The Effects of Simultaneous Use of Task-based Strategic and Careful Online Planning on EFL Learners' Self-repairs

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Abstract

This research examined the effects of task-based planning on self-repairs as psycholinguistic mechanisms underlying EFL learners' speech. To this aim, the influence of simultaneous use of strategic and careful online planning on the type and frequency of learners' self-corrections was investigated. Sixty Iranian intermediate learners were asked to orally narrate a picture-based story under four conditions: no planning, strategic planning, careful online planning, and the integration of both strategic and careful online planning. They were subsequently asked to verbalize their thought processes during task performance based on their audio-recorded narrations. In general, the results showed that learners' speech under careful online planning condition involved making more error-repairs and fewer different-information and appropriacy repairs. In addition, the results illustrated that strategic planning resulted in more instances of appropriacy and different-information repairs, and as such, simultaneous use of both types of planning brought about an overall increase in the use of appropriacy, different-information, and error-repairs. The outcomes of this study suggest that engaging the learners in planning can ease task demands; consequently, this task implementation option directs their attention to both form and meaning, hence promoting acquisition.

Keywords: Planning, Second language acquisition, Self-repair, Task

1. Introduction

Over the past few decades, using tasks for teaching a second language (L2) has grasped increasing attention because, as meaning-based activities, the tasks make possible a kind of instruction that engages those natural acquisition processes promoting interlanguage development (Ellis, 2003; Robinson, 2011). Likewise, the design features and implementation variables of tasks can be manipulated in such a way as to enhance different dimensions of L2 production as measured by its Complexity, Accuracy, and Fluency (CAF). In general, research to date has demonstrated that the effects of manipulating task implementation variables on L2 discourse are more robust and consistent than those reported for task design features (Skehan, 2016). As an important task implementation variable, the effect of providing L2 learners with planning time has warranted a significant amount of investigation. On balance, Ellis (2009) revealed that engaging L2 learners in planning before performing a task (i.e., strategic planning) consistently allows more fluent as well as complex oral discourse. The findings regarding the accuracy, however, have been mixed. Previous research has also found that giving learners abundant time to plan their oral production while performing a task (i.e., careful online planning) results in more accurate and more complex L2 speech, with detrimental effects on fluency.

These findings notwithstanding, as the construct of planning involves a number of psycholinguistic and mental processes some of which are not easily amenable to direct observation, merely focusing on aspects of the linguistic product fails to provide researchers with direct evidence as to what learners actually do when they are given time to plan (Ortega, 1999). Accordingly, Ortega calls for using introspective methodologies that render such cognitive processes accessible to examination. In agreement with Ortega, the researcher argues that it is methodologically imperative to employ introspective methodologies (e.g., retrospective interviews) to be able to document the occurrence of psycholinguistic mechanisms underlying the planning process (e.g., self-repairs). However, the psycholinguistic analysis of the influence of planning on the L2 speech production process has been a somewhat neglected area of inquiry (Ortega, 2005).

In a recent study, which is of particular relevance to and inspired the present study, Ahmadian and Tavakoli (2014) built on participants' retrospective verbal reports and examined the effects of planned speech on EFL learners' self-repairs. Nevertheless, the design of their study did not take into account the potential effects of pre-task, strategic

planning. Aiming to overcome the abovementioned limitations, the present research sought to first, replicate the effects of online planning previously reported in the related literature. Then, it aimed to provide a more comprehensive and more empirically grounded account of the cognitive mechanisms underlying the process of planning by exploring the way different types of planning, namely strategic and online, interact to affect the way EFL learners monitor and repair their speech in the context of meaningful language use.

The study of planning from a psycholinguistic point of view would be of both theoretical and pedagogical significance. Theoretically, the findings could add to the available body of research findings as to the nature of self-monitoring processes underlying L2 speech production as well as the possibility of manipulating language learners' attention and directing their cognitive resources to different dimensions of production. Pedagogically, given that the meaning-based outcome-oriented nature of tasks might lead the language learners to primarily focus on meaning to the exclusion of form, provision of planning time could substantially ease the cognitive load on their memory and, as a result, enable them to allocate their limited and selective attentional resources to both meaning and form.

2. Literature Review

2.1. Task-based Planning

Over the last few decades or so, studying the meta-cognitive language learning strategy of planning as a research line in its own right "has become a burgeoning area of investigation within task-based learning" (Ortega, 2005, p.77). In the planning literature, a distinction has been made between pre-task planning and online planning (Ellis, 2005; Ellis, 2009). Ellis conceptualizes strategic planning as a type of pre-task planning which provides learners with an opportunity to prepare to perform the assigned task, which involves encoding and expressing content. This type of planning, Ellis points out, has been distinguished from rehearsal in which the learner's first performance of the task is considered as a preparation for a subsequent performance (i.e., repetition). According to Ellis (2005), strategic planning can be either guided or unguided. Whereas in the case of the unguided strategic planning task performers are "left to their own devices" while carrying out planning, in the case of guided strategic planning they are guided to attend to linguistic form, meaning, or both.

As one of the variables of the present research, unguided strategic planning was operationally defined as a type of pre-task planning time during which language learners were allowed to prepare their speech without being given any advice regarding the content

or form. While strategic planning takes place before task performance, online planning involves providing learners with abundant time to plan their speech formally while they are carrying out a task (Ahmadian, 2012). Online planning is also of two types. Depending on the length of time allowed for task performance, careful online planning has been distinguished from pressured online planning. Thus, whereas under careful online planning condition, unlimited time is allowed for the language learners to carefully plan and monitor their speech online, in pressed online planning condition the learners are required to perform under a time constraint. (Yuan & Ellis, 2003).

Research on planning has mostly drawn upon the information processing theory according to which humans have a limited, selective processing capacity, and therefore cannot equally allocate their attentional resources to all aspects of performance (Schmidt, 2001). As a result, according to Skehan (1998), there are trade-offs among performance areas of CAF such that directing attention towards one aspect of performance (e.g., accuracy) may exert negative effects on other dimensions (e.g., complexity). In the light of this limited information processor view of the learner, it was hypothesized that different types of planning differentially relieve the pressure on the learner's working memory exerting variable effects on the trade-offs among aspects of form and meaning which are manifest in different dimensions of language output (Ellis, 2009).

Also of direct relevance to planning studies is Levelt's (1989) psycholinguistic model of speech production. Almost all planning studies have been informed by this widely accepted model as a theoretical rationale for conceiving the construct of planning. According to Levelt, speech production consists of three specialized underlying processing components: conceptualizer, formulator, and articulator.

The conceptualizer produces the intended pre-verbal message, the formulator transforms the intended message into linguistic structures through the processes of grammatical and phonological encoding, and the articulator translates linguistic structures into overt speech. Speech production system, according to Levelt (1989), has three monitoring loops; the conceptual loop that checks the pre-verbal message against communicative intentions, the pre-articulatory loop that detects encoding errors before articulation, and the external loop that monitors overt speech in terms of communicative appropriateness and grammaticality (Levelt, 1989). It is hypothesized that as L2 speakers do not possess a fully automatized linguistic knowledge, speech production processing

components vie for their limited and selective attentional resources leading to a slower rate of speech (Ahmadian & Tavakoli, 2011). Some second language acquisition (SLA) researchers (e.g., Bygate, 2001) have posited that providing L2 learners with pre-task planning time assists the conceptualizer. Also, it has been argued that the provision of careful online planning time enables language learners to attend to the formulation stage carefully and engage in pre-articulatory and external loops of monitoring (Yuan & Ellis, 2003).

Numerous studies have examined the influence of strategic planning on the CAF triad. On the whole, previous findings have shown a positive impact of planning on L2 oral output. More specifically, several investigations have reported consistent, advantageous effects on fluency and complexity. Results for accuracy, however, have been quite mixed (see Baleghizadeh & Nasrollahi Shahri, 2013; Gilabert, 2007; Nakakubo, 2011; Seifoori &Vahidi, 2012; Yuan & Ellis, 2003).

The effects of online planning on L2 speech has also been the subject of several studies (Ahmadian & Tavakoli, 2011; Ahmadian & Tavakoli, 2014; Ahmadian et al., 2015; Yuan & Ellis, 2003). Generally speaking, the outcomes of these studies suggest that providing learners with the opportunity to plan their speech carefully during task performance would help them produce more accurate and complex language. These gains, however, have been made at the cost of fluency.

2.2. Self-repair Behavior in L2 Speech

When speakers detect an error in their speech, they may either ignore it or pause to effectuate a self-repair (Kormos, 2006). As direct reflections of the speech monitoring process, self-repairs could be defined as "problem-solving mechanisms related to perceived deficiencies in one's production" (Gilabert, 2007, p. 219). To devise a comprehensive system of classifying self-repairs in L2 speech, Kormos (1998) built on cognitive processes involved in the speech production process, empirical findings concerning L2 automaticity, consciousness, awareness, and noticing theories. The proposed classificatory model, which is of central importance to the current study, distinguishes among different-information repairs (D-repairs), appropriacy repairs (A-repairs), and error repairs (E-repairs). Below is the outline of these concepts illustrated through examples from participants' retrospective verbal reports (RVR).

D-repairs take place when the speaker fails to adequately organize the information and therefore decides to encode new information. In fact, this type of error correction entails changing the content of the pre-verbal message.

Example: **Some boys are playing**, eh…, well, **there is a big yard near the garden and** some boys are playing in there

RVR (translated into English): Here, at first, I wanted to describe what was happening, then I thought it would be better if I tell you where the story happens, in the first place.

- A-repairs are employed when the speaker decides to express the intended message in a modified way in order to encode more precise, less ambiguous, and pragmatically more appropriate information. This category of self-repair is closely related to D-repairs as it involves changing the content of the pre-verbal message.

Example: **In this story some children,** emm, **some students** play together in the yard.

RVR: What happened here was that I thought the building in the picture was a school and therefore it was more precise to say that the kids were actually students who were playing in the yard.

- E-repairs involve mechanisms different from those of the first two correction types. This type of self-repair occurs when speakers detect and rectify lexical, grammatical, and phonological errors that occur at the formulation stage of the speech production process.

Example: …and one **of they**...er**, one of them** shoots the ball and the ball goes to a hole.

RVR: I made a mistake here, but then I realized that after the word of I should use the word them because this is an object.

Kormos' (1998) psycholinguistic taxonomy of self-repairs has been utilized in a number of studies as a benchmark for explaining the effect of individual variables, task difficulty, and performance conditions on the self-monitoring mechanisms underlying L2 speech production. As an example, Gilabert (2007) drew upon Robinson's (2003) task complexity framework to examine the effects of manipulating the cognitive demands of tasks on self-repairs as a measure of accuracy. In doing so, he operationally defined two degrees of cognitive complexity for a narrative task, an instruction-giving task, and a decision-making task. Results showed an overall influence of task complexity on language learners' self-repairs across tasks. It was also observed that different tasks prompted

contrasting self-correction behaviors. The effects of participants' level of proficiency, however, were insignificant.

Elsewhere, Ahmadian, Abdolrezapour, and Ketabi, (2012) investigated the effects of task difficulty, as the existence of a loose or tight inherent storyline structure in a narrative, on self-repairs in EFL learners' oral output. The results of analyzing participants' retrospective comments demonstrated that task difficulty and self-repair behavior were related. More precisely, it was found that performing the more difficult task (i.e., the loosely structured narrative) induced the participants to effectuate more D- and A-repairs. By contrast, the participants who performed the less difficult task (i.e., the tightly structured narrative) employed E-repairs more frequently.

In an attempt to examine the impact of individual variables on language learners' self-corrections, Kormos (1999) studied the effect of individual speaking style, namely accuracy-centered versus fluency-centered styles. The participants were English learners with different levels of proficiency. The results of analyzing their self-report data suggested that though the overall frequency of self-corrections did not reflect the difference between accuracy- and fluency-centered learners, the effect of this individual variable was more evident in the frequency of rephrasing repairs, error corrections, and rate of speech. In addition, it was discovered that whereas accuracy-centered participants were primarily concerned with monitoring their speech, fluency-centered learners aligned more attention to speedy production and focused less on detecting and monitoring errors. The findings also indicated that speaking style difference manifested itself in learners' conscious decision making about not to correct an error.

In another investigative attempt, Mojavezi and Ahmadian (2014) studied the relationship between the individual variable of working memory capacity and self-repairs in L1 and L2 oral discourse. In this study, the participants were asked to orally perform two narrative tasks, one in their L2 (English) and one in their L1 (Persian). The results of learners' verbal reports displayed that their working memory capacity and self-repairs were positively related in the L2 but not in the L1. Besides, it was found that working memory capacity is differentially associated with different types of self-corrections. To be specific, outcomes indicated that while performing the narrative task in L1 yielded more D- and A-repairs, carrying out the same task type in L2 resulted in employing more E-repairs.

In a more relevant study, which inspired the present research, Ahmadian and Tavakoli (2014) used retrospective verbal reports to complement their quantitative analyses of language learners' performance in terms of the CAF. Their study involved intermediate EFL learners who were asked to perform an oral narrative task under careful and pressured online planning conditions. The results of their analyses showed that those L2 learners who used the planning time notably committed more E- and fewer A- and D-repairs than those who used the pressured online planning condition. An analysis of the CAF corroborated these findings as careful online planning positively affected the accuracy of L2 oral discourse.

The effects of planning on the linguistic product of L2 as measured by its complexity, accuracy, and fluency has been extensively investigated in several task-based studies; however, to the best knowledge of the researcher, there are few numbers of studies addressing the effect of planning on the actual processes involved at the time of speaking under planned condition. In this connection, though Ahmadian and Tavakoli (2014) analyzed the effects of planning on self-corrections concerning Kormos' (1998) taxonomy, the scope of their research was constrained to only online planning and left the effect of strategic planning out of consideration. In effect, at present, to the best knowledge of the researcher, no study has explored the combined effects of using different types of planning on L2 learners' self-repair behavior. In light of this gap in the related literature, the study reported in the remainder of this paper was developed to investigate the nature of self-monitoring mechanisms underlying the speech produced under planned condition by primarily probing into the nature of the psycholinguistic processes at the time of L2 speaking in different planning time conditions (i.e., strategic and careful online planning). To this aim, the study sought answers to the following questions:

1. Does engaging in strategic planning affect EFL learners' self-repairs?
2. Does engaging in careful online planning affect EFL learners' self-repairs?
3. Does simultaneous use of strategic and careful online planning affect EFL learners' self-repairs?

3. Methodology

3.1. Design of the Study

The effects of planning on participants' self-corrections were investigated using a between-subjects design. The independent variables were strategic planning and online

planning with four levels: no planning, strategic planning without careful online planning, careful online planning without strategic planning, and both strategic and careful online planning. The dependent variables were speakers' self-corrections as measured in terms of D-, A-, and E-repairs, as well as the length of time they took to complete the task. To analyze the data, a series of analyses of variance (ANOVA), followed by post-hoc Scheffe analysis, were carried out to measure the impact of the independent variables on the dependent variables of the study.

3.2. Participants

The current study involved a total of 60 EFL learners as volunteers from a language institute in Isfahan, Iran. The sample included 22 males and 38 females whose ages ranged from 18 to 26 (*M*= 21). All learners were native speakers of Persian who had never been to an English-speaking country, and their communicative use of English was almost limited to the classroom context. Based on their scores on a placement test administered at the institute, they were classified as intermediate speakers; however, to ensure that they constitute a homogeneous sample in terms of their level of English language proficiency, they were asked to take the grammar part of the Oxford Placement Test (Allan, 1992). Their responses were scored on a scale of 100 points and ranged from 43 to 54 (*M*= 52), which spoke to their homogeneity. Though the participants were informed that the tasks were utilized to elicit data for research, they did not exactly know what the nature of the study was. The participants were randomly assigned to four groups of fifteen each.

3.3. Instruments

A narrative task was chosen to elicit participants' oral output. This task was considered a monologic oral production task which required the participants to look at six sequenced wordless pictures displaying a tightly structured narrative developing in a single storyline. In other words, the pictures provided only foreground information to depict a story that involved a clear problem-solution structure and constituted a fixed sequence of events. The story was about a group of children playing soccer and while they were playing, their ball fell into a pit. The kids decided to fill the pit with water to get their ball back. It should be noted that narrative task was preferred to other task types because (a) narratives are a well-established and frequently researched task type, (b) these tasks are non-interactive and fairly

open to control (Skehan, 2001), (c) previous research has shown that such tasks "are the most difficult tasks with which to demonstrate experimental effects" (Foster & Skehan, 2013, p.255), and (d) using narratives permits comparison with the results of relevant studies (e.g., Ahmadian & Tavakoli, 2014; Yuan & Ellis, 2003). The task performance instructions were provided in participants' L1 –Persian.

3.4. Data Collection Procedures

3.4.1. Performance Conditions

As seen in Table 1, in the present study, planning was operationally defined at four levels: no-planning (NP), strategic planning (SP), careful online planning (COP), and both strategic and careful online planning (SP/COP). Data were collected by the researcher in individual sessions with each participant. The participants were invited to a quiet language classroom, became acquainted with task instructions and procedures, and were then asked to look at the picture prompts and orally retell the story under one of the following conditions:

Table 1.

Task Performance Conditions

Planning	Performance conditions			
	NP	*SP*	*COP*	*SP/COP*
Strategic	-	+	-	+
Careful online	-	-	+	+

Under the NP condition, the learners were allowed just 30 seconds to look at the pictures prior to task performance. They were also given five minutes to look at the pictures and retell the story to preclude them from doing careful online planning. This time limit was established in a pilot study involving 10 participants at the same level of proficiency. In that study, participants were given abundant time to perform the narrative task used in the main study. It was observed that they took between 2.5 to 5 minutes for task performance, with a mean of about 3.5 minutes. Considering these findings and following Yuan and Ellis' (2003) recommendations, the maximum time taken for narrating the story was set as the time limit for task completion. As Yuan and Ellis note, though most participants probably needed less

time to carry out the task, setting a time limit helps make sure that they have sufficient time for task completion and also to preclude them from doing careful online planning.

In the SP condition, the participants were given 10 minutes to look at the pictures and plan their utterance. This amount of time, according to Ellis (2009), seems to have become the standard pre-task planning time. Because in this study unguided strategic planning was investigated, following Yuan and Ellis (2003), the participants were not provided with any detailed guidance, but they were encouraged to organize their message in terms of content and form. In addition, they were reminded that they would eventually have 5 minutes to tell the story so as to control for the effects of careful online planning. After the ten-minute planning time, each participant was allowed to look at the pictures and tell the story to the researcher who audio-recorded his or her performance.

In the COP condition, learners were notified that they had just 30 seconds to look at the pictures before carrying out the task; however, they could take as long as they liked. Thus, the participants performing under this condition were allowed little pre-task time for strategic planning but ample time for careful online planning. Finally, in the SP/COP condition, the participants were told that they had 10 minutes to look at the pictures and carry out strategic planning. Besides, they were provided with ample time to do the task. To confirm the successful operationalization of the careful online planning condition, the average length of time the participants in each group took for task completion was measured.

3.4.2. Retrospective Verbal Reports

Participants' task performance was followed by a round of retrospective interviews conducted in their L1 to collect their verbal reports. To ensure that learners reported what actually happened rather than rely on inferences, researchers have been recommended to elicit verbal reports as soon as possible after task completion (Erricson & Simon, 1993). Nevertheless, following the procedures described in Ahmadian et al. (2012), a five-minute time interval was allotted during which instructions on how to perform verbal reports were provided in the L1 of the participants. Following this intermission, learners were allowed to listen to their recorded speech, recall, and vocalize the problems they had experienced at the time of task performance. In doing so, the researcher paused participants' audio-recorded speech, and upon noticing instances of self-repairs asked them to verbalize their thought processes or the reason for halting their speech flow at that particular moment.

The interviews were audio-recorded and subsequently transcribed by the researcher. It needs to be noted that as the participants were not informed that they would be required to attend interviews before carrying out the task, retrospective verbal reports could not have a significant effect on their task performance.

3.5. Data Analysis

The audio-recorded verbal reports were used to code and categorize learners' self-corrections with reference to Kormos' (1998) classificatory system. To ensure that instances of self-repairs were reliably identified, the criteria advanced by Kormos (1998) were used. For instance, the utterances that contained an erroneous or inappropriate stretch of language that has been replaced with correct or appropriate language forms were considered as instances of self-correction. Besides, following the rigorous methodology detailed by Ahmadian et al. (2012), both covert and overt repairs were investigated. As such, cases of covert repairs were detected by asking the participants to express their thoughts whenever their speech showed such indirect manifestations as silent pauses, phrase or word repetitions, and prolongation (see Postma, 2000). Then, by sifting through elicited retrospective comments, the researcher managed to classify the identified instances of self-correction as one of the three correction types.

To verify that instances of self-repairs had been reliably categorized, they were double-checked by an experienced academic who had previously conducted research in this area. In addition, 10% of the sample was double-coded which yielded more than 90% agreement for the coding procedure. Having coded the data, the means for different types of self-repairs learners had used in each group were calculated and compared by means of a series of one-way ANOVAs followed by post-hoc Scheffe tests. Before running ANOVAs, however, assumption testing was carried out to examine the suitability of the data for such analyses. The software used for statistical analyses was SPSS.

4. Results

The present study sought to explore the number and types of self-repairs that engaging in task-based planning induces EFL learners to make on an oral narrative task. In this section, the outcomes of the study are presented in terms of the three research questions posed above. As was pointed out earlier, the average time spent on task completion by participants in each

group was measured so as to make sure of the successful operationalization of careful online planning. The results of a one-way ANOVA, followed by post-hoc Scheffe test, confirm that participants who had ample time have spent more time on task performance than those who performed under time pressure (see Table 2). This finding places us in a position to assume that careful online planning has been successfully operationalized.

Table 2.

Descriptive and Inferential Statistics for the Length of Time Spent on Task Performance

	Mean (*SD*)				*F* value	*Sig*.	Locations of Significance			
	NP	SP	COP	SP/COP			$\frac{NP}{COP}$	$\frac{NP}{SP/COP}$	$\frac{SP}{COP}$	$\frac{SP}{SP/COP}$
Length of time (seconds)	207.6 (57.51)	210.87 (47.62)	262 (39.74)	267.93 (45.14)	6.807	.001	.029*	.012*	.046*	.02*

Note: *= p < .05

Table 3.

Descriptive and Inferential Statistics for Self-repairs

	Mean (*SD*)				*F* value	*Sig*.	Locations of Significance		
	NP	SP	COP	SP/COP			$\frac{NP}{SP}$	$\frac{NP}{COP}$	$\frac{NP}{SP/COP}$
D-repairs	6.00 (1.46)	8.20(1.97)	4.40(2.09)	7.86(1.68)	14.116	.000	.018*	.135	.059
A-repairs	5.60 (1.29)	7.46 (1.72)	4.06 (1.62)	7.53 (1.95)	14.877	.000	.033*	.109	.025*
E-repairs	6.53 (2.13)	6.13(1.76)	8.33(1.44)	8.86(1.40)	9.122	.000	.938	.051*	.006*

Note: * = p < .05

The first research question addressed the impact of engaging in strategic planning on EFL learners' self-repairs. The results of descriptive and inferential statistics shown in Table 3 indicate that the type and number of self-repairs have been affected by the opportunity to plan strategically. More precisely, performance under this condition has prompted learners to generate more D- (*p* = .018) and A-repairs (*p* = .033), and fewer   E-repairs than their counterparts in the NP group (i.e., the control group). The mean difference for repairs, however, failed to reach statistical significance (*p* = .938).

The second research question concerned whether engaging in careful online planning influences the number and type of self-repairs that the participants employ. The results showed that the planners who narrated the picture story under the COP condition performed

more E-repairs than those who carried out the same task under the NP condition ($p = .051$). Though participants in this group made fewer D- and A-repairs, the mean differences were not statistically significant ($p = .135; p = .109$). Building on these findings, one can conclude that the number of E-repairs that language learners had employed increased as a result of carrying out careful online planning.

The third research question pertained to the effects of simultaneous use of strategic and careful online planning on L2 self-repair behavior. Interestingly, it was observed that, compared with the no-planning condition, this performance condition generates more frequent use of self-corrections in terms of the three measures. As shown in Table 3, post-hoc Scheffe tests yielded statistically significant mean differences for E- and A-repairs ($p = .006; p = .025$). The mean difference for D-repairs was almost significant ($p = .059$). In other words, participants in the SP/COP group outperformed their peers who performed under no planning condition by making more A-repairs, E-repairs, and also D-repairs. Thus, in response to the third research question, we can argue that simultaneously engaging EFL learners in both types of planning brings about an overall increase in the frequency of different self-repairs they use.

5. Discussion

The outcomes of this research study indicated that on the whole, the effects of different types of planning differentially manifest themselves in the number and types of self-corrections EFL learners commit while performing an L2 speaking task. In this section, these observations will be discussed with reference to previous empirical evidence and related theoretical rationales.

The first research question examined the ways that engaging EFL learners in strategic planning affects their self-correction behavior. It was observed that strategic planners effectuated more D- and A-repairs. Though these learners produced fewer   E-repairs, the mean difference was not statistically significant. From a psycholinguistic vantage point, this finding could be ascribed to the facilitative effect of strategic planning on learners' working memory through easing the pressure on conceptualizing the message they want to communicate (Ellis, 2009). Taking into account Levelt's (1989) perceptual loop theory of monitoring, it seems plausible to posit that allowing time for strategic planning enables L2 learners to focus much of their attention on monitoring their pre-verbal message conceptually through conceptual loop; however, their limited and selective attentional

capacity in tandem with online processing demands caused by time limit (i.e., five minutes) taxes their processing capacity and consequently precludes them from simultaneously detecting encoded errors and monitoring their speech online via pre-articulatory and external loops. Thus, it might be reasoned that pre-task planners are primarily concerned with monitoring their pre-verbal message in terms of pragmatic appropriateness and adequate organization of information because the 'trade-off' between form and content stemming from learners' limited processing capacity and performance conditions (Skehan, 1998) seems to predispose them to primarily focus on content and, as a result, effectuate more D- and A-repairs, but fewer E-repairs.

The second research question concerned the effect of careful online planning on L2 self-repairs. The results of the retrospective interviews with participants showed that those learners who had ample time to orally narrate a picture story were able to produce more E-repairs. Though mean differences did not reach statistical significance, careful online planners also employed fewer D and A-repairs. Generally, these findings replicated those of Ahmadian and Tavakoli (2014) that the opportunity to carefully plan L2 speech while performing a narrative task significantly affects the cognitive processes underlying L2 speech production by inducing learners to use more E-repairs and, of course, fewer D- and A-repairs. As careful online planning is primarily directed at the formulization stage of speech production (Yuan & Ellis, 2003), from these observations one may argue that carefully planning L2 speech establishes a focus-on-form context (Batstone, 2005, as cited in Ahmadian et al., 2012) which allows task performers to engage in controlled processing by devoting much of their limited-capacity attentional resources to detecting and correcting encoding errors at formulation and articulation stages through pre-articulatory and external loops, hence more accurate oral performance. Given that the number of E-repairs L2 learners produce is closely related to the accuracy of the linguistic products (Gilabert, 2007), this observation can be taken as further support to the findings of the previous studies that careful online planning generates more accurate L2 speech. Thus, it can be hypothesized that the psycholinguistic correlate of enhanced accuracy is the more frequent use of E-repairs.

The third research question pertained to the effects of simultaneous use of strategic and careful online planning on L2 learners' self-corrections. It was observed that, compared with the no-planning condition, this performance condition generates more frequent use of self-corrections in terms of E-, D-, and also A-repairs. Post-hoc Scheffe tests confirmed the

statistical significance of mean differences. These notable findings could be captured in light of Skehan's (1998) dual-processing model which assumes that L2 knowledge is stored in terms of rule-based and lexical systems. The former, according to Skehan, requires more time and attention to access. Building on this model and assuming that accuracy of L2 speech depends on what learners do while they are performing a task (Wendel, 1997), one may argue that providing learners with the opportunity to engage in both strategic and careful online planning substantially reduces the amount of cognitive demand imposed on them and, consequently, fosters an optimum condition for them to monitor their speech conceptually and, at the same time, makes them able to access their rule-based knowledge to detect and rectify errors at the formulator and articulator stages. As a result, they effectuate significantly more D- and A-repairs while conceptualizing and more E-repairs while formulating and articulating their utterances.

Overall, the findings of the present study provide support for Ahmadian et al.'s (2012) Extended Trade-off Hypothesis (ETH) according to which the nature of L2 performance trade-offs involves not only aspects of linguistic output, namely complexity, accuracy, and fluency, but also the conceptual, pre-articulatory, and external loops of monitoring. Besides, ETH assumes that trade-off involves the amount of attention devoted to using E-repairs on the one hand, and D- and A-repairs on the other. Hence, by drawing upon ETH we could hypothesize that strategic planning enables task performers to primarily focus their attention on conceptual monitoring of their speech by means of the conceptual loop and, consequently, effectuate more D- and A-repairs.

Careful online planning, on the other hand, assists them to access their rule-based system of L2 knowledge, monitor their speech via the pre-articulatory and external loops, and, as a corollary, effectuate more E-repairs. More importantly, it is also logical to posit that the synergistic effect of engaging language learners in both types of planning exponentially eases the pressure on their limited and selective attentional resources such that they can simultaneously attend to different aspects of their speech. Accordingly, their performance displays more frequent use of all types of self-repairs.

6. Conclusion

As a task condition-oriented research, the findings of the present study are of pedagogical importance. The outcomes suggest that though a meaning-based outcome-oriented task may predispose learners to prioritize meaning over form, it can be considered as a valuable activity that may be implemented in such a way as to control their attention allocation during the performance. Specifically, the results of the present research showed that whether performing a task directs EFL learners' attention to linguistic form partly depends upon the availability of both careful online and pre-task planning time. The significance of conscious attention to form lies in the fact that previous research (e.g., Godfroid, Housen, & Boers, 2010; Godfroid & Uggen, 2013) confirms that higher levels of awareness and noticing of form while processing L2 are associated with more conspicuous gains in the acquisition.

Given the cross-sectional nature of the present study, however, care must be exercised in making any generalizations based on the findings. Indeed, further longitudinal studies are definitely needed to investigate the sustained, long term beneficial effects simultaneous use of pre-task and online planning may have on L2 learners' mastery of L2 form and meaning. It is also hoped that future studies will examine the effects on the performance of simultaneous use of pre-task and online planning with a whole range of other task types. If the findings are replicated in other pedagogic contexts, EFL learners may be more motivated as they observe higher performance levels (Skehan, 2016).

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