that investigate the effects of a specific feature of recasts on a certain linguistic target structure in focus will shed more light on the effectiveness for L2 development of different types of recasts that vary in their place on the continuum of explicitness.

3.2.3. Learners' Perception of Explicit/Implicit Recasts

A small number of studies have examined whether explicit and implicit recasts exert different influences on L2 learners' perception of recasts as well. Their main focus has been whether L2 learners recognize explicit recasts as corrective feedback more precisely than implicit recasts, and the findings seem to support that they do. Learners noticed partial recasts more frequently and accurately than whole recasts (Roberts, 1995). In addition, length of recasts and number of changes were significantly related to learners' interpretation of recasts as corrective feedback (Egi, 2007; Kim & Han, 2007; Philp, 2003). In other words, shorter recasts and recasts with fewer changes were more likely to be noticed by learners. When they received isolated recasts rather than incorporated ones, learners also recognized the gaps between recasts and their erroneous utterances more accurately (Kim and Han, 2007). However, in terms of mode (or intonation), mixed findings have been obtained. While Kim and Han (2007) reported that declarative recasts were perceived better than interrogative ones, Mackey, Al-Khalil, Atanassova, Hama, Logan-Terry, and Nakatsukasa (2007) found that teachers' and learners' perception of the linguistic target overlapped to a greater extent in interrogative recasts than declarative recasts.

In summary, the preliminary findings of the small number of classroom studies that have examined the effects of various features of recasts on (a) learner uptake, (b) L2 development, and (c) learners' perception of recasts seem to support the prediction that explicit recasts are more accurately perceived by learners. First, explicit recasts led to greater learner repair than implicit ones. Recasts with falling intonation, prosodic emphasis, shorter length, fewer changes, isolation, reduction, or multiple feedback moves have been shown to be associated with greater numbers of repairs in general, although such a pattern has not been clearly manifested in uptake rates (Loewen & Philp, 2006;

Lyster, 1998a; Sheen, 2006). Second, although only a couple of studies have examined this issue yet (Loewen & Philp, 2006; Nassaji, 2009), explicit recasts were found to be more effective in L2 development measured by tailor-made posttests. In particular, recasts with shorter length and fewer changes were related to higher test scores. Third, studies (Egi, 2007; Kim & Han, 2007; Philp, 2003) also reported that explicit recasts were perceived better than implicit recasts as corrective feedback. Shorter recasts and recasts with fewer changes were more likely to be noticed by learners, and learners recognized the gaps between recasts and their erroneous utterances more accurately after isolated recasts than after incorporated ones, although mixed findings were obtained in terms of mode (i.e., interrogative and declarative recasts).

Various features have been identified as affecting where different types of recasts fall on the continuum of explicitness and their effects have been examined on different measures including uptake (or repair), L2 development, and learner perception. However, it should be noted that most of the previous studies have been limited to examining recasts that arose in natural classroom settings, in which recasts varying on diverse features were provided extensively on different linguistic targets. That is, these studies have not focused on a specific structure. However, if different degrees of explicitness are characterized by these features and have varying impacts on uptake (or repair), learners' perception of recasts, and subsequent acquisition, it is necessary and desirable to improve understanding of how each feature works by focusing on a specific feature of recasts and its subsequent effects on these measures (i.e., learner responses, noticing, and L2 development). When such information is gathered, it will enable L2 teachers and researchers to make more informed decisions when correcting learner errors using recasts.

3.3. Operationalization of Explicit/Implicit Recasts: Declarative vs. Interrogative Recasts

In this study, following Lyster's (1998a) typology of recasts, the explicitness of recasts will be operationalized in terms of mode (or intonation), resulting in two types being investigated: isolated declarative recasts and isolated interrogative recasts. The two types were illustrated in (3.10) and (3.11). For this investigation, isolated recasts were

chosen over incorporated recasts for two reasons. First of all, classroom descriptive studies have reported that isolated recasts occur far more frequently than incorporated ones (99% of total recasts in Sheen, 2006, and 79% of total recasts in Lyster, 1998a). In addition, according to Lyster, incorporated recasts provide or seek additional information by incorporating recasts of learner utterances into longer sentences. In other words, interlocutors need to not only reformulate learners' previous utterances into correct forms but also include additional semantic content. It was feared that, for experimental purposes, incorporated recasts would add too much processing load for the interlocutor. If interlocutors are asked to provide incorporated recasts intentionally, they have to decide (a) whether the learner's previous utterance is correct or incorrect; (b) when they should give recasts, seeking an opportune moment to correct; and in addition to all of this, (c) what kind of information they should add, all at the same time.

Mode or intonation was selected among other types of features for the following reasons. First, mode is one of the most often mentioned and investigated features of recasts in the previous studies (Erlam & Loewen, 2010; Kim & Han, 2007; Loewen & Philp, 2006; Lyster, 1998a; Mackey et al., 2007; Sheen, 2006). Second, mode is associated with both learner repair and linguistic development on posttests (Loewen & Philp, 2006; Sheen, 2006). Third, but most importantly, in Korean, interrogative and declarative recasts can be operationalized in exactly the same way with the only difference lying in intonation, because forming an interrogative sentence in Korean does not involve any word order change. Instead, questions are marked by an interrogative sentence-ender and rising intonation contour (Sohn, 1994). In the case of the polite speech level, which is the level expected to be used between the adult native and nonnative interlocutors involved in this study, the sentence enders for declarative (-yo) and interrogative (-yo) sentences are identical (except for the difference in intonation), as shown in (3.10) and (3.11).

(3.10) Declarative Recast (Korean)

L: *Tongkulami namca chayk-ul ilk-nun kel ilk-eyo.*
circle man book-ACC read-REL.PRES COMP-ACC read-POL-DEC
'The circle, the thing which the man reads the book... read.'

NS: *Namca-ka ilk-nun chayk-ey tongkulami iss-eyo.*
man-NOM read-REL.PRES book-at circle be- POL-DEC
'The circle is on the book the man reads.' ← *Declarative Recast*

(3.11) Interrogative Recast (Korean)

L: *Tongkulami namca chayk-ul ilk-nun kel ilk-eyo.*
circle man book-ACC read-REL.PRES COMP-ACC read- POL-DEC
'The circle, the thing which the man reads the book... read.'

NS: *Namca-ka ilk-nun chayk-ey tongkulami iss-eyo?*
man-NOM read-REL.PRES book-at circle be- POL-INT
'Is the circle on the book the man reads?' ← *Interrogative Recast*

Because interrogative recasts can be interpreted as confirmation checks (asking for the intended meaning of the utterance) rather than corrective feedback (providing correct reformulations of the learner's previous erroneous utterances), the interrogative ones have been considered to be more ambiguous and thus less explicit than the declarative ones (Loewen & Philp, 2006; Lyster, 1998a; Oliver, 1995). Nevertheless, it also has been argued that declarative recasts can be interpreted as mere repetitions of the learner's previous utterance, and in such a case, the corrective nature of declarative recasts would not be perceived by learners (Loewen & Philp, 2006).

A small number of studies have been conducted on declarative and interrogative recasts that arose in L2 classroom settings. They examined the effect of the two types of recasts on various measures such as uptake (Sheen, 2006), repair (Loewen & Philp, 2006; Sheen, 2006), L2 development (Erlam & Loewen, 2010; Loewen & Philp, 2006), and

learners' perception of recasts (Kim & Han, 2007; Mackey et al., 2007). According to the preliminary findings of these studies, declarative recasts were associated with a greater rate of repair in the learner discourse (Lowen & Philp, 2006; Sheen, 2006), whereas interrogative recasts were associated with greater score gains on the posttests (Lowen & Philp, 2006). In other words, learners repaired their initial errors more successfully following declarative recasts than interrogative recasts. However, interrogative recasts led to greater L2 development than declarative ones, which is somewhat counter to the prediction that explicit recasts should be more effective. In addition, mixed findings have been reported with regard to perception of recasts. While declarative recasts were perceived more accurately in Kim and Han's (2007) study, the opposite pattern was reported by Mackey, Al-Khalil, Atanassova, Hama, Logan-Terry, and Nakatsukasa (2007).

In summary, although it is hard to draw any firm conclusions from the few studies conducted so far, in terms of explicitness, declarative recasts and interrogative recasts seem to behave somewhat differently from recasts with the other features, which mostly are in accordance with the prediction that more explicit recasts will be more effective than implicit ones. Such a difference might be due to the nature of the interrogative recasts. Provided in a question form, interrogative recasts inherently seek a learner's response, which may possibly induce a deeper level of cognitive involvement from the learners than declarative recasts and thus lead to greater L2 development. The current study purports to shed more light on this issue by investigating how differently interrogative and declarative recasts influence learner responses as well as L2 development, focusing on a particular structure in a dyadic interaction setting between native and nonnative speakers of Korean rather than in a classroom setting.

CHAPTER 4

METHODS

4.1. Research Questions

The purpose of this study is twofold: (a) to investigate the impact of implicit and explicit recasts, operationalized as interrogative and declarative recasts, on the development of Korean relative clauses as well as on various types of learner responses (i.e., uptake, acknowledge, repetition, repair, and primed production); and at the same time (b) to inquire into the relationships between different types of learner responses and L2 development. With these purposes in mind, the following research questions were developed:

1. Which type of recasts (declarative vs. interrogative) leads to greater linguistic development of the Korean relative clauses measured by pretest/posttest score gains?
2. Which type of recasts (declarative vs. interrogative) leads to greater learner responses (i.e., uptake, acknowledge, repetition, repair, and primed production)?
3. Among the various types of learner responses, which one is more strongly associated with greater L2 development of the Korean relative clauses?

Based on the second claim discussed earlier with respect to the explicitness of recasts, explicit (i.e. declarative) recasts are predicted to induce greater accuracy score gains than implicit (i.e. interrogative) recasts, indicating greater L2 development. However, it is also possible that interrogative recasts, which are more implicit, would lead to larger score gains than declarative recasts, as shown in some previous studies (Loewen & Philp, 2006; Sheen, 2006). On the other hand, declarative recasts, which are more explicit in nature, are predicted to induce greater rates of repair (i.e., successful uptake) than interrogative recasts. With respect to the third research question, both repair and primed production are expected to be more strongly associated with greater accuracy

score gains than the other types of learner responses, although it is unclear which of the two should be a better indicator of L2 development of Korean RCs.

4.2. Target Structure: Korean Relative Clauses

The Korean relative clause (RC) constructions were selected as the target structure of the current study because a relatively large amount of research (Cho, 1999; Kim, 1987; Lee, 1991 in L1 and Jeon & Kim, 2007; O’Grady, Yamashita, Lee, Choo, & Cho, 2000; O’Grady, Lee, & Choo, 2003 in L2) has been conducted on this structure compared to other structures of Korean. Consequently, the developmental sequence of Korean RCs can be established based on the findings of these studies. The Korean RCs exhibit various unique characteristics that are not shared by the RCs of European languages (Sohn, 1994, 1999). In this section, the unique structural characteristics of Korean RCs will be described in detail, focusing on the features that distinguish Korean RCs from those of European languages (mainly English), followed by an examination of the previous studies conducted on L2 acquisition of Korean RCs and their major findings.

4.2.1. Characteristics of Korean Relative Clauses

First of all, the Korean RCs are prenominal, unlike European RCs, which are postnominal. In other words, in Korean, the modifying clauses precede the head nouns that they modify, whereas the modifying clauses follow the head nouns in European RCs. Examples of a Korean RC and an English RC appear in (4.1) and (4.2).

(4.1) Korean RC

[*yeca-ka* ____ *po-nun*] *aki*
 woman-NOM see-REL.PRES baby
 ‘the baby whom the woman sees’

(4.2) English RC

the baby [whom the woman sees]

In the example in (4.1), the head noun *aki* comes after the preceding RC *yeca-ka po-nun*. In contrast, in the example in (4.2), the head noun *baby* is positioned before the RC *whom the woman sees*.

Second, no relative pronoun corresponding to English *who*, *whom*, *which*, *whose*, or *that* is involved in Korean relativization. Instead, relativization is marked by a set of adnominal verbal suffixes such as *-(u)n*, *-nun*, and *-(u)l*. These adnominal verbal suffixes do not only syntactically link the RC to its head noun, but also express the tense and mood of the RC. The following examples display a present (4.3), a past (4.4), and a prospective Korean RC (4.5). In addition, the retrospective mood is expressed by the adnominal verbal suffix *-ten*, as shown in (4.6).

(4.3) Korean RC: Present

| | | | |
|----------------------------------|-------|--------------|-------|
| [yeca-ka | _____ | mek-nun] | sakwa |
| woman-NOM | | eat-REL.PRES | apple |
| ‘the apple which the woman eats’ | | | |

(4.4) Korean RC: Past

| | | | |
|---------------------------------|-------|-------------|-------|
| [yeca-ka | _____ | mek-un] | sakwa |
| woman-NOM | | eat-REL.PST | apple |
| ‘the apple which the woman ate’ | | | |

(4.5) Korean RC: Prospective

| | | | |
|--------------------------------------|-------|-------------|-------|
| [yeca-ka | _____ | mek-ul] | sakwa |
| woman-NOM | | eat-REL.PRS | apple |
| ‘the apple which the woman will eat’ | | | |

(4.6) Korean RC: Retrospective

| | | | |
|---------------------------------------|-------|------------|-------|
| [yeac-ka | _____ | mek-ten] | sakwa |
| woman-NOM | | eat-REL.RT | apple |
| ‘the apple which I saw the woman eat’ | | | |

These adnominal verbal suffixes are also called *relativizers* (Sohn, 1999), *modifier suffixes* (Sohn, 1994), or *relative clause markers* (Han, 1990) in the literature. According to Sohn (1999), these adnominal verbal suffixes can be summarized as follows (see Table 4.1), depending on the predicate type (i.e., verbs and adjectives), tense (i.e., non-past and past), and mood (i.e., indicative, retrospective, and prospective).

Table 4.1.

Adnominal Verbal Suffixes of Korean RCs

| Predicate | Tense | Indicative | Retrospective | Prospective |
|-----------|----------|--------------|---------------------|--------------------|
| Verb | Non-past | <i>-nun</i> | <i>-ten</i> | <i>-(u)l</i> |
| | Past | <i>-(u)n</i> | <i>-ess/ass-ten</i> | <i>-ess/ass-ul</i> |
| Adjective | Non-past | <i>-(u)n</i> | <i>-ten</i> | <i>-(u)l</i> |
| | Past | -- | <i>-ess/ass-ten</i> | <i>-ess/ass-ul</i> |

As shown in Table 4.1, verbs and adjectives behave in a slightly different way. Adjectives do not have any past tense indicative form, and their non-past indicative form *-(u)n* is identical to the past tense indicative verb form *-(u)n*. Besides these differences, retrospective and prospective forms show no differences between verbs and adjectives. Because Korean RCs are marked by these adnominal verbal suffixes, no distinction can be made between a simple attributive adjective expression (e.g., ‘a pretty girl’) and an RC (e.g., ‘a girl who is pretty’). Both of them are expressed in Korean as *yeyppen yeca*. Moreover, a participial construction (e.g., *ttui-nun ai* ‘a running boy’) is not distinguishable from its RC counterpart (e.g., *ttui-nun ai* ‘a boy who is running’).

Third, whereas a relativized element is moved to the front of the RC and then pronominalized or deleted in English relativization, it is widely accepted that no such movement or pronominalization is involved in Korean (A. Kim, 1990; S. Lee, 1983; Sohn, 1994, 1999; D. Yang, 1973; I. Yang, 1972), although some scholars have argued that Korean relativization also involves syntactic movement (Han, 1990; Hong, 1985; Kang, 1988). The general view, though, is that only the noun coreferential to the head noun is omitted, together with the case particle attached to it, as shown in (4.7); the dative

case marker *-eykey* is omitted with the head noun *yeca*. This is different from English relativization in which prepositions attached to the relativized noun phrases are preserved either in the position before the relative pronoun (4.8) or at the end of the RC (4.9).

- (4.7) [*namca-ka* (____*eykey*) *chayk-ul cwu-n*] *yeca*
 man-NOM (____to) book-ACC give-REL.PST woman
 ‘the woman to whom the man gave the book’

(4.8) ‘the woman to whom the man gave the book’

(4.9) ‘the woman whom the man gave the book to’

Fourth, unlike English RCs, which demonstrate no restriction with respect to the positions that can be relativized (Keenan & Comrie, 1977), some restrictions are imposed on Korean RCs. In English, all the positions of Keenan and Comrie’s Accessibility Hierarchy (1977) can be relativized, including subjects, objects, datives, obliques, genitives, and objects of comparison. In contrast, Korean only allows relativization of subject (SU) (4.10), object (DO) (4.11), dative (4.12), and some obliques (OBL) such as instrument (4.13), goal (4.14), locative (4.15), and source (4.16).

(4.10) Relativization of Subject:

- [____ *aki-lul po-nun*] *yeca*
 baby-ACC see-REL.PRES woman
 ‘the woman who looks at the baby’

(4.11) Relativization of Object:

- [*yeca-ka* ____ *po-nun*] *aki*
 woman-NOM see-REL.PRES baby
 ‘the baby who the woman looks at’

(4.12) Relativization of Dative:

[*namca-ka* ____ *phyenci-lul* *ssu-nun*] *yeca*
man-NOM letter-ACC write-REL.PRES woman
'the woman to whom the man writes a letter'

(4.13) Relativization of Oblique: Instrument

[*namca-ka* ____ *phyenci-lul* *ssu-nun*] *phen*
man-NOM letter-ACC write-REL.PRES pen
'the pen with which the man writes a letter'

(4.14) Relativization of Oblique: Goal

[*namca-ka* ____ *ka-nun*] *hakkyo*
man-NOM go-REL.PRES school
'the school which the man goes to'

(4.15) Relativization of Oblique: Locative

[*namca-ka* ____ *pap-ul* *mek-un*] *siktang*
man-NOM meal-ACC eat-REL.PST restaurant
'the restaurant at which the man ate'

(4.16) Relativization of Oblique: Source

[*namca-ka* ____ *nao-n*] *cip*
man-NOM come out-REL.PST house
'the house from which the man came out'

According to Cho (1999), genitives are only allowed to be relativized using a pronoun strategy in Korean, unlike other grammatical relations that are relativized using a gap strategy. An example of a genitive RC is displayed in (4.17).

(4.17) Relativization of Genitive

[*caki -uy kay-ka cwuk-un*] *namca*
self-GEN dog-NOM die-REL.PST man
'the man whose dog died'

(from Cho, 1999, p. 11)

In addition, multiply embedded RCs can be grammatically constructed in Korean, as in (4.18):

(4.18) Multiply Embedded Korean RCs

[_____ [_____ [*ney-ka* _____ *mek-un*]
(child-NOM) (lady-NOM) you-NOM (apple- ACC) eat-REL.PST
sakwa-lul sa-cwu-n] *acwuma-lul po-n*] *ai*
apple-ACC buy-for-REL.PST lady-ACC see-REL.PST child
'the child who saw the lady who bought the apple that you ate'

(from Sohn, 1999, p. 312)

Fifth, Korean RCs can be divided into head-external RCs and head-internal RCs depending on whether the head noun is positioned externally or internally to the RC (Cho, 2003; Jhang, 1994; K. Lee, 1991), whereas only head-external RCs are permitted in English. The Korean head-external RCs are similar to English RCs. They involve a gap inside the RC, with the head noun placed externally to the RC, as displayed in the examples in (4.10–4.16). On the other hand, the head-internal RCs are unique in that the lexical head remains inside the RC and no gap is involved in the modifying RC. In addition, a head-internal RC employs an adnominal verbal suffix and the complementizer *-kes* at its right boundary to signal relativization. In the example in (4.19), the head-internal RC *chayk-i chayksang wi-ey iss-te-n* is followed by the complementizer *-kes*, and no gap can be postulated inside the RC because the head noun *chayk* remains in its original position.

(4.19) Head-Internal Korean RC: Subject

[*chayk-i chayksang wi-ey iss-ten*] *kes-i salaci-ess-ta.*
book-NOM desk top-LOC exist-REL.PST COMP-NOM disappear-PST-DEC
'The book which was on the desk disappeared.'

(from Cho, 1999, p. 11)

The head-internal and the head-external RCs also differ with respect to the positions that can be relativized. While the head-external RCs permit relativization of subjects, direct objects, datives, obliques, and genitives as demonstrated above, the head-internal RCs only allow relativization of subjects and direct objects.

Fifth, whereas restrictive and non-restrictive RCs are clearly distinguishable in English, no essential syntactic distinction can be made between the two types of RCs in Korean (Cho, 1999; A. Kim, 1990; T. Kim, 1990; Sohn, 1999). In English, non-restrictive RCs are set off from the head nouns by either a comma in writing or a special pause and intonation in speech, and they do not allow a general pronoun *that* or 'zero' (\emptyset) relative pronoun (Cho, 1999; Comrie, 1981; A. Kim, 1990). Both types of RCs indeed occur in Korean; however, they are only semantically distinguished as shown in the following examples of restrictive (4.20) and non-restrictive RCs (4.21).

(4.20) Restrictive Korean RC

[*Yongho-ka ____ salangha-nun*] *yeca-nun Minji-i-ta.*
Yongho-NOM love-REL. PRES woman-TOP Minji-be-DEC
'The girl whom Yongho loves is Minji.'

(4.21) Non-Restrictive Korean RC

[*Yongho-ka ____ salangha-nun*] *Minji-nun nay yetongsayng-i-ta.*
Yongho-NOM love-REL. PRES Minji-TOP my sister-be-DEC
'Minji, whom Yongho loves, is my sister.'

(from Sohn, 1994, p. 64)

Beside these semantic differences, some phonological and syntactic differences also have been suggested by Sohn (1994). He claimed that whereas no pause is allowed between a restrictive RC and its head noun, a slight pause is usually placed between a nonrestrictive RC and its head noun. In addition, the head nouns of nonrestrictive RCs are often stressed whereas those of restrictive RCs can never be stressed. Furthermore, he pointed out that proper nouns and personal pronouns cannot occur as head nouns of restrictive RCs but can possibly occur as the head nouns of nonrestrictive RCs.

To summarize, Korean RCs exhibit various unique characteristics that are not shared by English or other European RCs. First of all, the Korean RCs are prenominal, in which the modifying clauses precede the head nouns they modify. Second, no relative pronoun is involved in Korean relativization. Instead, relativization is signaled by a set of adnominal verbal suffixes such as *-(u)n*, *-nun*, and *-(u)l*, which also express the tense and mode of the RCs. Third, unlike English RCs, movement and pronominalization are not involved in Korean RCs. Only the nouns coreferential to the head nouns are omitted together with the case particles attached to them. Fourth, in Korean RCs, restrictions are imposed on the positions that can be relativized whereas no such restrictions are manifested in English RCs. Fifth, both head-internal and head-external RCs are grammatical in Korean, while only head-external constructions are allowed in English. Sixth, no essential syntactic distinctions can be made between restrictive and non-restrictive RCs in Korean although these two types of RCs are clearly distinguishable in English.

4.2.2. Previous Studies on L2 Acquisition of Korean Relative Clauses

Previous studies on L1 child acquisition of Korean RCs (Cho, 1999; Kim, 1987; Lee, 1991) have shown that (a) there is a developmental sequence of Korean RCs, from headless to head-internal and to head-external RCs; and (b) DO RCs occur more frequently than SU RCs in the head-internal construction; whereas (c) SU RCs occur more frequently than DO RCs in the head-external construction. Considering that the head-internal construction is easier and thus developed earlier than the head-external construction, the fact that children in these studies produced DO RCs more frequently in

the head-internal construction than in the head-external construction indicates that DO RCs are more difficult for them to produce than SU RCs (Jeon & Kim, 2007).

Similar patterns have been observed in L2 acquisition studies (Jeon & Kim, 2007; O'Grady et al., 2003; O'Grady et al., 2000). Jeon and Kim (2007) investigated the development of RCs by L2 Korean learners across various proficiency levels (from high beginning to intermediate) and found a similar developmental sequence: headless to head-internal and to head-external RCs. The frequency of head-external RCs increased as the student's level of proficiency increased, and the learners produced SU RCs more accurately and frequently than DO RCs in the head-external construction. A similar tendency of preferring SU RCs to DO RCs was also found in listening comprehension studies (O'Grady et al., 2003) as well as in an oral production study (O'Grady et al., 2000). In other words, the L2 learners of Korean involved in these studies comprehended and produced SU RCs better than DO RCs. Furthermore, most of the learners who were able to accurately interpret DO RCs were also able to produce SU RCs correctly. However, the opposite pattern was not found. Written production data of L2 Korean learners (Ko, 2002 cited in O'Grady et al., 2003; Lee, 2001) has also confirmed a pattern similar to the one observed in the oral data.

In this study, head-external DO RCs will be the focus of investigation. The head-external DO RCs were selected based on the findings of the previously conducted pilot studies. The pilot studies revealed that the L2 learners of Korean, studying in both KFL and KSL institutional settings (where the participants were recruited for the current study), produced head-external RCs from the beginning, without going through the stage of head-internal RCs, counter to the findings of the previous L1 and L2 studies. In addition, the learners seemed to take much longer to develop DO RCs than SU RCs. Many learners showed their competence in producing SU RCs even at the high beginning (for KSL context) or low-intermediate level (for KFL context); however, structural errors were still committed when they produced DO RCs. It seems that although the learners started to produce DO RCs at the end of the beginning level (right after they received formal instruction in the target structure in both contexts), the development of DO RCs was not completed until they reached the intermediate-high or the advanced level.

4.3. Participants

4.3.1. Learners

In total, 63 adult learners of Korean participated in this study. There were 32 male and 31 female learners, ranging in age from 18 to 33 ($M = 22.7$). The length of time they had studied Korean ranged from a month to five years, with an average of 12.8 months. The participants were: (a) Korean as a Foreign Language (KFL) learners studying in a Korean language program located at a university in Honolulu, Hawai'i and (b) Korean as a Second Language (KSL) learners enrolled in two Korean language institutions located in Seoul, Korea, both of which belonged to major Korean universities. Considering that the target structure (i.e., the Korean DO RC) was introduced at the beginning-high level at all of the institutions, learners from beginning-high (in the case of the KSL learners) to intermediate level courses (in the case of the KFL learners)² were regarded as appropriate participants for the current study. Thirty-nine KFL learners (61.9%) from Korean 201 and 202 courses (equivalent to intermediate-level), and 24 KSL learners (34.1%) from Level 2 (equivalent to high-beginning level) at both KSL institutions participated.

Originally, 94 learners were recruited and given the pretest. However, based on the pretest scores, several learners who seemed not to be developmentally ready for the target DO RC structure ($N = 8$) or who were well advanced with the target structure ($N = 15$) were eliminated from the study. In addition, the data from several participants ($N = 8$) who did not complete the whole experiment process³ were excluded from the analysis. Consequently, the data from only the 63 learners who completed the experiment were included in the analysis. There were 21 learners for each of three groups—the interrogative recasts group (INT), the declarative recasts group (DEC), and the no feedback control group (CNT)—as shown in Table 4.2.

² Pilot studies had been conducted with both of the learner groups in order to gauge the appropriate level for the current study. The results showed that most of the KFL learners at the high-beginning level were not capable of carrying out interaction tasks with a native speaker in Korean due to their limited Korean language proficiency, whereas the KSL learners were. Hence, the KFL participants came from intermediate level classes, while the KSL learners were recruited from beginning-high level classes.

³ There were five learners who missed the delayed posttests and two learners who missed the second page of the GJT. In addition, a learner was excluded due to a malfunction of the OPT posttest recording.

Table 4.2.

Number of Participants in Each Group

| | INT | DEC | CNT | Total |
|---------------------|-----|-----|-----|-------|
| No. of Participants | 21 | 21 | 21 | 63 |

The learners were assigned to each group through stratified random sampling to ensure that the three groups were comparable in terms of general Korean language proficiency, RC development readiness, and learners' backgrounds (i.e., heritage vs. non-heritage learners as well as their L1). Learners' institutional levels were employed as an indicator of general Korean language proficiency, and the pretest scores were used as a measure of current ability to produce the target structure. Learners' institutional levels and their background information were gathered through a background information questionnaire (see Appendix A), which was collected prior to the pretest. The questionnaire was developed by adapting a questionnaire used by Kondo-Brown⁴ and another used by Wu (2011). It included questions regarding: (a) the learners' first language as well as their parents' native language, (b) their previous study and residence in Korea, (c) their exposure to the Korean language outside classrooms, and (d) other foreign language proficiency besides Korean, if any.

Table 4.3 displays the distribution of learners' Korean language proficiency levels for each group. Although the learners' proficiency levels were quite evenly distributed in the INT group, there were smaller numbers of learners at Level 202 compared to Level 2 and 201 in the DEC and the CNT groups, which was due to the failure of some learners to complete the experiment and the exclusion of their data from the analysis, as mentioned earlier.

⁴ Kondo-Brown's background questionnaire was designed for departmental use and is unpublished.

Table 4.3.

Korean Language Proficiency Levels of the Participants

| | KSL | KFL | | Total |
|-------|---------|-----------|-----------|-------|
| | Level 2 | Level 201 | Level 202 | |
| INT | 7 | 7 | 7 | 21 |
| DEC | 8 | 9 | 4 | 21 |
| CNT | 9 | 8 | 4 | 21 |
| Total | 24 | 24 | 15 | 63 |

Learners' language background information is presented in Tables 4.4 and 4.5. In this study, heritage learners of Korean are defined as those whose parents (or parent) are native speakers of Korean, following H. H. Kim's definition (2005). In the learners' self-reports on the background questionnaire, approximately 30% of them identified themselves as heritage learners of Korean (i.e., at least one of their parents was a native speaker of Korean), whereas 70% of them were non-heritage learners (i.e., neither of their parents was a native speaker of Korean). There were slightly more heritage learners in the INT group compared to the DEC and CNT groups, which is again due to the exclusion of some learners from the analysis.

Table 4.4.

Distribution of Heritage and Non-heritage Learners

| | Heritage | Non-Heritage | Total |
|-------|----------|--------------|-------|
| INT | 8 (38%) | 13 (62%) | 21 |
| DEC | 5 (24%) | 16 (76%) | 21 |
| CNT | 5 (24%) | 16 (76%) | 21 |
| Total | 18 (29%) | 45 (71%) | 63 |

The learners who participated in this study came from six different L1 backgrounds: English ($N = 30$, 47.6%), Chinese ($N = 12$, 19.0%), Japanese ($N = 11$,

17.5%), Korean ($N = 6$, 9.5%), Cantonese ($N = 3$, 4.8%), and Sinhalese ($N = 1$, 1.6%). As shown in Table 4.5, the learners' L1s were quite evenly distributed across the groups, which ensures that the three groups are not very different and thus are comparable with respect to their L1 background.

Table 4.5.

Distribution of the Learners' L1 Backgrounds

| | English | Chinese | Japanese | Korean | Cantonese | Sinhalese |
|-------|---------|---------|----------|--------|-----------|-----------|
| INT | 11 | 3 | 3 | 2 | 2 | |
| DEC | 11 | 4 | 5 | 1 | | |
| CNT | 8 | 5 | 3 | 3 | 1 | 1 |
| Total | 30 | 12 | 11 | 6 | 3 | 1 |

4.3.2. Korean Native Speaker Interlocutor

In addition to the learners, the researcher participated in the experiment as a native speaker instructor as well. Previous studies (Pica, Holliday, Lewis, Berducci, & Newman, 1991; Ross-Feldman, 2007; Sato & Lyster, 2007) have advised caution about the possible effects of interlocutor characteristics on learners' performance during interaction. In particular, focusing on the effects of interlocutor's gender on communicative task interaction, Pica, Holliday, Lewis, Berducci, and Newman (1991) reported a greater influence of interlocutor's gender on female learners' performances, whereas male learners were not affected by the gender of NS interlocutors. Female learners produced a greater amount of negotiation when they were interacting with female NS interlocutors. In addition, Ross-Feldman (2007) reported that both male and female learners were influenced by the interlocutor's gender. Both groups of learners (i.e., male and female) produced more focus on form incidences (which was assumed to lead to language development) when they were working with female NS interlocutors than when they were working with male interlocutors. In this study, by having a female interlocutor interacting with all the learners, the possible interlocutor effects were expected to be reduced to a minimum.

4.4. Instruments⁵

4.4.1. Pretest/Posttest Measures

In this study, one oral and two written tasks were developed as pretest/posttest measures, including an oral production task ($k = 16$), a sentence combination task ($k = 16$), and a grammaticality judgment task ($k = 24$). The oral production task (OPT) elicits relative clauses (RCs) from the learners by asking them to describe objects or people depicted in sets of pictures. The sentence combination task (SCT) is a written task that requires learners to combine two sentences into one using an RC. The SCT and the OPT were chosen to match the outcome measures to the type of interaction, and the grammaticality judgment task (GJT) was employed to tap into learners' knowledge or intuition of the target structure. According to Ellis (2005), the SCT and the OPT can be regarded as measures of learners' implicit knowledge, and the untimed GJT as a measure of explicit knowledge. All of these measures have been frequently used in previous RC acquisition studies (see Eckman, Bell, & Nelson, 1988; Gass, 1979; Ozeki & Shirai, 2007 for the SCT; Doughty, 1988, 1991; Hyltenstam, 1984; Pavesi, 1986 for the OPT; and Doughty, 1988, 1991; Izumi, 2003 for the GJT), although not in Korean RC acquisition studies (only the OPT, in a slightly different format from this study, was used in O'Grady et al., 2000). In each task, items representing other types of RCs than DO (i.e., SU and OBL) are incorporated as well, with the purpose of preventing learners from being aware of the focus of this study. Each task was developed in three versions, and they were counterbalanced across three testing sessions (i.e., pretest, immediate posttest, and delayed posttest). The numbers of the test items for each type of RC included in each task are shown in Table 4.6. The items were presented in random order in all three tasks.

⁵ The instruments were pilot tested with 15 learners of Korean (12 KSL learners in 2009 and 3 KFL learners studying at UH in 2011). After each pilot study, necessary revisions were made to the instruments.

Table 4.6.

Number of Items Included in Each Pre/Posttest Measure

| | SU | DO | OBL | Total |
|-----|----|----|-----|-------|
| OPT | 4 | 8 | 4 | 16 |
| SCT | 4 | 8 | 4 | 16 |
| GJT | 6 | 12 | 6 | 24 |

4.4.1.1. Oral Production Task

The oral production task (OPT) materials were created by adapting a task developed by Hyltenstam (1984). An OPT item contains a set of four pictures depicting people involved in similar activities, as shown in Figure 4.1. In each picture, there is an object or person on which a circle is drawn, and the participant's task is to describe the object or person inside the circle using an RC in response to the researcher's question. In total, 16 sets of pictures were developed for the OPT including eight DO RCs and eight other types of RCs (i.e., four SU and four OBL RCs). Each version of the OPT contains one item from each set of pictures. To put this another way, three items were created from each set of four pictures (e.g., *the bird which the boy is looking at*, *the baby who the boy is looking at*, and *the bird which the girl is looking at*), and one of the three items was included in each version of the OPT. A sample OPT task is provided in Appendix B.



Figure 4.1. Oral Production Task

To ensure that the learners produced an RC, a set of elicitation techniques was developed by adapting those used by Doughty (1988). Descriptions of each elicitation technique are displayed in Table 4.7. These elicitation techniques were used at the discretion of the interlocutor to prevent the learners from feeling uncomfortable or too pushed to produce the target RC.

Table 4.7.

Elicitation Techniques for the OPT (adapted from Doughty, 1988)

| I. Unstructured Elicitation | | |
|-----------------------------|--|---|
| Elicitation | Condition | Format |
| (1) Initial | Start of test item <i>- This technique may be repeated when and as necessary.</i> | “Where is the circle in the picture?” |
| (2) Format focus | In the case of an incomplete answer, the participant is reminded of the answer format. <i>- This technique may be repeated when and as necessary.</i> | “I’d like you to answer in a complete sentence. The circle is on...” Or “The circle is...” |
| (3) Information focus | In the case of an answer not describing the target, the participant’s attention may be redirected to the target. <i>- This technique may be repeated when and as necessary.</i> | “Now you’re telling me about the tree. Can you tell me about the baby?” Or “Where is the circle drawn? The circle is on the woman not on the baby.” |

Table 4.7. (Continued)

Elicitation Techniques for the OPT (adapted from Doughty, 1988)

| II. Structured Elicitation: Guided Sentence Completion | | |
|--|--|---|
| Elicitation | Condition | Format |
| (4) Provide the head noun | When the participant understands the target but does not produce an RC - <i>Use this technique only once.</i> | <i>Tongkulami-ka etten yeca-ey</i> circle-NOM which woman-at <i>iss-eyo?</i> exist-POL-INT 'Which woman is the circle drawn on?' (Target: 'The circle is on <u>the woman</u> who looks at the baby.' – SU) |
| (5) Provide one of the arguments (subject for DO/OBL & direct object for SU) | When elicitation (4) fails - <i>If this technique fails for SU and DO, abandon the item.</i> | <i>Tongkulami-ka aki-lul...</i> circle-NOM baby-ACC 'The circle is ... the baby' (Target: 'The circle is on <u>the woman</u> who looks at the baby.' – SU) OR <i>Tongkulami-ka namca-ka...</i> circle-NOM man-NOM 'The circle is ... the man ...' (Target: 'The circle is on <u>the tree</u> the man looks at.' – DO) |
| (6) Provide another argument (direct object only for OBL) | When elicitation (5) fails for OBL - <i>Use this technique only once.</i> | <i>Tongkulami-ka namca-ka phyenci-lul</i> circle-NOM man-NOM letter-ACC 'The circle is ... the man ... the letter' (Target: 'The circle is on <u>the pen</u> with which the man writes the letter.') |

4.4.1.2. Sentence Combination Task

The sentence combination task (SCT) was developed by adapting sentences used in the study conducted by Ozeki and Shirai (2007). Each SCT item is composed of two sentences: (a) Sentence A, which contains a subject, a verb, a direct object, and an adverbial noun phrase (NP); and (b) Sentence B, which is an equational copular sentence. An example of an SCT item is shown in (4.22).

(4.22) A Sample Sentence Combination Task

Sentence A: *Yeca-ka kongwen-eyse chinkwu-lul mann-ayo.*
woman-NOM park-at friend-ACC meet-POL-DEC
'A woman meets a friend at a park.'

Sentence B: *Ku yeca-ka acwu yeypp-eyo.*
the woman-NOM very pretty-POL-DEC
'The woman is very pretty.'

Answer: *Kongwen-eyse chinkwu-lul manna-nun yeca-ka*
park-at friend-ACC meet-REL. PRES woman-NOM
acwu yeypp-eyo.
very pretty-POL-DEC
'The woman who meets a friend at a park is very pretty.'

The participants were asked to combine the two sentences (i.e., Sentence A and Sentence B) into one using an RC. They were instructed to always start with Sentence A to ensure that they produced a complex sentence containing an embedded RC (e.g., *Pang an-eyse cam-ul ca-nun aki-ka kwuiyeweyo.* 'The baby who is sleeping in the room is cute.') rather than a simple sentence with an adjective modifying the head noun (e.g., *Kwuiyew-un aki-ka pang an-eyse cam-ul cayo.* 'A cute baby is sleeping in the room.'). Sixteen sets of three items (each item containing Sentences A and B) were developed, and each version of the SCT contained an item from each set, so each version of the SCT

consisted of 16 items. The three items in each set contained the same predicate with the same tense so that the correct RCs for each set should contain identical predicates conjugated in the same tense. The items were randomly listed in each version of the task. Appendix C displays a sample SCT task.

4.4.1.3. Grammaticality Judgment Test

The untimed grammaticality judgment test (GJT) was developed based on the most common and representative types of errors committed by the Korean L2 learners who participated in the pilot studies, which included both oral and written RC production tasks. Six error types were identified: (a) resumptive noun retention, (b) head noun missing, (c) resumptive pronoun retention and head noun missing, (d) tense or inflection errors, (e) case marker errors, and (f) argument omission. An example of each type of error is shown in Table 4.8.

Table 4.8.

Types of Errors Included in the GJT

| Error Type | Example |
|---|--|
| Resumptive noun retention | <p><i>Sumi-ka tosekwan-eyse <u>chayk-ul</u> ilk-un</i></p> <p>Sumi-NOM library-in book-ACC read-REL.PST</p> <p><i>chayk-un acwu caymi-issess-eyo.</i></p> <p>book-TOP very interesting-PST-POL-DEC</p> <p>‘The book which Sumi read <u>the book</u> in the library was very interesting.’</p> |
| Head noun missing | <p><i>Minsu-ka tosekwan-eyse pon _____</i></p> <p>Minsu- NOM library-in see-REL.PST _____</p> <p><i>yeyppess-eyo.</i></p> <p>pretty-PST-POL-DEC</p> <p>‘_____ who Minsu saw in the library was pretty.’</p> |
| Resumptive noun retention + Head noun missing | <p><i>Khephisyop-eyse yeca-ka <u>namca-lul</u> kitali-nun</i></p> <p>coffee shop-at woman- NOM man-ACC wait-REL.PRES</p> <p>_____ <i>Kim sensayngnim-ieyyo.</i></p> <p>_____ teacher Kim-be-POL-DEC</p> <p>‘_____ whom the woman is waiting for <u>the man</u> at the coffee shop is teacher Kim.’</p> |

Table 4.8. (Continued)

Types of Errors Included in the GJT

| Error Type | Example |
|-------------------------|---|
| Tense/inflection errors | <p><i>Cinan hakki-ey Pak sensayngnim-i kaluchi-nun</i> last semester-in teacher Park-NOM teach-REL.PRES <i>haksayngtul-i manh-ayo.</i> students-NOM many-POL-DEC ‘There are many students who teacher Park teach last semester.’ (<i>kaluchi-nun</i> (teach-REL.PRES) > <i>kaluchi-n</i> (teach-REL.PST))</p> |
| Case marker errors | <p><i>Paykhwacem-eyse Sumi-nun sa-n kapang-i</i> department store-at Sumi-TOP buy-REL.PST bag-NOM <i>acwu pissass-eyo.</i> very expensive-POL-DEC ‘The bag which Sumi bought yesterday was very expensive.’ (<i>Sumi-nun</i> (Sumi-TOP) > <i>Sumi-ka</i> (Sumi-NOM))</p> |
| Argument omission | <p><i>Minsu-ka _____ sa-n secem-un</i> Minsu-NOM _____ buy-REL.PST bookstore-TOP <i>acwu kakkaw-eyo.</i> very close-POL-DEC ‘The bookstore where Minsu bought _____ is very close.’</p> |

Twenty-four items were developed for each version of the GJT as well, encompassing twelve DO RC items and twelve other types of RC items (i.e., six SU and six OBL). Among them, half of the items contained correct RCs, and the other half incorrect RCs. Each incorrect item represented one of the six error types shown in Table 4.8. The learners were instructed to read the sentence carefully and decide whether the sentence was correct or not first. If they judged the sentence incorrect, then they were asked to underline the part they thought to be wrong and correct the erroneous part in order to prevent them from getting the right answer merely by guessing. Appendix D presents a sample GJT task.

4.4.1.4. Controlling Animacy Effects

Considering the strong animacy effects that were observed in the pilot studies, the animacy of the head nouns and the arguments inside the RCs was controlled in this study. In all three tasks employed as pretest/posttest measures (i.e., OPT, SCT, and GJT) in this study, the same numbers of reversible (with an animate head noun and an animate argument inside the RC) and nonreversible (with an inanimate head noun and an animate argument inside the RC or with an animate head noun and an inanimate argument inside the RC) items were included, following Kanno (2007). Examples of a reversible and a nonreversible item are given in (4.23) and (4.24).

(4.23) Reversible Condition

[*yeca-lul po-nun*] *namca*
 woman-ACC see-REL.PRES man
 ‘the man who looks at the woman’

(4.24) Nonreversible Condition

[*sinmwun-ul po-nun*] *namca*
 newspaper-ACC see-REL.PRES man
 ‘the man who reads the newspaper’

Because reversible items contain two animate arguments, these items are predicted to be more difficult to process than nonreversible items. By involving the same number of reversible and nonreversible items, it is expected that the effects of animacy will be counterbalanced in all testing measures.

4.4.1.5. Vocabulary Selection

The test items were developed to ensure that the participants would not miss an item due to their lack of lexical knowledge in the written measures (i.e., SCT and GJT). Two criteria were set for the selection of the vocabulary. First, the words had to be listed as beginning level words (level A) in the *Hankwuke Haksupyong Ehwui Moklok* (The Word List for the Learners of Korean) published by the *Kwuklip Kwukewon* (The National Institute of the Korean Language). In addition, the words had to have been introduced in *Integrated Korean: Beginning 2*, which is the textbook used at the high beginning level (i.e., Korean 102) in the institutions where the KFL learners were recruited. The only exceptions to these criteria were *hakki* ‘semester’ and some foreign loanwords such as *intheneyt* ‘internet’, *imeyil* ‘email’, *khemphuthe* ‘computer’, and *hayntuphon* ‘cell phone’. Because the learners were recruited from Korean language institutions, it was assumed that *hakki* would not cause them difficulty. As for the foreign loanwords, the learners were expected to be familiar with these everyday words, and this was confirmed in the pilot study. As for the OPT and treatment tasks, learners were allowed to ask the native speaker interlocutor for the meanings of unknown words while they performed the tasks.

4.4.2. Treatment Tasks

The Find the Circles (FCT) and Draw Circles (DCT) tasks were developed as treatment tasks, adapting tasks used by Jeon (2004). The FCT is a two-way information gap task in which each participant holds a different piece of information. Thus, it requires both of the participants to supply and request information in order to complete the task. In contrast, the DCT is a one-way information task in which only one of the participants holds all the information, and thus the other participant needs to request the information to complete the task. The information gap tasks have been suggested to be one of the

most effective task types to promote opportunities for comprehension, feedback, and interlanguage modification (Pica, Kanagy, & Falodun, 1993).

In the FCT, the learner and the native speaker interlocutor are each given a picture depicting people and objects involved in various activities. Although the pictures that the learner and the interlocutor receive are exactly the same, circles are drawn on multiple targets that are different in the two participants' pictures. Therefore, the task for each interactant is to describe where the circles are located in his/her own picture so that each partner can draw those circles on his/her picture as well. An example of the FCT is shown in Figures 4.2 and 4.3.

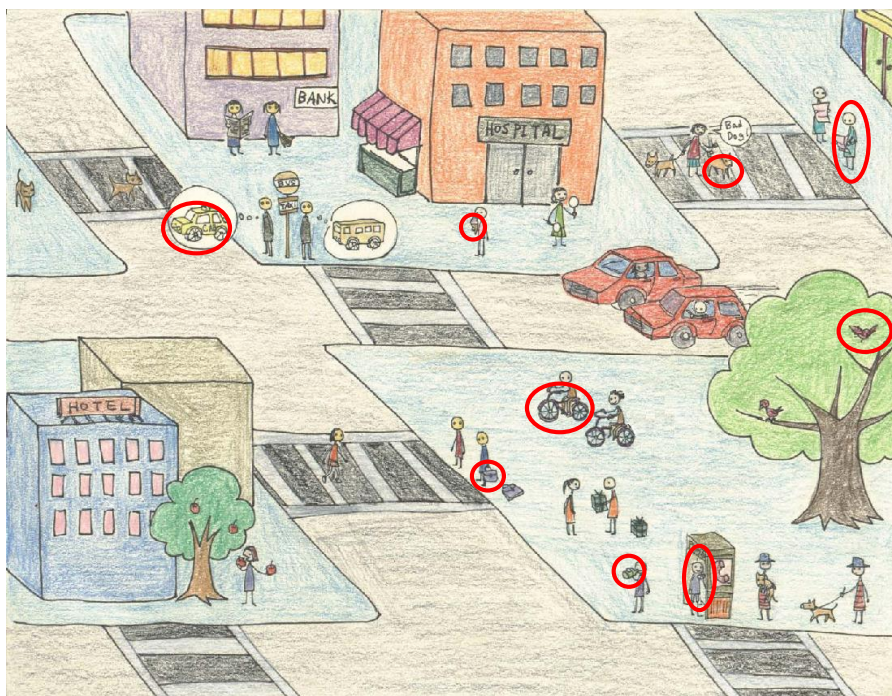


Figure 4.2. Find the Circles Task: On the Street (Learner's Picture)

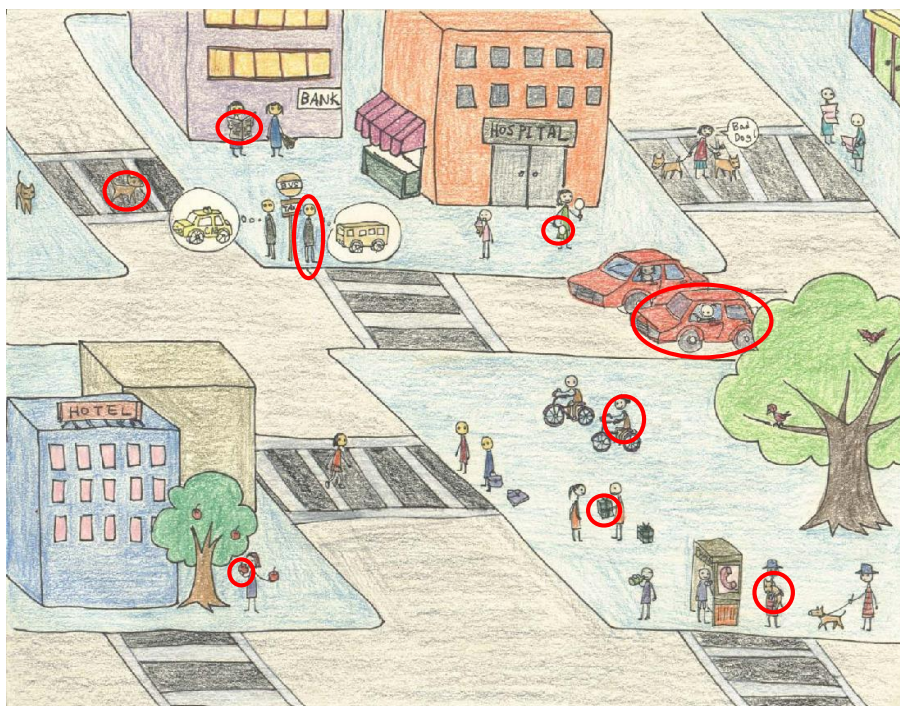


Figure 4.3. Find the Circles Task: On the Street (Native Speaker Interlocutor's Picture)

The DCT is similar to the FCT. However, in the DCT, circles are drawn only in the learner's picture, and no circles are drawn in the native speaker interlocutor's picture. Hence, only the learner needs to explain where the circles are drawn so that the native speaker interlocutor can draw the circles on the same targets in her own picture. Figures 4.4 and 4.5 display an example of the DCT. In addition, the lists of the RC targets contained in each task are provided in Appendixes E and F.

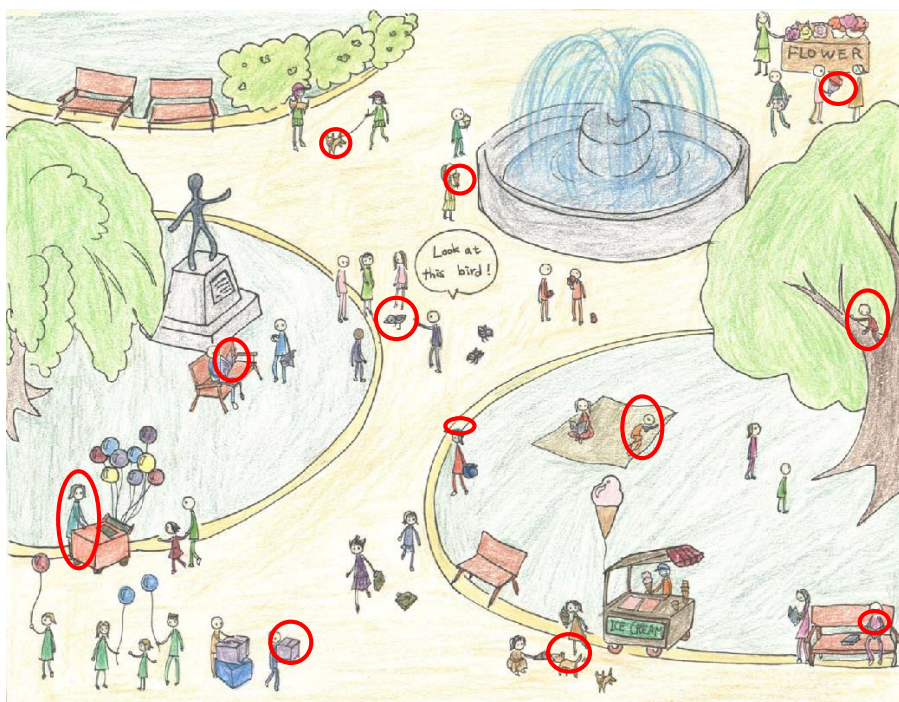


Figure 4.4. Draw Circles Task: At a Park (Learner's Picture)



Figure 4.5. Draw Circles Task: At a Park (Native Speaker Interlocutor's Picture)

In each treatment session, the learner and the NS interlocutor carried out each treatment task once, which resulted in a total of two FCTs and two DCTs completed throughout the two treatment sessions. In each FCT, 18 targets were included aiming to elicit five DO RCs and four other RC types (i.e., SU or OBL) from each interactant (i.e., nine RCs for each interactant). Once again, other RC targets (i.e., SU and OBL) besides DO RCs were included in the treatment tasks in order to make the linguistic target of the study (i.e., DO RCs) not so obvious to the learners. In each DCT, in total, eleven targets were circled including seven DO RC targets and four other RC targets (i.e., SU or OBL). The DCT had a smaller number of targets than the FCT because only the learner explains the location of the circles in the DCT. The total numbers of tokens included in both tasks are shown in Table 4.9.

Table 4.9.

Total Number of RC Targets Included in Each Treatment Task

| Task | Interactant | SU | DO | OBL | Total |
|-------|-------------|----|----|-----|-------|
| FCT | NNS | 6 | 10 | 2 | 18 |
| | NS | 6 | 10 | 2 | 18 |
| DCT | NNS | 6 | 14 | 2 | 22 |
| Total | NNS | 12 | 24 | 4 | 40 |
| | NS | 6 | 10 | 2 | 18 |

4.5. Operationalization

4.5.1. Explicit vs. Implicit Recasts

As mentioned in Chapter 3, in this study, the explicitness of recasts was operationalized in terms of mode or intonation, taking declarative recasts as explicit ones and interrogative recasts as implicit ones. The two types of recasts are illustrated in (4.25) and (4.26). The examples are taken from the transcript of the recording of the interaction between the learners and the native speaker in the current study.

(4.25) Declarative Recasts

L: *an meku-nun sathang-ey*

not eat-REL.PRES candy-at

‘(The circle is) on the candy which she does not eat’

(containing an inflection error: *meku-nun* (eat-REL.PRES) > *mek-nun*

(eat-REL.PRES))

NS: *Yeca-ka an mek-nun sathang-ey-yo.* ← DEC Recast

woman-NOM not eat-REL.PRES candy-at-POL-DEC

‘(The circle) is on the candy which the woman does not eat.’

(4.26) Interrogative Recasts

L: *Namca-ka moca-lul cwu-nun moca-ey iss-eyo*

man-NOM hat-ACC give-REL.PRES hat-at be-POL-DEC

‘(The circle) is on the hat which the man gives the hat.’

(containing a resumptive noun error)

NS: *Namca-ka yeca-hantey cwu-nun moca-ey-yo?* ← INT Recast

man-NOM woman-to give-REL.PRES hat-at-POL-INT

‘Is (the circle) on the hat which the man gives to the woman?’

Unlike in the study done by Lyster (1998a), who counted confirmation checks as interrogative recasts, in this study, confirmation checks were coded as interrogative recasts only when confirmation checks seemed to serve both functions (i.e., confirmation checks as well as correction) or when it was hard to clearly distinguish which function they served. Otherwise, confirmation checks were not coded as interrogative recasts. Considering that the opportunity to respond to recasts can affect learners’ uptake rate, as shown in Oliver’s study (1995), the provision of opportunities to respond to recasts was controlled in this study. Following both types of recasts, a short pause was made to allow

the learners to take the floor in the subsequent turn of the recasts and respond to the recasts.

4.5.2. Primed Production

In this study, primed production is defined as a learner's new utterance of the targeted structure (i.e., DO RC) provided within 10 turns of a recast, following McDonough and Mackey (2008). Although primed production can be produced by learners immediately following the native interlocutor's recast (i.e., immediate primed production), as shown in (4.27), it sometimes can be delayed by several intervening turns (i.e., delayed primed production). An example of delayed primed production due to an intervening dialogue is shown in (4.28).

(4.27) Primed Production (Immediate)

L: Why he hit the deer?

NS: Why did he hit the deer? ← *Recast*

He was driving home and the deer ran out in front of his car.

L: What did he do after that? ← *Primed Production*

(4.28) Primed Production (Delayed)

L: Where where where you work this job?

NS: Where did I work? ← *Recast*

L: Yeah.

NS: I worked in America.

It was my part time job during high school for three years.

L: Why did you like it? ← *Primed Production*

(from McDonough & Mackey, 2006, p. 705)

In Example (4.28), the interlocutor provides a recast in turn 2, and there is an intervening dialogue on the native speaker's previous working experience. Then the learner produces the target form as a primed production in turn 5. In this study, only the first DO RC that

is produced by the learner after the intervening dialogue ends, and only if it occurs within 10 turns of the native interlocutor's recast, was coded as primed production, adopting McDonough and Mackey's (2008) operationalization of primed production. All primed production was coded as either (a) immediate primed production or (b) delayed primed production, depending on whether it was produced immediately following the interlocutor's recast or delayed by intervening turns.

4.6. Procedure

The experiment was conducted over a three-week period. In Week 1, the learners took the pretest and carried out the first treatment session with the native speaker interlocutor. Before taking the pretest, they were asked to sign a consent form and fill out the background questionnaire. In Week 2, the second treatment session was held first, and upon the completion of the second treatment session, the immediate posttest was administered. The delayed posttest was held in Week 3 (i.e., a week after the immediate posttest). A pre/posttest session took about 40–50 minutes, and each treatment session took about 30 minutes. Figure 4.6 displays the whole experimental procedure.

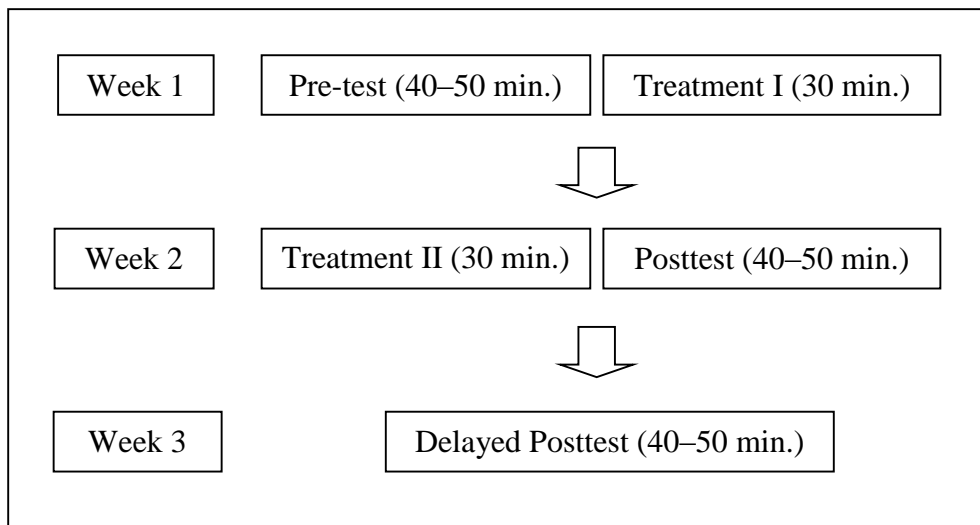


Figure 4.6. Experiment Procedure

All the learners who agreed to participate in the study ($N = 94$) took the pretest on the first day. Based on the pretest score, the learners who were not able to produce even a single correct SU RC, not to mention DO RCs (i.e., DO score 0 and SU score less than 1), were excluded from the study. In addition, the learners who produced the target structure (i.e., DO RCs) with more than 70% accuracy⁶ in all pretest measures were eliminated from the study as well. In other words, only the learners who were developmentally ready to produce the target structure but still had difficulties producing the structure remained in the study and carried out the treatment sessions with the native speaker interlocutor.

The learners who remained in the study were randomly assigned into three groups: (a) the declarative recasts group (DEC), (b) the interrogative recasts group (INT), and (c) the control group (CNT). Stratified random sampling was employed in order to ensure that the learners in each group were comparable in terms of: (i) general Korean language proficiency, (ii) developmental readiness for the target structure, and (iii) learners' backgrounds (i.e., their first language and whether they were heritage learners or not), as mentioned earlier. After completing the pretest, the learners performed two individual treatment sessions with the Korean native speaker (NS) interlocutor regardless of the group they were assigned. The treatment sessions were held in Week 1 and Week 2 with a week interval between the two. In each treatment session, the learners completed the two interaction tasks (i.e., the Find Circles and the Draw Circles tasks) with the interlocutor in Korean. In order to prevent the learners from being exposed to the models of RCs from the beginning, through the NS interlocutor's description of the targets before they produce any RCs, all the learners carried out the Draw Circles task (i.e. one-way information gap task) first and then the Find Circles task (i.e., two-way information gap task). While performing the tasks, the learners in the treatment groups received either explicit (declarative) or implicit (interrogative) recasts from their interlocutor, depending on the group they were assigned, following their incorrect use of the target structure. On the other hand, the learners in the control group did not receive any correction on their erroneous production of DO RCs while carrying out the tasks with their interlocutor.

⁶ The cut-off point of 70% accuracy scores was set following previous interaction studies (Jeon, 2004, 2007; McDonough, 2007).

Upon the completion of the two treatment sessions, the immediate posttest was administered (in Week 2), and the delayed posttest was administered in the subsequent week (Week 3).

4.7. Coding and Analysis

All the interactions between the learners and the native speaker interlocutor during the two treatment sessions were audio-recorded and transcribed by the researcher for the analysis. The Childes Language Data Exchange System (CHILDES; MacWhinney, 2000) was used to transcribe and analyze the interaction data.⁷ The oral and written production of RCs elicited during the OPT and SCT was transcribed and coded using an Excel spreadsheet for further analysis. All the errors and misspellings were kept as they were in the original data. The interaction and the pre/posttest data were coded and analyzed with respect to: (a) the correctness of the answers (only in the case of the pre/posttest data), (b) the successfulness of relativization, and (c) the occurrences of recasts and learner responses to recasts (only in the case of the interaction data). These factors will be described in detail in the following sections.

4.7.1. Pretest/Posttest Measures

The pretest/posttest data were analyzed for the correctness of the answers. First, learner responses on the GJT ($k = 24$) were coded dichotomously as 0 = incorrect or 1 = correct, as they were selected responses rather than productive responses. In the case of the ungrammatical items, only when the item was marked as incorrect and the ungrammatical part was corrected appropriately was a full score (1 point) given for the item. When learners marked the ungrammatical item as incorrect but did not provide accurate correction for the item, only half a point (.5) was given.

The written and oral production of RCs elicited from the SCT ($k = 16$) and the OPT ($k = 16$) were coded with detailed coding categories for further analysis. The coding categories were developed based on the learners' production of RCs elicited in the pilot

⁷ The interactions between the learners and the native speaker interlocutor were first transcribed and coded using the CHAT (Codes for the Human Analysis of Transcripts) transcription system of CHILDES, and then the transcribed data were analyzed using the CLAN (Computerized Language Analysis) program.

studies and with reference to coding categories employed in some previous studies (Doughty, 1988; Jeon & Kim, 2007; O’Grady et al., 2003; Ozeki & Shirai, 2007). First of all, all the RCs elicited from the SCT and OPT were classified into three categories according to the well-formedness of the RCs: (a) successful relativization, (b) unsuccessful relativization, and (c) no relativization attempted. A description of each coding category is provided in Table 4.10, and detailed explanations of the errors that qualify as unsuccessful relativization are given in Appendix G. Among these categories, only successful relativization received a point, whereas no point was given for unsuccessful relativization or no relativization attempted.

Table 4.10.

Coding Categories for Well-formedness of the RCs Elicited

| Coding Categories | Descriptions |
|---|---|
| Successful relativization | <p>When a target RC was successfully produced</p> <p>(e.g.) <i>aki-lul po-nun namca</i> baby-ACC see- REL.PRES man ‘the man who sees the baby’</p> |
| Unsuccessful relativization (No point) | <p>When a target RC was attempted but the relativization was unsuccessful, containing major structural error(s) (e.g., head-internal RCs, reversal error, head error, resumptive noun retention, or head noun missing) or other errors (e.g., miscombination or wrong target)</p> <p>(e.g.) Resumptive noun retention</p> <p><i>yeca kitha chi-nun kitha</i> woman guitar play-REL.PRES guitar ‘The guitar which the woman plays <u>the guitar</u>’ (Target: <i>yeca-ka chi-num kitha</i> ‘the guitar which the woman plays’)</p> |
| No relativization attempted (No point) | <p>When no attempt was made to relativize (i.e., no adnominal verbal suffix was found)</p> <p>(e.g.) <i>yeca-ka sayngkak-i namca</i> woman-NOM thought-NOM man ‘the woman think (?) the man’</p> |

The successful relativization category was also further coded for the type of RC (i.e., SU, DO, and OBL), as shown in Table 4.11. A point was given for the item when the intended target type of RC was produced. Put another way, when the type of RC was changed (i.e., from DO to SU or OBL to DO), no point was given for the item. However, there was one exception. In the OPT, which was an open-ended task, when a higher level RC than the target RC (i.e., DO for SU or OBL for DO) was produced, points were given for the item. It should be noted that following Eckman, Bell, and Nelson (1998), indirect object RCs were regarded as OBL in this study. Unlike in English, there is no structural difference between an indirect object RC and an OBL RC except the animacy of the head noun.

Table 4.11.

Coding Categories for Successful Relativization: Type of RCs

| RC Types | Examples |
|--------------------|--|
| Subject (SU) | [__ <i>aki-lul po-nun</i>] <i>namca</i> baby-ACC see-REL.PRES man ‘the man who looks at the baby’ |
| Direct Object (DO) | [<i>namca ai-ka</i> __ <i>po-nun</i>] <i>aki</i> boy-NOM see-REL.PRES baby ‘the baby whom the boy looks at’ |
| Oblique (OBL) | [<i>namca -ka</i> __ <i>phyenci-lul ssu-nun</i>] <i>phen</i> man-NOM letter-ACC write-REL.PRES pen ‘the pen with which the man writes a letter’ |

The remaining successful relativizations that were eligible for points were then analyzed in terms of the correctness of the RC structure. That is, each RC was checked for any errors contained in the RC, such as case marker errors, tense/inflection errors, and argument omission errors. Whenever such an error was identified, 20% of the total point

(.2 point) was deducted cumulatively. It should be noted that these errors are not major structural errors that threaten the successfulness of relativization, such as head errors or resumptive noun retention. Also, only the errors that were pertinent to RC formation were examined, and all other kinds of errors were disregarded. The error categories are shown in Table 4.12.

Table 4.12.

Coding Categories for Successful Relativization: Errors

| Error Categories | Examples |
|------------------------|---|
| Case marker error | <p><i>Sumi-nun ecey sa-n os</i></p> <p>Sumi-TOP yesterday buy-REL.PST clothes</p> <p>‘The clothes that Sumi bought yesterday’</p> <p>(<i>Sumi-nun</i>_(TOP) > <i>Sumi-ka</i>_(NOM))</p> |
| Tense/inflection error | <p><i>Pak kyoswunim-i imeyil-ul sse-nun haksayng</i></p> <p>Professor Park-NOM email-ACC write-REL.PRES student</p> <p>‘The student to whom Professor Park writes a letter’</p> <p>(<i>sse-nun</i> > <i>ssu-nun</i>)</p> |
| Argument omission | <p><i>Kongwen-eyse (chinkwu-lul) manna-nun yeca</i></p> <p>park-at (friend-ACC) meet-REL.PRES woman</p> <p>‘The woman who meets (a friend) at the park’</p> |

The first error category is the case marker error. Unlike in English, in Korean case markers play a crucial role in RCs as they are the only key to distinguishing the relationship between the arguments inside the RC and the head noun. As shown in (4.29) and (4.30), the only difference between the SU and the DO RC is the case marker inside the RC (i.e., the accusative case marker *-lul* in SU and the nominative case marker *-ka* in DO). Therefore, omitting or placing a wrong case marker inside the RC can either make the interpretation of an RC ambiguous or can change the type of RC, which conveys a different meaning. In this study, such case marker errors that significantly hindered the interpretation of the RCs were coded as errors, and all other, irrelevant case marker errors (i.e., *-ey* instead of *-eyse*, *-ul* instead of *-lul*, etc.) were ignored. Beside such errors, using a topic marker *-(n)un* inside an RC (as shown in Table 4.12) was coded as a case marker error, as it is the kind of error that makes the sentence ungrammatical but is often made by second language learners of Korean.

(4.29) SU RC

[_____ *aki-lul* *po-nun*] *namca*
 baby-ACC see-REL.PRES man
 ‘the man who looks at the baby’

(4.30) DO RC

[*aki-ka* _____ *po-nun*] *namca*
 baby-NOM see-REL.PRES man
 ‘the man who the baby looks’

The next error category is tense/inflection errors. As discussed in Chapter 3, in Korean, a relative clause is marked by a set of relativizers (the past tense *-(u)n*, the present tense *-nun*, and the future tense *-(u)l*), which are combined with the main predicate of the RC. Because the relativizers have the function of expressing the tense of an RC, it is very important for learners of Korean to know which form to use and how to conjugate them correctly when creating a Korean RC.

The final error category is argument omission. In Korean, many elements that are recoverable or understandable from context can be omitted in an utterance. However, this is not so freely permitted inside an RC, and indiscreet omission of indispensable arguments can make an RC ambiguous or even ungrammatical. For instance, in the OPT, if a learner says *po-nun* (see-REL.PRES) *namca* (man), omitting the object, it will be unclear which man the learner is referring to because the picture shows two men who are involved in the action of looking (i.e., one at a woman and the other at a baby). Only such argument omissions, which made an RC ambiguous or ungrammatical, were coded as errors in the case of the OPT. However, in the case of the SCT, all argument omissions were coded as errors except adverbial noun phrase omission, considering that it was a written production task in which all the relevant arguments were already provided and that it did not occur in a conversational context.

4.7.2. Interaction Data

The interaction data between the learners and the interlocutor during the two treatment sessions were analyzed in terms of: (a) the correctness of the elicited RCs, (b) the occurrences of recasts, and (c) learners' responses to recasts. Prior to the analysis, all the transcriptions of the interaction data were thoroughly searched to identify all the instances of learners' erroneous production of the target structure, interlocutor's provision of recasts, and learners' responses to recasts. The identified occurrences of the erroneous RCs, recasts, and learner responses were further classified into various categories. First, the erroneous RCs were coded for: (a) the type of RC (see Table 4.11) and (b) the type of error(s) contained in the RC (see Table 4.12). Second, the identified recasts were classified into either: (a) declarative recasts or (b) interrogative recasts. The provision of the opportunities to respond (for the learners following recasts) was not coded separately in this study as such opportunity was given in all recast episodes regardless of the recast type, as mentioned earlier. In the case of multiple FFEs, which contained multiple learner uptakes, only the final uptake was coded, under the assumption that the learner's interpretation of the recast would be most clearly manifested in the final uptake, following Ellis, Basturkmen, and Loewen (2001).

Learner responses to recasts were also further coded into three categories: (a) acknowledge, (b) repetition, and (c) primed production based on the response patterns obtained in the data. An example of each category is displayed in Table 4.13. Although “uptake” has been used as a term encompassing all learners’ immediate acknowledgement of recasts, in this study simple acknowledgements of recasts, such as *Ney* ‘Yes’ were coded as *acknowledge*, and repetition of recasts as *repetition* in order to differentiate the two, following Ellis, Basturkmen, and Loewen (2001).

Table 4.13.

Coding Categories for Learner Responses

| Learner Responses | Examples |
|-------------------|---|
| Acknowledge | <p>L: <i>Yeca chaek ilku-nun chayk-ey tongkulami iss-eyo.</i> woman book read-REL.PRES book-at circle be-POL-DEC ‘The circle is on the book which the woman reads <u>the book</u>.’</p> <p>NS: <i>Yeca-ka ilk-nun chayk-ey-yo?</i> ← <i>INT Recast</i> woman read-REL.PRES book-at-POL-INT ‘Is (the circle) on the book which the woman reads?’</p> <p>L: <i>Ney.</i> ← <i>Acknowledge</i> yes ‘Yes.’</p> |
| Repetition | <p>L: <i>Ku aisu khulim, mek-nun yeca, mek-nun</i> that ice cream eat-REL.PRES woman eat-REL.PRES <i>yeca-ka aisu khulim-ey_ tongkulami iss-eyo.</i> woman-NOM ice cream-at circle be-POL-DEC ‘The circle is on the ice cream, the woman who eats, the woman who eats...on the ice cream.’</p> <p>NS: <i>Yeca-ka mek-nun aisu khulim-ey-yo.</i> ← <i>DEC Recast</i> woman eat-REL.PRES ice cream-at-POL-DEC ‘(The circle) is on the ice cream the woman eats.’</p> <p>L: <i>Yeca-ka mek-nun aisu khulim-ey tongkulami</i> woman eat-REL.PRES ice cream-at circle <i>iss-eyo.</i> ← <i>Repetition</i> be-POL-DEC ‘The circle is on the ice cream the woman eats.’</p> |

Table 4.13. (Continued)

Coding Categories for Learner Responses

| Learner Responses | Examples |
|-------------------|---|
| Primed production | <p>L: <i>Yeca-ka tha-nun _____ tongkulami iss-eyo.</i> woman ride-REL.PRES circle be-POL-DEC ‘The circle is on _____ the woman rides.’</p> <p>NS: <i>Yeca-ka tha-nun cacenke-ey-yo.</i> ← DEC Recast woman ride-REL.PRES bicycle-at-POL-DEC ‘(The circle) is on the bicycle the woman rides.’</p> <p>L: <i>Ney, cacenke! Cacenke.</i> yes bicycle bicycle. ‘Yes, bicycle! Bicycle.’</p> <p>NS: <i>Ney. Ca, ku mit-ey kongjwung cenhwa yep-ey</i> yes well it under-at public telephone next-LOC <i>namca-ka twu myeng iss-ciyo?</i> man-NOM two men-counter be-POL-INT ‘Yes. Well, under it, there are two men next to the public telephone booth, aren’t they?’</p> <p>L: <i>Ney, ku wi-ey cha-ka twu kay iss-eyo.</i> yes it above-LOC car-NOM two thing-counter be-POL-DEC ‘Yes, above it, there are two cars.’</p> <p>NS: <i>Ney.</i> yes ‘Yes.’</p> |

Table 4.13. (Continued)

Coding Categories for Learner Responses

| Learner Responses | Examples |
|----------------------------------|---|
| Primed production (continued) | <p>L: <i>Han cha-nun yeca iss-ko han cha-nun namca</i> one car-TOP woman be-and one car-TOP man <i>wuncenha-nun ke-yeyo.</i> drive-REL.PRES thing-be-POL-DEC ‘In one car, there is a woman, and the other car is what the man drives.’</p> <p><i>Wuncenha-n cha, namca wuncenha-nun cha-ka</i> drive-REL.PST car man drive-REL.PRES car-NOM <i>tongkulami iss-eyo.</i> ← <i>Primed Production</i> circle be-POL-DEC ‘The circle is on the car which the man drove, the car which the man drives.’</p> |

The repetition category was also further divided into (a) no repair, (b) partial repair, and (c) repair based on the repetition patterns identified in the data. *No repair* refers to the unsuccessful repetition of a recast in which the error corrected in the recast was not repaired at all. *Partial repair* occurs when the recast involved changes of multiple errors but the learner repaired only some or part of the errors. Finally, *repair* refers to the successful repair of all the errors corrected in the recasts regardless of the number of changes given in the recasts (i.e., single or multiple changes). Initially, primed production was also coded into two different categories: immediate primed production and delayed primed production, depending on whether the primed production occurred immediately following the recasts or several turns after the recasts, following McDonough and Mackey (2007). However, the occurrences of immediate primed

production were extremely low in the data (i.e., only three occurrences), and therefore these two categories were combined and are reported together in this study.

4.7.3. Statistical Analysis

Before analyzing the data, a one-way ANOVA was run on the pretest scores to ensure that the three groups were comparable (i.e., the three groups are not different from the beginning). In order to examine which type of recasts (declarative vs. interrogative) leads to greater linguistic development of the target structure on the immediate and delayed posttests, a split-plot ANOVA was employed, taking group as a between-subject variable and time as a within-subject variable. When significant interaction effects were found according to the split-plot ANOVA results, Tukey's HSD test was employed as a post-hoc analysis. As a measure to investigate whether the two treatment groups are significantly different from each other with respect to the occurrences of recasts and learner responses to recasts, an Analysis of Co-Variance (ANCOVA) was performed, taking the frequency of recasts as a covariance, considering that the production of uptakes was contingent upon the provision of recasts. Finally, in order to examine the relationships among explicit/implicit recasts, various learner responses, and L2 development, Pearson's correlation coefficient was calculated for each relationship between posttest scores on different test measures of RC development and the various types of learner responses separately for each treatment group. An alpha level of $p < .05$ was set for all the analyses conducted.

CHAPTER 5

RESULTS

In this chapter, the results of the current study will be presented in the following order. First, the effects of explicit and implicit recasts on the learners' pretest/posttest score gains will be reported followed by the interaction analysis of the various learner responses to different types of recasts during the treatment interaction. Then, the relationships among recasts, learner responses, and accuracy test scores will be examined.

5.1. Explicit/Implicit Recasts & Pretest/Posttest Score Gains

5.1.1. Pretest Scores

Before the pretest and posttest score gains were calculated, the pretest scores on each testing measure were examined in order to see whether the three groups of learners were comparable from the outset. Tables 5.1–5.3 report the pretest scores on the Oral Production Task (SU = 4, DO = 8, OBL = 4 items), the Sentence Combination Task (SU = 4, DO = 8, OBL = 4 items), and the Grammaticality Judgment Task (SU = 6, DO = 12, OBL = 6 items). Because the numbers of items for each RC type included in each task are not identical, all scores were converted to a ratio of 10, and this is what is reported in each table. In other words, the total possible score for each RC type is 10 points, and consequently the total for each task can reach 30 points when scores on all three RC types are combined.

Table 5.1.

OPT Pretest Scores

| | SU | | DO | | OBL | | Total | |
|-------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|
| | <i>M</i> | (<i>SD</i>) | <i>M</i> | (<i>SD</i>) | <i>M</i> | (<i>SD</i>) | <i>M</i> | (<i>SD</i>) |
| INT | 8.31 | (2.25) | 5.27 | (3.31) | 2.86 | (2.55) | 16.29 | (6.61) |
| DEC | 8.40 | (1.67) | 5.40 | (2.94) | 1.86 | (2.02) | 15.80 | (6.00) |
| CNT | 9.00 | (1.43) | 6.63 | (3.20) | 3.19 | (2.55) | 19.09 | (6.09) |
| Total | 8.57 | (1.81) | 5.77 | (3.16) | 2.63 | (2.42) | 17.06 | (6.31) |

Table 5.1 displays the OPT pretest scores. As predicted, based on the previous RC studies, the average scores were the highest for the SU ($M = 8.57$, $SD = 1.81$), followed by DO ($M = 5.77$, $SD = 3.16$) and OBL RCs ($M = 2.63$, $SD = 2.42$) for all three groups. Put another way, the learners had the most difficulty producing the OBL RCs, followed by the DO RCs, with the SU RCs being the easiest for them. As shown by the SU RCs scores, it seemed that all three groups were well-advanced with SU RC production but still had problems producing DO and OBL RCs. A one-way ANOVA was conducted to see whether the score differences among the three RC types were statistically significant, and the results showed main effects for RC type ($F(2, 186) = 87.115$, $p = .000$), which indicates that the differences in the average scores of the three types of RCs are greater than chance. With respect to the DO RC scores, which are the main concern of the study, the average scores of the control group were somewhat higher than those of the other two treatment groups. A one-way ANOVA was conducted to see whether these score differences were statistically significant. The results showed no main effects for group ($F(2, 60) = 1.182$, $p = .314$), confirming that the three groups were comparable in terms of their DO RC production.

Table 5.2.

SCT Pretest Scores

| | SU | | DO | | OBL | | Total | |
|-------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|
| | <i>M</i> | (<i>SD</i>) | <i>M</i> | (<i>SD</i>) | <i>M</i> | (<i>SD</i>) | <i>M</i> | (<i>SD</i>) |
| INT | 6.98 | (3.75) | 6.79 | (3.54) | 6.83 | (3.98) | 20.54 | (10.89) |
| DEC | 7.98 | (3.05) | 7.96 | (2.81) | 6.76 | (3.52) | 23.00 | (8.61) |
| CNT | 7.17 | (3.84) | 7.06 | (3.75) | 5.55 | (3.94) | 20.13 | (10.74) |
| Total | 7.37 | (3.53) | 7.27 | (3.38) | 6.38 | (3.80) | 21.22 | (10.05) |

SCT pretest scores are shown in Table 5.2. Once again, the overall average scores were highest for SU RCs ($M = 7.37$, $SD = 3.53$), followed by DO ($M = 7.27$, $SD = 3.38$) and then OBL RCs ($M = 6.38$, $SD = 3.80$). Unlike in the OPT, however, in the SCT, the mean score differences between SU and DO were marginal although there were slightly larger gaps between DO and OBL RC scores. It seems that the gap position differences between SU and DO RCs did not affect the learners' written production of RCs as much as it affected their oral production (i.e., in the OPT). A one-way ANOVA also confirmed that the differences among the three RC types were not statistically significant ($F(2, 186) = 1.493$, $p = .227$). With respect to the DO RC scores, no main effects for group were found according to the one-way ANOVA ($F(2, 60) = .694$, $p = .503$), confirming that the three groups were not different in terms of their written production of DO RCs.

Table 5.3.

GJT Pretest Scores

| | SU | | DO | | OBL | | Total | |
|-------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|
| | <i>M</i> | (<i>SD</i>) | <i>M</i> | (<i>SD</i>) | <i>M</i> | (<i>SD</i>) | <i>M</i> | (<i>SD</i>) |
| INT | 5.32 | (1.43) | 4.90 | (1.50) | 5.08 | (2.01) | 15.15 | (3.88) |
| DEC | 6.07 | (1.87) | 5.48 | (1.63) | 5.28 | (2.38) | 16.73 | (3.94) |
| CNT | 5.56 | (2.05) | 5.32 | (1.37) | 4.29 | (1.52) | 15.36 | (3.01) |
| Total | 5.65 | (1.80) | 5.23 | (1.50) | 4.88 | (2.01) | 15.74 | (3.64) |

Table 5.3 presents the GJT pretest scores. Compared to the other tasks, the GJT pretest scores showed the least amount of decrease from SU ($M = 5.65$, $SD = 1.80$) to DO ($M = 5.23$, $SD = 1.50$) and to OBL RCs ($M = 4.88$, $SD = 2.01$). As expected, the differences among the three RC types were not statistically significant according to a one-way ANOVA ($F(2, 186) = 2.927$, $p = .056$). A one-way ANOVA was also carried out in order to see whether the three groups were comparable with respect to the DO RC scores, and the results confirmed that the three groups were not significantly different ($F(2, 60) = .819$, $p = .46$).

Table 5.4.

Pretest Scores: DO RC Only

| | OPT | | SCT | | GJT | | Total | |
|-------|----------|-------------|----------|-------------|----------|-------------|----------|-------------|
| | <i>M</i> | <i>(SD)</i> | <i>M</i> | <i>(SD)</i> | <i>M</i> | <i>(SD)</i> | <i>M</i> | <i>(SD)</i> |
| INT | 5.27 | (3.31) | 6.79 | (3.54) | 4.90 | (1.50) | 16.96 | (6.20) |
| DEC | 5.40 | (2.94) | 7.96 | (2.81) | 5.48 | (1.63) | 18.85 | (5.90) |
| CNT | 6.63 | (3.20) | 7.06 | (3.75) | 5.32 | (1.37) | 19.01 | (6.15) |
| Total | 5.77 | (3.16) | 7.27 | (3.38) | 5.23 | (1.50) | 18.27 | (6.06) |

Table 5.4 presents only the DO RC scores, which are the main focus of the current study, for all three testing measures. As shown in the table, the DO RC scores were the highest in the SCT ($M = 7.27$, $SD = 3.38$) followed by the OPT ($M = 5.77$, $SD = 3.16$), and they were the lowest in the GJT ($M = 5.23$, $SD = 1.50$). These scores can be interpreted to mean that written production of DO RCs (i.e., in the SCT) was relatively easier than oral production of DO RCs (i.e., in the OPT), and judging the grammaticality of the RCs (i.e., in the GJT) was the most difficult for the learners. The scores among the three groups, however, were not found to be significantly different in any of the pretest measures, assuring that the three groups were comparable in terms of DO RC production. In the following sections, only the DO RC scores will be further examined and reported, as DO RCs are the target structure of the current study.

To summarize the average pretest scores, the accuracy rates for the three different types of RCs were in general in the order of SU, DO, and OBL RCs for all three types of tasks, although main effects of RC type were only found for the OPT, according to the one-way ANOVA results. The score gaps among the three RC types were largest for the OPT and smaller in the GJT and SCT. With regard to the DO RC scores, the learners produced DO RCs most accurately in the SCT, followed by the OPT and then the GJT.

5.1.2. Pretest/Posttest Score Gains

5.1.2.1. Oral Production Task

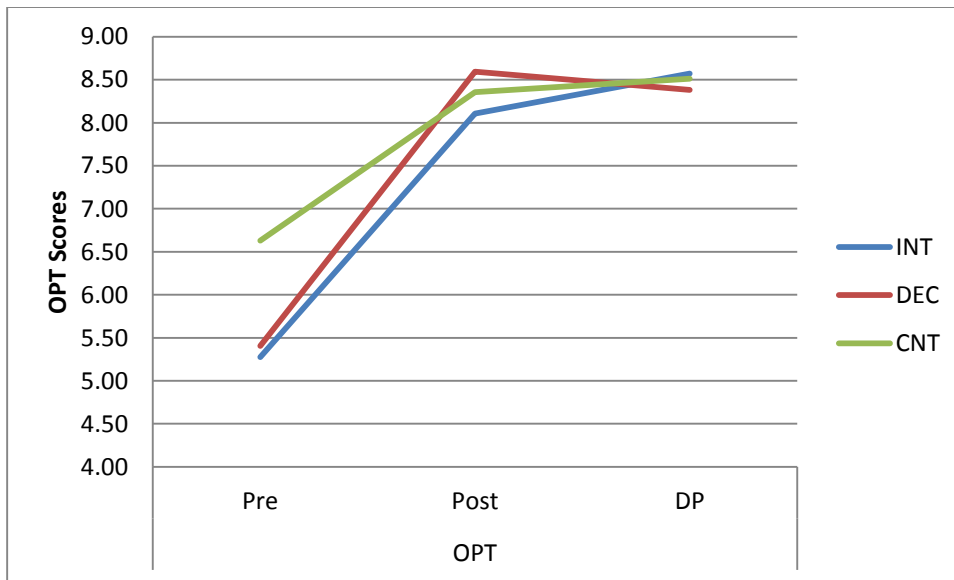
The descriptive statistics of the OPT pretest and posttest scores are displayed in Table 5.5 and Figure 5.1. Overall, score increases were observed in all three groups from the pretest to the immediate posttest (IPT) and the delayed posttest (DPT). Compared to the control group, both of the treatment groups (i.e., the interrogative and the declarative groups) gained considerably larger score increases from the pretest in both of the posttest measures (i.e., IPT and DPT). The DEC group scored the highest ($M = 8.60$, $SD = 1.47$) in the IPT, achieving the greatest score increase (on average 3.19 points) from the pretest among the three groups. On the other hand, the INT group reached the highest score in the DPT ($M = 8.57$, $SD = 1.90$), which is again the greatest score increase from the pretest (on average 3.30 points) among the three groups. Nevertheless, it is not clear from the data whether the smaller score increases observed in the control group in both IPT (on average 1.73 points) and DPT (on average 1.88 points) were due to ceiling effects. The average pretest score of the control group was somewhat higher than those of the two treatment groups to begin with, although the difference was not statistically significant. In the same way, it is also possible that there was no further room to improve for both of the treatment groups, as both of the groups reached over 80% accuracy rates in all posttest measures. In any case, it is worth noting that both of the treatment groups went from having relatively low pretest scores compared to the control group to either outperforming or scoring similarly to the control group in the posttests, achieving greater score increases from the pretest.

Table 5.5.

OPT Pre/Posttest Scores: DO RC Only

| | PRE | | IPT | | DPT | |
|-------|----------|-------------|----------------------|-------------|----------------------|-------------|
| | <i>M</i> | <i>(SD)</i> | <i>M</i> (*Gains) | <i>(SD)</i> | <i>M</i> (*Gains) | <i>(SD)</i> |
| INT | 5.27 | (3.31) | 8.11 (+2.83) | (2.37) | 8.57 (+3.30) | (1.90) |
| DEC | 5.40 | (2.94) | 8.60 (+3.19) | (1.47) | 8.38 (+2.98) | (1.86) |
| CNT | 6.63 | (3.20) | 8.36 (+1.73) | (2.40) | 8.51 (+1.88) | (2.17) |
| Total | 5.77 | (3.16) | 8.35 (+2.58) | (2.10) | 8.49 (+2.72) | (1.95) |

* Score gains from the pretest (i.e., PRE–IPT/PRE–DPT)

*Figure 5.1. OPT Pre/Posttest Scores: DO RC Only*

In order to examine the effects of the different types of recasts on the OPT scores, a split-plot ANOVA was employed with group as the between-subject variable and time as the within-subject variable. The results revealed main effects of time ($F(2, 120) = 69.266$, $p < .001$) but no main effects of group ($F(2, 60) = .316$, $p = .630$) or interaction effects between time and group ($F(4, 120) = 2.050$, $p = .092$), implying that all three groups improved over the three testing periods without significant treatment effects of the different types of recasts on the OPT performance.

5.1.2.2. Sentence Combination Task

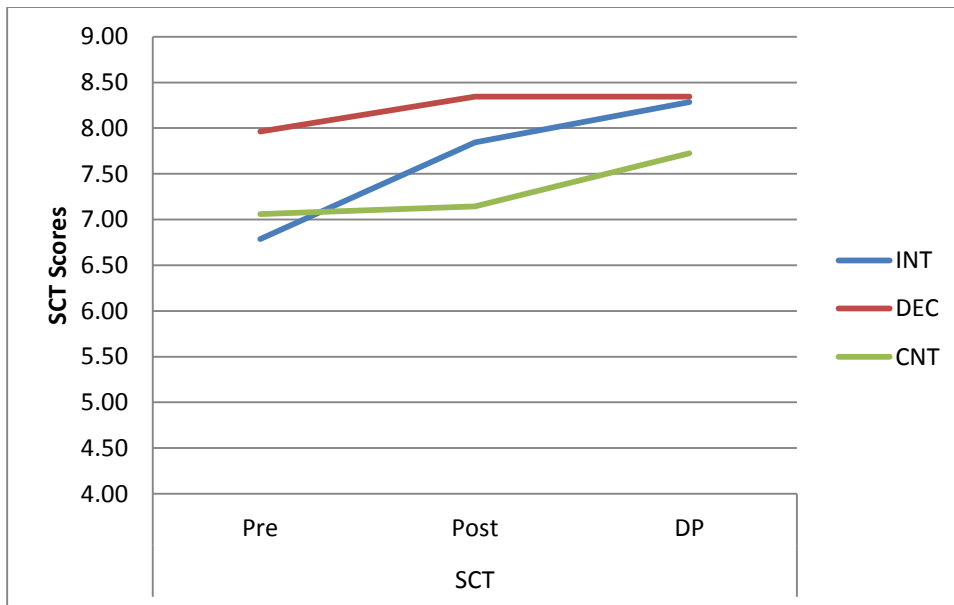
Table 5.6 and Figure 5.2 demonstrate the SCT pretest and posttest scores. Overall, the SCT scores showed very marginal score increases from the pretest compared to the OPT. Considering that the SCT pretest scores were the highest among the three tasks, these are not surprising results. Among the three groups, the INT group showed the greatest average score increase from the pretest (1.06 points in the IPT and 1.50 points in the DPT) whereas the DEC group produced the least increases (.38 for both IPT and DPT). However, as the pretest score of the DEC group was the highest (7.96 points), it is again possible that there were ceiling effects that prevented this group from obtaining further score increases. Nevertheless, it should be noted that the posttest scores of the control group were the lowest among the three groups in both of the posttest measures (i.e., IPT and DPT). It is not surprising that the DEC group outperformed the CNT group because their pretest scores were already higher than the CNT group's. However, it is notable that even the INT group outperformed the CNT group in both of the posttests despite their lower pretest scores.

Table 5.6.

SCT Pre/Posttest Scores: DO RC Only

| | PRE | | IPT | | DPT | |
|-------|----------|---------------|-------------------------------|---------------|-------------------------------|-----------|
| | <i>M</i> | (<i>SD</i>) | <i>M</i> (* <i>Gains</i>) | (<i>SD</i>) | <i>M</i> (* <i>Gains</i>) | <i>SD</i> |
| INT | 6.79 | (3.54) | 7.85 (+1.06) | (3.19) | 8.29 (+1.50) | 2.90 |
| DEC | 7.96 | (2.81) | 8.35 (+.38) | (2.47) | 8.35 (+.38) | 2.55 |
| CNT | 7.06 | (3.75) | 7.14 (+.08) | (3.43) | 7.73 (+.67) | 2.98 |
| Total | 7.27 | (3.38) | 7.78 (+.51) | (3.05) | 8.12 (+.85) | 2.78 |

* Score gains from the pretest (i.e., PRE–PRE/PRE–PRE)

*Figure 5.2. SCT Pre/Posttest Scores: DO RC Only*

The results of the split-plot ANOVA on the SCT scores were similar to those on the OPT scores, as could be predicted from the small score differences between the groups. Main effects for time ($F(2, 120) = 4.944, p = .009$) were observed, but again there were no main effects for group ($F(2, 60) = .553, p = .578$) or interaction effects between time and group ($F(4, 120) = 1.024, p = .398$). In other words, the ANOVA results confirmed that all three groups improved from the pretest to the posttests, but there were no statistically significant differences between the groups.

5.1.2.3. Grammaticality Judgment Task

As shown in Table 5.7 and Figure 5.3, the least score increases were observed in the GJT. Unlike the OPT and SCT, in which all three groups reached on average around 80% of the total score in the DPT, the average scores were around 60% of the total score in the GJT, regardless of the group. It seems that the structural knowledge of the Korean RCs measured in this task is the most difficult to change over a short period, or at least through the kind of interaction treatment provided in this study. Nevertheless, slight but gradual increases were observed from the pretest to the IPT and to the DPT in all three groups as a result of the treatment. As in the other tasks, the largest score gains were again observed for the INT group, while the DEC and the CNT groups showed similar score increases over the testing period.

Table 5.7.

GJT Pre/Posttest Scores: DO RC Only

| | PRE | | IPT | | DPT | |
|-------|----------|---------------|-------------------|---------------|-------------------|---------------|
| | <i>M</i> | (<i>SD</i>) | <i>M</i> | (<i>SD</i>) | <i>M</i> | (<i>SD</i>) |
| | | | (* <i>Gains</i>) | | (* <i>Gains</i>) | |
| INT | 4.90 | (1.50) | 5.40 | (1.60) | 5.99 | (1.45) |
| | | | (+.50) | | (+1.09) | |
| DEC | 5.48 | (1.63) | 5.85 | (1.19) | 6.13 | (1.06) |
| | | | (+.38) | | (+.65) | |
| CNT | 5.32 | (1.37) | 5.44 | (1.74) | 5.97 | (1.27) |
| | | | (+.12) | | (+.65) | |
| Total | 5.23 | (1.50) | 5.56 | (1.52) | 6.03 | (1.25) |
| | | | (+.33) | | (+.80) | |

* Score gains from the pretest (i.e., PRE–PRE/DPT–DPT)

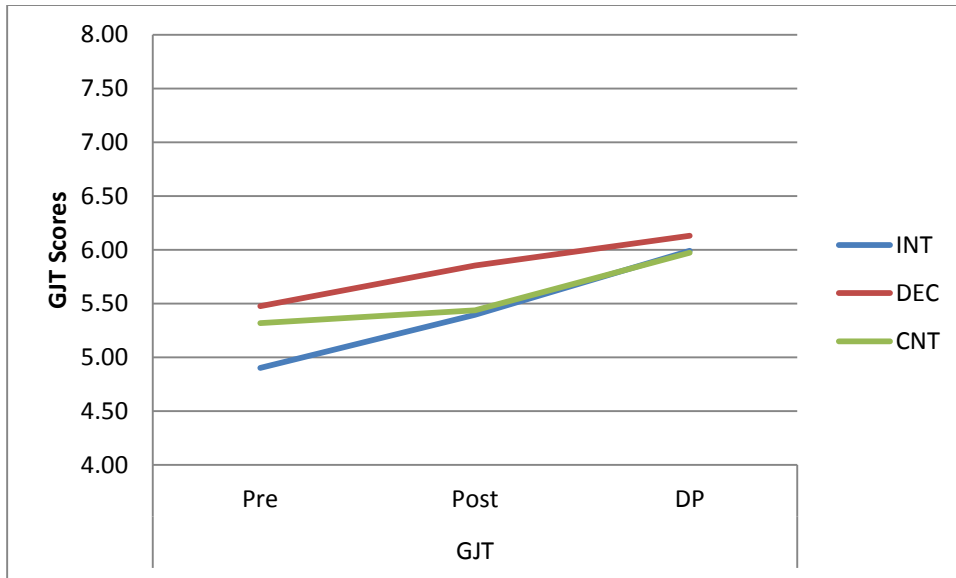


Figure 5.3. GJT Pre/Posttest Scores: DO RC Only

The split-plot ANOVA also found no main effects for group ($F(2, 60) = .613, p = .545$) or interaction effects between time and group ($F(4, 120) = .408, p = .802$), but only main effects for time ($F(2, 120) = 9.206, p < .001$). Thus, it can be concluded that there was improvement on the GJT scores in all three groups over the three testing periods. However, there were no significant differences among the groups in terms of their DO RC structural knowledge.

5.1.2.4. Overall Score Gains

The total score gains on all three tasks (i.e., OPT, SCT, and GJT) are displayed in Table 5.8 and Figure 5.4. Among the three groups, the INT group attained the largest score gains in the IPT (average score gain of 4.39) as well as in the DPT (average score gain of 5.89), followed by the DEC group (average score gain of 3.95 for the IPT and 4.01 for the DPT). Once again, it should be noted that from the data it is not clear whether the comparably modest score increases observed in the CNT group (1.93 for the IPT and 3.20 for the DPT) were due to ceiling effects; the pretest scores of the CNT were relatively higher than those of the other groups, and the CNT group reached over 80% of the total scores in the DPT in both SCT and OPT. Nevertheless, it is again worth noting that the INT and DEC groups outscored the CNT group in both of the posttest measures despite their lower pretest scores.

In addition, interesting patterns of score increases were observed among the three groups. Overall, the INT and CNT groups showed gradual score increases over time from the pretest to the IPT and to the DPT, whereas the DEC group attained rather rapid score increases from the pretest to the IPT and marginal (or no) score increases from the IPT to the DPT (except in the GJT), as described in the earlier sections that compare the individual task scores (see Tables 5.5–5.7 and Figures 5.1–5.3). Although caution is required in interpreting such patterns due to the pretest score gaps between the three groups and possible ceiling effects, it seems that, for the DEC group, the score improvement was achieved in a relatively short period (i.e., from the pretest to the IPT) and such increases were either maintained or started to decrease in the DPT. In comparison, for the INT and the CNT groups, gradual score increases were manifested

over the two testing periods, although greater gains were achieved immediately after the treatment session by the INT group.

A split-plot ANOVA was performed again for the total scores. Unlike the individual task scores, significant main effects of time ($F(2, 120) = 57.932, p = .000$) and interaction effects between time and group ($F(4, 120) = 2.590, p = .040$) were found. Once again no main effects for group were observed ($F(2, 60) = .353, p = .704$). To further examine the significant interaction effects and, if possible, to locate where differences exist between the groups, a post-hoc analysis was performed employing Tukey's HSD test. None of the comparisons between the groups, however, showed significant differences, which may be due to the conservative nature of the post-hoc analysis or the relatively small score increases observed in all three groups.

Table 5.8.

Total Pre/Posttest Scores: DO RC Only

| | PRE | | IPT | | DPT | |
|-------|----------|-------------|-----------------|-------------|-----------------|-------------|
| | <i>M</i> | <i>(SD)</i> | <i>M</i> | <i>(SD)</i> | <i>M</i> | <i>(SD)</i> |
| | | | <i>(*Gains)</i> | | <i>(*Gains)</i> | |
| INT | 16.96 | (6.20) | 21.35 | (5.61) | 22.85 | (4.97) |
| | | | (+4.39) | | (+5.89) | |
| DEC | 18.85 | (5.90) | 22.79 | (3.32) | 22.86 | (4.00) |
| | | | (+3.95) | | (+4.01) | |
| CNT | 19.01 | (6.15) | 20.94 | (4.87) | 22.21 | (4.52) |
| | | | (+1.93) | | (+3.20) | |
| Total | 18.27 | (6.06) | 21.69 | (4.89) | 22.64 | (4.45) |
| | | | (+3.42) | | (+4.37) | |

* Score gains from the pretest (i.e., PRE–IPT/PRE–DPT)

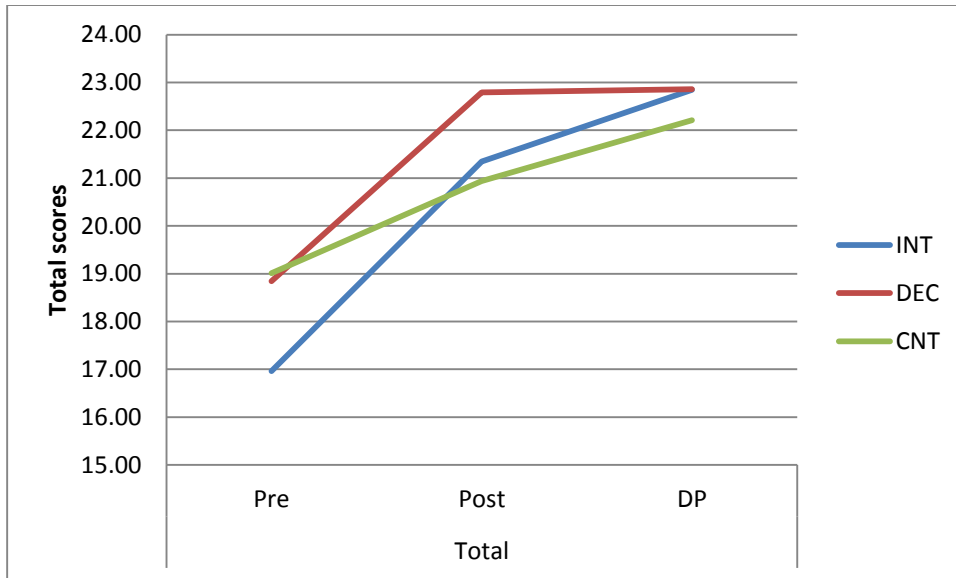


Figure 5.4. Total Pre/Posttest Scores: DO RC Only

To summarize the pretest and posttest score gains, all three groups showed improvements from the pretest to the posttests, regardless of task type and despite the marginal score increases observed in the GJT. With regard to the effects of different types of recasts, no significant group effects were obtained from the inferential statistics, indicating that all three groups improved to a similar extent from the pretest. Nevertheless, the descriptive statistics revealed relatively larger score increases for the treatment groups compared to the control group, although it is not clear from the results whether such differences were in part due to possible ceiling effects for the control group. Also, as discussed earlier, it is also possible that the learners in the treatment group did not have further room to improve in both OPT and SCT, considering that they already reached over 80% accuracy rates. In the following section, the interaction data of the two treatment tasks will be examined to see how the explicit and implicit recasts behave differently and lead to different learner responses in discourse.

5.2. Explicit/Implicit Recasts and Learners' Responses

5.2.1. Overall RC Production

Before delving into the examination of the occurrences of recasts and different learner responses following recasts, it will be worthwhile to examine how many RCs were produced correctly by the learners as a basis for the interaction analysis. Table 5.9 demonstrates the total number of RCs occurring during the interaction by each group, with the proportion of each RC type. It should be noted that the interaction data of the control group were excluded from the analysis because recasts, which are the main focus of this analysis, were only given to the treatment groups (i.e., INT and DEC). In addition, it should be noted that the data of four learners (three from INT and one from DEC) were excluded from the analysis due to a malfunction of the recorded files,⁸ leaving data from 20 learners for the DEC group and 18 learners for the INT group.

⁸ Four recording files were created for each learner (DCT 1 & 2 and FCT 1 & 2). If any of the files was damaged and thus the recordings could not be recovered, all of the learner's data were excluded from the analysis.

Table 5.9.

Numbers of RCs Produced During the Interaction

| | SU | | DO | | OBL | | Total | |
|-------|-----|---------|-----|---------|-----|--------|-------|--------|
| INT | 443 | (56.9%) | 316 | (40.6%) | 19 | (2.4%) | 778 | (100%) |
| DEC | 541 | (56.8%) | 390 | (40.9%) | 22 | (2.3%) | 953 | (100%) |
| Total | 984 | (56.8%) | 706 | (40.8%) | 41 | (2.4%) | 1,731 | (100%) |

In total, 1,731 RCs were produced by the learners of the two treatment groups during the interaction. Of this total, 778 RCs (44.9%) were produced by the INT group (on average 43.2 RCs per learner) and 953 RCs (55.1%) by the DEC group (on average 47.7 RCs per learner). Out of the total of 1,731 RCs, approximately 60% were correctly produced (1,042 RCs) whereas the rest (689 RCs, 39.8%) were inaccurate RCs containing errors. The proportions of correct and incorrect RCs produced were similar in both groups.

With respect to the type of RCs, it was found that SU RCs were most frequently produced by the learners followed by DO and OBL RCs. It is interesting that although the number of DO RC targets ($k = 24$) greatly outnumbered SU RC targets ($k = 12$) in the treatment tasks (as DO is the target structure of this study), the learners produced SU RCs more frequently than DO RCs. The accuracy rate of each RC type was also examined, and the number and proportion of correct and incorrect RCs for each RC type are displayed in Table 5.10.

Table 5.10.

Numbers of Correct and Incorrect RCs for Each RC Type

| | SU | | DO | | OBL | |
|-------|----------------|----------------|----------------|----------------|---------------|---------------|
| | Correct | Incorrect | Correct | Incorrect | Correct | Incorrect |
| INT | 309 (69.8%) | 134 (30.2%) | 146 (46.2%) | 170 (53.8%) | 12 (63.2%) | 7 (36.8%) |
| DEC | 393 (72.6%) | 148 (27.4%) | 166 (42.6%) | 224 (57.4%) | 16 (72.7%) | 6 (27.3%) |
| Total | 702 (71.3%) | 282 (28.7%) | 312 (44.2%) | 394 (55.8%) | 28 (68.3%) | 13 (31.7%) |

As shown in the table, the overall accuracy rate (i.e., the proportion of correct RCs) decreased from SU (71.3%) to DO (44.2%), which is in line with the RC difficulty order predicted in the literature (i.e., Keenan and Comrie, 1977). In other words, SU RCs were more accurately produced by the learners than DO RCs regardless of the group. Surprisingly, the accuracy rates for OBL RCs (68.3%) were much higher than those for DO RCs and even similar to or slightly lower than those for SU RCs in both DEC and INT groups. At first glance, it seems that the learners produced OBL RCs more accurately than DO RCs. However, it should be noted that only 41 OBL RCs were produced in total, which is on average 1.11 OBL RCs per learner. Table 5.11 shows the average number of RCs produced for each RC type. Considering that, altogether, four OBL targets were included for each learner during the two treatment sessions, it is hard to say that the learners were capable of producing OBL RCs more accurately than DO RCs. A more convincing interpretation would be that most of the learners avoided OBL RCs and attempted OBL RCs only when they were quite competent with the structure used in a particular context.

Table 5.11.

Average Numbers of RCs Produced During the Interaction

| | SU (* k = 12) | DO (k = 24) | OBL (k = 4) | Total (k = 40) |
|-------|-----------------|----------------|----------------|-------------------|
| INT | 24.6 | 17.6 | 1.1 | 43.2 |
| DEC | 27.1 | 19.5 | 1.1 | 47.7 |
| Total | 25.9 | 18.6 | 1.1 | 45.6 |

* k = number of total RC targets included

Now let us turn to the analysis of the interaction data, inquiring into the relationship between the explicit/implicit recasts and different learner responses to recasts, which is one of the main foci of the current study. In the following sections, the occurrences of explicit and implicit recasts as well as the various learner responses to recasts (i.e., uptake, acknowledge, repetition, repair, and primed production) will be reported followed by an examination of the relationships among them.

5.2.2. Occurrences of Explicit/Implicit Recasts

In total, 583 FFEs containing recasts were identified in the interaction data. Among them, 298 FFEs contained interrogative recasts (51.1%) and 285 FFEs (48.9%) contained declarative recasts, as shown in Table 5.12. It might be surprising at first glance that the number of the recasts exceeded the total number of incorrect DO utterances given in Table 5.10. However, this is because learners' avoidance of DO RCs and production of lower stage RCs (i.e., SU) were not coded as DO errors. As mentioned in Chapter 4, recasts were provided not only following learners' erroneous utterances of DO RCs but also following their avoidance of DO RCs (e.g., simple mentioning of the location of the circles without producing a DO RC or producing a lower stage RC instead of DO). There were particularly high rates of DO RC avoidance among the lower-proficiency learners. In the INT group, out of the total of 298 interrogative recasts, approximately 136 recasts (45.6%) were provided following learners' erroneous DO RC utterances. In the DEC group, out of 285 declarative recasts, 174 recasts (61.1%) were given after an incorrect DO RC. In sum, 53.2% of the total recasts were provided following erroneous DO RC

production, whereas the rest ($k = 273$, 46.8%) were given after either avoidance of DO RCs or production of lower level RCs (i.e., SU RCs).

Table 5.12.

Total Incidences of Interrogative and Declarative Recasts

| | INT | DEC | Total |
|---------|-------------|-------------|------------|
| Recasts | 298 (51.1%) | 285 (48.9%) | 583 (100%) |

Table 5.13 reports the average number of each type of recast given to individual learners. On average, 16.56 recasts were given to an individual learner in the INT group, and 14.25 recasts in the DEC group. The minimum was six and the maximum 26 recasts. It should be noted as well that the total numbers of recasts given to each learner varied depending on the number of DO RCs each learner erroneously produced or avoided.

Table 5.13.

Average Numbers of Interrogative/Declarative Recasts per Learner

| | <i>M</i> | <i>SD</i> | <i>Min</i> | <i>Max</i> |
|-------|----------|-----------|------------|------------|
| INT | 16.56 | 3.70 | 11 | 26 |
| DEC | 14.25 | 4.53 | 6 | 23 |
| Total | 15.34 | 4.26 | 6 | 26 |

As shown in Table 5.13, the average number of recasts given to the INT group was a bit higher than that of the DEC group due to the ambiguousness involved in coding interrogative recasts. Confirmation checks or clarification requests given with rising intonation could be clearly distinguished from declarative recasts, but the difference was often not clear with interrogative recasts. Therefore, only when an utterance could be unquestionably interpreted as a confirmation check or clarification request from the context was it coded as such. Otherwise, it was coded as an interrogative recast, which inevitably resulted in higher numbers of interrogative recasts than declarative recasts. In

the following sections, the occurrences of different learner responses to recasts (i.e., uptake, acknowledge, repetition, repair, and primed production) will be examined.

5.2.3. Explicit/Implicit Recasts and Learner Uptake

In this section, various types of learner responses to recasts will be reported. First, let us examine the total number of uptakes produced by the learners in each group following the recast episodes. In total, 487 uptakes were identified in the interaction data, as shown in Table 5.14, which corresponds to 83.5% of the total recast occurrences. The INT group produced 240 of the uptakes and the DEC group produced 247 of the uptakes. In other words, the learners in the INT group responded with an uptake following 240 out of 298 recast episodes (80.5%), and the learners in the DEC group responded with an uptake following 247 out of 285 recast episodes (86.7%). The uptake rate was slightly higher for the DEC group than the INT group.

Table 5.14.

Total Numbers of Uptakes Produced

| | INT | DEC | Total |
|--------|--------------|-------------|-------------|
| Uptake | 240 (80.5%)* | 247 (86.7%) | 487 (83.5%) |

* Proportion of uptakes to recast episodes

Table 5.15 displays the average number of uptakes produced by individual learners in each group. On average, the INT group learners each produced 13.33 uptakes, and the DEC group learners 12.35 uptakes. The minimum number of uptakes produced was six and the maximum was 20. In order to examine whether the two groups were significantly different from each other with respect to the uptake rate, an Analysis of Co-Variance (ANCOVA) was performed taking the frequency of recasts as a covariate. The frequency of recasts was added into the analysis as a covariate because the production of uptakes was contingent upon the provision of recasts. The results showed no significant difference between the two groups with respect to the total uptake rate ($F(1, 35) = .011, p$

= .916), indicating that the two groups produced similar proportions of uptakes following recasts.

Table 5.15.

Average Numbers of Uptakes Produced per Learner

| | <i>M</i> | <i>SD</i> | <i>Min</i> | <i>Max</i> |
|-------|----------|-----------|------------|------------|
| INT | 13.33 | 3.29 | 7 | 18 |
| DEC | 12.35 | 4.46 | 6 | 20 |
| Total | 12.81 | 3.93 | 6 | 20 |

As mentioned in Chapter 4, learner uptake can be divided into simple acknowledgement of recasts such as “Yeah” and repetition of recasts. Here, *acknowledge* refers to a learner’s simple acknowledgement of recasts without repetition of any parts of the recasts provided following their erroneous utterance. In Table 5.16, average numbers of both types of uptake (i.e., acknowledge and repetition) are displayed for each group. The percentages given in the parentheses report the relative proportion to the total number of recasts given to each group. Overall, recasts were more frequently followed by acknowledge than repetition. Whereas 307 recasts ($M = 8.08$, 52.7%) were responded to with simple acknowledgement, only 180 recasts were followed by repetition of the previously given recasts ($M = 4.74$, 30.9%)

Clearly different patterns of uptake were also manifested, as can be seen when comparing the two treatment groups. Whereas the DEC group produced similar proportions of acknowledge ($M = 6.50$, 45.6%) and repetition ($M = 5.85$, 41.1%), the INT group responded much more frequently with simple acknowledgement ($M = 9.83$, 59.4%) than with repetition ($M = 3.50$, 21.1%). The ANCOVA results confirmed that the differences between the two groups with respect to simple acknowledgement ($F(1, 35) = 5.243$, $p = .028$) and repetition ($F(1, 35) = 4.153$, $p = .049$) were statistically significant. Put another way, the INT group produced significantly more acknowledges than the DEC group while the DEC group produced significantly more repetitions than the INT group.

Table 5.16.

Distribution of Learner Uptake: Average Numbers of Acknowledge and Repetition

| | Acknowledge | | Repetition | | Total | |
|-------|-------------|---------|------------|---------|-------|---------|
| INT | 9.83 | (59.4%) | 3.50 | (21.1%) | 13.33 | (80.5%) |
| DEC | 6.50 | (45.6%) | 5.85 | (41.1%) | 12.35 | (86.7%) |
| Total | 8.08 | (52.7%) | 4.74 | (30.9%) | 12.82 | (83.5%) |

Repetition was also further divided into three categories based on the repetition patterns that emerged in the data: (a) *no repair* in which the initial error(s) corrected in the recast was not repaired at all, (b) *partial repair* in which multiple errors corrected in the recasts were partially repaired, but the response still contained some error(s), (c) *repair* in which all the error(s) corrected in the recasts were completely corrected. Overall, out of the 180 repetitions produced, approximately 70% of them (127 repetitions) contained either partial or full repair of the error(s) corrected in the recasts. Among these, 82 repairs (64.6%) were successfully made (i.e., repair) whereas the remaining 45 repairs (35.4%) still contained some error(s) that remained uncorrected (i.e., partial repair).

Now let us turn to how the two treatment groups behaved differently in terms of their patterns of repetition. Table 5.17 reports the average number of each repetition category for both groups. The total repair rates (i.e., combining both partial and full repair) were slightly higher for the DEC group ($M = 4.25$, 72.6%) than the INT group ($M = 2.33$, 66.7%). In the repetition patterns of the DEC group, repair ($M = 3.00$, 51.3%) was the most frequent repetition type produced. Indeed, the successful repairs comprised over half of the repetitions produced in this group, which is larger than the number of partial ($M = 1.25$, 21.4%) and no repairs ($M = 1.60$, 27.4%) combined. On the other hand, the INT group produced no repair (33.3%), partial repair (31.7%), and repair (34.9%) at similar rates. In other words, the learners in the DEC group repaired their errors in the RC more successfully than the INT group. The results of the ANCOVA also confirmed that the difference between the two groups' repair rates ($F(1, 35) = 5.467$, $p = .025$) was significant.

Table 5.17.

Distributions of Repetitions: Average Numbers of No Repair, Partial Repair, and Repair

| | No Repair | | Partial Repair | | Repair | | Total | |
|-------|-----------|---------|----------------|---------|--------|---------|-------|--------|
| INT | 1.17 | (33.3%) | 1.11 | (31.7%) | 1.22 | (34.9%) | 3.50 | (100%) |
| DEC | 1.60 | (27.4%) | 1.25 | (21.4%) | 3.00 | (51.3%) | 5.85 | (100%) |
| Total | 1.39 | (29.4%) | 1.18 | (25.0%) | 2.16 | (45.6%) | 4.74 | (100%) |

Lyster and Ranta (1997) classified uptake into two categories: (a) *repair* and (b) *needs-repair*. Repair is defined as the “uptake that results in ‘repair’ of the error on which the feedback focused” whereas needs-repair refers to the “uptake that results in an utterance that still needs repair” (p. 49). The categories of acknowledge, no repair, and partial repair were reclassified according to Lyster and Ranta’s dichotomy in order to make comparison with the findings of the previous studies possible. The results are shown in Table 5.18. Here, needs-repair incorporates acknowledge, no repair, and partial repair categories whereas repair corresponds to (full) repair.

Table 5.18.

Distribution of Needs-Repair and Repair

| | Needs Repair | | Repair | | Uptake Total | |
|-------|--------------|---------|--------|---------|--------------|--------|
| INT | 12.11 | (90.8%) | 1.22 | (9.2%) | 13.33 | (100%) |
| DEC | 9.35 | (77.7%) | 3.00 | (24.3%) | 12.35 | (100%) |
| Total | 10.66 | (83.2%) | 2.16 | (16.8%) | 12.82 | (100%) |

Overall, 83.2% of the uptakes ($M = 10.66$) were needs-repair, in which errors remained to be repaired, and only 16.8% of the uptakes ($M = 2.16$) were repairs in which the error(s) focused on by the feedback were fully repaired. Comparing the two treatment groups, the DEC group produced considerably more repairs ($M = 3.00$, 24.3%) than the INT group ($M = 1.22$, 9.2%), indicating that the DEC group repaired their errors more

successfully ($M = 1.22$) than the INT group ($M = 3.00$). These results were also confirmed as significant according to the ANCOVA, as mentioned earlier.

5.2.4. Explicit/Implicit Recasts and Primed Production

In the previous section, learners' immediate responses to the recasts (i.e., uptake), being either simple acknowledgement of the recasts or repetition of the recasts, were examined. In this section, primed production in which the learner incorporates the targeted structure (i.e., DO RCs) of the recasts in their new utterances rather than simply repeating the recasts will be investigated. As mentioned in Chapter 4, primed production is defined in this study as a learner's new utterance of the DO RCs within 10 turns of the recast, following McDonough and Mackey (2008). Although McDonough and Mackey divided primed production into immediate and delayed primed production depending on the number of intervening turns between the recasts and the primed production, the two categories were combined and are reported together here, because immediate primed production was very rarely produced in this study ($k = 3$).

The total number of identified primed production responses is shown in Table 5.19, followed by the average frequency of primed production per each learner in Table 5.20. Overall, similar proportions of primed production were observed from the two groups (20.8% for the INT group and 21.1% for the DEC group). On average, 3.33 primed productions were produced per learner in the INT group, and 3.00 from the DEC group. The minimum number of primed productions produced was zero and the maximum was eight. It also should be noted that the production of primed production was contingent upon the provision of recasts following learners' erroneous utterances or avoidance of the DO RCs.

Table 5.19.

Total Numbers of Primed Productions

| | INT | DEC | Total |
|-------------------|------------|------------|-------------|
| Primed Production | 60 (20.8%) | 60 (21.1%) | 120 (20.9%) |

Table 5.20.

Average Numbers of Primed Productions

| | <i>M</i> | <i>SD</i> | <i>Min</i> | <i>Max</i> |
|-------|----------|-----------|------------|------------|
| INT | 3.33 | 2.11 | 0 | 7 |
| DEC | 3.00 | 2.05 | 0 | 8 |
| Total | 3.16 | 2.06 | 0 | 8 |

To summarize the general findings of the interaction analysis, which examined various learner responses following different types of recasts, similar proportions of recasts were identified in both the INT (51.1%) and the DEC group (48.9%). The mean average frequency of the recasts per learner was slightly higher for the INT ($M = 16.56$) than the DEC ($M = 14.25$) group, due to the ambiguity involved in coding the INT recasts. The uptake rate was slightly higher for the DEC group (86.7%) than the INT group (80.5%), although the difference was not statistically significant. Detailed examination of the nature of the uptake revealed that the INT group produced simple acknowledgement of recasts (59.4%) more frequently than repetition (21.1%), whereas similar proportions of acknowledgement (45.6%) and repetition (41.1%) were identified in the DEC group. With respect to the repair rate, it was found that the DEC group was more successful in repairing their initial errors than the INT group. The repair rate was 24.3% for the DEC group and 9.2% for the INT group. Overall, the INT group tended to produce simple acknowledgement more frequently than the DEC group following recasts, whereas the DEC group repaired their initial errors for which recasts were provided more successfully than the INT group. With respect to primed production, no difference was observed between the two groups. On average, a little more than three primed productions were produced per individual regardless of the group.

5.3. Explicit/Implicit Recasts, Learners Responses, and RC Development

In this section, the relationships among the explicit/implicit recasts, various types of learner responses, and RC development (measured by the three task measures) will be explored. As for the statistical analysis, the Pearson Product Correlation Coefficient will

be calculated. Considering that the nature of each type of recast is different (i.e., interrogative or declarative) and also that each type of recast resulted in different patterns of learner responses, as discussed earlier, the relationships among recasts, learner responses, and RC development will be examined separately for each treatment group. In order to allow more detailed examination of the relationships between different types of learner responses and RC development, five different categories of learner responses (i.e., uptake, acknowledge, repetition, repair, and primed production) will be analyzed separately. The findings for the implicit recasts group (i.e., INT) will be reported first, followed by those for the explicit recasts group (i.e., DEC).

5.3.1. Interrogative Recasts

Among the various learner responses, only primed production was found to be significantly correlated with the posttest scores, implying that there was a tendency for the learners who produced more primed productions during the interaction to obtain higher posttest scores and for those who produced fewer to obtain lower posttest scores. More specifically, in the immediate posttest, moderate correlations were obtained between primed production and SCT IPT score ($r = .494, p = .037$), and quite strong correlations between primed production and OPT IPT score ($r = .672, p = .002$) as well as total IPT score ($r = .637, p = .004$), indicating that producing primed production is more strongly associated with oral than with written production of the target structure. Primed production also showed a moderate correlation with GJT IPT score ($r = .409, p = .092$), although it was not statistically significant. Besides primed production, no other types of learner responses showed considerable correlations with any of the posttest scores.

Investigation of the relationships between different learner responses and delayed posttest (DPT) scores also demonstrates very similar patterns. Moderate correlations were found for primed production with SCT DPT score ($r = .597, p = .032$) and with total DPT score ($r = .556, p = .017$), and there was a quite strong correlation with OPT DPT score ($r = .655, p = .003$). Except for primed production, no other learner responses were shown to have significant associations with any of the DPT scores.

5.3.2. Declarative Recasts

Now let us turn to the explicit (i.e., DEC) recasts group. The relationships between various learner responses and the IPT scores will be examined first. Unlike the implicit recasts (i.e., INT) group, none of the relationships produced statistically significant correlations. Although primed production showed a moderate correlation with GJT IPT score ($r = .415, p = .069$), it did not reach statistical significance. When the relationships between learner responses and DPT scores were examined, primed production showed a moderate but statistically significant correlation with GJT DPT score ($r = .502, p = .024$), indicating that the learners who produced more primed productions tended to have better GJT DPT scores. No other relationships between learner responses and DPT scores manifested significance. Interestingly, whereas primed production was significantly associated with the SCT and OPT scores in the INT group, it was the GJT scores with which primed production was significantly correlated in the DEC group.

5.4. Summary

To recapitulate the findings of the current study, first of all, with respect to the relative effectiveness of the explicit and implicit recasts, all three groups involved in this study (i.e., INT, DEC, and CNT group) showed improvement on all three testing measures (i.e., OPT, SCT, and GJT) over time (i.e., both immediate and delayed posttests). Although the two treatment groups showed somewhat larger score increases than the control group, particularly in the case of the OPT, such differences were not found to be statistically significant according to the split-plot ANOVA. Only main effects for time were observed in all three testing measures (i.e., GJT, SCT, and OPT), which confirms that all three groups improved over time as a result of the interaction they had with the Korean native speaker. Although significant interaction effects were observed between time and group in the split-plot ANOVA, when the total scores were examined, the post-hoc analysis (i.e., Tukey's HSD test) did not show any significant differences between the groups. It should also be noted that it is not clear from the results whether there were possible ceiling effects for both treatment and control groups that prevented them from showing further score increases (in the case of the INT and DEC in the OPT and

SCT) or left less room to improve from the beginning (in the case of the CNT group in the OPT).

In Section 5.2, the occurrences of the two different types of recasts and subsequent learner responses following each type of recasts were examined. Overall, there was a slightly greater number of INT recasts ($M = 16.56$, 51.1%) than DEC recasts ($M = 14.25$, 48.9%), which was in part due to the ambiguity involved in coding the INT recasts. When various types of learner responses were examined, it was shown that DEC recasts led to a greater amount of learner uptake (86.7%) than INT recasts (80.5%), although it was not shown to be statistically significant. More specifically, among the various types of learner uptake, INT recasts were responded to significantly more frequently with simple acknowledgement than DEC recasts, and DEC recasts with repetition significantly more often than INT recasts. The rate of repair, in which the initial error(s) corrected in the recasts was repaired, was also higher for the DEC group than the INT group. With regard to the occurrence of primed production, no considerable differences were observed between the two groups; similar numbers of primed productions were produced by both groups.

Finally, the relationships among the explicit/implicit recasts, various learner responses, and the accuracy test scores were examined for both of the treatment groups (i.e., INT and DEC). The results showed that only primed production was significantly correlated with the posttest scores for the INT group; moderate to quite strong associations were seen between primed production and the SCT and OPT scores on both of the posttests (i.e., immediate and delayed). As for the DEC group, again only primed production showed a correlation, which was moderate but significant, with the GJT score on the DPT. No other types of learner responses (i.e., uptake, acknowledge, repetition, or repair) demonstrated correlations with any of the posttest scores.

CHAPTER 6

DISCUSSION AND CONCLUSION

The current study set out to investigate two interesting claims that previous research had made regarding recasts. The study aimed: (a) to examine the effects of explicit (i.e., declarative) and implicit (i.e., interrogative) recasts on L2 acquisition of Korean RCs as well as various learner responses to recasts; and (b) to explore which types of learner responses are more strongly associated with L2 development. With these two purposes in mind, three research questions were developed about the relationships among the explicit/implicit recasts, different learner responses, and L2 development of Korean RCs. The first and second research questions addressed the issues related to the first claim (i.e., the explicitness of recasts), and the third research question is pertinent to the second claim (i.e., delayed effects of recasts on L2 development). In this chapter, first, the answers to each research question will be discussed, and the findings of the current study will be examined in light of the two claims. Afterwards, limitations of the current study as well as suggestions for future research will conclude the chapter.

6.1. RQ1: Which Type of Recasts (Declarative vs. Interrogative) Leads to Greater Linguistic Development of the Korean Relative Clauses Measured by Pretest/Posttest Score Gains?

The first research question asked which type of recast, explicit (i.e., declarative) or implicit (i.e., interrogative), would lead to learners' greater linguistic development of Korean RCs. In order to answer the question, L2 development of Korean DO RCs was measured using three different tasks (i.e., an oral production task, a written sentence combination task, and an untimed grammaticality judgment task) on two different occasions (i.e., immediately after the treatment and after a one-week interval). Contrary to the general prediction made earlier in the study, that more explicit recasts would lead to greater learning effects, no significant differences were observed between the INT and the DEC recasts groups in any of the three measures. In fact, somewhat greater score gains were obtained by the INT group in comparison to the DEC group. In addition, the

control group had score increases similar to those of the two treatment groups, which is again counter to the prediction of this study that the least amount of improvement would be manifested in the control group because no negative feedback was provided to this group. It is also in conflict with the evidence reported by the previous studies that suggests that recasts are associated with greater linguistic development than no feedback. In this study, nevertheless, all three groups achieved significant score increases over time (i.e., from the pretest to the two posttests) in all three testing measures.

Similar findings were also obtained in Erlam and Loewen's (2010) group interaction laboratory study, which investigated the differential effects of INT and DEC recasts on L2 French noun-adjective agreement acquisition. Erlam and Loewen designed their study so that the explicitness of the recasts was quite salient—more so than in the current study—by manipulating the number of feedback moves in addition to intonation. Their explicit recasts were operationalized as two feedback moves consisting of a repetition of the student's error with rising intonation and a declarative recast. Their implicit recasts were the same as those of this study (i.e., interrogative recasts in a single feedback move). Despite the more explicit type of recasts employed in their study, they found no significant differences among the three groups (i.e., explicit recasts, implicit recasts, and control groups) on any of the test measures they used (i.e., an oral imitation test, an untimed grammaticality judgment test, and a spontaneous production test). To rephrase this, in both the current study and Erlam and Loewen's (2010) study, there were no distinguishing effects between explicit and implicit recasts, and the control group unexpectedly also showed significant development of the target structure along with the recast groups, indicating that interaction itself was effective enough for learning to occur in all three groups, regardless of the explicitness of the recasts and even the presence or absence of recasts.

Other previous studies have reported greater accuracy score gains for learners receiving explicit recasts than for those receiving implicit recasts in natural classroom settings (e.g., Loewen & Philp, 2006). It is, therefore, very interesting that no such effects have been observed in the laboratory studies that attempted to directly compare the two types of recasts in a more controlled way. Moreover, the significant improvement of the control groups along with the recast groups was even less expected. Considering that

greater impacts of recasts have been more frequently obtained in experimental laboratory settings than natural classroom settings (Mackey & Goo, 2007; Nicholas et al., 2001), the findings of the current study and Erlam and Loewen's study are even more intriguing, as they imply that not the feedback alone but other factors as well were contributing to learning (Erlam & Loewen, 2010). Possible explanations for the lack of significant differences between the effects of the INT and DEC recasts, as well as factors that might have intervened and contributed to the learning that occurred in the control group, will be explored.

First of all, with respect to the lack of differential learning effects manifested between the explicit and implicit recasts groups, the intensity of the recasts might influence the relative efficacy of the two different types, as Erlam and Loewen (2010) pointed out. Unlike in natural classroom settings, where recasts occur incidentally, aiming at multiple linguistic targets, in laboratory settings recasts are often given intensively, focusing on a few preselected linguistic features. In the current study, both explicit and implicit recasts were provided repeatedly on a single linguistic target (i.e., Korean DO RCs), whenever the learners made errors in the target structure as long as providing a recast was appropriate. Such intensity in the recast feedback could have increased the salience of the recasts in both cases, possibly offsetting the intended effects of explicitness. To explicate further, it is possible that the salience of the INT recasts increased due to the intensiveness with which they were provided, and as a result they were no longer as implicit as expected, which could have contributed to the similar or greater learning demonstrated by the INT group.

Other researchers have advised caution about the increased salience of feedback associated with laboratory settings (Nicholas et al., 2001; Russell & Spada, 2006). Pointing out that recasts tend to be more effective in the laboratory setting than in the classroom setting, these researchers suggested that such effectiveness could be due to the focused consistency with which recasts can be given repeatedly on a few features in dyadic interaction in a laboratory setting. They have further suggested that the increased intensity of feedback could help learners interpret the nature of feedback as corrective rather than as responses to the content of their previous utterances. Even in the classroom setting, such enhanced salience of feedback was reported in an experimental study by

Lyster and Izquierdo (2009), who compared the effects of recasts to those of prompts on French gender acquisition. Contrary to their prediction that the prompts group would outperform the recasts group, no such effects were observed. They concluded that the consistency of recasts made the recasts less implicit than intended. In addition, Erlam and Loewen (2010) reported that the extent of learners' awareness of the linguistic target was similar for both INT and DEC recasts, which also supports the suggestion that INT recasts can have increased salience in the laboratory setting. Despite the more explicit recasts employed in their study, they did not find any differential effects of the DEC and INT recasts in terms of L2 development or learners' awareness of recasts. It seems that the level of explicitness as manipulated by researchers does not necessarily correspond to the salience that learners perceive, as Erlam and Loewen concluded.

With respect to the significant learning that occurred in the control group along with the two treatment groups in the current study, the most straightforward and reasonable explanation seems to be that the task-based interaction in which the learners engaged was effective enough to result in improvement for all three groups regardless of the explicitness of the recasts given or the presence or absence of recasts. Explaining the similar findings obtained in their study (i.e., noticeable learning effects in the control group), Erlam and Loewen (2010) also argued that "feedback may not be more effective in promoting learning than the mere opportunity to engage in tasks that are specifically designed to elicit targeted structures" (p. 899). The beneficial role of interaction has been attested in two previous meta-analysis studies, when interaction groups were compared with no interaction groups in terms of accuracy test score gains (Keck et al., 2006; Mackey & Goo, 2007). In both of the studies, significantly greater effects were found in the interaction treatment group than in the no interaction group. Moreover, the delayed effects of the interaction treatment were shown to be larger than the immediate effects (Mackey & Goo, 2007), indicating that participating in interaction is considerably more effective than no interaction and the effects of interaction are sustained or even increased over a period of time.

The findings of the current study and Erlam and Loewen's (2010) study, however, seem to suggest that interaction alone might not be less effective than feedback provided during interaction, which argues against the facilitative role of feedback for acquisition

widely accepted in the field. Despite the amassed evidence examined in Chapter 2 that shows the effectiveness of feedback on L2 acquisition, it is still inconclusive whether interactional feedback (i.e., interaction and feedback) is more effective than interaction alone (i.e., no feedback), due to the limited number of studies that have included an interaction only group (i.e., interaction but no feedback provided). As Mackey and Goo (2007) pointed out, feedback is an essential part of interaction, and thus it is not an easy task to tease apart the effects of feedback from those of interaction. Nevertheless, quite a few studies have attempted to investigate this issue.

To begin with, Mackey and Goo (2007) tried to answer this question by comparing interaction with feedback groups to no feedback groups in their meta-analysis of interaction research. First, no significant differences were reported between the feedback and no feedback condition in immediate posttests. However, in short-term delayed posttests, significantly larger effects were found for the feedback condition, although such effects were not maintained in the long-term delayed posttests. In addition, examining the relative efficacy of different types of feedback moves (i.e., recasts, metalinguistic feedback, and clarification requests), Loewen and Nabei (2007) included a no feedback group (i.e., interaction only) in addition to the control group (i.e., no interaction group). The effects of the different feedback moves were examined through three testing measures (i.e., an untimed grammaticality judgment test, a timed grammaticality judgment test, and an oral production task). The results showed that the feedback group outperformed the no feedback group and the control group in only one of the tasks (i.e., the timed GJT). In the other two tasks, no significantly distinguishable learning effects were observed among the groups, regardless of the provision of feedback or even interaction.

The small number of the studies that have included an interaction only (i.e., no feedback) condition and the conflicting findings obtained in the studies, which both confirm and dispute the effectiveness of feedback over interaction, make it difficult to reach any firm conclusion regarding this issue. Although more studies have reported greater effects of feedback over interaction only, and this sounds more reasonable theoretically and logically as well, it should not be ignored that there is some evidence, although little, showing a similar extent of learning by groups receiving no feedback (i.e.,

interaction only), against the general assumption. Therefore, more studies are called for along these lines, particularly studies including interaction only groups, in order to allow comparison between feedback and no feedback conditions.

It is also possible that it was not interaction alone that contributed to the learning effects manifested in the control group. Rather, it could be the positive evidence given through models that helped the learners in the control group improve significantly. Although the control group did not receive any feedback (i.e., recasts) during the interaction treatment, models of the target structure were inevitably offered to the learners through the NS interlocutor's description of the targets; as mentioned in Chapter 4, the NS interlocutor and the learner carried out two-way information gap tasks during the two treatment sessions, in which they alternately described targets in the pictures by using DO RCs. Hence, in each treatment session, the learners in all three groups were exposed to a considerable number of DO RC models (i.e., positive evidence) from the NS interlocutor. This could have provided all the learners, including those in the control group, with chances to compare their erroneous utterances of the DO RCs with the native-like utterances produced by the interlocutor and thus resulted in learning of the target structure.

Therefore, the critical difference between the treatment (i.e., recasts) groups and the control group in this study might not be whether feedback was provided during the interaction or not (i.e., interaction plus feedback vs. interaction only). Rather, it could be whether negative evidence was provided in addition to the positive evidence (i.e., models) provided to all groups (i.e., positive and negative evidence vs. positive evidence only). As mentioned in Chapter 2, recasts provide both positive evidence and negative evidence, whereas models only contain positive evidence. Thus, in the current study, the treatment groups received both positive and negative evidence (through models and recasts) whereas the control group was exposed to only positive evidence (through models). Previous studies have shown that providing both positive and negative evidence (i.e., recasts) is more facilitative of L2 learning than providing only positive evidence (Iwashita, 2003; Long et al., 1998). Nevertheless, it is still not clear to what extent the learning that occurs as a result of recasts can be explained by the learners' exposure to negative evidence alone, apart from positive evidence. It is not an easy task to tease apart

the effects of negative evidence from those of positive evidence. However, several studies (Ayouun, 2001; Iwashita, 2003; Leeman, 2003) have reported substantial learning effects of positive evidence (i.e., models) alone, although they might not be as strong as the effects of recasts.

In addition, Iwashita (2003) reported interesting findings, which seem to be relevant to the interpretation of the findings of the current study. In her study investigating the relationships between various interactional moves (i.e., recasts, negotiation, and models) and L2 development of two Japanese structures, she reported that whereas recasts induced significant learning effects regardless of learners' current mastery levels of the target structures, only learners with above-average pretest scores benefited from models. Put another way, models were not effective for all the learners with their varying levels of mastery of the target structures, as recasts were. Nevertheless, if the learners were at the right developmental stage to benefit from models—in other words, if they had above-average mastery of the target structure—then they also significantly benefited from models. When the results of the current study are examined in light of the findings of Iwashita's study, it seems possible that the learners in the control group were those who were able to benefit from models (i.e., those with above-average levels of mastery of Korean DO RCs). Considering that the combined pretest score of the control group was the highest among the three groups, although the difference was not statistically significant, it is possible that there were more learners with above-average scores in the control group than there were in the treatment groups (particularly the INT group, which had the lowest pretest scores), and that the learners in the control group learned from the positive evidence alone, which was all that was provided to them, whereas the learners in the recasts groups benefited from both the positive and negative evidence, regardless of their pretest scores.

Another factor that can also be considered as an explanation for the significant learning that occurred in the control group is the increased saliency of the linguistic target, which is often associated with laboratory settings. Unlike descriptive classroom studies, interventional studies conducted in a laboratory setting often focus on a single (or a few) target linguistic feature(s). In addition, interaction tasks are purposely designed to be conducive to the use of the preselected structure(s) or even to elicit the linguistic

target(s) intensively, in order to increase task-essentialness (Loschky & Bley-Vroman, 1993). Besides, relatively long test sessions often include various tasks to measure different aspects of learners' knowledge. All of these research design features, which were present in both of the laboratory studies under discussion (i.e., the current study and Erlam & Loewen's 2010 study), possibly, and in most cases inevitably, increase the salience of the target linguistic feature, no matter how carefully they are designed to be natural. The increased salience of the target structure can also make learners pay extra attention to the well-formedness of the target structure in their production, possibly enhancing their learning of the target structure, regardless of the presence or absence of recasts.

6.2. RQ2: Which Type of Recasts (Declarative vs. Interrogative) Leads to Greater Learner Responses (i.e., Uptake, Acknowledge, Repetition, Repair, and Primed production)?

The second research question was concerned with the differential effects of the DEC and INT recasts on various learner responses. The prediction made earlier in this study was that DEC recasts would induce a greater amount of repair (i.e., successful uptake) than the INT recasts, as they were considered to be more explicit, and this prediction has been upheld in this study. The overall uptake rate was greater from the DEC group than the INT group. When the quality of the uptake was examined, the DEC group responded to the recasts with significantly more repetition than the INT group, whereas the INT group produced simple acknowledgement considerably more frequently than the DEC group. The DEC group was also significantly more successful repairing their initial errors corrected in the recasts than the INT group. All of this evidence indicates that DEC recasts are more explicit than INT recasts. However, with respect to primed production, no difference was manifested between the DEC and INT groups. The amounts of primed production were similar for both groups.

Unlike previous studies that reported that recasts led to the least amount of uptake compared to other types of feedback moves, the overall uptake rates were considerably high in this study for both DEC and INT recasts. Lyster (1998a), in his study of Canadian immersion classroom interaction, reported that the overall uptake rate for both isolated

DEC and INT recasts was only slightly over 30% of the total recasts given (i.e., 37.1% for DEC and 30.4% for INT). However, the overall uptake rate obtained in this study was over 80% of the total recasts provided, regardless of whether the recasts were explicit (86.7% for DEC) or implicit (80.5% for INT), which is comparable to the uptake rates reported for the ESL and EFL classroom settings (79.0% for DEC and 84.2% for INT) in Sheen's study (2006). It seems that uptake rates can vary to a great extent depending on interactional and instructional contexts, as Lyster and Mori (2006) suggested in their *counterbalance hypothesis*. Whereas the uptake rates were quite low in the natural immersion classroom settings, considerably higher uptake rates were found in the ESL/EFL classroom and KSL/KFL dyadic interaction settings.

Nevertheless, the overall repair (i.e., successful uptake) rates were markedly low in this study in comparison to those of the previous studies, which is quite interesting considering that higher uptake rates were obtained in this study for both of the types of recast. In this study, the learners successfully repaired their initial errors following 24.3% of the total DEC recasts and 9.2% of the total INT recasts provided. The overall repair rates reported in the previous studies were much higher for the DEC recasts (71.0% reported in Lyster, 1998a and 80.5% in Sheen, 2006) although a similar repair rate was reported for the INT recasts in Lyster as well (7.1%). However, much higher repair rates were obtained for INT recasts in Sheen's study (46.9%). The learners in this study, in addition to showing low rates of repair, produced a noticeably greater amount of partial repairs (10.1% for the DEC and 8.3% for the INT recasts), in which only some of the error(s) were repaired.

Such low repair rates and at the same time relatively high partial repair rates, despite the fairly high uptake rates, seem to be due to the complexity and relative length of the target structure (i.e., DO RCs) of this study. In previous studies (Lyster, 1998a; Sheen 2006), as they were descriptive classroom studies examining the natural occurrences of feedback and learner uptake during classroom interaction, recasts were given on various linguistic targets including lexical, pronunciation, and morphosyntactic errors. In the current study, however, recasts were given only on a single linguistic target structure (i.e., DO RCs). As shown in the previous studies, the linguistic targets of feedback influence learners' perception of feedback (Mackey et al., 2000) as well as the

effectiveness of the feedback on L2 acquisition (Long, 2007; Long et al., 1998). In this study, the inherent features of the Korean RC construction seem to have influenced the characteristics of the recasts provided as well as learners' responses to the recasts. To explain further, due to the complexity and relative length of the target structure, the recasts in this study were also fairly long and complex, as they contained RCs. Moreover, many of the recasts involved corrections of multiple errors, which might have made it difficult for the learners to immediately repeat the recasts successfully and thus consequently lowered the repair rates.

6.3. RQ3: Among the Various Types of Learner Responses, Which One Is More Strongly Associated with Greater L2 Development of the Korean Relative Clauses?

The third research question addresses the claim against the efficacy of recasts, which is based on the lack of immediate uptake induced from recasts in comparison to other feedback moves. Researchers have argued that the responses to recasts can be delayed beyond the immediate turn (i.e., primed production) and such delayed responses can even be a stronger indicator of L2 development than immediate uptake. Therefore, this study aimed to examine whether delayed responses can be observed following DEC and INT recasts, and if so, between immediate learner uptake and primed production, which one would be more strongly associated with accuracy test scores on the three different measures of Korean RC development (i.e., GJT, OPT, and SCT). In order to answer the research question, the relationships between the various learner responses and the immediate and delayed posttest scores on three testing measures were examined for the INT and DEC recast conditions separately.

The results showed that, among the various types of learner responses examined in this study (i.e., uptake, acknowledge, repetition, repair, and primed production), only primed production was significantly correlated with accuracy test scores for both recast conditions, and higher correlations were observed in the INT condition than the DEC condition. In addition, interestingly, different patterns of relationships were observed in the INT and the DEC group. Whereas, primed production was significantly correlated with the SCT and the OPT scores for the INT group on both immediate and delayed

posttests, for the DEC group, primed production was only significantly associated with GJT delayed posttest scores. To put this another way, it seems that when learners produced primed productions following INT recasts, it was more likely that the learners would gain higher scores on both written and oral production of Korean RCs, and if learners produced primed productions following DEC recasts, then they tended to achieve greater scores on the measure of explicit knowledge of Korean RCs. In addition, unlike the previous studies that reported strong associations between repair (or modified output) and L2 development, in this study neither repair nor repetition (which is similar to modified output) was found to be significantly associated with L2 development of Korean RCs.

The findings of the current study support the claim that responses to recasts can be delayed beyond the immediate turn and thus the efficacy of recasts should not be discounted due to lack of immediate uptake (either acknowledging or repeating the recasts), as not the immediate uptake but the primed production—which was mostly postponed beyond the immediate turn following recasts—was shown to be more strongly associated with L2 development of Korean RCs. Corroborating McDonough and Mackey's (2006) findings, this study also confirmed that it is the creative use of the target structure corrected in the recasts, not the immediate repetition of recasts, that is more significantly related to subsequent learning effects with the Korean DO RCs. In addition, neither repetition nor repair was found to be significantly associated with learning in any of the test measures. This finding provides additional support for the argument that immediate repetition of the recasts might not imply any learning but rather can be simple mimicking that does not show full understanding of the recasts. Moreover, in this study repetition and repairs were more frequently produced following DEC recasts. It seems that when learners perceive recasts as corrective feedback, which is more likely to happen with the explicit recasts (i.e., DEC), they tend to respond to the corrective function of the recasts by repeating them, even when they are not fully aware of the recasts' target.

Although primed production was shown to be associated with subsequent L2 learning in this study as well as in McDonough and Mackey's (2006) study, it is not clear how exactly primed production of recasts induces L2 development. It is possible that, although syntactic priming is an unconscious mental process, the learners who produced

primed production could have gone through deeper processing of the target structure as a result of the priming (i.e., recasts) they received. Such deeper processing might have enabled learners to compare their erroneous utterances with the priming (i.e., target-like form) and thus led to greater L2 learning, which seems to be more likely the case for the INT recasts priming. However, a counterargument can also be made. That is, the learners who were more developmentally advanced with the Korean DO RCs and thus more capable of using the target structure may have produced primed production more frequently and accurately incorporating the DO RCs and also scored higher on the posttest measures, which in turn contributed to the positive relationship found between primed production and posttest scores. This is indeed a very plausible explanation for the positive correlations found between primed production and SCT and OPT posttest scores for the INT group. However, in order for the argument to hold true, the same findings should have been obtained for the DEC group, as it is again very likely that developmentally more advanced learners would have produced more primed production and also achieved greater posttest scores. Nevertheless, this was not the case for the DEC. Despite the same amount of primed production produced by the DEC and the INT groups, only the GJT delayed posttest score was shown to be moderately correlated with primed production for the DEC group.

6.4. General Discussion

As noted earlier, the major interest of this study was to examine two crucial claims that have emerged in the research on recasts by investigating: (a) whether explicit and implicit recasts varying in mode have differential effects on L2 development of Korean RCs as well as various types of learner responses to recasts and (b) which kind of learner response is more strongly associated with subsequent L2 development of Korean RCs. In this section, the study's findings will be discussed in light of these two claims.

First of all, with respect to the explicit and implicit nature of recasts, the findings of the current study seem to support that DEC recasts are more explicit than INT recasts. It was predicted earlier in this study that DEC recasts, due to their explicit nature, would induce greater amounts of learner repairs as well as greater L2 development of Korean RCs. The first part of the prediction was confirmed: significantly more repairs were

produced following DEC recasts, confirming that DEC recasts are indeed more explicit. Furthermore, learners responded with simple acknowledgement more frequently following INT recasts, which also indicates that INT recasts are more implicit. However, it is not clear from the findings why the learners produced simple acknowledgement more frequently following INT recasts, as no introspective methods, which could have tapped into learners' perceptions or intentions, were employed in this study. One possible explanation would be that the learners interpreted INT recasts as confirmation checks and thus responded with *ney* 'yes' to reaffirm the content. Otherwise, it is also possible that they could have perceived the INT as corrective feedback but, due to the implicitness of the INT, they did not outwardly repeat the recasts even if they were processing them in their minds. Considering that the levels of learners' awareness were no different for the DEC and INT recasts (Erlam & Loewen, 2010) and also that similar extents of learning occurred following DEC and INT treatments (in this study as well as Erlam & Loewen's), the latter explanation sounds more reasonable. Nevertheless, in either case, the findings can serve as supporting evidence for the implicitness of INT recasts.

The prediction regarding the relative effectiveness of DEC recasts was not supported in this study. There were no significant differences between the DEC and INT recasts' effects in any of the testing measures employed in this study. Furthermore, the delayed effects were even greater for the INT than the DEC group in all three testing measures. Considering that INT recasts led to similar or even greater score gains despite their low repair or repetition rates, and also that no difference was observed in the frequency of primed production between the INT and DEC groups, the findings of the current study are even more intriguing. The most plausible explanation for this intriguing finding seems to be that, as L2 researchers have previously suggested, INT recasts induce a deeper level of processing than DEC recasts. Provided in a question form with rising intonation, and reformulating learners' previous utterances, the INT recasts may make learners ponder whether what the NS interlocutor just said agrees with what they intended to say, which may result in more cognitive comparison between their interlanguage and the target language (Ellis, 1995).

In addition, somewhat different patterns of score increases were observed in the results, implying that INT and DEC recasts differently influence learners' cognitive

processing and subsequent learning. In the case of the INT group, gradual score increases were observed over the three testing periods (i.e., from the pretest to the immediate posttest and to the delayed posttest). In contrast, the DEC group obtained rapid score increases from the pretest to the immediate posttest, followed by no increase (in the case of the SCT) or even decrease (in the case of the OPT) in delayed posttest scores. Only in the GJT, which measures learners' explicit knowledge, were further score increases observed in the delayed posttest. Similar patterns of score increases from explicit and implicit feedback were manifested in a recent meta-analysis study. Li (2010) reported that whereas explicit feedback was more effective on immediate and short-term delayed posttests, implicit feedback had greater effects on long-term delayed posttests, suggesting greater lasting effects for implicit feedback over explicit feedback. In addition, the gradual score increase observed in the INT group is also in accordance with the findings of the interaction studies, in which the delayed effects of interaction were stronger than the immediate effects (Mackey & Goo, 2007). Therefore, although no significantly distinguishable learning effects were demonstrated between the INT and DEC recast conditions, we can conclude that DEC recasts are more explicit than INT recasts in nature based on the immediate but relatively short-term effects of DEC recasts and the gradual but lasting effects of INT recasts observed in this study.

The second claim in the recasts research that this study addresses is that immediate learner uptake cannot be a reliable indicator of the effectiveness of recasts, and thus lack of immediate learner responses should not be equated with lack of learning. Rather, learners' creative use of the linguistic structure (corrected in the recasts) in a later turn could be a stronger predictor of the effectiveness of recasts. To investigate this issue, this study first identified various types of learner responses to recasts in the interaction data, including uptake (in general), acknowledge, repetition, repair (i.e., successful uptake), and primed production, and then the study explored their relationships with the accuracy test scores on the three different measures. Unlike the findings of the previous studies, in which repair (i.e., successful uptake) was strongly associated with accuracy score gains, in this study only primed production was significantly correlated with posttest scores; no significant correlations were observed between repair (or repetition) and any of the

testing measures, confirming that it is primed production, not mere repetition of recasts, which is related to L2 development, as McDonough and Mackey (2006) claimed.

6.5. Limitations of the Study and Suggestions for Future Research

The current study suffers from various limitations. To begin with, controlling for the developmental readiness of the L2 Korean learners was a very thorny issue in this study. Because different types of RCs (i.e., SU, DO, and OBL RCs) are not introduced separately in KFL/KSL classrooms (rather, all three RC structures are taught at the same time), it was very hard to select learners who were developmentally at the right stage for the current study. They needed to be quite competent with SU RCs but still having problems with DO RCs. It seems that as soon as learners know how to produce SU RCs, it does not take them long to produce DO RCs, although there still will be differences in frequency and accuracy between the two RC types; this was particularly true for the KSL learners. Although KSL learners in the fifth week of instruction (right after the RC constructions were taught in class) were purposely selected for this study, many of the learners were quite advanced with the target structure, which resulted in higher pretest scores. In addition, there was no control over the learners' exposure to the target structure outside the experimental setting, which is often the case for experimental studies regardless of whether they are conducted in a classroom or a dyadic setting.

Second, the relative difficulty and complexity of the target structure (i.e., DO RCs) seem to have contributed to the small score increases observed in this study, particularly for the GJT, which showed the least amount of score change. As Mackey and Goo (2007) pointed out, the effectiveness of feedback is contingent upon the characteristics of the target structure. They showed that feedback on grammatical targets not only resulted in smaller effect sizes in comparison to feedback on lexical items (Mackey & Goo, 2007), but was also perceived least by learners (Mackey et al., 2000). Among the various grammatical target structures, RC constructions are one of the most complex and difficult structures to acquire in a short period (through the short treatment sessions). Therefore, it is recommended that future research examine the relative effects of explicit and implicit recasts on various linguistic targets, including structures that are both simple and difficult to acquire, in order to shed more light on this issue.

Several limitations pertinent to the experimental design also exist. First of all, in this study only DO RC errors were corrected, while SU or OBL RC errors were disregarded. Considering that DO RCs are the linguistic focus of the current study, the decision to only correct DO RC errors was reasonable and appropriate. Nevertheless, it seems to have resulted in confusion for the learners because the same error that was corrected in the DO RCs was not corrected when it occurred in the other types of RCs. Such a lack of consistency in error correction, at least from the learners' perspective, could possibly have limited the relative effectiveness of the recasts. The other types of RCs were included in order to obscure the target of the current study; however, it seems that their inclusion also created this unexpected source of confusion for the learners.

Furthermore, the long testing sessions involved in this study could have served as additional learning opportunities for the learners. In order to comprehensively measure learners' knowledge and skills with Korean DO RCs, it was necessary to include three tasks in each testing session (to test oral and written production skills as well as explicit knowledge of Korean RCs). However, inevitably, long testing sessions resulted. With respect to the similar findings obtained by Erlam and Loewen (2010), they claimed that the significant learning that occurred in the control group was not due to the test effects, but rather to interaction effects, basing this claim on findings from a study by Philp and Iwashita (2010). Philp and Iwashita reported that, although exactly the same test measures were employed in their study as in the study by Erlam and Loewen, no significant score gains were observed in the test only group, which received no interaction. Nevertheless, because the current study had no genuine control group that participated only in the testing sessions, we still cannot rule out the possibility that learning effects resulted from the relatively long testing sessions. For future research, it would be more advisable to include a true control group that participated only in the testing sessions and received no interaction treatment.

In addition, this study employed only a short-term delayed posttest, which was administered one week after the immediate posttest. Lacking a long-term delayed posttest, this study has failed to clearly demonstrate to what extent the effects of the INT recasts would be sustained. Therefore, it would be more desirable in future studies to test the effects of INT and DEC recasts in a longitudinal study employing long-term delayed

posttests in order to clearly show the learning patterns associated with both explicit and implicit recasts.

6.6. Conclusion

The major goals of the current study were to shed more light on two interesting claims that have been made with regard to recasts and thus contribute to our understanding of: (a) the explicit and implicit nature of recasts and (b) the relationships between various learner responses to recasts and L2 acquisition of Korean RCs. With respect to the explicitness of recasts, declarative and interrogative recasts were selected as explicit and implicit recasts respectively, varying in mode. The findings showed that the DEC recasts induced a greater amount of repairs, confirming that DEC recasts are more explicit in nature. However, when the effects of explicit and implicit recasts on L2 development were examined, the findings were somewhat unexpected. Despite the prediction that DEC recasts would result in greater learning, no significantly different learning effects were shown between the DEC and INT groups. Rather, similar or greater score gains were observed in the INT group, possibly indicating that somewhat different processing is involved with the INT recasts that could promote learners' cognitive comparison of their erroneous form and the target-like form. In addition, a similar extent of learning was observed in the control group as well, suggesting that interaction alone, or, more specifically, the positive evidence that was provided to the control group, was effective enough to induce subsequent learning in this study, regardless of the presence of recasts or negative evidence. Nevertheless, despite no distinguishable difference in the learning effects observed for explicit and implicit recasts, different patterns of score increases observed in this study (i.e., rapid, short-term score increases for the DEC and gradual, long-term score increases for the INT) seem to provide support for the relative explicitness of the DEC and INT recasts.

In order to explore which type of learner response would be the most reliable indicator of the effectiveness of recasts, particularly between immediate learner repair and primed production, as they have been shown to be significantly predictive of L2 learning in previous studies, the relationships between the various learner responses (i.e., uptake, acknowledge, repetition, repair, and primed production) and accuracy scores

(measured on three different tasks on two occasions) were examined in this study. The findings revealed that only primed production was significantly correlated with the posttest scores, indicating that it is the creative use of the target structure corrected in the recasts, not the immediate repetition of recasts, that is more strongly associated with L2 development of Korean RCs. These findings seem to confirm the claim that recasts can have delayed effects, and thus the effectiveness of recasts should not be questioned or discredited on account of low immediate uptake rates. In addition, the findings also suggest that learner's immediate repetition of recasts (including repair) can be simple mimicking rather than an indicator of the learner's true understanding of the linguistic target.

Although DEC recasts were shown to be more explicit than INT recasts in this study based on the repair rates and score increase patterns, it is not certain whether the same findings would hold for other features of recasts that affect where they fall on the continuum of explicitness. As DEC and INT recasts' effects on L2 development were different from what the study predicted, it is also likely that other features of recasts would behave differently as well and thus unexpected results might be found if such features were tested. Therefore, more studies are called for on this issue. Future studies should not only manipulate various features of recasts with respect to explicitness but also include various linguistic targets, settings, proficiency levels, and learner characteristics, as these factors have also been suggested to influence the relative efficacy of recasts. In addition, a greater number of studies investigating primed production in response to recasts would be required to reach a solid conclusion that primed production is a stronger indicator of L2 learning than immediate repetition of recasts.

APPENDIX A: **BACKGROUND INFORMATION QUESTIONNAIRE**

Affiliated University: _____ **Level:** KOREAN _____

Gender: Male _____ Female _____ **Age:** _____

Q1. What was your first or strongest language before your age of 5?

☐ English ☐ Korean ☐ Other (specify) _____

Q2. What is your strongest language now?

☐ English ☐ Korean ☐ Other (specify) _____

Q3. Check if your parents, grandparents, or anyone else in your immediate/extended family is a native speaker of Korean.

☐ Mother ☐ Father ☐ Maternal grandparent(s) ☐ Paternal grandparent(s) ☐ Other(specify) _____

Q4. At what age did you start to hear or use Korean? _____

Q5. How long in total have you studied Korean at school? _____ year(s) _____ month(s)

Q6. Have you visited/lived in Korea? ☐ No ☐ Yes (if YES, see below)

(For _____ year(s) _____ month(s), from year _____ to year _____ [age _____ to age _____])

(For _____ year(s) _____ month(s), from year _____ to year _____ [age _____ to age _____])

(For _____ year(s) _____ month(s), from year _____ to year _____ [age _____ to age _____])

Q7. How much do you hear or use Korean outside classroom?

1: never 2: occasionally 3: sometimes 4: frequently 5: almost always

- parents/grandparents speaking Korean to you N/A 1 2 3 4 5

- relatives/friends speaking Korean to you N/A 1 2 3 4 5

- self study Korean N/A 1 2 3 4 5

- others (specify): _____ N/A 1 2 3 4 5

Q8. Do you speak any other foreign language(s) beside Korean? ☐ No ☐ Yes (if YES, see below)

(If your first language is not English, please include English proficiency as well.)

(Language _____, [Level] ☐ beginning / ☐ intermediate / ☐ advanced / ☐ native-like)

(Language _____, [Level] ☐ beginning / ☐ intermediate / ☐ advanced / ☐ native-like)

(Language _____, [Level] ☐ beginning / ☐ intermediate / ☐ advanced / ☐ native-like)

APPENDIX B:

SAMPLE ORAL PRODUCTION TASK

INSTRUCTION

In this task, I am going to ask you some questions about the picture. In the picture, you will see that a circle is drawn on an object. It can be on a person, an animal, or an object. Please look at the pictures carefully and tell me where the circle is located IN ONE COMPLETE KOREAN SENTENCE. For example, I will ask you “Where is the circle?” and you need to say “The circle is on...” and then complete the sentence explaining on which the circle is drawn.

(Example)

Q: 동그라미가 어디에 있어요?

‘Where is the circle?’

A: 동그라미는 _____ 웃는 남자 _____ 에 있어요.

‘The circle is one the man who is smiling.’



SAMPLE PICTURES: DO RC Targets

1. DO RC (Non-Reversible)



여자가 먹는 빵
'The bread which the woman eats'

2. DO RC (Reversible)



여자 아이가 생각하는 남자 아이
'The boy whom the girl is thinking'

SAMPLE PICTURES: Other RC Targets

1. SU RC (Non-Reversible)



커피를 마시는 여자
'The woman who drinks coffee'

2. SU RC (Reversible)



아기를 보는 남자 아이
'The boy who looks at the baby'

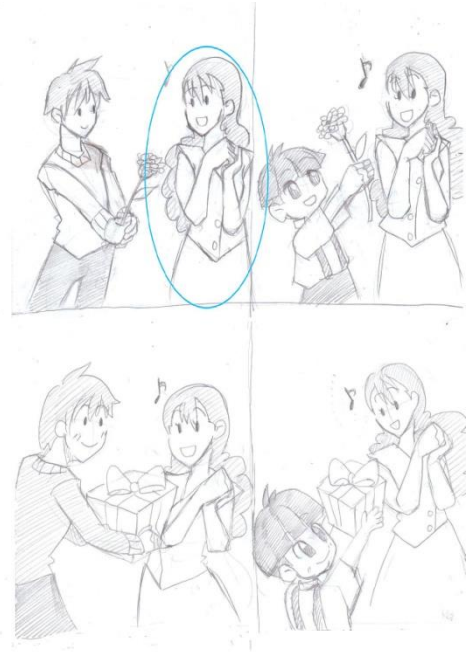
SAMPLE PICTURES: Other RC Targets

3. OBL RC (Non-Reversible)



여자가 그림을 그리는 펜
'The pen with which the woman draws'

4. OBL RC (Reversible)



남자가 꽃을 주는 여자
'The woman to whom the man gives flowers'

APPENDIX C:
SAMPLE SENTENCE COMBINATION TASK

INSTRUCTION

Please combine the two sentences into one correct Korean sentence. Always begin with the first sentence. Do not leave out any information. Do not use BECAUSE, SINCE, WHILE, WHEN, AS, BEFORE, and AND. Thank you for your participation.

(Example)

A: 아이가 잠을 자요.
 ‘A baby is sleeping.’

B: 그 아이가 아주 귀여워요.
 ‘The baby is very cute.’

→ 잠을 자는 아이가 아주 귀여워요. (NOT 귀여운 아이가 잠을 자요.)
 ‘The baby who is sleeping is very cute.’ (NOT ‘A cute baby is sleeping.’)

SAMPLE ITEMS: DO RC Targets

1. DO RC (Non-Reversible)

A: 민지가 어제 김치를 만들었어요.
'Minji made Kimchi yesterday.'

B: 그 김치가 맛있었어요.
'The Kimchi was delicious.'

→

2. DO RC (Reversible)

A: 교실에서 학생이 선생님을 기다려요.
'A student is waiting for a teacher in the classroom.'

B: 그 선생님은 한국어 선생님이예요
'The teacher is a Korean teacher.'

→

SAMPLE ITEMS: Other RC Targets

1. SU RC (Non-Reversible)

A: 남학생이 지하철에서 신문을 읽어요.
'A male student reads a newspaper in the subway.'

B: 그 남학생은 준세예요.
'The male student is Junsei.'

→

2. SU RC (Reversible)

A: 도서관에서 남학생이 민지를 기다렸어요.
'A male student waited for Minji at the library.'

B: 그 남학생은 준수예요.
'The male student is Junsu.'

→

SAMPLE ITEMS: Other RC Targets

3. OBL RC (Non-Reversible)

A: 성희가 식당에서 김선생님을 만나요.
'Sunghee meets teacher Kim at a restaurant.'

B: 그 식당은 아주 커요.
'The restaurant is very big.'

→

4. OBL RC (Reversible)

A: 준세가 친구에게 편지를 썼어요.
'Junsei wrote a letter to his friend.'

B: 그 친구는 중국 사람이에요.
'The friend is Chinese.'

→

APPENDIX D:

SAMPLE GRAMMATICALITY JUDGMENT TASK

INSTRUCTION

Please read each sentence and decide whether it is correct or incorrect. If you think the sentence is a good, correct Korean sentence, circle “correct.” But, if you think the sentence is bad, incorrect Korean sentence, circle “incorrect.” Circle only ONE answer for each sentence. If you have chosen “incorrect,” please underline the part you think incorrect and make corrections. ALL WORDS ARE SPELLED CORRECTLY. Thank you for your participation.

(Examples)

- 1 어제 수미는 학교에 갔어요. 맞다 틀리다
‘Sumi went to a school yesterday.’
- 2 어제 남자는 친구하고 극장에 갔어서 영화를 봤어요. 맞다 틀리다
(갔어서 -> 가서)
‘Yesterday the man go to a movie theater with a friend and watched a move.’ (go -> went)

SAMPLE ITEMS: Ungrammatical DO RC Items Only

1. Resumptive Noun Retention Error

박교수님이 학생한테 이메일을 보낸 학생은 민수예요.

‘The student whom Professor Park sent an email to a student is Minsu.’

맞다

틀리다

2. Head Noun Missing Error

다음 학기에 한국어를 배울 많아요.

‘There are many _____ who will learn Korean next semester.’

맞다

틀리다

3. Resumptive Noun Retention & Head Noun Missing Error

여자가 극장에서 영화를 본 아주 넓었어요.

‘_____ which she saw a movie in the movie theater was very large.’

맞다

틀리다

4. Tense/Inflection Error

아침에 남학생이 들은 수업은 한국어 수업이에요.

‘The class which the male student took in the morning is a Korean class.’

맞다

틀리다

5. Case Marker Error

여자는 점심을 먹은 식당은 아주 깨끗했어요.

‘The restaurant at which she had lunch was very clean.’

맞다

틀리다

6. Argument Omission Error

타는 자전거는 새 거예요.

‘The bicycle which _____ is riding is a new one.’

맞다

틀리다

APPENDIX E:
FIND CIRCLES TASK TARGETS

| Task 1 | Task 2 |
|---|--|
| 여자가 읽는 신문 'The newspaper which the woman reads' | 여자가 생각하는 햄버거 'The hamburger which the woman is thinking' |
| 남자가 안고 있는 개 'The dog which the man is holding' | 여자가 안고 있는 개 'The dog which the woman is holding' |
| 아이가 들고 있는 캔디 'The candy which the child is holding' | 여자가 미는 카트 'The cart which the woman pushes' |
| 여자가 먹는 사과 'The apple which the woman eats' | 남자가 싸는 상자 'The box which the man wraps' |
| 남자가 (여자에게) 주는 선물 'The gift which the man gives (to the woman)' | 남자가 (여자에게) 주는 모자 'The hat which the man gives (to the woman)' |

APPENDIX F:
DRAW CIRCLES TASK TARGETS

| Task 1 | Task 2 |
|---|--|
| 남자가 읽는 책 ‘The book which the man reads’ | 여자가 읽는 책 ‘The book which the woman reads’ |
| 여자가 먹는 아이스크림 ‘The ice cream which the woman eats’ | 남자가 마시는 주스 ‘The juice which the man drinks’ |
| 사람들이 보는 새 ‘The bird which the people look at’ | 여자가 안고 있는 개 ‘The dog which the woman is holding’ |
| 여자가 든 가방 ‘The bag which the woman carries’ | 남자가 든 풍선 ‘The balloon which the man holds’ |
| 남자가 읽는 신문 ‘The newspaper which the man reads’ | 여자가 쓴 모자 ‘The hat which the woman is wearing’ |
| 남자가 들고 가는 상자 ‘The box which the man carries’ | 남자가 갖고 가는 꽃 ‘The flowers which the man carries’ |
| 남자가 (여자에게) 주는 꽃 ‘The flowers which the man gives (to the woman)’ | 아이가 (개한테) 주는 아이스크림 ‘The ice cream which the child gives (to the dog)’ |

APPENDIX G:
ERROR CATEGORIES FOR UNSUCCESSFUL RELATIVIZATION

| Coding Categories | Descriptions |
|-------------------|---|
| Head-internal RCs | <p>When a head-internal RC was produced.</p> <p>(e.g.) <i>namca khephi masi-nun kes</i> man coffee drink-REL.PRES COMP ‘the thing which the man drinks coffee’</p> <p>(Target: <i>namca-ka masi-nun khephi</i> man-NOM drink-REL.PRES coffee ‘the coffee which the man drinks’)</p> |
| Reversal error | <p>When the gap position in the RC was misinterpreted and, as a result, a wrong type of RC was produced.</p> <p>(e.g.) <i>Minji-lul kitali-nun namhaksayng</i> Minji-ACC wait-REL.PRES male student ‘the male student who waits for Minji’</p> <p>(Target: <i>Minji-ka kitali-nun namhaksayng</i> Minji-NOM wait-REL.PRES male student ‘the male student who Minji waits for’)</p> |
| Head error | <p>When the utterance-initial noun was interpreted as the head of the RCs instead of the utterance-final noun.</p> <p>(e.g.) <i>sensayngnim-ul kitali-n haksayng</i> teacher-ACC wait-REL.PST student ‘the student who waited for the teacher’</p> <p>(Target: <i>haksayng-ul kitali-n sensayngnim</i> student-ACC wait-REL.PST teacher ‘the teacher who waited for the student’)</p> |

(Continued) Error Categories for Unsuccessful Relativization

| Coding Categories | Descriptions |
|--|--|
| Resumptive noun retention | <p>When the resumptive noun was retained inside the RC.</p> <p>(e.g.) <i>yeca-ka kitha chi-nun kitha</i> woman-NOM guitar play-REL.PRES guitar ‘the guitar which the woman plays the guitar’ (Target: <i>yeca-ka chi-num kitha</i> woman-NOM play-REL.PRES guitar ‘the guitar which the woman plays’)</p> |
| Head noun missing | <p>When the head noun was not produced following the relativizer.</p> <p>(e.g.) <i>Minsu-ka mant-un ____ mas-iss-ess-eyo.</i> Minsu-NOM made-REL.PST delicious-PST-POL-DEC ‘_____ which Minsu made was delicious’ (Target: <i>Minsu-ka mant-un Pulgogi-ka</i> Minsu-NOM made-REL.PST Pulgogi-NOM <i>mas-iss-ess-eyo.</i> delicious-PST-POL-DEC ‘The Pulgogi which Minsu made was delicious.’)</p> |
| Resumptive noun retention & Head noun missing | <p>When the resumptive noun was retained inside the RC and the head noun was not produced following the relativizer.</p> <p>(e.g.) <i>yeca-ka kitha chi-nun ____</i> woman-NOM guitar play-REL.PRES ‘_____ which the woman plays the guitar’ (Target: <i>yeca-ka chi-num kitha</i> woman-NOM play-REL.PRES guitar ‘the guitar which the woman plays’)</p> |

(Continued) Error Categories for Unsuccessful Relativization

| Coding Categories | Descriptions |
|------------------------------|---|
| Miscombination (SCT only) | <p>When sentences were combined in the wrong order starting with Sentence B instead of Sentence A.</p> <p>(e.g.) <i>Yeyppun yeca-ka chinkwu-lul mannayo.</i> pretty woman-NOM friend-ACC meet-POL-DEC ‘A pretty woman meets a friend.’</p> <p>(Target: <i>Chinkwu-lul manna-nun yeca-ka</i> friend-ACC meet-REL.PRES woman-NOM <i>yeyppeyo.</i> pretty-POL-DEC ‘The woman who meets a friend is pretty.’)</p> |
| Wrong target (OPT only) | <p>When the participant described a non-target object even though an RC was produced.</p> <p>(e.g.) <i>aki-lul po-nun yeca</i> baby-ACC see-REL.PRES woman ‘the woman who look at the baby’</p> <p>(Target: <i>aki-lul po-nun namca</i> baby-ACC see-REL.PRES man ‘the man who looks at the baby’)</p> |

REFERENCES

- Allwright, B. (1984). Why don't learners learn what teachers teach? The interaction hypothesis. In D. Singleton & D. Little (Eds.), *Language learning in formal and informal contexts* (pp. 3–18). Dublin, Ireland: IRAAL.
- Ammar, A. (2008). Prompts and recasts: Differential effects on second language morphosyntax. *Language Teaching Research*, 12(2), 183–210.
- Ammar, A., & Spada, N. (2006). One size fits all? Recasts, prompts and the acquisition of English possessive determiners. *Studies in Second Language Acquisition*, 28, 543–574.
- Ayoun, D. (2001). The role of negative and positive feedback in the second language acquisition of *passé composé* and *imparfait*. *The Modern Language Journal*, 85(2), 226–243.
- Bencini, G., Bock, K., & Goldberg, A. E. (2000). The contribution of argument structure constructions to sentence meaning. *Journal of Memory and Language*, 43(4), 640–651.
- 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., Dell, G. S., Chang, F. & Onishi, K. H. (2007). Persistent structural priming from language comprehension to language production. *Cognition*, 104, 437–458.

- Bock, K., Loebell, H. & Morey, R. (1992). From conceptual roles to structural relations: Bridging the syntactic cleft. *Psychological Review*, 99, 150–171.
- Bohannon, J. N., & Stanowicz, L. (1988). The issue of negative evidence: Adult responses to children's language errors. *Developmental Psychology*, 24, 684–689.
- Braidi, S. (2002). Reexamining the role of recasts in native-speaker/nonnative-speaker interactions. *Language Learning*, 52, 1–42.
- Branigan, H., Pickering, M., Stewart, A. & McLean, J. (2000). Syntactic priming in spoken production: Linguistic and temporal interference. *Memory & Cognition*, 28, 1297–1302.
- Carpenter, H., Jeon, K.S., MacGregor, D. & Mackey, A. (2006). Learner's interpretations of recasts. *Studies in Second Language Acquisition*, 28, 209–236.
- Carroll, S., & Swain, M. (1993). Explicit and implicit negative feedback: An empirical study of the learning of linguistic generalizations. *Studies in Second Language Acquisition*, 15, 357–386.
- Chaudron, C. (1977). A descriptive model of discourse in the corrective treatment of learners' errors. *Language Learning*, 27, 29–46.
- Cho, S. (1999). *The acquisition of relative clauses: Experimental studies on Korean*. Unpublished doctoral dissertation, University of Hawai'i at Mānoa.
- Demetras, M., Post, K., & Snow, C. (1986). Feedback to first language learners: The role of repetitions and clarification requests. *Journal of Child Language*, 13, 275–292.
- Doughty, C. (1988). *The effect of instruction on the acquisition of relativization in English as a second language*. Unpublished doctoral dissertation, University of Pennsylvania.
- Doughty, C. (1991). Second language instruction does make a difference: Evidence from an empirical study of SL relativization. *Studies in Second Language Acquisition*, 13(4), 431–469.
- Doughty, C., & Varela, E. (1998). Communicative focus on form. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 114–138). Cambridge: Cambridge University Press.

- Eckman, R., Bell, L. & Nelson, D. (1988). On the generalization of relative clause instruction in the acquisition of English as a second language. *Applied Linguistics*, 9(1) 1–20.
- Egi, T. (2004). Verbal reports, noticing, and SLA research. *Language Awareness*, 13, 243–264.
- Egi, T. (2007). Interpreting recasts as linguistic evidence: the role of linguistic target, length, and degree of change. *Studies in Second Language Acquisition*, 29, 511–537.
- Egi, T. (2010). Uptake, modified output, and learner perceptions of recasts: Learner responses as language awareness. *The Modern Language Journal*, 94, 1–21.
- Ellis, R. (2005). Measuring implicit and explicit knowledge of a second language: a psychometric study. *Studies in Second Language Acquisition*, 27(2), 141–172.
- Ellis, R. (2007). The differential effects of corrective feedback on two grammatical structures. In A. Mackey (Ed.) *Conversational interaction and second language acquisition: A series of empirical studies* (pp. 339–360). Oxford: Oxford University Press.
- 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.
- Ellis, R., & Sheen, Y. (2006). Reexamining the role of recasts in second language acquisition. *Studies in Second Language Acquisition*, 28, 575–600.
- Erlam, R. & Loewen, S. (2010). Implicit and explicit recasts in L2 oral French interaction. *The Canadian Modern Language Journal*, 66(6), 877–905.
- Farrar, M. J. (1992). Negative evidence and grammatical morpheme acquisition. *Developmental Psychology*, 28, 90–98.
- Gass, S. M. (1979). Language transfer and universal grammatical relations. *Language Learning*, 29(2), 327–344.
- 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.
- Ferreira, V. S., & Bock, K. (2006). The functions of structural priming. *Language and Cognitive Processes*, 21(7–8), 1011–1029.
- Han, J. (1990). *Movement and empty categories in Korean syntax*. Seoul: Hanshin.
- Han, Z. H. (2002). A study of the impact of recasts on tense consistency in L2 output. *TESOL Quarterly*, 36, 543–572.
- Hartsuiker, R. J., Pickering, M. J. & Veltkamp, E. (2004). Is syntax separate or shared between languages? Cross-linguistic syntactic priming in Spanish-English bilinguals. *Psychological Science*, 15, 409–414.
- 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.
- Hawkins, B. (1985). Is the appropriate response always so appropriate? In S. Gass & C. Madden (Eds.) *Input in Second Language Acquisition* (pp. 162–178). Rowley, MA: Newbury House.
- Hirsh-Pasek, K., Treiman, R., & Schneiderman, M. (1984). Brown & Hanlon revisited: Mothers' sensitivity to ungrammatical forms. *Journal of Child Language*, 11, 81–88.
- Hong, S. (1984). *A and A-bar binding in Korean and English – A Government and Binding approach*. Unpublished doctoral dissertation, University of Connecticut.
- Huttenlocher, J., Vasilyeva, M., & Shimpi, P. (2004). Syntactic priming in young children. *Journal of Memory and Language*, 50, 182–195.
- Hyltenstam, K. (1984). The use of typological markedness conditions as predictors in second language acquisition: The case of pronominal copies in relative clauses. In R. Andersen (Ed.), *Second languages: A cross-linguistic perspective* (pp. 39–60). Rowley, MA: Newbury House.

- Inagaki, S., & Long, M. H. (1999). The effects of implicit negative feedback on the acquisition of Japanese as a second language. In K. Kanno, (Ed.), *The acquisition of Japanese as a second language* (pp. 9–30). Amsterdam/Philadelphia: John Benjamins.
- 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.
- Izumi, S. (2003). Processing difficulty in comprehension and production of relative clauses by learners of English as a second language. *Language Learning*, 53(2), 285–323.
- Jeon, K. S. (2004). Interaction-driven learning: Characterizing linguistic development. Unpublished Doctoral Dissertation, Georgetown University, Washington, DC.
- Jeon, K. S. (2007). Interaction-driven L2 learning: characterizing linguistic development. In A. Mackey (Ed.) *Conversational interaction and second language acquisition: A series of empirical studies* (pp. 379–403). Oxford: Oxford University Press.
- Jeon, K. S., & Kim, H-Y. (2007). Development of relativization in Korean as a foreign language. *Studies in Second Language Acquisition*, 29, 253–276.
- Jhang, S. (1992). *Headed nominalization in Korean: relative clauses, clefts, and comparatives*. Unpublished doctoral dissertation, Simon Fraser University.
- Kang, M. Y. (1988). Syntactic movement in Korean relativization. In Linguistic Society of Korea (Ed.), *Linguistics in the Morning Calm 2: Selected papers from the SICOL*. Seoul: Hanshin Publishing Company.
- Kanno, K. (2007). Factors affecting the processing of Japanese relative clauses by L2 learners. *Studies in Second Language Acquisition*, 29, 197–218.
- Keck, C. M., Iberri-Shea, G., Tracy-Ventura, N., & Wa-Mbaleka, S. (2006). Investigating the empirical link between task-based interaction and acquisition. In J. Norris & L. Ortega (Eds.), *Synthesizing research on language learning and teaching* (pp. 91–130). Amsterdam: John Benjamins.
- Keenan, E., and Comrie, B. (1977). Noun phrase accessibility and Universal Grammar. *Linguistic Inquiry*, 8(1), 63–99.

- Kim, A. (1990). Typological characteristics of Korean and English relative clauses: Prenominal (SOV) vs. Postnominal (SVO). *Hankwumal Kyoywuk*, 1, 107–126.
- Kim, H. H. (2005). Processing strategies and transfer of heritage and non-heritage learners of Korean, *Unpublished Dissertation*, University of Hawai‘i at Mānoa.
- Kim, J., & Han, Z. (2007). Recasts in communicative EFL classes: Do teacher intent and learner interpretation overlap? In A. Mackey (Ed.) *Conversational interaction and second language acquisition: A series of empirical studies* (pp. 269–297). Oxford: Oxford University Press.
- Kim, Y. (1987). *The acquisition of relative clauses in English and Korean: Development in spontaneous production*. Unpublished doctoral dissertation, Harvard University, Cambridge, MA.
- Lee, K. (1991). *On the first language acquisition of relative clauses in Korean: The universal structure of COMP*. Unpublished doctoral dissertation, Cornell University, Ithaca, NY.
- Lee, S. W. (1983). *Syntax of some nominal constructions in Korean*. Unpublished doctoral dissertation, University of Wisconsin.
- Lee, S. (2001). *Relative clauses and pro-drop in KFL learner’s writing: A sentence processing approach*. Unpublished manuscript, University of Hawai‘i at Mānoa.
- Lee-Ellis, S. (2011). The elicited production of Korean relative clauses by heritage speakers, *Studies in Second Language Acquisition*, 44, 305–321.
- Leeman, J. (2003). Recasts and second language development: Beyond negative evidence. *Studies in Second Language Acquisition*, 25, 36–63.
- Li, S. (2010). The effectiveness of corrective feedback in SLA: A meta-analysis. *Language Learning*, 60(2), 309–365.
- 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.
- Loebell, H., & Bock, K. (2003). Structural priming across languages. *Linguistics*, 41(5), 791–814.
- Loewen, S. (2005). Incidental focus on form and second language learning. *Studies in Second Language Acquisition*, 27, 361–386.

- Loewen, S., & Nabei, T. (2007). Measuring the effects of oral corrective feedback on L2 knowledge. In A. Mackey (Ed.) *Conversational interaction and second language acquisition: A series of empirical studies* (pp. 361–377). Oxford: Oxford University Press.
- Loewen, S., & Philp, J. (2006). Recasts in the adult L2 classroom: Characteristics, explicitness and effectiveness. *The Modern Language Journal*, 90, 536–556.
- Long, M. H. (1981). Input, interaction, and second language. In H. Winitz (Ed.) *Native language and foreign language acquisition* (pp. 259–278). New York: Annals of the New York Academy of Sciences.
- Long, M. H. (1983). Native speaker/non-native speaker conversation and the negotiation of comprehensible input. *Applied Linguistics*, 4(2), 126–141.
- Long, M. H. (1996). The role of linguistic environment in second language acquisition. In W. R. Ritchie & T. J. Bhatia (Eds.) *Handbook of second language acquisition* (pp. 413–468). San Diego: Academic Press.
- Long, M. H. (2007). *Problems in SLA*. Mahwah, NJ: Lawrence Erlbaum.
- Long, M. H., Inagaki, S. & Ortega, L. (1998). The role of implicit negative feedback in SLA: Models and recasts in Japanese and Spanish. *The Modern Language Journal*, 82, 357–371.
- Loschky, L., & Bley-Vroman, R. (1993). Grammar and task-based methodology. In Crookes, G. & Gass, S. M. (Eds.) *Tasks and language learning: integrating theory & practice* (pp. 123–167). Clevedon: Multilingual Matters.
- Lyster, R. (1998a). Recasts, repetition, and ambiguity in L2 classroom discourse. *Studies in Second Language Acquisition*, 20, 51–81.
- Lyster, R. (1998b). 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., & Izquierdo, H. (2009). Prompts versus recasts in dyadic interaction. *Language Learning*, 59, 453–498.

- Lyster, R., & Mori, H. (2006). Interaction feedback and instructional counterbalance. *Studies in Second Language Acquisition*, 28, 269–300.
- Lyster, R., & Ranta, L. (1997). Corrective feedback and learner uptake: Negotiation of form in communicative classrooms. *Studies in Second Language Acquisition*, 19, 37–66.
- Lyster, R., & Saito, K. (2010). Oral feedback in classroom SLA: A meta-analysis. *Studies in Second Language Acquisition*, 32(2), 265–302.
- 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 instructed second language learning. *Applied Linguistics*, 27, 403–430.
- Mackey, A., Al-Khalil, M., Atanassova, G., Hama, M., Logan-Terry, A. & Nakatsukasa, K. (2007). Teacher's intentions and learner's perceptions about corrective feedback in the L2 classroom. *Innovation in Language Learning and Teaching*, 1(1), 129–152.
- Mackey, A., Gass, S. & McDonough, K. (2000). How do learners perceive interactional feedback? *Studies in Second Language Acquisition*, 22, 471–497.
- Mackey, A., & Goo, J. (2007). Interaction research in SLA: a meta-analysis and research synthesis. In A. Mackey (Ed.) *Conversational interaction and second language acquisition: A series of empirical studies* (pp. 407–452). Oxford: Oxford University Press.
- Mackey, A., & Philp, J. (1998). Conversational interaction and second language development: Recasts, responses, and red herrings? *Modern Language Journal*, 82, 338–356.
- MacWhinney, B. (2000). *The CHILDES Project: Tools for Analyzing Talk*. 3rd Edition. Mahwah, NJ: Lawrence Erlbaum Associates
- McDonough, K. (2004). Learner-learner interaction during pair and small group activities in a Thai EFL context. *System*, 32, 207–224.

- McDonough, K. (2005). Identifying the impact of negative feedback and learners' responses on ESL question development. *Studies in Second Language Acquisition*, 27(1), 79–103.
- McDonough, K. (2007). Interactional feedback and the emergence of simple past activity verbs in L2 English. In A. Mackey (Ed.), *Conversational interaction in second language acquisition: Empirical research* (pp. 323–338). Oxford: Oxford University Press.
- McDonough, K., & Mackey, A. (2006). Responses to recasts: Repetitions, primed production and linguistic development. *Language Learning*, 56, 693–720.
- McDonough, K., & Mackey, A. (2008). Syntactic priming and ESL question development, *Studies in Second Language Studies*, 30, 31–47.
- Muranoi, H. (2000). Focus on form through interaction enhancement: Integrating formal instruction into a communicative task in EFL classrooms. *Language Learning*, 50, 617–673.
- 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.
- Nassaji, H. (2007). Relationship with learner repair in dyadic interaction. *Language Learning*, 57(4), 511–548.
- Nassaji, H. (2009). Effects of recasts and elicitations in dyadic interaction and the role of feedback explicitness. *Language Learning*, 59(2), 411–452.
- Nelson, K. E., Carskaddon, G., & Bonvillian, J. D. (1973). Syntax acquisition: Impact of experimental variation in adult verbal interaction with the child. *Child Development*, 44, 497–504.
- Nelson, K. E., Denninger, M., Bonvillian, J. D., Kaplan, B., & Baker, N. (1983). Maternal input adjustments and non-adjustments as related to children's advances and to language acquisition theories. In A. D. Pellegrini & T. D. Yawkey (Eds.) *The development of oral and written language in social contexts* (pp. 31–56). Norwood, NJ: Ablex.
- Nicholas, H., Lightbown, P. M., & Spada, N. (2001). Recasts as feedback to language learners. *Language Learning*, 51, 719–758.

- O'Grady, W., & Lee, S. (2006). Classifiers and learnability: the role of recasts. In J. Song (Ed.), *Frontiers of Korean language acquisition* (pp. 127–137). Saffron Books: London.
- O'Grady, W., Lee, M. & Choo, M. (2003). A subject-object asymmetry in the acquisition of relative clauses in Korean as a second language. *Studies in Second Language Acquisition*, 25, 433–448.
- O'Grady, W., Lee, M., & Choo, M. (2001). The acquisition of relative clauses by heritage and non-heritage learners of Korean as a second language: a comparative study. *Journal of Korean Language Education*, 12(2), 283–294.
- O'Grady, W., Yamashita, Y., Lee, M., Choo, M. & Cho, S. (2000). Computational factors in the acquisition of relative clauses. *Proceedings of the International Conference on the Development of the Mind*, (pp. 433–448). Tokyo: Keio University
- 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*, 18, 459–481.
- Oliver, R. (2000). Negotiation of meaning in child interactions: the relationship between conversational interaction and second language acquisition. *Modern language Journal*, 50, 119–151.
- Oliver, R., & Mackey, A. (2003). Interactional context and feedback in child ESL classrooms. *Modern Language Journal*, 87, 519–533.
- Ortega, L., & Long, M. H. (1997). The effects of models and recasts on the acquisition of object topicalization and adverb placement by adult learners of Spanish. *Spanish Applied Linguistics*, 1, 65–86.
- Ozeki, H., & Shirai, Y. (2007). Does the noun phrase accessibility hierarchy predict the difficulty order in the acquisition of Japanese relative clauses? *Studies in Second Language Acquisition*, 29, 169–196.

- Panova, I., & Lyster, R. (2002). Patterns of corrective feedback and uptake in an adult ESL classroom. *TESOL Quarterly*, 26(4), 573–595.
- Pavesi, M. (1986). Markedness, discourse models, and relative clause formation in a formal and informal context. *Studies in Second Language Acquisition*, 25(1), 99–126.
- Pica, T., Holliday, L., Lewis, N., Berducci, D. & Newman, J. (1991). Language learning through interaction; what role does gender play? *Studies in Second Language Acquisition*, 13, 343–376.
- Pica, T., Kanagy, R. & Falodun, J. (1993). Choosing and using communication tasks for second language interaction and research. In Crookes, G. & Gass, S. M. (Eds.) *Tasks and language learning: integrating theory & practice* (pp. 9–34). Clevedon: Multilingual Matters.
- 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.
- Philp, J., & Iwashita, N. (2010). *Talking, turning in, and noticing: Exploring the benefits of pushed output in task-based peer interaction*. Unpublished manuscript, University of Auckland, New Zealand.
- Pickering, M. J., & Branigan, H. P. (1998). The representing of verbs: Evidence from syntactic priming in language production. *Journal of Memory and Science*, 39, 633–651.
- Ranta, L., & Lyster, R. (2007). A cognitive approach to improving immersion students' oral language abilities: The awareness-practice-feedback sequence. In R. DeKeyser (Ed.), *Practice in a second language: Perspectives from applied linguistics and cognitive psychology* (pp. 141–160). New York: Cambridge University Press.
- Roberts, M. A. (1995). Awareness and the efficacy of error correction. In R. Schmidt (Ed.), *Attention and awareness in foreign language learning (technical report #9)* (Vol. 9, pp. 163–182). Honolulu: University of Hawai'i, Second Language Teaching & Curriculum Centre.

- Ross-Feldman, L. (2007). Interaction in the L2 classroom: does gender influence learning opportunities? In A. Mackey (Ed.), *Conversational interaction and second language acquisition: A series of empirical studies* (pp. 53–77). Oxford: Oxford University Press.
- Russell, J., & Spada, N. (2006). The effectiveness of corrective feedback for the acquisition of L2 grammar. In J. Norris & L. Orteg (Eds.), *Synthesizing research on language learning and teaching* (pp. 133–163). Amsterdam: John Benjamins.
- Saxton, M. (1997). The contrast theory of negative input. *Journal of Child Language*, 24, 139–161.
- Schenkein, J. (1980). A taxonomy for repeating action sequences in natural conversation. In B. Butterworth (Ed.), *Language production* (pp. 21–47). San Diego, CA: Academic Press.
- Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics*, 11, 129–158.
- Schmidt, R. (1993). Awareness and second language acquisition. *Annual Review of Applied Linguistics*, 13, 206–226.
- Schmidt, R. (1995). Consciousness and foreign language learning. A tutorial on the role of attention and awareness in learning. In R. Schmidt (Ed.), *Attention and awareness in foreign language learning* (pp. 1–64). Honolulu: University of Hawai'i Press.
- Schmidt, R. (2001). Attention. In P. Robinson (Ed.), *Cognition and second language instruction* (pp. 3–32). Cambridge: Cambridge University Press.
- Sheen, Y. (2004). Corrective feedback and learner uptake in communicative classrooms across instructional settings. *Language Teaching Research*, 8, 263–300.
- Sheen, Y. (2006). Exploring the relationship between characteristics of recasts and learner uptake. *Language Teaching Research*, 10, 361–392.
- Sheen, Y. (2007). The effects of corrective feedback, language aptitude, and learner attitudes on the acquisition of English articles. In A. Mackey (Ed.), *Conversational interaction in second language acquisition: Empirical research* (pp. 301–322). Oxford: Oxford University Press.

- Shekary, M., & Tahririan, M. H. (2006). Negotiation of meaning and noticing in text-based online chat. *The Modern Language Journal*, 90(4), 557–573.
- Slimani, A. (1992). Evaluation of classroom interaction. In C. Anderson & A. Berreta (Eds.), *Evaluating second language education* (pp. 197–221). Cambridge: Cambridge University Press.
- Sohn, H. M. (1994). *Korean*. London and New York: Routledge.
- Sohn, H. M. (1999). *The Korean language*. Cambridge: Cambridge University Press.
- Swain, M. (1985). Communicative competence: some roles of comprehensible input and comprehensible output in its development. In S. M. Gass & C. G. Madden (Eds.), *Input in second language acquisition* (pp. 235–256). Boston, MA: Heinle & Heinle Publishers.
- Swain, M. (1998). Focus on form through conscious reflection. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 64–81). Cambridge: Cambridge University Press.
- Swain, M. (2005). The Output Hypothesis: Theory and research. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 471–485). Mahwah, NJ: Erlbaum.
- Williams, J. (1999). Learner-generated attention to form. *Language Learning*, 49(4), 583–625.
- Wu, S. L. (2011) *Learning to express motion events in L2 Chinese: A cognitive linguistics perspective*. Unpublished doctoral dissertation, University of Hawai‘i at Mānoa.
- Yang, D. W. (1973). *Topicalization and relativization in Korean*. Unpublished doctoral dissertation, Indiana University.
- Yang, I. S. (1972). *Korean Syntax: Case markers, delimiters, complementation and relativization*. Unpublished doctoral dissertation, University of Hawai‘i at Mānoa.
- Yoshida, R. (2008). Teachers’ choice and learners’ preference of corrective feedback types. *Language Awareness*, 17(1), 78–93.