Next or Beyond Next: Effect of Contrastive Phrase-Based Treatment on Stage Gain Across Self-Paced and More Time-Constrained Tasks

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Abstract

This study explored the effect of contrastive phrase resynthesis instruction on gaining the teachability hypothesis stages in self-paced versus time-constrained oral production and recognition. Three groups (i.e., 23 learners) of high beginner female learners in an English language institute were randomly selected from a cohort of learners. One group received contrastive metalinguistic instruction on the concept and structure of English phrases. The second group received the same instruction only in English. The third group served as a comparison group. Self-Paced Picture Differences Tests and Time-Constrained Oral and GJTs were used for collecting the data. Chi-square analyses through Fisher's Exact Test showed that the treatment, especially in its contrastive form, significantly contributed to gaining *next*, *next* + 1, and *next* + 2 stages in spontaneous oral production, but only to *next* + 1 and + 2 stages in self-paced oral production and time-constrained recognition. The theoretical implications of the findings are discussed.

Keywords: Phrase-Based Treatment; Contrastive Teaching; Self-Paced Task; Time-Constrained Task; Stage Gain

1. Introduction

Processability theory (PT) states that learning an L2 is constrained by underlying procedural skills needed for processing syntactic structures at different *stages* in the hierarchy of syntactic acquisition (Pienemann, 1984). The first stage is the lemma access procedure which is characterized by the learner's use of lexical items and fixed phrases without having any grammatical information about them. It is during the second stage, the category procedure, that the learner assigns a grammatical category to lexical items, recognizing them as different parts of speech. This stage marks the onset of canonical word order when learners acquire the ability to produce morphological markers without the ability to exchange grammatical

information within and across phrases. During the third stage or the phrase procedure level, the learner is assumed to exchange grammatical information at intraphrasal level, without still being able to exchange grammatical information at interphrasal level. At the S-procedure level as the fourth stage, the learner is able to determine the function of each phrase within the sentence. It is during the subordinate-clause procedure, as the final stage, that learners demonstrate the ability to cancel interrogative word order in subordinate clauses.

The pedagogical implications of PT have been captured in the teachability hypothesis (TH), which states that instruction which is targeted at the *next* stage beyond the learner's current developmental readiness could contribute to learning, and any instruction targeted at stages beyond the *next* stage would not prove effective (Pienemann, 1984, 1989). A miscellany of research studies have so far set out to validate the TH. Some studies have investigated the effect of order of instruction in accordance with the TH hierarchy on grammatical accuracy (e.g., Mansouri & Duffy, 2005). Other studies have examined the effect of interaction and developmental readiness on learners' stage increase (Farley & McCollam, 2004; Mackey, 1999; Spada & Lightbown, 1999). To date, only a small subset of PT-inspired studies has addressed the effect of instruction on learners' acquisition of *next* and *next* + X stages. Bonilla (2012), for instance, explored the effect of instruction on the learning of structures at the *next* and *next* +1 and +2 stages. He found that, unlike the TH prediction, instruction facilitated acquisition of structures at *next* and higher-than-*next* stages.

Also, of special interest is the question of whether there exists any particular method of instruction which is more likely to modify the TH prediction. The only study addressing this question was the one carried out by Farley and McCollam (2004) which investigated the effect of explicit, structured input, and processing instruction on learners' stage gain in L2 Spanish. Also, one area which is of particular relevance to PT and the TH is the subsequent question of whether the TH prediction holds true with regard to self-paced tasks, more time-constrained tasks, or both. This concern echoes Pienemann's (1984) original claim that PT stages and their acquisition apply primarily to spontaneous linguistic production. This poses the question of whether emergence in self-paced production equals skilled use of structures under time pressure, which has rarely been explored by PT-oriented research except in one study by Kawaguchi and Di Biase (2012). They investigated whether all learners who showed some emergence of the passive construction in Japanese in a self-paced oral task would also use it skillfully in a time-constrained task. They found that among all learners who had shown emergence of passive only a subset of learners managed to use this construction under a timed task condition.

The present study aimed to address the gaps just recognized by investigating whether a specific type of instruction (phrase resynthesis instruction) would contribute to acquisition of *next* and *next* + X PT stages both in self-paced and more time-constrained tasks. Phrased differently, the study set out to explore whether the effects of a particular type of instruction, if proved to be at work, would be moderated in terms of task type operationalized to involve controlled and more spontaneous linguistic behavior. A second question addressed in this study related to the effects of this type of instruction on stage increase in terms of recognition versus production tasks.

2. Literature Review

2.1. Research on Phrase-Dependency of L1 and L2 Knowledge and Production

Previous research indicates that children and adult native speakers heavily rely on multiword unanalyzed phrases in their linguistic knowledge and production (e.g., Arnon, 2010; Bannard & Matthews, 2008; Brandt, Verhagen, Lieven, & Tomasello, 2009; Jusczyk, 1999; Tomasello, 2000). Also, the dependence of linguistic knowledge on phrases has been advocated theoretically (Bresnan, 1982; Chomsky, 1957, 1981; Pienemann, 1984). Besides, research indicates that adult learners' knowledge of an L2 is mainly dependent on segmentation of language chunks into sequences of discrete words and that different learning outcomes in L1-L2 acquisition relate, at least in part, to the nature and length of the linguistic units from which children and adults learn (Arnon, 2010). This segmented representation of phrases is claimed to hinder adults' learning of an L2 but reorienting learners toward a holistic representation of phrases enhances L2 acquisition (Arnon, 2010; Bod, 2009). Furthermore, as Cook and Newson (2007) argued, knowledge of such descriptive devices as phrase and head-directionality in an EFL classroom cannot be acquired from ordinary linguistic input. Therefore, explicit metalinguistic instruction is deemed to be necessary. The rationale in the present study to investigate the effect of phrase teaching on L2 syntactic development derives primarily from these theoretical arguments and empirical findings about the role of phrases. The theory regarding how instruction can influence acquisition which acted as the impetus for the present study was the TH. Therefore, this study aimed at probing the questions of whether phrase-based instruction would modify the prediction of the TH, and whether the effects, if any, will be differential in terms of self-paced and more time-constrained tasks.

2.2. Contrastive Teaching

In this section, we turn to the theoretical justification for relying on contrastive input and contrastive teaching. Trevise (1996) endorsed the role of contrastive metalinguistic representations in the process of learning an L2 arguing

that L1 linguistic system and metalinguistic knowledge act as filters through which L2 learners build up and appraise their knowledge of the L2.

Kufperberg and Olshtain (1996) who tested the effect of such input on the acquisition of difficult grammatical structures in English by speakers of Hebrew found that contrastive linguistic input significantly facilitated performance on both recognition and production tasks. They concluded that explicit contrastive input facilitated noticing and, therefore, was conducive to the acquisition of difficult L2 forms, replicating the result obtained in Kupferberg (1995, as cited in Kufperberg & Olshtain, 1996).

Further theoretical justification for contrastive teaching comes from Ellis (2005), who, referring to the slow and gradual resetting of L2 cues as a result of the dominant influence of L1 cue strength, argued that "under these circumstances of low salience of L2 form, all the extra input in the world might sum to naught, and we describe the learner as having 'fossilized' or—more correctly—'stabilized'" (p. 324). He maintained that "the remedy is to bring the issue into the light of consciousness" (p. 324). This is where contrastive instruction comes in promising to fulfill the function of consciousness-raising about L2 structures through highlighting L1-L2 differences to prevent L1-induced "overshadowing," "blocking," and "automatically learned inattention" (Ellis, 2006). This concern echoes James' (1999) view that

> One's understanding of the workings of the FL [foreign language] can be illuminated by MT [mother tongue] study, by transferring one's MT meta-cognitions to the task of FL learning. Seeing MT and FL objectively, first in terms of their immanent *systematicity*, and then each in terms of the other, is to develop one's linguistic meta-cognitions of each. (p. 142)

2.3. The Present Study

To date, whether or not the prediction of the TH equally applies to stage gain in self-paced versus time-pressured tasks has remained underresearched. White, Spada, Lightbown, and Ranta (1991) investigated the effect of form-focused instruction and corrective feedback operationalized as input enhancement provided within a primarily communicative program on accuracy in question formation on both oral and written paper-and-pencil tasks. They found that "instruction had an effect on spontaneous oral tasks as well as on the paper-and-pencil tasks" (p. 428). However, their study did not address the effect of instruction targeted at different stages of question formation as it only measured learners' judgment and production of questions in general. One study which has empirically tested whether emergence equals skilled use of structures in time-constrained performance is that of

Kawaguchi and Di Biase (2012). They tried to find out whether all learners who had shown emergence of Japanese passive construction could equally use it in time-constrained oral production. They found that emergence of passive construction in a self-paced oral task did not necessarily predict skilled use of this construction in time-constrained oral production.

A somewhat different but closely related question concerns the effect of instruction on advancing to *next* and *next* + X stages in self-paced versus more time-constrained tasks on the one hand, and in time-constrained recognition versus production tasks on the other. Also, considering research findings about the role of phrases in L1 and L2 knowledge and production, one could optimistically assume that instructing L2 learners to explicitly reconceptualize the linguistic configuration of phrases as whole-form units and notice their intra and interphrasal grammatical relationships would help them develop the underlying processing procedures for processing higher-order linguistic structures. In so doing, we might be able to help L2 learners transcend the TH boundaries and restrictions. Furthermore, in line with the theoretical and empirical support for contrastive teaching and input cited above, it is hoped that implementing instruction in a contrastive framework would better equip learners for noticing and attending to L2 particularities. More specifically, in the context of this study the following questions were formulated.

1. Does phrase resynthesis instruction differentially influence the emergence of PT stages in self-paced versus more time-constrained oral production?
2. Does phrase resynthesis instruction differentially influence the emergence of PT stages in recognition versus more time-constrained oral production tasks?
3. Does phrase resynthesis instruction differentially influence the emergence of PT stages in recognition versus self-paced oral production tasks?

3. Method

3.1. Participants

A total number of 37 female learners of English in a language institute participated in this study. They went through a series of pretests of oral and written PT stages until 23 learners who turned out to be homogeneous in phrase knowledge, written grammatical accuracy, and current PT stages were left. Finally, the learners were randomly assigned to one of the three groups: a contrastive experimental group (CEG, $n = 9$), an L2-only experimental group (L2EG, $n = 7$), and a comparison group (CG, $n = 7$).

3.2. Instruments

The Nelson English Language Test was used to measure the participants' global proficiency in English. Two equivalent Picture Differences Tests were adopted from Spada and Lightbown (1999) to specify the learners' current PT stages in self-paced oral production. On Picture Differences Tests, the fourth researcher selected one card from a set of cards that duplicated four cards displayed in front of the student. For each picture set, the student asked five questions and then tried to guess which picture the researcher was holding. A time-constrained oral production test was also used to check the emergence of PT stages in more spontaneous oral production. A time-constrained GJT was used to check the learners' recognition of grammatical questions. The GJT was an adapted version of the Preference Test used by Spada and Lightbown (1999). The time-constrained oral production test was a computer-assisted test which included 10 items. In each item, some key words in English were displayed to the participants for 5 s. They were required to use the key words in each item to make correct English questions before the key words in the following item were displayed. The items included direct questions corresponding to stage 4 and stage 5 questions and imbedded indirect questions corresponding to the Cancel-Inversion stage (stage 6) on PT hierarchy. The timed GJT included 20 computer-delivered items which displayed both grammatical and ungrammatical English direct and imbedded questions. Each item was displayed only for 5 s, during which the participants had to judge it as grammatical or ungrammatical. The participants marked their grammaticality judgment responses on an answersheet which was scored later. Their self-paced and timed oral production data were audio-recorded, transcribed, coded, and rated based on exact rating criteria in terms of emergence and accuracy. The criterion of emergence was the production of two items/tokens of a structure for a learner to be assigned to a stage, following Kawaguchi (2005, cited in Pienemann, 2005) as well al Spada and Lightbown (1999). This is consistent with Meisel, Clashen, and Pienemann's (1981) view of acquisition as emergence rather than as mastery. They assumed learners to have developed the processing skills for a new stage when they "begin to use structures that are typical of that stage rather than when the majority of their utterances conform to that stage" (Spada & Lightbown, 1999, p. 8).

3.3. Procedure

After pretesting, the two experimental classes received the treatment as follows. The CEG was provided with contrastive L1-L2 metalinguistic instruction about the concept, boundary, and structure of English NP, VP, and PP along with intra and interphrasal parsing and phrase resynthesis practice. The instruction focused on introducing the head and complement of English phrases together with the place and function of each phrase and interphrasal relationships in both

affirmative and interrogative sentences. Then, they were given a focused task for negotiating meaning entailing English questions. Finally, the group was assigned extra assignment as homework input to analyze and use for discovering the structure of English phrases and using phrases for constructing new sentences. This treatment was replicated for the L2EG only in the English language rather than being contrastive. The CG only received the focused task for meaning negotiation and follow-up homework assignments. After the treatment, participants were posttested on PT stages in self-paced and more time-constrained oral production as well as time-constrained recognition based on the exact assessment procedures followed on the pretest.

3.4. Data Analysis

To examine the emergence of structures belonging to different PT stages, the samples of self-paced and more time-constrained oral production were transcribed, coded, and analyzed for the structures in focus. The Fisher's Exact Test which is a subset of chi-square test was run for comparing the percentage of learners who had gained *next* and *next* + X stages on both the self-paced and more time-constrained oral production and GJTs across the three groups. To check group differences in the amount of production of structures at different stages the nonparametric Kruskal-Wallis test was used. Also, depending on the distribution of amount-of-production scores, the Mann-Whitney test and the independent samples *t* test were used for the post-hoc multiple comparisons following the Kruskal-Wallis test.

4. Results

Table 1 displays the number of learners from the total number of participants in each group who advanced to higher stages on the self-paced oral task. The percentages of learners developing to higher stages are also presented.

Table 1. *Stage Gains by Group: Self-Paced Oral Production*

Test Range: Pretest-to-Posttest			
Group	CEG	L2EG	CG
Stage 4	8/9(89%)	7/7 (100%)	4/7(57%)
Stage 5	8/9(89%)	5/7 (71%)	1/7(14%)
Stage 6	8/9(89%)	6/7(86%)	0/7(0 %)

Table 2. *CEG × CG (Self-Paced Oral Production, Stage 4)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	2.116	1	.146		
Fisher's Exact Test				.262	.192
N of Valid Cases	16				

According to the result presented in Table 2, there was no significant difference between the CEG and the CG in their developing to stage 4 on the self-paced oral task, p = .262. That is, both groups appeared to perform equally on the task measuring the *next* stage. A similar result was obtained for the L2EG × the CG comparison, as represented in Table 3.

Table 3. *L2EG × CG (Self-Paced Oral Production, Stage 4)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	.818	1	.051		
Fisher's Exact Test				.192	.096
N of Valid Cases	14				

As stated above, all three groups demonstrated almost comparable stage gains as regards stage 4 on the self-paced oral test (the *next* stage). As shown in Table 3, there was no difference between the L2EG and the CG, p = .192. Further comparisons of the groups' gaining of higher (*next* + X) stages on the self-paced oral task were needed to further test the effectiveness of the treatment.

However, the effectiveness of the treatment on gaining higher *next* + 1 stage can be corroborated with reference to the significant difference between the CEG and the CG as displayed in Table 4:

Table 4. *CEG × CG (Self-Paced Oral Production, Stage 5)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	8.905	1	.003		
Fisher's Exact Test				.009	.006
N of Valid Cases	16				

As indicated in Table 4, the CEG outperformed the CG in gaining stage 5 on the self-paced oral test, p = .009. This might support the hypothesis that the treatment would contribute to development to the stages beyond the *next* stage.

Table 5. *L2EG × CG (Self-Paced Oral Production, Stage 5)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	4.667	1	.031		
Fisher's Exact Test				.103	.051
N of Valid Cases	14				

According to the results summarized in Table 5, there was no statistically significant difference between the L2EG and the CG in gaining stage 5 on the self-paced oral task, p = .103. As regards stage 5 on the self-paced oral test, the only

significant difference was in favor of the CEG, indicating the effectiveness of the phrase resynthesis treatment at least in its contrastive form. So far, the results suggest that, in most cases, the contrastive form of the treatment has appeared to be effective.

Table 6. *CEG × CG (Self-Paced Oral Production, Stage 6)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	12.444	1	.000		
Fisher's Exact Test				.001	.001
N of Valid Cases	16				

Table 7. *L2EG × CG (Self-Paced Oral Production, Stage 6)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	120.500	1	.001		
Fisher's Exact Test				.005	.001
N of Valid Cases	14				

The effectiveness of the phrase-based treatment, regardless of whether it is contrastive or not, is more substantially endorsed by the results obtained in Tables 6 and 7. As shown in Table 6, the CEG which received the contrastive treatment outperformed the CG, $p = .001$. Also, as it is clear in Table 7, there was a significant difference between the L2EG and the CG, $p = .005$. Moving toward the higher stages along the PT hierarchy we came up with results which supported the effectiveness of the treatment on gaining higher stages for the experimental groups involved.

Overall, the results obtained so far indicate that for the *next* stage (stage 4), on the self-paced oral task, the treatment did not significantly contributed to any of the groups' stage gain. On the *next* + 1 stage (stage 5), the treatment was significantly effective only in favor of the CEG, but it benefited both the CEG and the L2EG on the *next* + 2 stage (stage 6) in terms of percentage of individual learners who showed emergence of each particular stage. Generally speaking, the treatment was effective on stages higher than the *next* stage on the self-paced oral measure. The percentages of learners who gained higher stages on the more time-constrained oral task in the three groups are presented in Table 8:

Table 8. *Stage Gains by Groups: Time-Constrained Oral Production*

Test range: Pretest-to-Posttest			
Group	CEG	L2E	GCG
Stage 3 to 4	8/9(89%)	6/7(86%)	2/7(29%)
Stage 3 to 5	6/9(67%)	4/7(57%)	2/7(29%)
Stage 3 to 6	6/9(44%)	4/7(57%)	0/7(0 %)

Table 9. *CEG × CG (Time-Constrained Oral Production, Stage 4)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	6.112	1	.013		
Fisher's Exact Test				.035	.024
N of Valid Cases	16				

As shown in Table 9, the percentage of learners in the CEG who advanced to the *next* stage (stage 4) on the more time-constrained oral task was significantly higher than that of the CG (as displayed in Table 9, the *p* value of the Fisher's Exact Test for the CEG × the CG was .035).

Table 10. *L2EG × CG (Time-Constrained Oral Production, Stage 4)*

	Value	*df*	Asymp. Sig. (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	4.667	1	.031		
Fisher's Exact Test				.103	.051
N of Valid Cases	14				

The L2EG and the CG displayed comparable performance, $p = .103$, as displayed in Table 10. These results could be interpreted as evidence that only the contrastive treatment effectively contributed to advancing to the *next* stage (stage 4) on the more time-constrained oral task.

Table 11. *CEG × CG (Time-Constrained Oral Production, Stage 5)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	8.906	1	.003		
Fisher's Exact Test				.009	.006
N of Valid Cases	16				

The results of Fisher's Exact Test, as displayed in Table 11, indicated that a significantly higher percentage of learners in the CEG advanced to the *next* + 1 stage (stage 5) on the more time-constrained oral production task than that in the CG, $p = .009$.

Table 12. *L2EG × CG (Time-Constrained Oral Production, Stage 5)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	2.800	1	.094		
Fisher's Exact Test				.266	.133
N of Valid Cases	14				

However, the performance of the L2EG was comparable to that of the CG, p = .266, as shown in Table 12. Stated differently, the treatment in its contrastive version was significantly more effective than the L2-only version for advancing to the *next* + 1 stage on the timed oral task.

Table 13. *CEG × CG (Time-Constrained Oral Production, Stage 6)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	7.467	1	.006		
Fisher's Exact Test				.011	.010
N of Valid Cases	16				

The three groups were further compared to examine whether there was any difference between them in gaining the *next* + 2 stage (stage 6) on the time-constrained oral production task. Table 13 shows that the number of learners in the CEG who advanced to the *next* + 2 stage (stage 6) on the timed oral task was significantly larger than that in the CG, p = .011.

Table 14. *L2EG × CG (Time-Constrained Oral Production, Stage 6)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	7.778	1	.005		
Fisher's Exact Test				.021	.010
N of Valid Cases	14				

Also, as shown in Table 14, the L2EG significantly outperformed the CG in advancing to the *next* + 2 stage (stage 6) on the more spontaneous oral production task, p = .021. Therefore, it is safe to claim that both versions of the phrase resynthesis treatment proved significantly effective in driving learners forward to the *next* + 2 stage on the more spontaneous oral task.

Table 15. *Stage Gains by Groups: Time-Constrained GJT*

Test Range: Pretest-to-posttest			
Group	CEG	L2E	GCG
Stage 3 to 4	8/9(89%)	7/7 (100%)	7/7(100%)
Stage 3 to 5	9/9(100%)	7/7 (100%)	4/7(86%)
Stage 3 to 6	8/9(56%)	5/7(57%)	2/7(71%)

Table 15 represents the percentages of learners who developed to higher stages on the timed GJT.

Table 16. *CEG × CG (Time-Constrained GJT, Stage 4)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	.830	1	.362		
Fisher's Exact Test				1.000	.563
N of Valid Cases	16				

Table 17. *L2EG × CG (Time-Constrained GJT, Stage 4)*

Chi-Square Test	
	Value
Pearson Chi-Square	.[a]
N of Valid Cases	14

a. No statistics are computed because stage-4GJT is a constant.

This section (Tables 15-21) displays the results of intergroup comparisons for the percentage of learners in each group who managed to proceed to the *next* stage (stage 4) on the time-constrained GJT as a measure of recognition knowledge. As shown in Tables 16 and 17, no significant difference was observed between the three groups in their developing to the *next* stage (stage 4) on the timed GJT, p = 1.000 for the CEG × the CG. As presented in Table 17, no statistical value for the L2EG × the CG comparison was obtained, as the percentage of learners in both groups who advanced to the *next* stage was perfectly the same. Therefore, all groups appeared to perform similarly, indicating no superiority effect for any of the treatment types for the *next* stage.

Table 18. *CEG × CG (Time-Constrained GJT, Stage 5)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	9.351	1	.002		
Fisher's Exact Test				.005	.005
N of Valid Cases	16				

Table 19. *L2EG × CG (Time-Constrained GJT, Stage 5)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	7.778	1	.005		
Fisher's Exact Test				.021	.010
N of Valid Cases	14				

Table 18 shows that the percentage of learners in the CEG who gained the *next* + 1 stage on the more spontaneous oral task was significantly higher than that in the CG, p = .005. Also the L2-only version of the treatment had a sizeable effect on learners' gaining the *next* + 1 stage in that the learners in the L2EG significantly outperformed those in the CG, p = .021, as displayed in Table 19. Therefore, both

versions of the treatment proved effective in facilitating learners' progress to the *next* + 1 stage on the recognition-type task (JGT).

Table 20. *CEG × CG (Time-Constrained GJT, Stage 6)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	12.343	1	.000		
Fisher's Exact Test				.001	.001
N of Valid Cases	16				

Table 21. *L2EG × CG (Time-Constrained GJT, Stage 6)*

	Value	*df*	Asymp. *Sig.* (2-tailed)	Exact *Sig.* (2-sided)	Exact *Sig.* (1-sided)
Pearson Chi-Square	7.143	1	.008		
Fisher's Exact Test				.029	.015
N of Valid Cases	14				

As it is evident in Table 20, the CEG significantly outperformed the CG in gaining the *next* + 2 stage (stage 6) on the more spontaneous JGT, $p = .001$. The L2EG also outperformed the CG, $p = .029$, as presented in Table 21.

5. Discussion

The major purpose of this study was to compare the effect of phrase resynthesis instruction in both contrastive and L2-only forms on advancing to the TH *next* and *next* + X stages in self-paced oral production versus more time-constrained oral production. The results indicated that the treatment, especially in its contrastive form, had a significant effect on gaining *next*, *next* + 1, and *next* + 2 of the TH stages in time-constrained oral production. But the treatment effects on stage gains in self-paced oral production and time-constrained recognition (Timed GJT) were significant only on beyond the *next* stage. This could mean that on the self-paced oral task and the timed recognition task which were less cognitively demanding than the time-constrained oral task the learners in the CG were also able to develop to the immediately *next* stage.

In terms of token count of structures at different stages significant effects were observed on the *next* and beyond *next* stages in all measures. This further reflected the effectiveness of the treatment because, despite the similarity in percentage of the *next*-stage gains among the three groups on the self-paced oral and timed recognition tasks, the learners in the experimental groups produced more structures at different stages than the CG, which bears witness to the contribution of the treatment.

The results chime with those in other studies (e.g., Bonilla, 2012; Farley & McCollam, 2004; Spada & Lightbown, 1999; Spada, Lightbown, & White, 2006, as cited in Housen & Pierrard, 2006), supporting the effectiveness of instruction for gaining stages beyond the *next* stage, hence countering the TH prediction that beyond the *next* stage cannot be acquired through instruction. Also, this study replicated previous studies on the effect of contrastive teaching and contrastive input (e.g., Kupferberg, 1995, as cited in Kupferberg & Olshtain, 1996), though Kupferberg (1995, as cited in Kupferberg & Olshtain, 1996) and Kupferberg and Olshtain (1996) did not operationalize learning with reference to the TH stages. However, the results contradict the claim made by Pienemann (1984, 1989) who argued that only instruction targeted at the *next* developmental stage will be effective.

Unlike Kawaguchi and Di Biase (2012) who found a gradient between emergence and automatic use of structures in time-constrained oral production, this study revealed that instruction significantly contributed to the higher-stage gains in time-constrained oral production and recognition for the experimental learners who had shown higher emergence of the same stages in self-paced oral production. The discrepancy between these two studies could be accounted for with reference to the fact that Kawaguchi and Di Biase only traced the acquisitional path from emergence to automatic use of structures without incorporating any instruction in their study. However, the present study explored the effect of a particular type of instruction on emergence in both self-paced and more time-constrained oral production and recognition. Therefore, the difference could be interpreted as evidence supporting the effect of the treatment on emergence even in more time-constrained production and recognition. Furthermore, the spontaneity of the tasks in this study was a matter of degrees. That is, the time-constrained task was not a completely spontaneous task as that in Kawaguchi and Di Biase (2012). But it was a semispontaneous oral production task compared to the self-paced oral task in which participants had a 5-s time interval to produce structures at different TH stages because the limited proficiency of participants precluded the use of completely spontaneous tasks.

Unlike self-paced oral production and time-constrained recognition where the treatment effects were more noticeable on *higher-than-next* stages, in more time-constrained oral production the effects were observed even on the *next* stage. This could be interpreted as evidence that time pressure interacted with treatment effect because no significant difference was observed on the *next* stage in self-paced oral production and time-constrained recognition instruction did seem to prove effective in the same stage (*next* stage) in time-constrained oral production. This could be interpreted as evidence for the effect of instruction, as on the more cognitively demanding task the nonexperimental learners could no longer show emergence of

the *next* stage as they did in self-paced oral production and time-constrained recognition. This provides support for the PT proposition that developmental constraints apply to spontaneous oral production; meanwhile, it bears evidence to the effect of instruction, contrary to what the TH proposed.

Two factors can weaken our claims about the generalizability of the findings, however. One relates to the small sample size of this study. The other factor concerns the degree of spontaneity of the time-constrained tasks. That is, whether the amount of time pressure operationalized for the time-constrained oral production task represents an acceptable degree of spontaneity cannot be insured. Therefore, further research would be needed to probe the same questions with more accurate time-constraint operationalization of measures and larger sample sizes. Time constrained tasks should be operationalized as including different time limits ranging from semispontaneous to completely spontaneous measures of oral production. This would yield more accurate estimates of the threshold of time pressure when the gradient between emergence in self-paced tasks and emergence in time-constrained tasks could be more reliably specified.

6. Conclusion and Implications

Previous research has primarily focused on the effects of instruction on modifying the TH predictions without probing the equally important question of whether these effects could be moderated by any particular instructional operationalization. Furthermore, the acquisitional path from emergence of structures in self-paced tasks to skilled use of those structures in time-constrained tasks has remained almost underresearched. The significance of this study lies in bridging these gaps in previous research on the plausibility of the TH by exploring the effect of a particular method of instruction and by adding time constraint as a design feature to further probe the role of instruction in terms of self-paced versus time-constrained tasks from the TH perspective. In so doing, not only does it contribute to reconciling theory and practice by applying devices from theoretical linguistics to our teaching practice but it also encourages specifying the threshold level at which the effects of instruction are more evidently noticeable. That is, it provided the insight that although instruction did not seem to make a difference for the *next* stage in self-paced oral production, as nonexperimental learners also showed emergence of that stage, it did result in a significant difference when the same stage was investigated in a more time-constrained oral production task, as the difference was only in favor of experimental learners who had received instruction.

An important contribution of this study was that, unlike most previous studies, it explicitly aimed to test the PT proposition that developmental constraints only apply to spontaneous oral production rather than to formal linguistic knowledge. In other words, it explored whether differential time pressure would

moderate the effects in terms of stage gains. It might encourage redefining spontaneity as a relative rather than fixed construct proportionate to learners' proficiency level. That is, even if instruction is not supposed to contribute to emergence of stages in learners' genuinely spontaneous oral production, it could be expected to make a difference in their stage gains in semispontaneous tasks. This understanding would reduce part of the burden on language teachers by helping them reform their expectations of instruction and readjust task features to learners' capabilities. Furthermore, the finding that the instructional intervention in this study significantly influenced stage gains in both self-paced and more time-constrained oral production and recognition provides stronger support for theoretical assumptions and empirical findings about phrase-dependency of linguistic knowledge and production.

Last but not least, this study provided evidence for the role of two methodological features which were linguistic in orientation. First, it showed that contrastive teaching and simultaneous anchoring of L2 teaching to L1 parametric characterization would make a difference. Second, it revealed that the incorporation of elements of UG such as structure-dependency, head-directionality, branching, and interphrasal parsing proved effective for L2 learning.

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