THE EFFECTS OF ORAL CORRECTIVE FEEDBACK AND LANGUAGE ANXIETY ON PRONUNCIATION DEVELOPMENT

LOS EFECTOS DE LA RETROALIMENTACIÓN CORRECTIVA ORAL Y LA ANSIEDAD SOBRE EL DESARROLLO DE LA PRONUNCIACIÓN

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While a substantial body of research has shown that oral corrective feedback (CF) is effective for the acquisition of foreign language grammar, very few studies have focused on the impact of CF on pronunciation development. Moreover, there is a dearth of CF research which takes individual differences such as foreign language anxiety into account. The present study therefore investigated the effects of recasts and metalinguistic feedback on the pronunciation of the -ed ending, comparing 30 low- and high-anxiety learners with an A2+ level of English at a Spanish secondary school. A pre-test/post-test design involving a reading-aloud test and a storytelling treatment was applied to a recast (n=10), metalinguistic feedback (n=10) and control group (n=10). Each of the three groups was

further divided into a high-anxiety (n=5) and low-anxiety group (n=5). Significant differences were found between the recast and control group, confirming previous research showing that recasts are beneficial for pronunciation development. However, despite certain indications that low-anxiety learners benefited more from CF, and high-anxiety learners seemed to benefit especially from recasts, no significant differences between the anxiety-groups could be identified in this study.

Key words: *foreign language anxiety; corrective feedback; recasts; metalinguistic feedback; modified output; pronunciation*

Si bien una gran cantidad de estudios han demostrado que la retroalimentación correctiva oral (RC) es efectiva para la adquisición de la gramática en un idioma extranjero, muy pocos se han centrado en el impacto de la RC en el desarrollo de la pronunciación. Además, escasea la investigación de RC que tenga en cuenta las diferencias individuales, como la ansiedad en el aprendizaje de una lengua extranjera. Por lo tanto, el presente estudio investigó los efectos de las reformulaciones y la retroalimentación metalingüística sobre la pronunciación de la terminación de pasado -ed, comparando 30 estudiantes de ansiedad alta y baja con un nivel A2 + de inglés en una escuela secundaria de España. Un diseño pre-test/post-test consistente en una lectura en voz alta y una narración fue llevado a cabo con un grupo de reformulación (n=10), un grupo de retroalimentación metalingüística (n=10) y un grupo de control (n=10). Cada uno de los tres grupos fue subdividido en un grupo de ansiedad alta (n = 5) y otro de ansiedad baja (n = 5). Se encontraron diferencias significativas entre el grupo de reformulación y el grupo de control, lo cual confirma investigación previa que demuestra que las reformulaciones son beneficiosas para el desarrollo de la pronunciación. Sin embargo, a pesar de ciertas indicaciones de que los estudiantes con ansiedad baja se beneficiaron más de la RC, y los estudiantes con ansiedad elevada parecieron beneficiarse especialmente de las reformulaciones, no se pudieron identificar diferencias significativas entre los grupos de ansiedad en este estudio.

Palabras clave: *ansiedad en el aprendizaje de una lengua extranjera; retroalimentación correctiva; reformulaciones; retroalimentación metalingüística; producción modificada; pronunciación.*

1. Introduction

While there is a considerable body of research which shows positive effects of oral corrective feedback (CF) on the acquisition of L2 grammar (e.g., Ammar & Spada, 2006; Doughty & Varela, 1998; Ellis, Loewen & Erlam, 2006; Lyster & Saito, 2010; McDonough 2007), few studies to date have investigated its impact on vocabulary learning (e.g., Dilans, 2010) and even fewer studies have focused on the impact of CF on the acquisition of pronunciation features (e.g., Saito & Lyster, 2012a,b). Pronunciation is nonetheless an important aspect of L2 oral skills, since it can affect overall intelligibility and the ability to communicate. Moreover, although several researchers have tried to determine if there is a difference between different CF-types, so far the question whether to use recasts or prompts (such as metalinguistic feedback or clarification requests) remains unresolved (Goo & Mackey, 2013; Lyster, Saito & Sato, 2013). Research on CF-effectiveness is further complicated by the interference of both external (e.g., CF-type, linguistic target, interactional setting) and internal variables (e.g., proficiency level, working memory, anxiety). The internal variables in particular, also referred to as individual differences, have received the least attention from CF-researchers (Ellis, 2010; Lyster, Saito & Sato, 2013). An individual difference which is particularly interesting to investigate is foreign language anxiety, since Sheen (2008) states anxiety is an important variable that may interfere not only in CF efficacy, but also in learners' responses (i.e., uptake). Only few CF studies have ventured to relate anxiety to error correction (e.g., Sheen, 2008), and to the best of our knowledge, no studies have examined the impact of anxiety and CF on pronunciation development. To fill this gap, the current study analyzes the possible influence of learners' anxiety on two types of error correction (recasts and metalinguistic feedback) directed at a specific pronunciation feature.

2. Literature Review

2.1. The Effectiveness of Oral CF

Since Lyster and Ranta published their seminal paper on oral CF in 1997, researchers have carried out a great number of studies investigating the effects of oral CF on second language acquisition. Most of these studies focused on specific grammatical targets, such as question formation (e.g.,

Mackey & Philp, 1998; McDonough, 2005), articles (Muranoi, 2000; Sheen, 2007) or the past tense (Doughty & Varela, 1998; Han, 2002; Yang & Lyster, 2010), to name a few. Several meta-analyses of these studies have been published, which have all concluded that oral CF has positive and durable effects on acquisition (Mackey & Goo, 2007; Russell & Spada, 2006; Li, 2010; Lyster & Saito, 2010). A few studies have looked at how oral CF impacts on vocabulary acquisition, and these have also concluded in favour of CF (e.g., Dilans, 2010). However, as mentioned in the introduction, its impact on L2 pronunciation has received very little attention.

Before having a closer look at the few studies which have addressed this question, we need to discuss the different variables involved in CF research. While most researchers now agree oral CF is effective, there is still some debate about the most effective CF-type. As Lyster, Saito and Sato (2013) explain, oral CF-types can be classified according to two dimensions: explicit vs. implicit, on the one hand, and input-providing vs. output-pushing, on the other. Recasts, usually classified as implicit and input-providing, have been put forward as an effective technique by some researchers (Han, 2002; Ishida, 2004; Leeman, 2003; Mackey & Philp, 1998; Mcdonough & Mackey, 2006; Loewen & Nabei, 2007). However, many of these studies were carried out in laboratory settings and did not compare recasts to other types of CF. Comparisons between recasts and more explicit CF-types have been made, generally resulting in greater effects for the more explicit CF (e.g., Ellis, Loewen & Erlam, 2006; Sheen, 2007; Yilmaz, 2012). However, Li (2010) states that recasts seem to have greater effects on delayed post-tests, which means their impact may take longer to manifest itself. When comparing recasts to prompts, a group of output-pushing techniques such as elicitation or clarification requests, studies carried out in classroom-settings indicate a greater benefit for prompts (Lyster & Saito, 2010). The question of which type of CF is the most effective has not been fully resolved so far, and more and more researchers point out the need to focus on other variables which potentially interfere with CF effectiveness, such as proficiency, working memory or indeed, language anxiety. Moreover, recasts and prompts may affect different target structures in different ways (see for instance Ellis, 2007). Mackey, Gass and McDonough (2000) showed that learners do not tend to notice recasts on morphosyntactic errors, while recasts on phonological errors are more salient. As mentioned earlier, most research on CF has looked at grammatical targets. For pronunciation, it may well be that

recasts are a better choice, given the fact that they provide a correct model for the students. However, as we will see in section 2.2, hardly any studies have compared the effects of recasts and prompts on the acquisition of a phonological target, so this question remains to be investigated.

2.2. Oral CF and Pronunciation

So far, there is a dearth of research looking at the effects of CF on students' accurate pronunciation. A series of studies carried out by Lyster and his colleagues combined form-focused instruction with CF on the pronunciation of different consonant and vowel sounds. Saito and Lyster (2012a) and Saito and Lyster (2012b) only investigated the effects of recasts on pronunciation, while Gooch, Saito and Lyster (2016) is one of the rare studies comparing the effects of recasts and prompts on pronunciation development.

Saito and Lyster (2012a) found that a combination of form-focused instruction and recasts had positive effects on the pronunciation of /ɹ/ by adult Japanese ESL learners, but recasts were not compared with any other types of CF. Saito and Lyster (2012b) used data from the same study involving adult Japanese learners, but focused on the pronunciation of vowel sound /ae/. As for /ɹ/, they concluded that recasts positively affected the pronunciation of /ae/, both in words the students had previously practiced and in a new word. Using the same method as Saito and Lyster (2012a,b), Gooch, Saito and Lyster (2016), compared the effects of recasts and prompts (a combination of clarification requests and elicitation) on Korean adult EFL learners' pronunciation of /ɹ/. They concluded that both types of oral CF appeared to have positive effects, although recasts were found to be more helpful for controlled production and prompts benefited both controlled and freer production.

To the best of our knowledge there is only one other study which has compared prompts and recasts with regard to pronunciation learning. Mohammadi (2014) focused on the influence of recasts and prompts on Iranian high school students' performance in final ending –*s/-es* pronunciation. In this study, the pronunciation rules were first taught to students. They then practiced the target structure in more controlled tasks (fill-in-the blank with the correct sound and read-aloud tasks) and a communicative task in which they had to tell a picture story about a

student's typical day. Mohammadi (2014) observed that recasts were more effective than prompts, but it is not clear how exactly prompts were operationalised in this study.

The few studies that have been carried out on CF and pronunciation have thus combined explicit rule teaching with practice and feedback, and have focused on a limited number of phonemes.

2.3. Foreign Language Anxiety and Oral CF

Apart from comparing the effects of different types of CF on different target structures, researchers have also stressed the need for taking individual learner factors into account when studying the effectiveness of CF. As argued by Sheen (2008), one of the individual factors that can have a significant impact on error correction is foreign language anxiety. Not only is anxiety often related to oral production (Awan et al., 2010; Hashemi & Abbasi, 2013; Horwitz et al., 1986; Ortega, 2009; Rassaei, 2015; Sheen, 2008) and pronunciation (Szyska, 2016; Vitanova & Miller, 2002), some scholars also claim oral CF may increase anxiety and should therefore not be used (Krashen, 1982; Truscott, 1999). Studies on teachers' beliefs about oral CF moreover show that teachers tend to be concerned about possible negative effects of CF on students' motivation and self-esteem (Lasagabaster & Sierra, 2005; Yoshida, 2010).

It is therefore surprising that so few studies on oral CF have taken the variable of anxiety into account. DeKeyser's (1993) research is pioneering in this respect. He conducted a study with high-school learners of French in an attempt to evaluate the impact of CF in connection with individual differences. He found that CF was the most beneficial for students with high previous knowledge, high aptitude, and low anxiety, but DeKeyser's analysis did not separate recasts from other types of error correction, nor did he analyze any particular language pattern. Rassaei (2015) investigated the impact of anxiety on recasts and metalinguistic feedback aimed at the definite and indefinite English article. The results indicated that although low-anxiety learners improved with both types of CF, they profited more profoundly from metalinguistic corrections, while high-anxiety learners responded better to recasts. A possible explanation put forward by the author is that recasts do not seem to interfere with communication, and imply less cognitive effort.

Similar results were those evidenced by Sheen (2008), who only analyzed the effects of recasts on English articles and found that low-anxiety students from the experimental group performed significantly better than high-anxiety learners, and even outperformed low-anxiety learners from the control group, while no significant differences were found between the high-anxiety experimental group and the high-anxiety control group. Moreover, she found that the low-anxiety recast students were also able to produce a higher number of learner uptake moves, or modified output.

2.4. Modified Output

Following Lyster and Ranta (1997), we defined uptake as a learner's immediate response to a teacher's CF. It can be a simple acknowledgement ("yeah", "ok", "yes", "oh"); a repetition of the original mistake; a correction of the original mistake; or a partial correction. However, Sheen (2008) makes a distinction between "learner uptake" and "modified output", arguing that the former can consist of any type of response, while the latter encompasses any attempt to repair the ill-formed utterance, be it repaired or not. As she puts it "learners might produce uptake but not necessarily modify their output, whereas even when they do produce modified output, they might not repair their original error" (p. 841). Even though it is important to note that uptake is not the same as acquisition (Mackey & Philp, 1998), some studies have found that it can be an important predictor of acquisition (e.g., Loewen, 2005; McDonough, 2005). Lyster (1998) discovered that pronunciation- and lexical-focused recasts triggered more instances of modified output than recasts directed at morphosyntactic errors. This finding is supported by Mackey et al. (2000), who noted that students perceive and respond to morphosyntactic recasts to a lesser extent than to recasts directed at lexical or phonological errors.

2.5. Research Questions

Given that the relationship between CF and foreign language anxiety has received little attention and that to the best of our knowledge no study has been carried out so far on the acquisition of pronunciation features through CF taking foreign language anxiety into account, the aim of this paper is to

analyze the extent to which groups of high- and low-anxiety learners acquire a pronunciation feature through recasts and metalinguistic feedback, as well as to examine their uptake moves.

More specifically, the following research questions underlie the present study:

1. What is the effect of recasts and metalinguistic feedback on the pronunciation of the *-ed* ending, and is there a difference between the two types of CF?
2. Do high-anxiety and low-anxiety students benefit from CF on their pronunciation of the *-ed* ending, and is there a difference between the two groups of students?
3. Do high-anxiety and low-anxiety students modify their output after oral CF directed at their pronunciation errors, and is there a difference between the two groups?

3. Methodology

3.1. Design

The current study followed a quasi-experimental design which included a pre- and a post-test administered to three intact classes (*n*=64) that were each randomly assigned to two experimental groups and a control group. Afterwards, based on their responses to a foreign language anxiety questionnaire (see Appendix), the students in the three classes were divided into a group of high-anxiety (n=15) and low-anxiety learners (n=15). On a 4-point likert-scale, the mean score of all the questionnaires together was 2.00 with a standard deviation (SD) of 0.50. Following Sheen (2008), learners who scored over one SD above the mean were classified as "high-anxiety learners", while those who scored more than one SD below the mean were classified as "low-anxiety learners". From each anxiety group, the five students with the highest and the lowest scores were selected, and those students whose score fell within one SD of the mean were excluded from the analysis because they can be said to belong to the middle range of anxiety, rather than clearly exhibiting high or low anxiety (Rassaei, 2015; Sheen, 2008). This means the final number of participants amounted to 30 students in the high- and low-anxiety groups. As a result, these six groups were formed:

1)   Recasts (high-anxiety) (n=5) (class C)
2)   Metalinguistic (high-anxiety) (n=5) (class A)
3)   Control (high-anxiety) (n=5) (class B)
4)   Recasts (low-anxiety) (n=5) (class C)
5)   Metalinguistic (low-anxiety) (n=5) (class A)
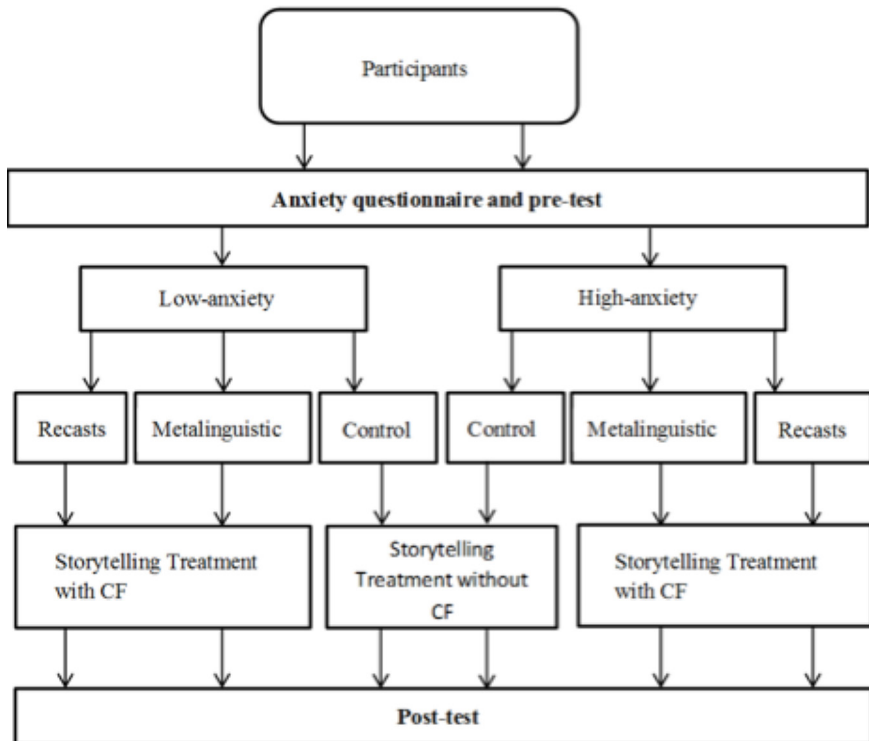6)   Control (low-anxiety) (n=5) (class B)

Figure 1. Study design.

Figure 1 represents the design of the present study. Table 1 shows the mean language anxiety scores of the six groups. The anxiety questionnaire and the pre-test were administered during the same session, four days before the treatment session. Three days after the treatment, the learners were given an immediate-post-test. Unfortunately, due to time constraints, a delayed post-test could not be conducted.

Group	Mean	SD
Recasts (high-anxiety) (n=5)	2.85	0.33
Metalinguistic (high-anxiety) (n=5)	2.54	0.24
Control (high-anxiety) (n=5)	2.51	0.12
Recasts (low-anxiety) (n=5)	1.36	0.18
Metalinguistic (low-anxiety) (n=5)	1.50	0.28
Control (low-anxiety) (n=5)	1.30	0.17

Table 1. Descriptive statistics for foreign language anxiety scores

3.2. Participants

At the start of the study, 64 EFL students from a secondary state-subsidized catholic school in Spain filled in a questionnaire (see Appendix) to find out to what degree they suffered from language anxiety. Nevertheless, only 30 students (those with the highest and lowest scoring) were considered for the final sample. The participants did not vary greatly in terms of age (ranging from 12 to 13 years), linguistic background (their first language was Spanish and they had not spent more than two weeks in any English-speaking country, with the exception of one student who was excluded from the study), and educational background (their level of English corresponded to an A2+ level following the *Common European Framework of Reference for Languages,* they all had started learning English at the age of 3 and nobody recounted taking extracurricular English classes for more than 2 hours a week).

3.3. Target Form

The pronunciation of the past tense morpheme (*-ed*) was chosen as the target structure for the present study. This feature is worth investigating

because it is one of the most difficult aspects to acquire for Spanish learners of English. The correction of the three possible past endings (/*t*/, /*d*/ and /*id*/) was considered, but given that at this stage the participants would have needed some instruction and their utterances might have been found difficult to recognize for correction, this alternative was discarded. Hence, only the realization of the past tense morpheme (without taking into account whether it was voiced or voiceless) was deemed appropriate for the goal of the present study. This means students were corrected when pronouncing the "e" in words such as "learned" or "worked", or when they did not pronounce the /*id*/ in words such as "started".

3.4. Data Collection

3.4.1. Procedure

Data were collected and recorded during three sessions distributed as follows:

Session 1: Anxiety questionnaire and pre-test. In this first session, after completing the questionnaire, all students took part in the pre-test, which consisted in reading a fairy tale aloud. The students recorded themselves telling these stories using iPads. The same activity with different stories was used for the post-test.

Session 2: Treatment. After assigning the learners into recasts, metalinguistic, and control groups, the treatment took place in the three intact classes over a period of one hour. Each class was provided with five different fairytales, consisting of a short narration of a story accompanied by a number of pictures and keywords that described the tale. The students were informed that the purpose of the activity was to improve their communicative skills, and they were not told that the focus was on pronunciation. The treatment was carried out as follows:

1. Firstly, groups of four or five students were formed. The grouping was organized in such a way that there was one high- and one low-anxiety student within each group.

2. Each group was provided with a narration of a fairy tale.

3. The researcher then told the students to practice telling the story in groups for 10 minutes and informed them that afterwards she would take the text away, go over the list and choose two people from each group to retell the story in front of their classmates with the help of a sequence of pictures and keywords.

4. The selected participants were asked to go up to the blackboard and present the story for the class using the picture stories as a guide. The retellings were recorded by the researcher. Each student told half a story, and the listeners were asked to pay careful attention because they were going to be asked about the content of their classmates' tales.

Recasts were used to correct the two groups in C; metalinguistic feedback was chosen as the corrective method for the groups in A, on the grounds that there is a clear rule for the pronunciation of –*ed* which the students might have seen before; whereas the two groups in B (control group) did not receive any feedback on their errors while telling the stories.

Session 3: Post-test. An immediate post-test was administered to the participants, in which they had to read aloud a different fairytale from the one in the pre-test.

3.4.2. Materials

The design of the anxiety questionnaire was an abbreviated version of the Foreign Language Classroom Anxiety Scale (FLCAS) by Horwitz et al. (1986), and consisted of 16 items (4-point Likert scale ranging from "strongly disagree" to "strongly agree"). A translated version of the questionnaire (Ortega, 2003) was administered to the learners to avoid difficulties with the language and to facilitate its completion (see Appendix). To calculate the questionnaire scores, negatively worded items were reversed in order to make sure all the responses ranged from 1 (least anxious) to 4 (most anxious). Afterwards, the total score of each student was calculated and divided by 16 to get a mean score between 1 and 4 for each learner.

Concerning the testing and the treatment materials, most of the narrations and the picture stories were taken from Roothooft (2014), and some others were adapted from Chowdhury (2013), Guenther (n.d.), and Topic Resources (n.d). A few words were simplified, some sentences were

replaced with easier ones and some of the stories were summarized to be at the same level of difficulty. To make sure the students produced a sufficiently high number of regular verbs in the past tense, the verbs appearing in the narrations were all included in the keywords attached to the corresponding pictures. The post-test task also included a few questions to verify whether they knew the rule for the pronunciation of *-ed* and to find out their opinion about the activity.

3.5. Operationalization

3.5.1. Corrective Feedback

The following examples illustrate how recasts and metalinguistic feedback were operationalized in the present study. In the case of recasts, partial recasts were used, providing the correct pronunciation of the past tense verbs:

- Student: Once upon a time there lived ([lɪved]) a lovely princess.
- Researcher: Lived ([lɪvd]).

Metalinguistic feedback was operationalized as comments on the ill-formedness of the student's output, while withholding the correct form:

- Student: Once upon a time there lived ([lɪved]) a lovely princess.
- Researcher: Remember to pronounce the past tense correctly.

3.5.2. Modified Output and Repair

Sheen's (2008) operationalization of modified output and repair was adopted. Thus, *modified output* is a learner's immediate reaction to CF in an effort to correct an error. *Repair* is the learner's modified output that emends the original error after the feedback, while *no repair* is defined by Sheen as the learner's modified output still containing an error. There are, therefore, three possibilities (all examples come from the present study):

- Student: Once upon a time there lived ([lɪved]) a lovely princess.
- Researcher: Remember to pronounce the past tense correctly.
- Student: There lived ([lɪv]). (**Non-targetlike modified output/No repair**)

- Student: Once upon a time there lived ([lɪved]) a lovely princess.
- Researcher: Remember to pronounce the past tense correctly.
- Student: Yes. (**No modified output**).

- Student: Once upon a time there lived ([lɪved]) a lovely princess.
- Researcher: Remember to pronounce the past tense correctly.
- Student: There lived ([lɪvd]). (**Targetlike modified output/Repair**)

Uptake was classified into four possible categories: repetition of the original mistake; repair; different mistake (in an effort to correct the original one); and ignore.

3.6. Data Analysis

In order to answer the first two research questions, the number of pronunciations correctly supplied by each learner during both the pre- and post-test was multiplied by 100 and divided by the total number of obligatory contexts to be reported in percent as the learner's score. Two one-way ANOVAs were calculated to find out whether there was any significant difference at the pre-test, and two repeated-measures ANOVAs were calculated on the scores of the groups as a whole, and on the separate scores of the high- and low-anxiety groups. For the third research question, the feedback and the learner's responses occurring during the treatment were identified and transcribed, and the latter were classified into "Total number of corrections", "modified output", "no modified output", "repair" and "no repair". A series of chi-square tests of independence were carried out to determine if there were any significant differences between the modified output of the recast and the metalinguistic feedback groups, and the low- and high-anxiety groups.

4. Results

4.1. The Effects of Recasts and Metalinguistic Feedback on the Pronunciation of -ed

To answer the first research question, Table 2 contains the means and standard deviations of the recast, metalinguistic feedback and control

groups at the pre- and post-test, as well as the gain scores. As Table 2 shows, there is a notable difference between the post-test means of the recast (51.6%) and the metalinguistic groups (35.6%), with a gain score of 24.4 in the case of the recast group (almost twice as high), and of 13.9 in the case of the metalinguistic group (an increase of around 50%).

	Pre-test		Post-test		Gain scores	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Recasts	27.2	8	51.6	21.3	24.4	16
Metalinguistic	21.7	7.1	35.6	21.5	13.9	18.2
Control	21.7	14.2	22.4	15.7	0.7	4.5

Table 2. Pre- and post-test scores of the three groups

A one-way-ANOVA comparing the pre-test results of the recast, metalinguistic and control group showed that there were no statistical differences between the three groups (irrespective of anxiety-level) (F=0.96, p=0.395). This means the three groups were comparable at the beginning of the experiment. For the whole group, a repeated-measures ANOVA on the pre- and post-test scores of the recast, metalinguistic feedback and control groups revealed significant differences for group, F=3.92, p=0.03, and also for time, F=24.99, p<0.0001. To find out where the differences between the groups are, a one-way ANOVA was performed on the gain scores of each group, revealing significant differences, F=6.9, p=0.004. A Tukey HSD test showed that there were no significant differences between the gains of the metalinguistic and recast group (p=0.25), or the metalinguistic and control group (p=0.12), but only between the recast and the control group (p<0.01).

4.2. Foreign Language Anxiety

Let us now look at the high- and low-anxiety groups, to see if they benefited differently from the CF. Table 3 presents the mean pre- and post-test scores of the different anxiety groups. A one-way-ANOVA comparing the six anxiety groups' pre-test scores (low-recast, high-recast, low-metalinguistic, high-metalinguistic, low-control, high-control) indicated significant

differences between the groups (F=2.9, p=0.04). However, as it was noted that the high-anxiety control group performed much worse than all other groups, another one-way-ANOVA was carried out without this group, only comparing the 5 others at the pre-test. This yielded no significant differences (F=1.83, p=0.16). It was therefore decided not to include the control group in the subsequent analysis of the impact of anxiety on CF-effectiveness. For the high- and low-anxiety groups, a repeated-measures ANOVA on the scores of the high- and low-anxiety metalinguistic feedback and recast groups indicated no significant difference for group, F=2.49, p=0.1, but a significant difference for time, F=24.9, p=0.0001, meaning that there was no evidence that anxiety has an influence on the student's performance, but as mentioned in section 4.1, there were significant differences between the pre- and the post-tests.

	Pre-test		Post-test		Gain scores	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Recasts (high-anxiety)	22.2	3.9	40.8	16.3	18.6	16.5
Metalinguistic (high-anxiety)	22.2	7.8	31.2	19.7	9	13.1
Control (high-anxiety)	13.4	10.4	13.6	9.2	0.2	4.7
Recasts (low-anxiety)	32.2	8.2	62.4	21.5	30.2	14.9
Metalinguistic (low-anxiety)	21.1	7.3	40	24.7	18.9	22.7
Control (low-anxiety)	30	12.8	31.2	16.6	1.2	4.8

Table 3. Pre- and post-test scores of the anxiety groups

Although there were no statistical differences between the low- and high-anxiety groups in this study, certain trends can nonetheless be identified. The bottom right half of Table 3 shows the low-anxiety post-test results, which are considerably better when compared to their corresponding high-anxiety results. For example, the low anxiety recast group had a mean post-test score of 62.4%, while the high anxiety recast group only scored 40.8%

on average. The highest score was obtained by the low-anxiety recast group, with a gain score of 30.2%. Moreover, when comparing the two CF-types, we note that the high-anxiety recast group improved twice as much (gains of 18.9%) as the high-anxiety metalinguistic group (gains of 9%).
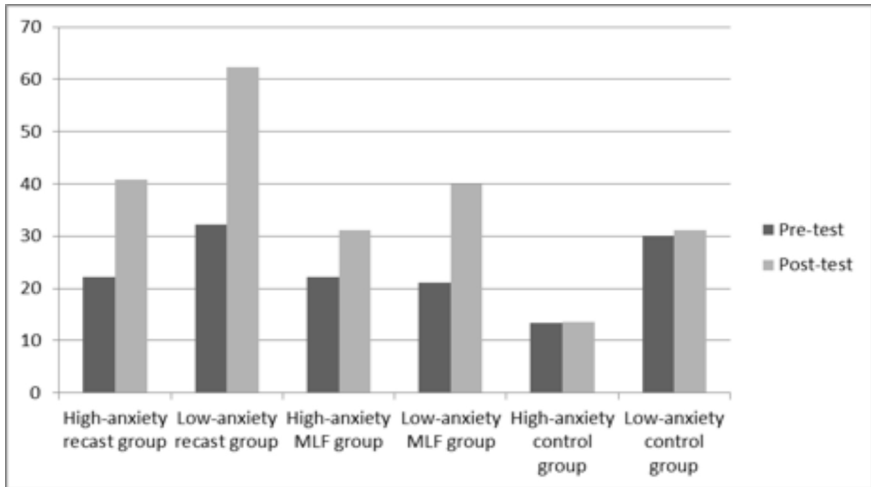

Figure 2. Pre- and post-test results of the different anxiety groups

These tendencies might be more clearly visualized in Figure 2, which shows the pre- and post-test results of the different anxiety groups. As can be seen in Figure 2, the low-anxiety groups tended to benefit more from CF than the high-anxiety ones, and the greatest progress was made by the low-anxiety recast group. We can also observe from Figure 2 that the low-anxiety metalinguistic group had a similar post-test score to the high-anxiety recast group, even though recasts were generally more effective. Finally, Figure 2 illustrates the greater progress made by the high-anxiety recast group in comparison with the high-anxiety metalinguistic group.

4.3. Learner Uptake

To identify the learner uptake moves that occurred during the treatment, the students' responses following CF were classified into four categories (repetition of the original mistake; repair; different mistake; and ignore).

	Modified output	No modified output	Total corrections
Recasts (high-anxiety)	30	5	35
	85.8%	14.3%	100%
Metalinguistic (high-anxiety)	34	9	43
	79%	21%	100%
Recasts (low-anxiety)	21	8	29
	72.4%	27.6%	100%
Metalinguistic (low-anxiety)	23	5	28
	82.1%	17.9%	100%

Table 4. Frequency of modified output

Turning now to the experimental evidence on learner uptake, the number of feedback-moves and all the instances of modified output were counted (see Table 4). Out of a total number of 64 recasts, 35 were aimed at the high-anxiety group and 29 at the low-anxiety group. Similarly, out of 71 metalinguistic feedback corrections, 43 occurred in the high-anxiety group and almost half of them (28) in the low-anxiety group. Concerning modified output, Table 4 shows that there is not much difference between the four groups.

Table 5 illustrates the rate of learner repair and no repair in the modified output responses for the low- and high-anxiety recast and metalinguistic feedback groups. As can be seen from Table 5, the high- (69%) and low-anxiety (66%) recast groups together produced a considerably higher rate of repair (43 repairs out of 51 modified output moves) than the high- (28%) and low-anxiety (46%) metalinguistic feedback groups (25 out of 57). As for differences in language anxiety, we can observe that the non-anxious students from the metalinguistic group repaired their errors to a greater extent (46%) than the anxious students from the same group (28%), while the difference between the high- and low-anxiety groups from the recast group is barely notable (69%, 66%, respectively).

	Repair	**No repair**	**Total modified output**
Recasts (high-anxiety)	24	6	30
	69%	17%	100%
Metalinguistic (high-anxiety)	12	22	34
	28%	51%	100%
Recasts (low-anxiety)	19	2	21
	66%	7%	100%
Metalinguistic (low-anxiety)	13	10	23
	46%	36%	100%

Table 5. Frequency of learner repair

A series of four chi-square tests of independence comparing the number of modified output and repair moves of the different groups revealed that there were no significant differences between the high-anxiety recast and the low-anxiety recast group (chi=1.03, p=0.6) or between the high-anxiety metalinguistic and the low-anxiety recast group (chi=2.51, p=0.3). However, significant differences were found between the high-anxiety recast and the high-anxiety metalinguistic group (chi=12.94, p=0.0015) and between the low-anxiety recast and the low-anxiety metalinguistic group (chi=6.38, p=0.04).

5. Discussion

The analyses revealed that CF positively affected the students' pronunciation of the *–ed* ending, since both experimental groups made significant improvements on the post-test, but contrary to expectations no significant difference between recasts and metalinguistic feedback was evident. The significant differences can only be found between recasts and control, confirming previous work on the positive effects of recasts on pronunciation (Lyster et al., 2013; Mohammadi, 2014; Saito & Lyster, 2012ab). However, although no statistical differences were found between the two CF types,

students receiving recasts appeared to perform better than those in the metalinguistic group. One of the few studies which has compared the effects of recasts and prompts on the acquisition of a phonological feature (Gooch et al., 2016) also found that both CF-types caused students to improve over time and only found differences with regard to the type of task used on the pre- and post-tests. While recasts in their study were particularly beneficial in controlled tasks, prompts were found to be helpful both in controlled and free production tasks. However, our study only included one type of task, a controlled reading-aloud test.

Regarding the impact of anxiety, both high- and low-anxiety learners improved their pronunciation with the two CF types, and there was also some indication that low-anxiety learners benefited more, especially the low-anxiety recast group, which is in line with Sheen (2008). It also appeared that high-anxiety learners tended to respond better to recasts than to metalinguistic feedback, as was found by Rassaei (2015). Nonetheless, it needs to be stressed that no statistical differences between the anxiety-groups were found. It may be that the tests lacked power because of the small sample size. When looking at modified output and repair, we noted that anxiety did not seem to play a role in the recast-group, where there was a high number of repairs in both low- and high-anxiety groups. However, students receiving metalinguistic feedback were able to repair their errors much more frequently if they were low-anxiety students, compared to the high-anxiety metalinguistic group, even though these differences were not statistically significant. The chi-square tests indicated that there were no significant differences between the high- and low-anxiety groups, but only between the type of CF. Given the fact that uptake after recasts usually involves a simple repetition of the correct form provided by the teacher, it is not surprising that recasts led to a higher number of repair. Gooch et al. (2016) also noted high levels of uptake after both recasts and prompts directed at pronunciation errors, but a higher level of repair after recasts. In our study, both the recast and metalinguistic groups tried to modify their output frequently after receiving CF, but the metalinguistic group had a more difficult task, since they did not receive a correct model and had to try to self-correct their errors. Nonetheless, as seen before, both types of CF led to significant improvements from pre- to post-test. Unlike in Gooch et al. (2016), we did not include form-focused instruction, but only provided feedback without focusing on the pronunciation rule beforehand, although a post-test questionnaire confirmed that students were aware of the rule for

-ed. This study thus shows that oral CF directed at pronunciation errors can be effective, even without providing explicit pronunciation instruction. Moreover, it is important to note that this study differs from those by Gooch et al. (2016), Rassaei (2015) and Saito and Lyster (2012ab) in that our learners were low-level secondary learners and not university/adult students. It is noteworthy that even pre-intermediate younger learners can improve their pronunciation as a result of oral CF in the form of recasts and metalinguistic feedback.

6. Conclusion, Limitations, and Future Research

The aim of this research project was to better understand to what extent foreign language anxiety plays a role in CF directed at pronunciation errors. To this purpose, the interference of anxiety in two types of CF (recasts and metalinguistic feedback) on a specific pronunciation feature as well as in their responses to CF was analyzed. The current findings supported the effectiveness of CF for the students' pronunciation development. Furthermore, although recasts did not show a marked difference with respect to metalinguistic feedback, both experimental groups significantly improved from pre- to post-test. However, only the recast-group significantly outperformed the control group, confirming the positive effects of recasts on pronunciation found in previous studies. Regarding anxiety, even though statistical significance was not reached, we can observe certain trends in favour of low-anxiety learners, who obtained better results and were able to repair their errors to a greater extent than their more anxious counterparts. High-anxiety learners also appeared to benefit more from recasts than from metalinguistic feedback.

A number of limitations of the present study need to be taken into account. First, as indicated earlier, a delayed post-test to investigate the long-term effects of the treatment was not administered due to time constraints. Second, the students were classified as either highly anxious or not anxious, while those whose score on the questionnaire fell within one standard deviation below or above the mean were excluded, which means that students with moderate levels of anxiety were not taken into account. What is more, the elimination of these middle range learners resulted in a small sample size for the different anxiety groups, which may be why statistically significant differences could not be identified. Fourth, the shortness of the one-hour

treatment for each CF type may have hindered a substantial positive effect on second language acquisition regardless of the anxiety level. Fifth, the fact that the verbs in the past were provided in the written form is likely to have triggered a prompting effect, making the students pronounce them the way they were written ([lɪved]). Finally, pronunciation was only tested through a controlled reading-aloud task, which means we cannot draw any conclusions about the effect of oral CF on students' free production of the *–ed* morpheme. Future research should take these limitations into account, by comparing the effects of recasts and prompts in larger groups of low- and high-anxiety students, and by including both controlled and free production tasks. Different phonological targets should also be studied.

Despite the aforementioned limitations, this study adds to the limited body of research focusing on the effects of different types of oral CF on pronunciation development, showing that both recasts and metalinguistic feedback are useful for improving EFL students' pronunciation of the *-ed* ending, with a clear advantage for recasts. The present study also indicates that foreign language anxiety can play a role in the effectiveness of oral CF directed at phonological targets and that this issue is worthy of further investigation.

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APPENDIX

Anxiety questionnaire

Nombre y apellidos:

INSTRUCCIONES: *Las siguientes afirmaciones se refieren a distintas situaciones frecuentes en el aprendizaje de un idioma. Tu tarea consiste en valorar el grado de acuerdo o desacuerdo con cada una de las siguientes afirmaciones, utilizando para ello la siguiente escala. No olvides escribir tu nombre y apellido en el recuadro superior.*

4	3	2	1
Estoy totalmente de acuerdo	**Estoy de acuerdo**	**No estoy de acuerdo**	**Estoy totalmente en desacuerdo**

1. Nunca estoy completamente seguro de mí mismo cuando hablo en clase de inglés.	
2. No me preocupa cometer errores en clase.	
3. Tiemblo cuando sé que me van a preguntar en clase.	
4. Me asusta no entender lo que el profesor está diciendo en inglés.	
5. Me pongo muy nervioso cuando tengo que hablar en clase y no me lo he preparado bien.	
6. En clase, me pongo tan nervioso que se me olvidan algunas cosas que sé.	
7. Me da corte salir voluntario en clase.	
8. Creo que no me pondría nervioso si hablara inglés con un nativo.	
9. Aunque vaya con la clase preparada, me siento nervioso.	
10. Me da miedo que mi profesor corrija cada fallo que cometo.	
11. Siento cómo mi corazón palpita cuando sé que me van a pedir que intervenga en clase.	

12. Tengo la sensación de que mis compañeros hablan inglés mejor que yo.	
13. Me da mucho corte hablar en inglés delante de mis compañeros.	
14. Comparativamente, estoy más tenso y me siento más nervioso en las clases de idiomas que en otras clases.	
15. Me pongo nervioso cuando tengo que hablar en clase.	
16. Temo que mis compañeros de clase se rían de mí cuando hablo en otro idioma.	