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# The Combined Effects of Online Planning and Task Structure on Complexity, Accuracy, and Fluency of L2 Speech

## Abstract

This study investigates the combined effects of task-based careful online planning condition and the storyline structure of a task on L2 oral performance (complexity, accuracy, and fluency). 60 intermediate EFL learners were randomly assigned to four groups ( $n = 15$ ). Participants were asked to perform two tasks with different degrees of storyline structure (structured and unstructured) under two different planning conditions (pressured online planning and careful online planning). Analysis of the narrations and the results of a series of one-way ANOVA revealed that the participants who performed the structured task under careful online planning condition produced reasonably more complex, accurate, and fluent language. However, those who performed the unstructured task under pressured online planning condition obtained the lowest scores in terms of all three areas of oral production. The findings add support to the view that selecting appropriate task-based implementation conditions and task design features could induce language learners to produce the kind of output which enjoys complexity, accuracy, and fluency at the same time.

Keywords: Accuracy, Complexity, Fluency, Online planning, Task structure

## 1. Introduction

Recently there has been a growing interest in investigating the nature and effects of task demand in learners' attentional capacity in relation to complexity, accuracy, and fluency (henceforth CAF) of second language learners' oral production (Samuda and Bygate, 2008). Previous studies have demonstrated that different task design features and implementation conditions have the potential to direct second language (L2) learners' attentional and processing resources and positively affect L2 oral performance (Ahmadian and Tavakoli, 2011, Ahmadian, 2011, in press a, in press b; Ellis, 2009; Skehan and Foster, 1996, 1997, 1999; Tavakoli and Foster, 2009; Tavakoli and Skehan, 2005). For example, there is now fairly convincing evidence that performing a structured task – i.e. a task which has a clear timeline or a story with a conventional and crystalline beginning, middle, and end (examples for structured and unstructured tasks are provided in Appendix A) – induces speakers to produce more fluent and accurate language (see Skehan, 2003 for a review) and that different types of planning (both pre-task and within-task planning) have beneficial effects on complexity, accuracy, and fluency (see Ellis, 2009, for a review). However, the combined effects of storyline structure and (careful/pressured) online planning on different aspects of L2 oral speech have not yet been investigated. The current study attempted to fill this gap by examining the way manipulating these two variables might affect L2 oral performance as measured along the dimensions of complexity, accuracy, and fluency.

The need for such a work could be justified in two ways: (a) in order to provide a comprehensive theoretical account of the role of (online) planning and different task design characteristics in L2 use and acquisition it is imperative to study, among other things, the way these two sets of variables interact with one another (Ellis, 2009a); and (b) assuming that complexity, accuracy, and fluency are essential to achieving “greater functional proficiency in a language” (Skehan and Foster, 1999, p. 116, see also Skehan, 1998) it would be necessary to identify task design characteristics and/or implementation conditions which have the potential to enhance all three areas of L2 oral performance.

## 2. Background

Most of the research studies which address task-based planning – as an implementation variable – and task design features are informed by some fundamental principles of information processing theories. According to Huitt (2003), within the information processing tradition there are a number of basic principles that most of the cognitive psychologists agree with. One of the principles concerns the assumption of limited attentional capacity whereby the amount of information that an individual can process at a particular point in time is limited in some important ways. Based on this assumption when there are two or more mental activities which need focal attention, one cannot allocate equal attentional resources to all of them. Of course, one can attend to one of the activities but as a result of this prioritization little amount of processing resources would be left over to be devoted to the others (Schmidt, 2001; Skehan, 1998). This putative assumption is a corner stone of the Trade-off Hypothesis which may guide our predictions regarding the outcomes of manipulating implementation conditions and task design features (Skehan, 1998, 2009a; Skehan & Foster, 2001).

According to Trade-off Hypothesis when one is carrying out a (say) pedagogic narrative task, he/she cannot simultaneously attend to all aspects of performance (i.e. complexity, accuracy, and fluency) and that “committing attention to one area, other things being equal, might cause lower performance in others” (Skehan, 2009a, p. 511), unless he/she is assisted through manipulating performance conditions (e.g. the planning time available) or design features of the tasks (e.g. task structure).

### 2.1. Online planning

Inducing learners to plan their speech could be, in crude and general terms, defined as providing learners with ample time to do mental work on their utterances conceptually and/or formally, prior to and/or while performing a task (Ahmadian, in press a). To date, virtually all planning studies have used Levelt’s (1989) speech production model as a standard theoretical framework for conceptualizing the notion of planning. Levelt introduces speakers as ‘complex information processors’ who are able to translate their intentions, thoughts, and feelings into articulated words.

In Levelt’s speech production model, the whole process of producing speech is accomplished in three overlapping stages: (a) conceptualization, during which intentions and relevant information to be conveyed are selected and prepared in the form of what Levelt dubs preverbal message; (b) formulation, during which preverbal message, which

is propositional and conceptual in nature, is transformed into linguistic structures; and (c) articulation, during which the linguistic structure translates into actual speech. In addition, one important processing component of Levelt's model which is of great relevance and significance to planning studies is the self-monitoring component. This component is responsible for monitoring, among other things, the speaker's internal speech as represented in their working memory (Levelt, 1989). It is hypothesized that providing the performers with the opportunity to plan their speech could reduce the time pressure and may assist speakers with this process.

According to Ellis (2005b, 2008, 2009a), different types of planning are usually distinguished in terms of when the planning occurs. Pre-task planning, which has been investigated in a number of studies (see Ellis, 2009 for an excellent review) takes place prior to task performance and could be categorized into two types: (a) strategic planning, which "entails learners preparing to perform the task by considering the content they will need to encode and how to express this content"; and (b) rehearsal, which involves "task repetition with the first performance of the task viewed as a preparation for a subsequent performance" (Ellis, 2005, p. 3).

Online planning, as befits the name, concerns task performers utilizing the time available while performing the task "to regroup and to plan 'on the fly'" (Skehan, 2007, p. 57). Online planning could be either 'pressured' or 'careful'. Pressured online planning is normally used in everyday communication or in pedagogic tasks where the performer is required to complete the task using limited amount of time. In the case of careful online planning, the speaker or task performer has ample time at his or her disposal for task completion and therefore might carefully monitor his/her speech 'online'.

For Yuan and Ellis (2003, p. 6) careful online planning is "... the process by which speakers attend carefully to the formulation stage during speech planning and engage in pre-production and post-production monitoring of their speech acts". Theoretically, then, one could hypothesize that careful online planning assists complexity and accuracy in language production.

Following Yuan and Ellis (2003) and building on Ahmadian and Tavakoli (2011), Ahmadian (in press a, in press b), in the present study careful online planning was operationalized experimentally in a two-pronged way: (a) by providing careful online planners with ample time for task completion; and (b) by requiring all participants (careful online planners as well as pressured online planners) to start task performance straight away. Part (a) of this operational definition may guarantee that participants have enough time at their disposal to (re)conceptualize, (re)formulate, and monitor their internal speech (to use Levelt's terminology) prior to articulation. Part (b), however, could be taken as an attempt to control for participants' engagement in pre-task planning.

Empirical support for the beneficial effects of careful online planning comes from four studies (Ahmadian & Tavakoli, 2011; Ahmadian, in press a, in press b; Yuan & Ellis, 2003), which are fairly similar in terms of the operationalization of online planning and the measures they have used to assess the CAF of participants' oral production. Yuan and Ellis (2003) compared the effects of pre-task and careful online planning on learners' complexity, accuracy, and fluency in performing a narrative task.

Results of their study indicated that careful online planners produced both more accurate and complex language. Yuan and Ellis (2003) posited that when participants perform a task under time pressure, the working memory uses the limited time to access lexical information from long-term memory, but when they perform under careful online planning condition, they can access syntactic information too. They also found that the pre-task planning groups produced more fluent language than the online planning groups.

Ahmadian and Tavakoli (2011) investigated the effects of simultaneous use of careful online planning and task repetition on CAF in oral production. However, one of the research questions addressed in our study concerned the effects of careful online planning alone. They found that careful online planning enhances both complexity and accuracy in participants' oral production. Results of their study also revealed that careful online planning led task performers to produce significantly less fluent language than pressured online planners did. Ahmadian and Tavakoli posited that careful online planning causes learners to draw on their rule-based system. Rule-based system acts upon explicit linguistic knowledge retrieved from long term memory, which normally taxes working memory. As a result, participants' attentional resources, which get consumed by retrieving explicit knowledge, cannot process meaning appropriately and thus the rate of speech (fluency) decreases significantly.

More recently and building on the studies reported above, Ahmadian (in press a) studied the way guided careful online planning (operationalized by directing learners attention to a particular linguistic form as they were engaged in careful online planning) assists intermediate EFL learners in accurate oral production of English articles (an/a and the). He also investigated whether guided careful online planning has any effects on global complexity and fluency of intermediate EFL learners' oral language performance. Results of this study, too, pointed to the facilitative role of careful online planning in accurate production of English articles as well as global complexity. It is important to note that both Ahmadian and Tavakoli (2011) and Ahmadian (in press a) interpreted their results with reference to the limited working memory capacity.

Ahmadian (in press b) attempted to investigate the way inter-individual variations in working memory capacity (WMC) interact with careful online planning to affect L2 oral performance. He posited that individual differences in WMC would affect careful online planning precisely because, careful online planning is thought to involve planning what to say and how to say it while one is performing a task (Ellis, 2005); that is, planning speech while performing another cognitively demanding task. Based on this logic, he predicted that those with greater WMC should benefit from careful online planning more than those with lesser WMC. Results of his study showed that working memory capacity correlates with accuracy and fluency under careful online planning condition. However, the relationship between WMC and complexity under careful online planning condition did not reach the level of significance. Ahmadian (in press b) attributed this latter finding to the fact that complexity pertains to learners' tendency to take risks and using cutting edge of their grammatical knowledge and thus, viewed from this perspective, this aspect of performance has little (if not nothing) to do with WMC.

Regardless of the way we account for this dissociation, he argued, this finding assumes both pedagogical and theoretical relevance. The complexity of language is

conceived of as “the scope of expanding or restructured second language knowledge” (Wolfe-Quintero, et al., 1998, p. 4), which could be taken to mean that the production of complex language is a precursor to L2 development. If the production of complex language under careful online planning condition is not associated with WMC and inter-individual variations in terms of WMC do not interfere with the positive effects of careful online planning then learners with different WMC can benefit from this implementation variable in favor of producing complex language and, consequently, L2 acquisition. Ahmadian (in press b) suggested that this may speak to the viability of careful online planning as a task-based implementation variable for language development and for virtually all learners with different WMC.

Given the theoretical and empirical support for the beneficial effects of careful online planning on accuracy and complexity of L2 oral production, a pedagogically motivated question may arise as to what effects may accrue from manipulating the relative degree of the structure of a task and the online planning conditions (pressured/careful) under which a task is performed. This question, which is of both theoretical and practical importance, necessitates clarifying the notion of task structure.

## 2.2. Task structure

One of the task design features which has attracted the researchers’ attention in recent years is the inherent storyline structure of a narrative task. According to Tavakoli and Skehan (2005, p. 248-9), narrative tasks are defined as “stories based on a sequenced set of picture prompts, which are given to participants in order to elicit language performance”. The storyline structure of an oral narrative task pertains to the degree to which a task has “a clear time line, a script, a story with a conventional beginning, middle and end, and an appeal to what is familiar and organized in the speaker’s mind” (Tavakoli and Skehan, 2005: 246). It is assumed that a task which is tightly structured – i.e. has all, or at least most, of the above-mentioned features – imposes less processing and attentional demands on the task performers for simply enacting the task and getting the job done and as a result more attentional resources would be left over to be devoted to complexity, accuracy, and fluency of speech.

The notion of task structure first emerged from the post-hoc interpretations of the findings of a series of studies (Foster and Skehan, 1996; Skehan and Foster, 1997) which originally aimed to examine the degree to which familiar and unfamiliar task content would affect L2 oral production. Overall, the results of these studies revealed that talking in an L2 about a topic with which the task performers were familiar was associated with more fluent and accurate oral production and that where task participants were required to talk about unfamiliar information, less fluent and accurate output but more complex language was produced. However, Skehan and Foster in their post-hoc analyses of these findings noticed that the most fluent task performance was elicited by two tasks which had a tightly structured storyline.

Skehan and Foster’s (1999) subsequent study lent further empirical support to this post-hoc interpretation. They found that, compared to tasks which were loosely structured, narrative tasks with a tightly structured storyline induced learners to produce more fluent language. They also found that tight narrative structure combined with pre-task planning opportunity led task performers to speak more accurately in an L2. In

another investigative attempt, Tavakoli and Skehan (2005) studied whether and how the degree of structure in a narrative task might influence L2 oral performance. The results of their study revealed that overall task structure has positive and significant effects on complexity, accuracy and fluency of language. For example, in the case of fluency, they found significant differences between structured and unstructured tasks in terms of the number of pauses and speaking time, length of run, the total amount of silence, and false starts.

In a more recent study, Tavakoli and Foster (2008) attempted to replicate the effects for task structure found in this research program. In order to enhance the comparability of the results, they used the same structured and unstructured task employed by Tavakoli and Skehan (2005). Results of their study corroborated the results found by Skehan and Foster (1997, 1999) and Tavakoli and Skehan (2005) that task structure is linked with accuracy in L2 oral production. Tavakoli and Foster concluded that “L2 performance is affected in predictable ways by design features of narrative tasks” (2008: 459, italics in original)<sup>1</sup>.

In light of the foregoing theoretical and empirical discussions two interrelated hypotheses might follow: (a) structured tasks have a clear time line and macrostructure and accordingly impose relatively lower cognitive load on the task performers; therefore, performing structured tasks under careful online planning condition might result in the production of language which is reasonably more complex, accurate, and fluent ; (b) given the fact that unstructured tasks are cognitively demanding and therefore difficult to carry out, performing an unstructured task under pressured online planning condition results in the production of language which is relatively less complex, accurate, and fluent . Considering these hypotheses, the present research seeks to address the following research question:

- What are the combined effects of task structure and online planning on complexity, accuracy, and fluency of L2 oral performance?

In the current study, task structure was operationalized as structured and unstructured tasks and online planning condition was operationalized in terms of two planning conditions, namely careful online planning condition and pressured online planning condition.

### **3. Method**

#### **3.1. Participants**

The participants were 60 Iranian intermediate learners of English as a Foreign Language (EFL) randomly selected from among 120 intermediate learners in a private language center in Iran. They were all male and their age ranged from 21-27 ( $M = 24.5$ ). They had been learning English for 9-11 months. According to the principals of the language center and their language teachers, prior to initiating the language program the learners had all participated in both Oxford Placement Test and oral interviews and

based on the test results they could be considered as fairly homogeneous in terms of overall language proficiency. The participants were all taught under the same language teacher, used the same language teaching and learning materials, and did not use English for communicative purposes outside the classroom. Nevertheless, to make sure that the participants were sufficiently similar in terms of their overall language ability they were asked to take the grammar part of the 'Oxford Placement Test 2' (Allan, 1992). Their responses were scored on a scale of 100 points. The subjects obtained scores of 42 to 47, which confirmed that they were virtually homogenous in terms of their overall language proficiency.

The participants were randomly assigned to four groups: in group one, the participants were asked to perform the structured task under careful online planning condition. In group two, the participants were required to carry out the structured task under pressured online planning condition. In group three, language learners were asked to do an unstructured task under careful online planning condition and finally, in group four, the unstructured task was performed under pressured online planning condition.

### 3.2. Procedure

#### 3.2.1. Selection of the tasks and setting the time limit for pressured condition

In the present study two oral narrative tasks were used: a structured task and an unstructured task. The inherent structure of these two tasks was determined in a small-scale pilot study which was specifically designed and conducted to identify two tasks with different degrees of structure to be employed in a series of investigations on task structure. In this pilot study, Tavakoli and Skehan's (2005) criteria for determining the degree of task structure were taken into account. These criteria include: whether or not there is a logical relation among the elements of the story, and whether or not the story entails a clear time line, conventional beginning, middle, and end.

Considering these criteria, four interesting short animated videos (Day and Night [2010]; Lifted [2006]; For the Birds [2000] and One-Man Band [2005]; each 3-6 minutes long) were selected which were thought to constitute a cline from highly structured to relatively unstructured. These four videos were then shown to 13 experienced EFL teachers who were also presented with the above-mentioned criteria and were asked to arrange the tasks in the order of the degree of structure. Also, 12 intermediate EFL learners were invited to a laboratory to perform oral narrative tasks using these four video prompts. After performing all four tasks the participants were requested to select the most difficult and the easiest tasks in terms of the abovementioned criteria.

In light of Tavakoli's (2009) finding that there is noticeable similarity between teachers and language learners in terms of the criteria they deem important for identifying task difficulty, it was no surprise that the researcher, language learners, and EFL teachers chose the same tasks as the most difficult and the easiest one. The most difficult task was the one which used Day and Night (2010) as the video prompt.

The story of this 6-minute animated video is about two characters, Day and Night. Within Day is a day scene, and inside Night is a night scene. Everything happening inside of Day or Night reflects the normal events that typically take place within a day or



night, respectively, and these events often correspond with actions or emotions that the characters Day or Night express. Almost all language learners and teachers mentioned that the logical relationships between the elements of the story were vague and that the sequence of events did not follow a clear timeline. Performing this task took 3-5 minutes and therefore it was decided to set the 5-minute time limit for pressured online planning group in performing the unstructured task.

The easiest task was based on One-Man Band (2005), which tells the humorously captivating tale of a peasant girl who encounters two competing street performers who would prefer the coin find its way into their tip jars. As the two one-man bands' rivalry crescendos, the two overly eager musicians vie to win the little girl's attention. Therefore, these two tasks were selected to be used in the main study. Here again the participants took about 3-5 minutes for performing the task, hence the 5-minute time limit for the pressured online planning group.

The time limit set for both tasks (5 minutes) was longer than the time that most participants actually spent on task completion in the pilot study (i.e. 3-5 minutes). However, following the previous online planning studies cited above, it was reasoned that this time limit would help making sure that pressured online planning has been successfully operationalized – i.e., on the one hand all participants have enough time for task completion and on the other hand they are under time restriction and therefore cannot engage in careful online planning. Careful online planners were allowed to take as much time as they needed for task performance.

### 3.2.2. Measurement of the CAF triad

Currently, there are various measures available to assess the CAF triad (see Ellis 2005b, 2008, 2009a). Given the multifaceted and complex nature of the three principal constructs, using multiple measures for assessing each dimension of performance (CAF) is highly recommended (Ellis & Barkhuizen, 2005), but this may not yield a clearer and more valid picture of the constructs unless the measures used, examine different facets of the construct in question. In the current study, two principles were followed in choosing the CAF measures: (a) to reach more comparable results, it is advisable to use the same measures used in the previously conducted planning research (Ellis, 2005b); and (b) to avoid redundancy in measurement, each measure must tap a specific facet or sub-construct of the principal construct in question and that to assess each sub-construct, using one measure will suffice. Therefore, the following measures were utilized:

- **Complexity measures:**
  - Syntactic complexity (amount of subordination): the ratio of clauses to AS-units (the Analysis of Speech Unit) in the participants' production. AS-unit is defined as "... a single speaker's utterance consisting of an independent clause or sub-clausal unit, together with any subordinate clause(s) associated with it" (Foster, et al., 2000).

- Syntactic variety: the total number of different grammatical verb forms used in participants performances. We used tense and modality as grammatical verb forms for the analysis.
- **Accuracy measures:**
  - Error-free clauses: the percentage of the clauses which were not erroneous. All syntactic, morphological and lexical errors were taken into account.
  - Correct verb forms: the percentage of all verbs which were used correctly in terms of tense, aspect, modality, and subject-verb agreement.
- **Fluency measures:**
  - Rate A (number of syllables produced per minute of speech): the number of syllables within each narrative, divided by the number of seconds used to complete the task and multiplied by 60.
  - Rate B (number of meaningful syllables per minute of speech): Rate A's procedure was followed again, but all syllables, words, phrases that were repeated, reformulated, or replaced excluded.

### 3.2.3. Analysis

The transcribed narrations were segmented, coded, and scored based on the measures chosen for assessing the CAF triad. To ensure that the segmentation and scoring of the transcripts were conducted reliably, 50% of the data were segmented, coded and scored by an independent expert colleague. Intercoder/inter-rater reliability coefficient magnitudes were above .93 for all measures (with a mean of .91). The scores were then entered into SPSS version 16.0 and were checked in terms of normality of distribution via skewness and kurtosis indices. One-way ANOVA was used to identify the best combination of task structure and planning condition.

## 4. Results and discussion

In this study we researched into the combined effects of online planning conditions and the relative degree of task structure on complexity, accuracy, and fluency of oral L2 speech. In effect, the ultimate goal of this study was to identify the best combination of task structure and online planning conditions.

In order to make sure that careful online planning has been operationalized successfully it is necessary to compare the amount of time (seconds) that the participants in each group have spent on the task performance. It is expected that careful online planners spend more time on performing the task. Descriptive statistics and the results of one-way ANOVA are reported in Table 1. As it is displayed in this Table, careful online planners (Groups 1 and 3) have taken more time for task completion which could be taken to mean that careful online planning condition has been operationalized successfully.

We will now report the results of this study in terms of complexity, accuracy, and fluency of speech and will discuss the results in light of the relevant theoretical and empirical issues.

### **Table 1 about here**

#### 4.1. Complexity

Descriptive and inferential statistics for fluency measures are displayed in Table 2. Two measures were used to assess the structural complexity of L2 oral speech. The statistics presented in this Table indicate that the participants who performed the structured/unstructured tasks under careful online planning condition (Group 1) have produced more complex language than those who have carried out the tasks (both structured and unstructured) under pressured online planning condition (Groups 2 and 4). However, there is no statistically significant difference between the careful online planning groups (Groups 1 and 3) in terms of the complexity measures. Also, the difference between the mean scores of the pressured online planning groups (Group 2 and 4) who performed structured and unstructured tasks did not reach the level of significance. Based on this finding we can infer that complexity of speech has benefited from careful online planning condition but not from the relative degree of task structure.

This result is in accord with the predictions made in the present study and fits neatly with the findings of previous online planning studies (Yuan & Ellis, 2003; Ahmadian, in press b; Ahmadian & Tavakoli, 2011). Theoretically, this finding could be explained with reference to Skehan's (1998) dual-mode system proposal. Based on this proposal one could reason that under pressured online planning conditions participants are likely to use their exemplar-based system which is comprised of a large number of ready-made chunks of language and imposes lower degrees of cognitive demand on the speaker. This might in turn reduce the speakers' creativity and willingness to utilize the recently learnt grammatical rules for generating novel sentences. However, under careful online planning condition, since speakers have ample time for planning their speech online, they are likely to draw on their rule-based system during the formulation stage of speech production. According to Skehan (1998), the rule-based system includes generative linguistic rules and enables the speaker to use his/her cutting-edge linguistic knowledge and as a result produce more complex language.

### **Table 2 about here**

#### 4.2. Accuracy

In Table 3, the descriptive and inferential statistics indicate that careful online planners who performed the structured or unstructured tasks (Groups 1 and 3) have produced more accurate language than those who performed a structured or unstructured task under pressured online planning condition (Groups 2 and 4). As it is illustrated in the Table, the differences between careful/pressured online planning groups working with different types of tasks did not reach the level of statistical significance. Therefore, as the findings suggest, it is careful online planning – not the task structure – which positively affects the accuracy of L2 learners' oral speech.

As for careful online planning, this finding is similar to those of previous studies reviewed in this article (Ahmadian, in press b; Ahmadian & Tavakoli, 2011; Yuan &

Ellis, 2003). However, as far as task structure is concerned, the results do not confirm the findings of Tavakoli and Skehan (2005) and Tavakoli and Foster (2008) in that in the present study no linkage was found between task structure and the accurate production of language. This discrepancy between the results could be attributed to individual difference variables (e.g. working memory capacity or language aptitude) or to the fact that the studies were all carried out under laboratory condition which lacks ecological validity.

One plausible way to account for the positive effects of careful online planning on accuracy of speech is to posit that whereas under careful online planning condition participants fall back on their explicit knowledge and are thus able to formulate more accurate sentences during the formulation stage of speech production, under pressured online planning condition they are likely to use their implicit knowledge of language. This seems to be a reasonable hypothesis considering Dekeyser's (2003) argument that producing language under time pressure induces speakers to access and consult their implicit knowledge.

### **Table 3 about here**

#### 4.3. Fluency

As for fluency, the results presented in Table 1 point to interesting differences among the four groups. On the one hand the findings indicate that the speech produced by careful online planners working with the structured task (Group 1) is more fluent than those who performed the unstructured task under careful and pressured online planning condition (Groups 3 and 4). On the other hand, the Table shows that performing a structured task under pressured online planning condition (Group 2) induces speakers to produce more fluent language as compared to all the three groups. This findings indicates that although careful online planning gives rise to the production of dysfluent language – a finding which corroborates the results of previous online planning studies – task structure has the potential to offset the detrimental effects of careful online planning on fluency and enable careful online planners to produce the kind of language which is reasonably more complex, accurate, and fluent.

On balance, the findings of this study provide support for the results of Tavakoli and Skehan (2005), Skehan and Foster (1999), and Tavakoli and Foster (2008) that unlike unstructured tasks, a task with a clear and tight storyline structure has positive and beneficial effects on L2 oral fluency. Segalowitz (2007) operationalized fluency in terms of two important dimensions: (a) attention control which pertains to the process through which a language user focuses and refocuses attention in real time while the message is being communicated; and (b) access fluidity, which deals with learners' ability to link words and expressions to their meaning. Taking into account this operational definition, one could suggest that although careful online planning of speech might detract from the amount of attentional resources available and thus reduces the speed with which one produces language, if a task has a relatively clear time line and macrostructure the performers will have more processing resources available to devote to focusing and refocusing attention in real time and linking words and expressions to their meanings and, hence, producing more fluent language.

To sum up, the results revealed that performing a structured task under careful online planning is the best combination of task structure and online planning condition since it enables the speakers to produce the kind of language which enjoys complexity, accuracy, and fluency. This combination might enable language pedagogy to foster the “balanced language development” in which the development of fluency is matched by the development of accuracy and complexity and, therefore, “simply transacting tasks (and expressing meanings) is less likely to compromise longer-term interlanguage restructuring” (Skehan, 1998, p. 98).

**Table 4 about here**

## 5. Conclusion

Throughout the past two decades a group of SLA researchers with a cognitive bent have tried to identify task design features and implementation variables which might reduce the cognitive load of tasks and channel task performers’ attentional capacity to different dimensions of language in predictable ways (Skehan, 1998). In this study we examined the combined effects of online planning conditions and task structure on the CAF triad. Here is a brief summary of the results of this study which could be of importance to both SLA researchers and language teachers:

- Task structure has a positive effect on the fluency of speech.
- Careful online planning has a positive effect on the complexity and accuracy of L2 speech.
- Careful online planning has a detrimental impact on the fluency of L2 speech.
- A clear and tight task structure has the potential to compensate for the adverse effects of careful online planning on fluency and therefore performing a structured task under careful online planning condition might result in reasonably more complex, accurate, and fluent speech.

Of course, since this study was conducted under laboratory condition – and thus lacks ecological validity – the findings need to be used with due caution.

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### **Appendix A: examples for structured and unstructured tasks**

An example of a **structured narrative task** is to ask participants to narrate the story of a series of pictures about a family who are having lunch in a restaurant. Obviously, since what happens in a restaurant is based on a script and the logical relationship among the elements of the story are clear, this task could be considered as ‘structured’.

However, asking participants to narrate the story of a series of pictures which depict doing a scientific experiment in a laboratory might be considered as **unstructured**. This is mainly because scientific experiments are unfamiliar and unappealing to many language learners and most people do not have a script for what happens in a laboratory. Therefore, the logical unfolding of the story might not be readily clear to the task performers.

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Notes

<sup>i</sup> The apparent discrepancy among the findings of these studies might be attributed to the different discourse analytic measures used to assess complexity, accuracy, and fluency (see Norris & Ortega, 2003). For example, whereas in Foster and Skehan's (1999) study c-units were used as an index of subordination, in Tavakoli and Foster's (2008) investigation AS-units were used to assess the amount of subordination. Also, since there is a lack of uniformity in the methods that SLA researchers normally use to assess the language proficiency of research participants (see Tremblay, 2011; Ellis, 2009a) a part of this discrepancy could be ascribed to the individual differences in terms of second language proficiency.