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The Effect of Segmented and Interrupting Recasts on EFL Learners' Acquisition of English Question Forms*

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Research has revealed that a recast, which is a type of corrective feedback (CF) that has been acknowledged to be especially beneficial for L2 learners during communicative interaction, works differently depending on the way L2 teachers use salience enhancement techniques. The present study explores two types of salience-enhanced recasts, viz. segmented recasts (the teacher's provision of a partial recast of the learner's utterance) and interrupting recasts (the teacher's provision of a recast soon after the occurrence of the error), and the extent to which the accuracy of the learner' use of some English question forms (i.e., *do*-fronting and *do*-second question forms) is affected by them. 41 Japanese university EFL students took part in a pretest-posttest-delayed posttest design study over a 13-week period. The results revealed that there was no significant difference between the three groups; however, segmented and interrupting recasts groups showed gains in some instances while learners receiving recasts with no salience-enhanced techniques did not make any significant gains in the two question forms in either immediate or delayed posttests. The study gives rise to a valuable pedagogical implication about the importance of considering appropriate salience enhancement techniques when providing implicit forms of corrective feedback.

Keywords: corrective feedback, EFL, English question forms, recasts, saliency

* This is an abridged version of Chapter 5 of Asari's dissertation "Investigation of the Effect of Recasts from Multiple Perspectives: The method, the teacher, and the learner" (2016).

1 Introduction

The emergence of the concept of communicative competence (Hymes, 1971, 1972; Savignon, 1972) had many ramifications. It had an impact on foreign language (FL) teaching methods, with a result that classroom procedures which focused on meaning came to be used widely. The emphasis on communication, however, sometimes gave rise to kinds of tasks which did not attach importance to grammatical, phonological, and lexical accuracy. As an answer to this problem, a specific corrective feedback (CF) technique referred to as recasting came to be recognized (e.g., Ayoun, 2001; Braidi, 2002; Brocks et al., 1986; Han, 2002; Iwashita, 2003; Leeman, 2003; Lyster & Ranta, 1997; Mackey & Philp, 1998; Storch, 2002). Recasting refers to a method whereby the teacher provides a reformulation of a learner's incorrect utterance as part of a communicative interaction rather than departing from the natural flow of communication. This technique is meant to improve learners' use of grammar, phonology, and lexical items without damaging the flow of communication in the classroom.

While recasts have been acknowledged as theoretically and empirically beneficial for FL learners (e.g., Goo, 2012; Han, 2002; McDonough & Mackey, 2006; Muranoi, 2000; Nassaji, 2009), some researchers have criticized them as being not as effective as other CF types (e.g., Ammar & Spada, 2006; Lyster, 1998; Lyster & Ranta, 1997; Ohta, 2001; Panova & Lyster, 2002, Yang & Lyster, 2010). They argue, for example, that the lack of clear indicators of negative evidence may lead learners to overlook teachers' intention for correction and thus may not lead to learners' interlanguage (IL) restructuring.

Researchers have long perceived recasts as an implicit form of CF; however, more recent research has shown that recasts can be provided in more or less explicit manner (e.g., Ellis & Sheen, 2006; Loewen & Philp, 2006; Philp, 2003; Sheen, 2006; Wacha & Liu, 2017). Employing a pre-post-delayed posttest design, the present study examines whether two types recasts that are provided with salience-enhancement techniques (i.e., segmented recasts and

interrupting recasts) impact learners' L2 development more successfully than recasts that do not employ any salience-enhancement techniques. The findings will be of great interest as FL teachers equipped with knowledge of salience-enhancement techniques may be able to promote learners' language learning more effectively.

2 Literature Review

2.1 Corrective feedback

According to Lyster and Ranta's (1997) scheme, there are six CF types: explicit correction, metalinguistic feedback, elicitation, clarification requests, recasts, and repetition. The six CF types can be categorized by either one of the following criteria: (a) whether the CF is input-providing (CF types that provide learners with the correct L2 model) or output-prompting (CF types that elicit learner-generated correction) or (b) whether the CF is implicit (CF types in which the corrective force is covert) or explicit (CF types in which the corrective force is overt). This is summarized in Table 1. The definition and examples of each CF type are provided in Table 2 (definition and examples are quoted verbatim from Panova & Lyster, 2002, pp. 582-585 unless otherwise indicated).

Table 1. Classification of CF

	Implicit	Explicit
Input-providing	Recasts	Explicit correction
Output-prompting	Repetitions	Metalinguistic comments
	Clarification requests	Elicitation

Table 2. Definition and Examples of CF types

CF	Definition	Example
Explicit corrections	Explicit correction provides explicit signals to the student that there is an error in the previous utterance.	S: The day ... Tomorrow (lexical error) T: No, the day before yesterday.
Elicitation	Elicitation is a corrective technique that prompts the learner to self-correct.	S: New Ecosse. (L1) T: New Ecosse. I like that. I'm sure they'd love that. Nova ...? S: Nova Scotia.
Metalinguistic feedback	Metalinguistic feedback refers to "comments, information, or questions related to the well-formedness of the student utterance, without explicitly providing the correct answer" (Lyster & Ranta, 1997, p. 46).	S: Nouvell Ecosse ... (L1) T: Oh but that's French.
Clarification requests	The purpose of a clarification request is to elicit reformulation or repetition from the student with respect to the form of the student's ill-formed utterance.	S: I want practice today, today (grammatical error) T: I'm sorry?
Recasts	A recast is "the teacher's reformulation of all or part of a student's utterance minus the error" (Lyster & Ranta, 1997, p. 49).	S: Dangerous? (phonological error: /dange'rus) T: Yeah, good. Dangerous (deɪndʒ rəs/)
Repetition	In a repetition, the teacher repeats the learner's ill-formed part of the student's utterance, usually with a change in intonation.	T: What is this called? S: Comma. (lexical error) T: Comma?

While the ways in which the different CF types facilitate learners' L2 development are not completely uniform, the shared benefits of CF are that it (a) allows learners to find out if their hypothesis about their IL is correct or not, (b) helps learners notice the gap between their IL form and the target language (TL) form, and (c) provides opportunities for learners to produce pushed output.

2.2 Recasts

Of the six different types of CF, one in particular, namely recasts, has been receiving substantially more attention than any other CF types. As shown in the previous table, a recast is a type of implicit CF that reformulates an ill-formed utterance in an unobtrusive way. Here is another example of a recast (Example 1).

Example 1: (Mackey & Philp, 1998, p. 344)
NNS: What what they doing?
NS: What are they doing? (recast)
NNS: Yeah
NS: They're signing a contract

Recasts began to receive a spotlight in the 1990s, a time when L2 teachers were searching for teaching methodologies that would ensure accuracy in learners' L2 while achieving their overall communicative skills or fluency. Instruction with such a dual purpose is known as focus on form (FonF), a teaching method that sets out to draw attention to linguistic elements only "as they arise incidentally in lessons whose overriding focus is on meaning or communication" (Long, 1991, pp. 45-46). As shown in the example above, recasts provide learners with both positive and negative evidence promptly subsequent a learner's erroneous utterance, and this allows learners to shift their attention temporarily to the linguistic element all the while maintaining the focus on meaning. In this sense, recast came to be regarded as a typical FonF CF technique.

2.3 Salience-enhanced recasts

As more studies were conducted to investigate the efficacy of recasts, however, there turned out to be no guarantee that learners could benefit from them (e.g., Carpenter et al., 2006; Ohta, 2001; Panova & Lyster, 2002). This conclusion was drawn from numerous research results that revealed that

learners often misperceive recasts as non-corrective repetition due to their implicit nature. For instance, Carpenter et al. (2006) conducted a study with a purpose of investigating the extent of ambiguity in recasts. They found that learners were not able to identify recasts as corrective most of the time (77% of the time). The researchers argued that the lack of clear indicators of negative evidence may lead learners to overlook teachers' intention for correction and thus may not lead to learners' IL restructuring. Learners' failure to notice recasts is supported by other researchers such as Lyster (1998) and Mackey et al. (2000).

More recently, it has been found that learners' ability to notice the corrective function in recasts is heavily dependent on its saliency; in other words, recasts can vary in their degree of explicitness depending on the way they are provided by the interlocutor. Sheen (2006), for example, observed how FL teachers provide recasts to their learners and what types of recasts lead to learners' production of modified output (i.e., the learner's reaction subsequent the teacher's that involves some reformulation focused on the error). She found that the teachers' recasts were more likely to be declarative in mode (i.e., recasts provided in a statement, in other words, with a falling intonation), isolated (i.e., only the non-target-like part of a learner's utterance is reformulated without adding new information), short (i.e., recasts consisting of only one word or short phrases with only one content word), and reduced (i.e., recasts in which the reformulation is shorter than the learners' erroneous utterance). They also tend to focus on a single-error focus (i.e., amount of change made in the recast is limited to one linguistic item) and were usually provided towards grammatical errors. On a closer observation, she then found that short, reduced, single-error focused recasts that were targeted towards lexical or phonological errors led to learners' production of modified output. It was thus concluded that such recasts are more likely to be perceived by the learner as a correction as they are explicit rather than implicit and therefore more likely to be salient. In fact, the terms explicit recast and implicit recast were introduced by Sheen after this study. With these terms,

she criticized the dichotomy between clear and ambiguous recasts hitherto entertained by other researchers and posited for the first time a continuum in which recasts with varying degrees of explicitness may be placed.

In a similar vein, Asari (2017) conducted an observational study to examine (a) the types of recasts used by native speaker teachers in adult L2 communicative lessons and (b) which types of recasts are related to learner uptake (i.e., all forms of the learner's overt and covert reaction subsequent the teacher's CF) and modified output. From the 569 recast episodes, eight features that may influence the salience of recasts were found (See Appendix A for the features, definition, and examples). The findings revealed that of the eight features, segmentation (i.e., the recast provides a reformulation of part of the learner's utterance) and interruption (i.e., the recast is provided immediately after the occurrence of the learner's error by interrupting the learner's utterance) were two features frequently used by FL teachers and, furthermore, led to learners' production of modified output. It was concluded that segmented and interrupting recasts were potentially more beneficial than unsegmented and uninterrupting recasts. However, as modified output is merely an immediate response, associating the presence or absence of modified output with L2 development is questionable. This is the issue which will be discussed next.

2.4 The acquisitional role of modified output

There is agreement among some researchers that learners' production of uptake, especially in the form of modified output subsequent CF, is an indication that learners have noticed their interlocutors' CF (e.g., Egi, 2010; Panova & Lyster, 2002). It has even been argued, along the lines of Swain's Output Hypothesis, that the process of producing modified output contributes to learners' L2 development in that producing modified output (a) encourages hypothesis testing, (b) strengthens existing knowledge representations, and (c) promotes fluency and automaticity (Swain,1985, 1995, 2005).

Others, on the other hand, argue that equating the production of any

kind of uptake with noticing and/or L2 development could be problematic as there are research results that show that despite the presence of modified output, CF do not lead to L2 development. For example, Loewen and Philp (2006) compared the effectiveness of recasts, elicitation, and metalinguistic feedback and how the three CF types lead to learner modified output and contribute to learner accuracy. The result of the posttest showed that the three different CF types did not lead to learner accuracy even though one of those types of CF, namely, elicitation, led to significantly higher amounts of modified output than recasts (83% and 60% respectively). Despite the frequently advanced contention that modified output leads to L2 development, their study suggested that it may not, at least as far as accuracy was concerned.

The conflicting views on the role of uptake on learners' L2 development make it necessary to conduct an experimental study that looks at not only the production of modified output subsequent segmented and interrupting recasts but also the effect of those recasts on learners' long-term L2 development if we are to truly understand how they contribute to learners' language development.

3 Research Questions

The present study was conducted to investigate (a) whether the two types of recasts, namely segmented and interrupting recasts, lead to learners' L2 development and (b) whether the types of learners' uptake moves differ depending upon the types of recasts with which the learners are provided. The research questions addressed in the present study are as follows:

(RQ1) Do learners receiving segmented recasts, interrupting recasts, and recasts without such special features respectively gain accuracy in their production of the present tense *do*-fronting and/or *do*-second question forms?

(RQ2) Do learners receiving the different types of recasts gain accuracy dif-

ferently in comparison with each other?

(RQ3) How do the different types of recasting result in different types of uptake?

4 Method

4.1 Participants

41 native Japanese-speaking first-year university students learning EFL participated in this study. The students were recruited by the researcher and only those who volunteered took part in the present study. They were then randomly divided into three groups. The learners in the first experimental group (n = 14) received segmented recasts; the learners in the second experimental group (n = 14) received interrupting recasts; learners in the third group (n = 13), the control group, received recasts without salience enhancement, referred to as unsalient recasts for the study. The researcher was the sole provider of the recasts

4.2 Recasts

Three different types of recasts were examined for this study. Segmented recasts are those that are partial recasts of the learner's utterance. Interrupting recasts are those that are provided soon after the occurrence of the learner's error. Unsalient recasts are repetition of the learner's original utterance minus the error. Examples of the different types of recasts provided in the present study are provided in Examples 2-4. The "=" signals an interruption.

Example 2: Segmented recast

Learner:	What time you wake up?
Researcher:	Do you
Learner:	What time do you wake up?

Example 3: Interrupting recast

Learner: What you like =
Researcher: = What do you like
Learner: What do you like to do in free time?

Example 4: Unsalient recast
Learner: How many best friends they have?
Researcher: How many best friends do you have?
Learner: Do you have?

The difference between segmented recasts and interrupting recasts must be stressed at this point. While segmented recasts are provided after the learner has finished his/her sentence, focusing solely on the erroneous part of the learner's utterance, interrupting recasts are provided before the learner can finish his/her utterance, repeating everything the learner had said up to the point of the recast provision. Since it was predicted that there would be situations where recasts can have both features like in Examples 5 and 6, care was taken not to provide a recast which possessed the two features in one recast episode in this study.

Example 5: Segmented and interrupting recast
Learner: What time you =
Researcher: = Do you
Learner: What time do you

Example 6: Segmented and interrupting recast
Learner: What you mother =
Researcher: = Does your
Learner: What does your mother look like?

4.3 Target structure

The learners received their respective recasts whenever they made an error

about (a) questions beginning with *do* or *does*, referred to as *do*-fronting question forms hereafter (e.g., *Do you like listening to music?*), and (b) questions beginning with *wh*-question words followed by *do* or *does*, referred to as *do*-second question forms hereafter (e.g., *What time do you go to bed?*). These target forms were chosen because (a) previous research has shown that CF improves learners' use of question forms (e.g., Mackey, 1995, 1999), (b) while university students who have studied English under the Japanese education system have already learned the English question forms, the accurate use these forms are still difficult for these students because of the L1-L2 syntactic differences, and (c) an interrogative word or auxiliary takes the initial position in English, making it easy for the researcher to provide an interrupting recast in case of an error related to such a word.

4.4 Procedure

The study involved three treatment sessions and three tests over a 13-week period (Table 3).

Table 3. Schedule for the Participants

Week	Procedures in all three groups
Week 1	Pretest (Sentence unscrambling/written)
Week 2	Treatment session 1 (Peer interview/oral)
Week 3	Treatment session 2 (Peer interview/oral)
Week 4	Treatment session 3 (Task activity/oral)
Week 5	Immediate posttest (Sentence unscrambling/written)
Weeks 6-12	No intervention
Week 13	Delayed posttest (Sentence unscrambling/written)

The learners in the two experimental groups and the control group were put into groups of six or seven people and participated in the treatment sessions separately. In the sessions, learners were instructed to ask their peers questions to achieve the task goal. The goal of the first and second treatment sessions was "getting to know each other." Using a set of cards that had key

words on them such as *food* and *music*, the learners were instructed to take turns asking their peers two question: A *do*-fronting question (e.g., *Do you like listening to music?*) followed by a *do*-second question. (e.g., *What kind of music do you listen to?*). The third treatment session's task goal was "finding a roommate." Again, using a set of cards that had key words on them such as *moving date* and *house or apartment*, the learners had to ask their peers questions such as *Do you want to move this summer? / When do you want to move?* and *Do you want to live in a house or an apartment? / What kind of apartment do you want to live in?* Each treatment session lasted approximately 30 minutes.

4.5 Pretest, immediate posttest, delayed posttest, and analysis

The pretest, immediate posttest, and delayed posttest took the form of a written sentence unscrambling task. The task required learners to put the words in the right order, eliminating one unnecessary word that was included for the purpose of minimizing the possibility of success on the basis of guessing. The test consisted of 30 items: ten items aimed at testing learners' knowledge of *do*-fronting question forms; ten items aimed at testing *do*-second question forms; ten items which tested other question forms, included as distractors. Although oral tests would have been preferable, administering such tests was not feasible due to class time constraints. However, the tests were designed so that learners would work in a close approximation to a speaking test setup: Each question appeared on a PowerPoint slide projected on a screen, and a time limit was set for each slide so as to make learners answer under time pressure similar to that which they would have to face if they were providing answers orally. To do that, prior to the test, a small-scale test had been conducted in which advanced learners of English, who have complete mastery of question forms, were asked to answer the question used in the pretest. Their performance was timed and the average length of time it took them to answer each question was used in the tests as the time limit for that question. Appendix B is a sample of a PowerPoint slide used for

the pretest. For this slide, the time limit was set at 19 seconds.

For the pretest and the two posttests, similar test questions were used so that the complexity of the forms in question would be the same amongst the three tests. For example, the word *Shibuya* appearing in Appendix B was changed to *Shinjuku* and *Harajuku* for the posttests. The purpose of this alteration was to minimize the practice effect that might affect the results of the posttests.

The test scores were expressed in terms of percentages. As the research questions are intended to look into learners' progress in the accurate use of question forms, errors unrelated to the question forms (e.g., adverb/adjective misplacement) were disregarded in the scoring. For all statistical analysis, the alpha level was set at .05.

4.6 Uptake

Each error treatment sequence involved the following three steps: (a) learners' erroneous utterance, (b) the researcher's provision of recasts, and (c) uptake, which is learners' subsequent reaction following the recasts. Uptake was then coded as either "modified output" or "unmodified output." Learners' response which could be classified as either a repair or a partial-repair was categorized as modified output, but any other response was categorized as unmodified output. This is summarized in Table 4 (Definitions are based on Lyster & Ranta (1997) and Egi (2007), and examples are taken from the present study).

Table 4. Definition and Examples of Different Types of Uptake

Uptake type	Definition	Example
Modified output		
Repair	Cases where participants successfully corrected the original error that had triggered a recast by either (a) repeating all or part of the recast or (b) incorporating the recast into a longer statement.	S: What time you wake up? T: What time do you S: What time do you wake up?
Partial-repair	Cases when the participants modified the problematic form incorrectly or only partially correctly.	S: How many times you cleaning? T: How many times do you clean your room? S: How many times a week clean?
Unmodified output		
Acknowledgment	Cases when learner simply acknowledged the recast (e.g., "Yes", "I see").	S: How many friends have? T: How many friends do you have? S: Yes
No uptake	Cases when there was no response or reaction following recasts.	S: What you like talking? T: Do you like? S: ...

5 Results

In this section, the results will be presented in the following order: (a) the result for the *do*-fronting question forms, (b) the result for the *do*-second question forms, and (c) the result regarding uptake patterns in relation to different recast types.

5.1 *Do*-fronting question forms

A one-way ANOVA test was conducted first to ensure the homogeneity of the participants. The results showed no significant difference between the three groups at the point of the pretest, $F(2, 38) = .49$, $p = .62$. Table 5 displays the means, the standard deviations, and the standard errors of the accuracy scores for the three groups across the three testing times (i.e., T1, T2, and T3).

Table 5. Descriptive Statistics for the Three Tests (*Do*-fronting)

					95% Confidence Interval	
		Mean	Standard Deviation	Standard Error	Lower Bound	Upper Bound
T1	Segmented	24.29	17.85	5.24	13.68	34.89
	Interrupting	31.43	20.33	5.24	20.82	42.04
	Unsalient	29.23	29.23	5.44	18.22	40.24
T2	Segmented	30.77	23.26	7.19	17.58	46.71
	Interrupting	50.00	34.19	7.19	35.44	64.56
	Unsalient	30.77	30.77	7.47	15.66	45.88
T3	Segmented	43.08	19.85	6.28	40.87	66.28
	Interrupting	45.00	24.1	6.28	32.3	57.7
	Unsalient	43.08	43.08	6.51	29.89	56.26

A Two-Way Repeated Measures ANOVA was then run on the data to conduct the (a) within-subject analysis and (b) between-subject analysis. As for within-subject analysis, a significant main effect for time was found, $F(2, 76) = 12.48$, $p < .001$, indicating that the groups' test scores changed over time. Furthermore, a significant interaction effect was found: time x groups, $F(4, 76) = 2.64$, $p = .04$; in other words, the groups' test scores changed over time but changed in different ways. The results of a Bonferroni post hoc test (Table 6) and pairwise comparison (Table 7) revealed that it was the increase in score (a) from T1 to T2 and (b) from T2 to T3 in the segmented recast

group that contributed to the outcome.

Table 6. Bonferroni Post Hoc Test (*Do*-fronting)

	Sources of Variation	Sum of Squares	*df*	Mean Square	*F*	*p*	Partial Eta Squared
Segmented	Test	6433.33	2	3216.67	10.77	< .001	.45
	Error (Test)	7766.67	26	298.72			
Interrupting	Test	2585.71	2	1292.86	3.76	.04	.22
	Error (Test)	8947.62	26	344.14			
Unsalient	Test	1497.44	2	748.72	3.23	.06	.21
	Error (Test)	5569.23	24	232.05			

Table 7. Pairwise Comparison (*Do*-fronting)

					95% Confidence Interval	
		Mean Difference	Standard Error	*p*	Lower Bound	Upper Bound
T1 - T2	Segmented	7.86	7.05	.86	−11.49	27.21
	Interrupting	18.57	7.55	.09	−2.16	39.30
	Control	1.54	6.08	1.00	−15.36	18.44
T2 - T3	Segmented	21.43	6.78	.02	2.81	40.05
	Interrupting	−5.00	6.09	1.00	−21.72	11.72
	Control	12.31	5.57	.14	−3.16	27.78
T1 - T3	Segmented	29.29	5.69	< .001	13.66	44.91
	Interrupting	13.57	7.31	.26	−6.50	33.64
	Control	13.85	6.26	.14	−3.55	31.24

In regard to the between-subject analysis, the results revealed no difference among groups, $F(2, 38) = .61$, $p = .55$. In other words, the gains in scores of the three groups were not different in relation to each other.

5.2 *Do*-second question forms

The same steps were taken for analyzing the data of the three groups in their performance with *do*-second question forms. The descriptive statistics of the three testing times are provided in Table 8.

Table 8. Descriptive Statistics for the Three Tests (*Do*-second)

					95% Confidence Interval	
		Mean	Standard Deviation	Standard Error	Lower Bound	Upper Bound
T1	Segmented	45.71	19.50	5.21	34.46	56.97
	Interrupting	52.86	23.01	6.15	39.57	66.15
	Unsalient	60.77	16.05	4.45	51.07	70.47
T2	Segmented	59.29	22	5.88	46.58	71.99
	Interrupting	68.57	17.91	4.79	58.32	78.91
	Unsalient	60.77	25.97	7.20	45.08	76.46
T3	Segmented	67.14	12.67	3.39	59.83	74.46
	Interrupting	71.43	24.76	6.62	57.13	85.73
	Unsalient	52.31	23.86	6.62	37.89	66.73

After ensuring that there was no significant difference between the three groups at the point of the pretest, $\chi^2(2) = .43$, $p = .81$, the within-subject effect was calculated. A significant main effect for time, $F(2, 76) = 4.34$, $p = .02$, and a significant interaction effect were found, $F(4,76) = 2.84$, $p = .03$, indicating that the three groups' test scores changed over time but changed differently. A Bonferroni post hoc test showed that it was the two experimental groups that contributed to this outcome. Specifically, the increase in score from T1 to T3 was significant, and the increase in score from T1 to T2 was significant for the segmented recasts group and the interrupting recast group respectively. The results are summarized in Tables 9 and 10.

Table 9. Bonferroni Post Hoc Test (*Do*-second)

	Sources of Variation	Sum of Squares	*df*	Mean Square	*F*	*p*	Partial Eta Squared
Segmented	Test	3290.48	2	1645.24	5.11	.01	.28
	Error (Test)	8376.19	26	322.16			
Interrupting	Test	2800.00	2	1400.00	4.23	.03	.25
	Error (Test)	8600.00	26	330.77			
Unsalient	Test	620.51	2	310.26	.97	.40	.07
	Error (Test)	7712.82	24	321.37			

Table 10. Pairwise Comparison (*Do*-second)

					95% Confidence Interval	
		Mean Difference	Standard Error	*p*	Lower Bound	Upper Bound
T1 - T2	Segmented	13.57	8.03	.34	−8.47	35.61
	Interrupting	15.71	4.54	.01	3.26	28.17
	Control	.00	8.01	1.00	−22.25	22.25
T2 - T3	Segmented	7.86	6.97	.84	−11.28	26.99
	Interrupting	2.86	7.73	1.00	−18.38	24.09
	Control	−8.46	6.59	.67	−26.77	9.85
T1 - T3	Segmented	21.43	5.01	< .001	7.67	35.19
	Interrupting	18.57	7.84	.10	−2.94	40.09
	Control	−8.46	6.39	.63	−26.22	9.30

When a between-subjects analysis was conducted, however, the results revealed no significant difference, $F(2, 38) = .91$, $p = .41$), meaning that the gains in score of the three groups were not different in relation to each other as was the case for *do*-fronting question forms.

5.3 Recasts and uptake

To examine whether different recasting techniques result in different types of uptake, the total number of recast episodes and the numbers of recasts for the different types of uptake were tabulated (Table 11).

Table 11. Breakdown of Uptake to Different Recasts

	Segmented	Interrupting	Unsalient
Modified output			
Repair	52 (91.2%)	69 (94.5%)	35 (68.6%)
Partial Repair	0 (0.0%)	3 (4.1%)	6 (11.8%)
Unmodified output			
Acknowledgment	0 (0.0%)	0 (0.0%)	2 (3.9%)
No Uptake	5 (8.8%)	1 (1.4%)	8 (15.7%)
Total	57 (100.0%)	73 (100.0%)	51 (100.0%)

A chi-square analysis of the three groups' means of learners' modified output instances revealed a significant difference, $\chi^2(2) = 18.81$, $df = 2$, $p < .001$. In other words, there was an association between the three recast types and learners' production of modified output. Specifically, learners receiving segmented or interrupting recasts were more likely to produce modified output compared to those receiving unsalient recasts.

5.4 Summary of the results

Three points can be made from the results: (a) Although the gains were not durable, the interrupting recast group was able to show short-term gains in their production of *do*-fronting question forms, (b) the segmented recast groups' gains in accuracy in both the *do*-fronting and the do-second forms surfaced gradually, and (c) learners receiving segmented recasts and interrupting recasts produced modified output more frequently than learners receiving unsalient recasts.

6 Discussion

This section discusses the following two points: (a) the shared advantages of segmented and interrupting recasts, (b) the superiority of segmented recasts over interrupting recasts in terms of retention.

6.1 Benefits of segmented recasts and interrupting recasts

Firstly, the advantages of the two salience-enhanced recasts can be discussed from a cognitive perspective: Segmented and interrupting recasts are less onerous on learners' (a) working memory and (b) attentional capacity. The biggest disadvantage of recasts is that the information in them (i.e., positive evidence) can easily fade before it can be processed by learners. Therefore, the more information there is to process in a recast, the more likely the positive evidence in the recasts will be remembered and detected by the learners. The strengths of segmented and interrupting recasts are that they minimize (a) the length of the recasts and (b) the distance between the positive evidence in recasts (TL) and the erroneous form uttered by the learner (IL). Compare the three types of recasts (i.e., segmented recasts, interrupting recasts, and unsalient recasts) provided below (Examples 7-9).

Example 7: Segmented recast

Learner:	What time you wake up?
Researcher:	Do you.
Same Learner:	What time do you wake up?
Researcher:	Good.
Different Learner:	Eight o'clock.

Example 8: Interrupting recast

Learner:	What time you =
Researcher:	= What time do you.
Same Learner:	What time do you go to bed?

Researcher: Very good.
Different Learner: One o'clock.

Example 9: Unsalient recast
Learner: What time you go to the bed?
Researcher: What time do you go to bed?
Same Learner: Yes.
Different Learner: Eleven o'clock.

The number of words in the recasts is two, four, and six respectively, and the number of words between the learners' error and the positive evidence in recasts is three, three, and seven respectively. Previously, Asari (2012) conducted a study which examined whether the length of recasts and the distance between the error and the TL form in the recast are related to learners' success in producing modified output. It was found that the learners' ability to produce modified output decreased when the number of words in a recast exceeded four, or when the number of intervening words between the error and the target structure in a recast exceeded five. On the basis of this result, an argument was put forward that there are thresholds beyond which the task of noticing and retaining the information becomes disproportionately more onerous for learners. This would explain why learners in the segmented recasts group and the interrupting recasts group were able to produce repair more frequently than learners in the unsalient recasts group.

Secondly, the advantage of the two types of salience-enhanced recasts can also be discussed in terms of their disambiguation. Example 10 is a transcription of the interaction between two learners and the researcher. The first learner commits an error and, after the learner has finished his utterance, the researcher provides an unsalient recast. The first learner (the one being corrected) responds in the form of acknowledgment and the second learner interprets his acknowledgment as a cue to answer her peer's question. This may be an indication that the researcher's recast was perceived as

an act of confirmation. If that is indeed the case, it will explain why learners in the unsalient recasts group produced higher rate of acknowledgment. On the other hand, segmented and interrupting recasts may have a better chance of being clearly perceived as CF by learners, perhaps because they are incomplete sentences. In brief, while the negative evidence in non-salient recasts may be overlooked, that may not be the case with segmented recasts and interrupting recasts.

Example 10: Unsalient recast

Learner:	Dog? Do you pets?
Researcher:	Do you have any pets?
Same Learner:	Yes. (Acknowledgment)
Different Learner:	Ah ... I have a dog.

Finally, learners receiving segmented or interrupting recasts may have benefited from engaging in *negotiation of form* (this term was first introduced in Lyster, 1994), which is defined as "the provision of corrective feedback that encourages self-repair involving accuracy and precision and not merely comprehensibility" (Lyster & Ranta, 1997, p. 42). Observe the following three examples (Examples 11-13). In Example 11, the first learner produces an ill-formed question. The researcher then provides a recast in a complete sentence, which enables the second learner, i.e., the first learner's interlocutor, to understand the question and answer it. The initial learner now finds himself in a position in which he does not need to reformulate his utterance, hence just a few turns in this particular episode. This is not the case for segmented and interrupting recasts. In Examples 12 and 13, the corrections given to a learner through the two types of salience-enhanced recasts tend to continue until the first learner has been able to give the full utterance without any error. This is because segmented and interrupting recasts are not in a full sentence and, unless the correct question is uttered by the first learner, who received the recast, his/her peer cannot understand the question.

Example 11: Unsalient recasts

Learner:	What you want in the future?
Researcher:	What do you want to do in the future?
Same Learner:	Yes.
Different Learner:	Tennis player.

Example 12: Segmented recast

Learner:	What- what you listen to music?
Researcher:	What kind of music do you.
Same Learner:	What kind of music.
Different Learner:	Mm?
Same Learner:	What kind of music listen to?
Researcher:	Do you listen to.
Same Learner:	What kind of music do you listen to?
Different Learner:	Pop music.
Researcher:	Good. Next person.

Example 13: Interrupting recasts:

Learner:	How much you=
Researcher:	= How much do you.
Same Learner:	How much you =
Researcher:	= How much do you.
Same Learner:	How much do you pay for rent?
Different Learner:	50,000 yen.
Researcher:	Good. Next person.

According to Lyster (2001), one of the benefits of negotiation of form is that it provides learners with opportunities to make form-function links while maintaining mutuality inherent in negotiation. Therefore, extended negotiations triggered by segmented and interrupting recasts may be considered to be one of the factors that account for the advantage in using these recasts.

In sum, segmented and interrupting recasts seem to be more effective for learners' L2 development because (a) they are manageable for learners' cognitive processing, (b) they are free of ambiguity as to the nature of the CF, and (c) they trigger subsequent practice via the production of modified output and engagement in negotiation of form. The question, then, is why learners in the interrupting recasts group were not able to retain their accuracy.

6.2 Segmented recasts' retention

The superiority of segmented recasts may be explained by some problems which are uniquely associated with the use of interrupting recasts. Because interrupting recasts are provided immediately after the occurrence of the error, learners are interrupted abruptly and immediately if the error is committed toward the beginning of a sentence. This immediacy may have had the following adverse effects.

Firstly, a close examination of the transcription showed that interrupting recasts take away opportunities for learners' self-generated repair. Learners' self-generated repair is different from repair in that it refers to a self-correction made without CF by the learners who committed the initial error (Panova & Lyster, 2002). Compare the following examples (Examples 14 and 15).

Example 14: Segmented recast

Learner:	What do you after school?
Researcher:	What do you do.
Same Learner:	What do you after school- ah- what do you do after school?
Different Learner:	Play with friends.

Example 15: Interrupting recast

Learner:	Friends come=
Researcher:	= Do friends come

Same Learner: Friends =
Researcher: = Do friends
Same Learner: Ah! Do friends come many times?
Different Learner: One time one week

The learner receiving a segmented recast immediately catches himself after producing an erroneous utterance again ("What do you after school?") and produces self-repair ("What do you do after school?"). Panova and Lyster (2002) assert that in order to produce self-repair, learners must be able to (a) actively monitor their own speech and detect a possible IL form and (b) retrieve the correct TL knowledge from their memory. This cognitively deep processing is said to be beneficial for L2 development because it helps learners increase control over their already existing internal system. Unfortunately, learners in the interrupting recasts group were probably not given the opportunity to produce self-repair as the researcher hastened to provide a correction, as shown in Example 15.

Secondly, learners receiving segmented recasts and those receiving interrupting recasts may not have performed the same depth of cognitive processing in order to produce subsequent repair. For one thing, learners receiving interrupting recast are not given the opportunity to construct whole sentences as they would in the case of segmented recasts. Furthermore, because the positive evidence is given before the end of the sentence involving an error, learners may not be able to analyze the evidence in the framework of a complete sentence. Due to these factors, even though the repair rate produced by the learners in the two salience-enhanced recasts groups were not significantly different, the level at which learners analyze the evidence may not be as deep as it would be if they were not interrupted.

Thirdly, learners receiving interrupting recasts may have been able to correct their errors *too* easily due to the IL/TL proximity. Although the juxtaposition may facilitate learners to notice the positive evidence in recasts and produce repair, learners may be merely parroting the interlocutor's

utterance. This would explain why learners were able to gain instant success from interrupting recasts in the case of *do*-second forms yet the gain was not retained: The input may not have been internalized as firmly as segmented recasts due to the lesser degree of effort required of learners for production. In other words, learners receiving interrupting recasts were able to achieve awareness at the level of noticing yet were not able to achieve awareness at the level of understanding (refer to Schmidt, 1990 for more information). Theoretically, then, forms that are restructured through segmented recasts are more durable in learners' memory than those restructured through interrupting recasts.

7 Conclusion

The findings of this study indicate that the degree to which learners benefit from recasts seems to depend on how they are provided and that one of the responsibilities of FL teachers who intend to use recasting as a teaching technique is to understand the theoretical benefits of different recast types. However, some limitations to this study should be acknowledged when interpreting its results. The relatively small sample size, the small of amount of time devoted to treatment sessions, and the short time frame in which the entire study was conducted all reduce the validity of any generalization. Second, the mismatch between oral treatment and written tests could have skewed the data. Third, the provider of recasts was not involved in the communication in the way in which the learners were. Because the researcher joined the conversation only when an error occurred, learners may have become overly sensitive to corrections. Therefore, it is possible that if the study had purely taken the form of researcher-learner interaction, the result may have been different.

In spite of the limitations, the present study offers significant empirical implications. While extensive research has been carried out on the use of recasts, studies such as this one highlights the fact that there are issues related to factors influencing the efficacy of recasts which are still under-

researched. For decades, studies exploring the efficacy of recasts have yielded mixed results. As the present study shows, such mixed results can be explained by the loose operationalization of recasts. Therefore, future research focusing on recasts must clearly indicate how the they are provided as different recasts may bring out different outcomes.

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Appendix

Appendix A. Description and Examples of Different Types of Recasts (Asari, 2017, pp.71-72)

Feature	Description	Example
Segmentation		
Segmented	The recast is a partial recast of the learner's utterance	S: If the desk is dirty T: Messy
Whole	The recast is an entire recast of the whole trigger utterance	S: Jake's hobby is make furniture T: Jake's hobby is making furniture
Emphasis		
Stressed	Linguistic item that is recast is given atypical emphasis through stress, pitch or additional pausing	S: I have impatient. T: I AM impatient
Unstressed	Linguistic item that is recast is not given atypical stress	S: He exercise two or three times a week. T: He exercises twice or three times a week.
Intonation		
Rising-tone	The recast is provided with rising intonation	S: There were some problem. (*said with falling tone*) T: There were some problems? (*said with rising tone*)
Falling-tone	The recast is provided with falling intonation	S: They like to expand their business. (*said with rising tone*) T: They'd like to expand their business. (*said with falling tone*)
Verbal cue		
With cue	The recast is provided with an additional verbal signal (e.g., *ah!* or *oh!*)	S: Last year did you go to traveling? T: Ah! Did you go traveling?

No cue	The recast is provided without an additional verbal signal	S: I went ... I went swimming for relax. T: To relax.
Sign of approval		
With approval	The recast is provided with an additional sign of approval (e.g., *That's right* or *yes*)	S: I like ... I like TV show. T: Yeah. You like TV shows.
No approval	The recast is provided without an additional sign of approval	S: I went ... I went swimming for relax. T: To relax.
Linguistic focus		
Morphosyntactic	The recast modifies the morphology or syntax of the learner's utterance	S: But Janet want to go to beach. T: Wants to go
Lexical	The recast provides a new or modified lexical item or phrase (open class items, e.g., nouns, verbs, adverbs, adjectives)	S: A woman is along a man. T: Besides a man.
Phonological	The recast modifies the learner's pronunciation of an item/items	S: They submit a report [repo:to]. T: Report
Multiple focus	The recast includes multiple changes, involving the phonology, the morphology, the syntax, or the vocabulary	S: She like green or blue clothes. T: She likes green and blue clothes
Timing		
Interrupting	The recast is provided soon after the occurrence of the learner's error	S: When I was a student, I'm good at T: I was good at
Uninterrupting	The recast is provided after the learner has finished his/her utterance	S: They concerned about their job's security. T: They are concerned about their job's security
Length		
One word	The recast contains one word	S: I like bargain T: Bargaining

Two words	The recast contains two words	S: My responsible are advice for customer. T: Giving advice
Three words	The recast contains three words	S: I medical doctor seventeen years T: I have been
Four words	The recast contains four words	S: Two men work on tan T: Two men are working
Five words	The recast contains five words	S: Eat breakfast. Nine o'clock I go to bed. T: I go to bed at
Six words	The recast contains six words	S: She went work on the walk. T: She went to work on foot.
Seven or more words	The recast contains seven or more words	S: Where would you go jogging? T: Where would you LIKE to go jogging?

Appendix B. Sample of the Pretest