

Chapter VII

Further results

7.1 Introduction

In the previous chapter, the results associated with the four main hypotheses in this dissertation were presented. The results of the first hypothesis showed the effects of increasing complexity along planning time on the three areas of production. Hypothesis 2 dealt with the impact of increasing complexity along the +/-Here-and-Now variable under both planned and unplanned conditions. Hypothesis 3 tried to provide an answer to whether complex tasks benefit more from planning time than simple ones. Finally, Hypothesis 4 was an attempt at discovering whether the effects of increasing complexity along the +/- Here-and-Now variable would be enhanced by planning time or not.

This chapter will begin with the exploration of alternative comparisons among conditions. This will be followed by an examination of the results of the affective variables as influenced by Task Complexity. Linked to these results, the correlations between affective variables and production variables will be presented, as well as the correlations existing among affective variables. Following these, the results of examining production as mediated by perception will be described. Finally, the results connected to the potential influence of sequence on production will be analyzed.

7.2 Further analyses comparing conditions

Because of the nature of the two hypotheses analyzed in Chapter VI, only a certain pattern of comparison between conditions has been made for each hypothesis. Thus, Hypothesis 1, which was concerned with the effect of planning time on production, only compared Condition 1 (Planned Here-and-Now tasks) to Condition 2 (Unplanned Here-and-Now). Condition 3 (Planned There-and-Then task), on the other hand, was only contrasted with Condition 4 (Unplanned There-and-Then tasks). Hypothesis 2, which compared the two levels of Task Complexity along the +/- Here-and-Now, only compared Condition 1 (Planned Here-and-Now) to Condition 3 (Planned There-and-Then), and Condition 2 (Unplanned Here-and-Now) to Condition 4 (Unplanned There-and-Then).

However, other combinations remained to be explored. Reported below are the results of comparing the simplest condition to the most complex one, that is, Condition 1 (Planned Here-and-Now) to Condition 4 (Unplanned There-and-Then). After that, Condition 2 (Unplanned Here-and-Now) is compared to Condition 3 (Planned There-and-Then) (See Table 39 for a summary).

As far as fluency is concerned, when stories were narrated with 10 minutes' planning time and in the Here-and-Now (Condition 1), learners were significantly more fluent than when doing so after a 50-second preparation time and in the There-and-Then (Condition 4). This was confirmed by both Unpruned Speech Rate A ($p < .01$) and by Pruned Speech Rate B ($p < .01$). For lexical complexity, learners used significantly more complex language when they performed in the Here-and-Now

after 10 minutes of planning time (Condition 1) than when doing so in the There-and-Then and after less than a minute of planning time (Condition 4). This is confirmed by the percentage of lexical words ($p<.01$), by the ratio of lexical to function words ($p<.01$), and by Guiraud's Index ($p<.01$). Structural complexity, exactly in the same way as with the other comparisons, did not present any significant differences between the simplest condition (Condition 1) and the most complex condition (Condition 4). Finally, accuracy presented mixed results for the comparisons at stake. Hence, the percentage of error-free T-Units did not discriminate between planned Here-and-Now tasks (Condition 1) and unplanned There-and-Then ones (Condition 4). The target-like use of articles, though, did portray significant differences ($p<.05$) between the simplest (Condition 1) and the most complex version of tasks (Condition 4), suggesting that learners were more accurate when performing in the present tense, while looking at the strips, and after 10 minutes of planning time than when narrating the strips from memory, in the past tense, and after a little less than a minute of planning time. As for the percentage of self-repairs, Condition 4 generated a significantly higher ($p<.05$) percentage of self-repairs than Condition 1, suggesting that learners monitored their speech more often when carrying out the most complex version of the tasks. The ratio of repaired to unrepaired errors also showed that Condition 4 generated a significantly higher ($p<.01$) ratio of repaired to unrepaired errors than Condition 1.

When comparing Condition 2 and Condition 3, no significant differences were found between the two conditions for either Rate A or Rate B. As for lexical

complexity, the three measures showed significant differences between unplanned Here-and-Now (Condition 2) tasks and planned There-and-Then ones (Condition 3), the latter generating a significantly higher percentage of lexical words ($p < .05$), ratio of lexical to function words ($p < .05$), and higher Guiraud's Index ($p < .01$). Structural complexity did not display any significant differences between unplanned Here-and-Now tasks (Condition 2) and planned There-and-Then ones (Condition 3). With regard to accuracy, the percentage of error-free T-units did not show any differences between unplanned Here-and-Now narratives (Condition 2) and planned There-and-Then stories (Condition 3), and neither did the target-like use of articles between the second simplest one (Condition 2) and the second most complex one (Condition 3). As for the percentage of self-repaired errors, learners performing tasks under Condition 3 self-repaired a significantly higher number of times ($p < .01$) than when doing so under Condition 2. Finally, There-and-Then tasks performed under planned conditions (Condition 3) led learners to repair errors a significantly greater number of times ($p < .01$) than when narrating planned Here-and-Now tasks (Condition 2).

Table 39

Further analyses among conditions: planned Here-and-Now tasks (Condition 1) compared to unplanned There-and-Then ones (Condition 4), and unplanned Here-and-Now tasks (Condition 2) compared to planned There-and-Then ones (Condition 3).

Measures	Comparison of		Comparison of	
	Condition 1 Planned Here-and-Now	Condition 4 vs. Unplanned There-and-Then	Condition 2 Unplanned Here-and-Now	Condition 3 vs. Planned There-and-Then
Fluency	Speech Rate A	Planned Here-and-Now tasks generated higher fluency.	No differences were found.	
	Speech Rate B	Planned Here-and-Now tasks generated higher fluency.	No differences were found.	
Lexical Complexity	% of Lexical Words	Planned Here-and-Now tasks led to a higher percentage of lexical words.	Planned There-and-Then tasks generated a higher percentage of lexical words.	
	Ratio Lexical to Function	Planned Here-and-Now tasks led to a higher ratio of lexical to function words.	Planned There-and-Then tasks triggered a higher ratio of lexical to function words.	
	Guiraud's Index	Planned Here-and-Now tasks generated higher levels of lexical richness.	Planned There-and-Then tasks had as a consequence higher levels of lexical richness.	
Structural Complexity	S-Nodes per T-units	No differences were found.	No differences were found.	
	Error-Free T-units	No differences were found.	No differences were found.	
Accuracy	TLU of Articles	Planned Here-and-Now tasks generated more accurate use of articles.	No differences were found.	
	% of Self-Repairs	Unplanned There-and-Then tasks caused learners to self-repair more often.	Planned There-and-Then tasks caused learners to self-repair more often.	
	Repaired to Unrepaired	Unplanned There-and-Then tasks caused learners to repair a higher proportion of errors.	Planned There-and-Then tasks led learners to repair a higher proportion of errors.	

7.3 Affective variables results

We now turn to the perception learners had of tasks regarding their level of difficulty, how stressful they found performance to be, their degree of confidence in narrating the stories, as well as their interest in the tasks and their motivation to perform similar tasks in the future. As was said in Section 5.4, questionnaires were provided immediately after the performance of the two tasks in both sessions. In addition to that, in Session 2 a protocol analysis was carried out to find out what learners understood by the questions related to each affective variable (See Protocol Analysis results Section 7.6).

Firstly, it was thought important to measure the potential differences in perception caused by story type, since some plots may have been perceived as more difficult or interesting than others. Table 40 on facing page includes the descriptive statistics of comparing the five affective variables by story type. Repeated-measures analyses of variance for each measure did not display any significant main effects among the stories for any of the measures. Therefore, it can be concluded that all of the stories were perceived to be equally difficult and stressful; the level of confidence during performance was the same; and so was the perception of the interest and motivation among learners when performing the stories.

Table 40

Descriptive statistics for affective variables by story type: difficulty, stress, confidence, interest, and motivation.

Dependent Variable	Story 1				Story 2				Story 3				Story 4			
	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>K</i>	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>K</i>	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>K</i>	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>K</i>
Difficulty (n= 48)	4.77	1.48	.331	-.607	4.75	1.96	.189	-.873	4.69	1.81	.400	-.488	5.13	1.85	-.002	-1.051
Stress (n=48)	5.08	1.86	.263	-.762	5.52	2.08	-.325	-.566	5.54	1.82	-.511	.174	5.40	1.74	-.493	-.435
Confidence (n=43)	4.38	1.73	.028	-.744	4.87	1.62	.120	-.675	5.07	1.55	-.224	-.154	5.15	1.47	.247	-.806
Interest (n= 44)	7.04	1.21	-.160	-.099	7.33	.977	.340	-.795	7.06	1.13	-.054	-.621	7.09	1.10	.030	-.280
Motivation (n=41)	7.64	.942	-.065	-.858	7.70	.916	-.249	-.662	7.58	1.09	-.331	-.290	7.15	1.45	-.560	-.369

Table 41

Repeated measures ANOVA of affective variables by story type.

Dependent Variable	<i>Mauchly's sphericity</i>	<i>Df</i>	<i>Sum of Squares</i>	<i>F-value</i>	<i>p-value</i>	η^2
Difficulty	n.s.	132,3	5.625	.737	n.s.	n.s.
Stress	n.s.	132,3	6.437	1.206	n.s.	n.s.
Confidence	n.s.	117,3	10.591	2.552	n.s.	n.s.
Interest	n.s.	120,3	1.724	1.620	n.s.	n.s.
Motivation	n.s.	111,3	1.293	1.080	n.s.	n.s.

Df= Degrees of freedom; η^2 = partial eta squared (effect size).

The next step was to calculate whether there were any differences in perception along the five affective variables when stories were performed under the four levels of Task Complexity. Table 42 on the facing page shows the mean and standard deviations of the four conditions for each of the 5 variables.

Repeated measures ANOVAs for the five affective variables found a significant main effect for the perception of difficulty, stress, and confidence, whereas no significant main effects were found for interest or motivation. Table 43 specifies the main effects and the significance level reached by each of the five measures.

Following this section, a detailed analysis of the impact of the different levels of Task Complexity on learners' subjective perception of the tasks is provided. For each measure, each condition is considered against all the other conditions, and graphics are provided to visually represent the impact of each condition on the affective perception of learners.

Table 42

Descriptive statistics for affective variables by condition: difficulty, stress, confidence, interest, and motivation.

Dependent Variable	Story 1				Story 2				Story 3				Story 4			
	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>K</i>	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>K</i>	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>K</i>	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>K</i>
Difficulty (n=48)	4.08	1.62	.442	-.283	5.08	1.55	.316	-.492	4.92	1.67	.279	-.866	5.13	1.99	-.076	-1.053
Stress (n=48)	6.10	1.58	.088	-.795	5.15	2.06	-.143	-.872	5.23	1.76	-.146	-.742	5.06	1.92	-.352	-.504
Confidence (n=43)	5.29	1.42	-.039	-.435	4.73	1.79	.012	-.922	4.7	1.68	-.072	-.191	4.31	1.81	-.154	-.538
Interest (n=44)	7.12	1.06	-.259	.566	7.16	1.22	.079	-.782	7.19	1.13	-.301	.415	6.98	1.12	.042	-.452
Motivation (n=41)	7.48	1.20	-1.021	1.423	7.21	1.50	-.726	.305	7.46	1.22	-.523	-.359	7.19	1.39	-.940	-.742

M= Mean; SD= Standard deviation; Sk= Skewness; K= Kurtosis

Table 43

Repeated measures ANOVA of affective variables by condition.

Dependent Variable	<i>Mauchly's sphericity</i>	<i>Df</i>	<i>Sum of Squares</i>	<i>F-value</i>	<i>p-value</i>	η^2
Difficulty	n.s.	132,3	38.667	5.064	.002**	.103
Stress	n.s.	132,3	33.729	6.316	.000**	.126
Confidence	n.s.	117,3	23.354	7.785	.001**	.116
Interest	n.s.	120,3	2.255	2.118	n.s.	n.s.
Motivation	n.s.	132,3	3.542	1.872	n.s.	n.s.

Df= Degrees of freedom; η^2 = partial eta squared (effect size).

**p*< .05

***p*< .01

7.3.1 Difficulty

Learners perceived differences in the difficulty of performing tasks under different conditions. Results suggest that both the lack of planning time and the increased level of complexity of There-and-Then tasks contributed to tasks being perceived as more difficult. For both Here-and-Now and There-and-Then tasks, having planning time led learners to assess tasks as easier, and complex There-and-Then tasks were thought to be more difficult under planned and unplanned conditions. Differences in perception of difficulty, however, only reached significance when Condition 1 was compared to all the other conditions. Tasks performed in the present, while looking at the pictures, and with 10 minutes planning time (Condition 1) were found to be significantly easier ($p < .01$) than tasks also performed in the Here-and-Now but with only 50-seconds' planning time. Tasks under Condition 1 were also perceived to be easier to narrate ($p < .05$) than tasks that had 10 minutes of planning time and were narrated in the past and without looking at the pictures (Condition 3). Tasks that were carried out under Condition 4, the most complex of the four conditions, were also apprehended as significantly more difficult ($p < .01$) than tasks done under Condition 1. No significant differences were found among any of the other conditions. Hence, tasks narrated under conditions 2, 3, and 4 triggered similar levels of perception of difficulty (See Figure 37 on facing page).

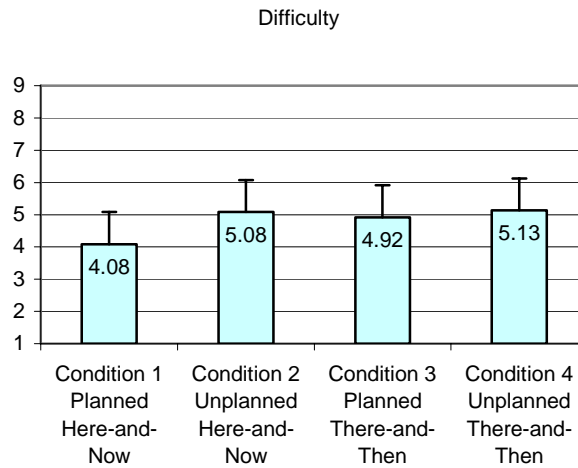


Figure 37. Perception of difficulty¹.

7.3.2 Stress

Stress followed a similar pattern to that of the perception of difficulty. Planned tasks triggered lower levels of stress than unplanned ones, and so did Here-and-Now tasks as compared to There-and-Then ones. Condition 1, which asked learners to do the tasks after 10 minutes of planning time and in the Here-and-Now, was perceived to be significantly less stressful than any of the other conditions. Stress was significantly higher ($p < .01$) for Here-and-Now tasks with almost no planning time (Condition 2) as compared to Here-and-Now tasks with 10 minutes planning time (Condition 1). Both planned and unplanned There-and-Then tasks were also found to be significantly more stressful ($p < .01$ for Condition 3; $p < .01$ for Condition 4) than planned Here-and-Now ones (Condition 1). Again, no significant differences

¹ On the 9-point Likert scale, 1 would correspond to least difficult and 9 to most difficult. See affective variables questionnaire, Appendix I.

among unplanned Here-and-Now, and planned and unplanned There-and-Then tasks were detected by pairwise comparisons (See Figure 38 below).

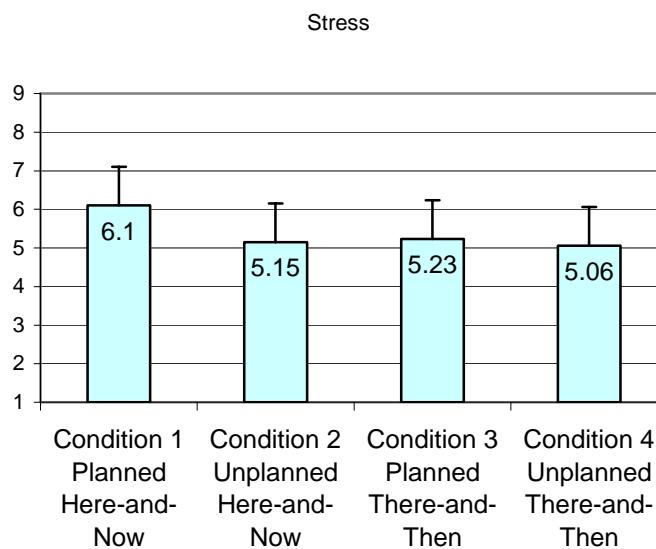


Figure 38. Perception of stress².

7.3.3 Confidence

Confidence in the performance of the tasks progressively declined as tasks were made increasingly more complex along the two variables. Hence, learners were more confident they had performed better when narrating under the simplest of all conditions, that is, Condition 1. Condition 1 displayed significantly higher levels of confidence than Condition 2 ($p < .01$), Condition 3 ($p < .05$), and Condition 4

² On the 9-point Likert scale, 1 corresponds to most stressful and 9 to least stressful.

($p < .01$). Pairwise comparisons did not show any significant differences among the 3 latter conditions (See Figure 39 below).

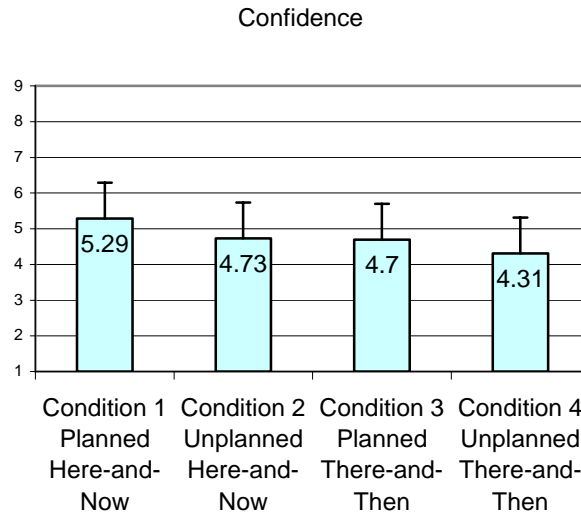


Figure 39. Perception of confidence³.

7.3.4 Interest

As was seen in Table 43, learners' perception of interest did not vary significantly from one condition to another. Figure 40 on the following page shows that giving learners planning time seemed to contribute to a slightly higher interest in the tasks, and within planned conditions, There-and-Then tasks displayed a slightly higher interest than Here-and-Now ones. In the absence of planning time, however, the Here-and-Now task was preferred over the There-and-Then one.

³ On the Likert scale, 1 would be the lowest level of confidence and 9 the highest level.

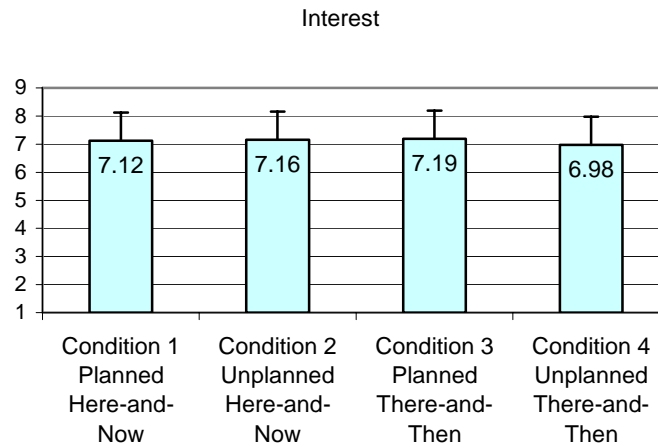


Figure 40. Perception of interest⁴.

7.3.5 Motivation

As was the case with interest, motivation was favored by the 10 minutes of planning time for both simple and complex tasks. Under planned conditions, Here-and-Now tasks were thought to be slightly more interesting than There-and-Then ones, a pattern which was similar for tasks performed with less than 1 minute of planning time. These differences, however, were not significant (See Figure 41 on facing page).

⁴ On the Likert scale, 1 corresponds to least interesting and 9 to most interesting.

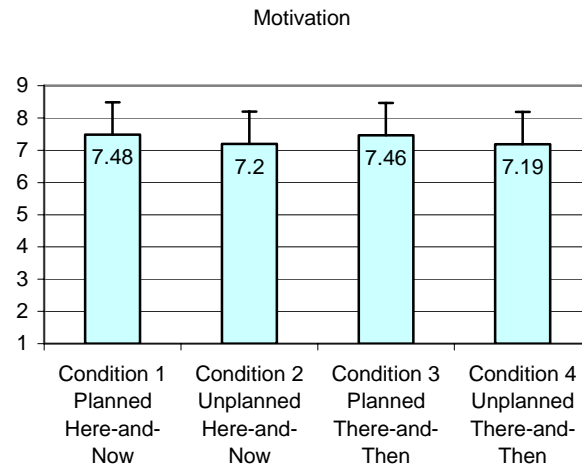


Figure 41. Perception of motivation⁵.

7.4 Correlations between production and affective variables

This section explores the correlations existing between the quality of production, as expressed by the 10 variables used in this experiment, and the affective perception of learners of the four levels of complexity. As will be further detailed, the correlations existing between production variables and affective ones differ considerably depending on the level of Task Complexity under which they were performed (See Table 44 on the following page).

⁵ On the 9-point Likert scale, 1 corresponds to the lowest level of motivation and 9 to the highest one.

Table 44.

Correlations between production variables and affective variable for each condition¹.

Conditions →	Difficulty				Stress				Confidence				Interest				Motivation			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Rate A				-.229*	.413**					.479**	.307*									
				.043	.413					.001	.038									
				40	40					40	40									
Rate B				-.432**	.334*					.337**	.427**									
				.002	.023					.010	.002									
				43	43					43	43									
% Lexical																				
Lex / Func.																				
Guiraud																				
S-Nodes T-Units						.428**														
						.002														
						47														
Error-Free T-Units																				
TLU of Articles												-.387**								
												.008								
												43								
% of Self-Repairs (n= 45)														.304*						
														.045						
														45						
Repaired (n= 40)														.304*						
Unrep. (n= 40)														.045						
														40						

* $p < .05$
 ** $p < .01$

¹ For each correlation, the 'r', p-level, and 'n' are reported. Non-significant correlations have been omitted from the chart.

Under Condition 1 (i.e. the simplest version of tasks) difficulty only showed a negative correlation with ratio of repaired to unrepaired errors ($r = -.327, p < .05$), which suggests that the more difficult the task was perceived to be, the fewer errors were repaired. Stress, on the other hand, correlated positively with both Speech Rate A ($r = .413, p < .01$) and Speech Rate B ($r = .334, p < .05$), which indicates that the more relaxed they felt during performance, the faster they spoke. Confidence followed suit with regard to fluency, since both Speech Rate A ($r = .479, p < .01$) and Speech Rate B ($r = .377, p < .05$) correlated positively with confidence, which indicates that the faster they spoke, the higher they rated their confidence in how well they had performed.

The second simplest condition, Condition 2, did not show any correlations between task difficulty and any of the production measures. Stress positively correlated with structural complexity ($r = .428, p < .01$), which suggests that after a short time to plan tasks, learners produced more structurally complex language if they felt relaxed during performance. Interest also positively correlated with both the percentage of self-repairs ($r = .304, p < .05$) and the ratio of repaired to unrepaired errors ($r = .304, p < .05$). A possible interpretation would be that under unplanned conditions and in the Here-and-Now, the more interesting the task was perceived to be, the more they monitored their own speech. Another interpretation would be that when they corrected their speech and provided correct solutions to problems, they found the task more interesting.

Under Condition 3, no correlations were found between affective variables and the 10 measures of Task Complexity.

Finally, Condition 4 also displayed some correlations between Task Complexity and perception. Hence, both Speech Rate A ($r = -.299, p < .05$) and Speech Rate B ($r = -.432, p < .01$) correlated negatively with difficulty, which confirms that the more difficult the task was perceived to be, the less fluent its narration was. Fluency was also associated with confidence. Both Speech Rate A ($r = .307, p < .05$) and Speech Rate B ($r = .427, p < .01$) correlated with confidence, which means that the faster they spoke, the more confident they felt about their performance. Finally, the TLU of articles correlated negatively with the level of perceived difficulty ($r = -.387, p < .01$). Protocol analysis, which will be dealt with in Section 5.4.8, may provide an answer to this negative correlation.

7.5 Correlations among affective variables

Another interesting aspect of learners' perception is how affective variables correlated with one another. Table 45 below shows the correlations among the five affective variables.

Table 45

Correlations among affective variables⁶.

Dependent Variables	Condition 1	Condition 2	Condition 3	Condition 4
Difficulty & Stress	-.390** .006 48		-.452** .001 48	-.539** .000 48
Difficulty & Confidence			-.608** .000 48	-.551** .000 48
Difficulty & Interest		-.331* .026 45		
Difficulty & Motivation		-.324* .025 48		
Stress & Confidence	.507** .000 48	.683** .000 48	.739** .000 48	.716** .000 48
Stress & Interest				
Stress & Motivation		.353** .014 48		
Confidence & Interest				
Confidence & Motivation				
Interest & Motivation	.567** .000 48	.584** .000 45	.565** .000 45	.550** .000 45

* $p < .05$

** $p < .01$

⁶ Only significant correlations are included in the chart, and for each correlation, the 'r', p-level, and 'n' are reported.

There is a negative correlation between difficulty and stress for all conditions except for Condition 2. This suggests that the more difficult a task was perceived to be, the more stressful it also was. Difficulty and confidence only correlated when narratives were performed in the There-and-Then, implying that the more difficult learners think a task is, the less confident they feel about performing it. Only under Condition 2 does difficulty correlate with interest and motivation, which would mean that the higher the perceived difficulty, the less interesting and motivating the task was found to be.

Stress and confidence correlate under all conditions, which may mean that they were interpreted in a similar way. Stress never correlated with interest, which can be interpreted to mean that no matter how stressful a task was perceived to be, interest did not change. Under Condition 2, stress correlated with motivation, again suggesting that when a task is performed in the Here-and-Now with very little time to plan, as stress increases motivation decreases.

Finally, confidence correlated with neither interest nor motivation and interest and motivation correlated in all cases.

7.6 Protocol analysis results

This section reports the results of the retrospective protocol analysis which, as already mentioned in Section 5.4, took place at the end of the second data collection session. Learners completed their affective variables questionnaires after Session 1 and after Session 2, and then they were asked to provide their subjective interpretation of the five variables in the questionnaire in either Catalan, Spanish, or English. Retrospective protocol analysis was preferred over introspection or think-aloud protocols, since it was the least disruptive method. Following Jourdenais (2001:357), focused, open-ended questions (See end of Appendix B) were used in order not to bias their answers. Also, as suggested by Greene and Higgins (1994), contextual cues were provided when necessary so as to help learners reconstruct what they had considered when answering the questionnaire. Their answers were then transcribed for further analysis.

Although qualitative in nature, learners' answers to the researcher's questions about the five variables in the questionnaire were qualitatively analyzed and then quantified. In order to analyze what learners meant by difficulty (i.e. I thought this task was easy/I thought this task was difficult), stress (i.e. I felt frustrated doing this task/I felt relaxed doing this task), confidence (i.e. I did not do this task well/I did this task well), interest (i.e. This task was not interesting/This task was interesting), and motivation (i.e. I don't want to do more tasks like this/I want to do more tasks like this), the transcripts of learners' answers to the questions were carefully

considered. Each answer was divided into different items (e.g. when they assessed whether it was easy or difficult, they may have considered either the “story” or the “task”, or both) which were then inductively grouped into categories, and the number of references to each category was counted to establish percentages. It is important to note that most learners’ answers were not monolithic, and they included more than one item, as in the example below:

Researcher: “When you think of easy and difficult, what do you actually consider?”

S1: “I consider the vocabulary that I have to use and have er I have more time and to prepare it and if the story is long or short er if I have to to use past tense or present tense because it’s more it’s easier to use present I don’t know it’s easier.”

Table 46 on the facing page shows the answers provided by learners during protocol analysis. They have been organized from the most frequent answer to the least frequent one. Percentages are provided for each answer.

Table 46

Protocol analysis results.

Variable	Learners' answers
Difficulty	<ul style="list-style-type: none"> • Whether they could “find” or they “knew” the words they needed to narrate the stories (33.8%). • The clarity of the storyline and pictures (23%). • Whether they had to narrate the story in the present or in the past (15.3%). • The time they had had to plan the narration (10.7%). • Their performance in general (9.2%). • The rest of their answers included references to their level of proficiency, story length, the difficulty of language in general, their ability to memorize what they had planned, and their interest in the story.
Stress	<ul style="list-style-type: none"> • Frustration was associated with not finding the words they needed to narrate the stories (27.6%). • Their awareness of not doing a good job while they narrated (18.4%). • Their rating of stress depended on their perception of difficulty (12.3%). • Dysfluency as a source of stress (7.6%). • Whether the story was in the present or in the past (6.1%). • Whether they had been able to express themselves in general (6.1%). • The rest of their answers made references to the time they had had to prepare, their inability to understand the story, problems with grammar, the purpose of the experiment, their level of proficiency, personality, the fact that they were being recorded, and their need to concentrate.
Confidence	<ul style="list-style-type: none"> • They thought they had not done a task well when they had not found the words they needed, had used wrong words, or detected errors in their narration (25.3%). • Performance was assessed against their proficiency level or their own “standards of quality” or how well they had performed in general (21.1%). • Confidence depended on their level of stress (15.2%). • The rest of the answers included references to the amount of time they had to plan, making mistakes in the past tense, forgetting what they wanted to say, not being understood by others, the difficulty of the task, not having prepared well enough, or even their mood.
Interest⁷	<ul style="list-style-type: none"> • Interesting because it had given them an opportunity to practice and improve their English (25%). • The task in general (12.5%). • The fact that it was different from their previous learning experiences (10.7%). • Interesting was interpreted as challenging (8.7%). • Others said that they had found the tasks interesting because they could get something out of it, or because it had been good for their fluency.
Motivation⁸	<ul style="list-style-type: none"> • They wanted more practice to improve their English (35%). • In the same way as they interpreted interest (17.7%). • They wanted to repeat the task in general (13.3%). • Their motivation to do similar tasks in the future depended on the degree of difficulty (12.3%). • Others affirmed that to them it meant if they wanted to repeat the experiment which they had seen as useful or helpful.

⁷ It is important to note that although a majority interpreted ‘interest’ as referring to the task (71.4%), others interpreted it as referring to the story (23%), and only a small percentage to the experiment (5.3%).

⁸ The majority interpreted the question as referring to the task itself (65.5%), while others (19.8%) referred to the experiment.

7.7 Summary of affective variables results

In sum, results of the affective variables questionnaires suggest that increasing task demands along planning time and the +/- Here-and-Now variable simultaneously made tasks be perceived as more difficult and stressful, and generated lower levels of confidence. Yet, such an increase in task demands did not seem to affect their interest or motivation in carrying out the tasks in a significant way (See Table 47 on facing page for a summary).

7.8 Production as mediated by perception

At least one study (Robinson, 2001a) has reported on the interaction existing between production outcomes and subjective perception of performance. Even if task demands are uniform, which should theoretically affect performance in the same way, the subjective perception of how the task is being performed may affect how learners meet the demands of the task.

In order to check the influence of perception on production, the 48 subjects were divided into two groups depending on their perception of difficulty and stress. Hence, the low difficulty/stress group was formed of learners who found tasks to be easier and felt more relaxed while performing them, while the high

Table 47

Summary of affective variables results.

Measure	As affected by Task Complexity	Correlation with production variables	Correlation with other affective variables	Protocol analysis
Difficulty	Task perceived as more difficult when Task Complexity was increased along both planning time and the +/- Here-and-Now variable. Condition 1 was perceived as significantly easier compared to the others, which were perceived as being equally difficult.	Difficulty negatively correlated with fluency, suggesting that the faster learners spoke, the lower they rated the difficulty of the task.	Correlated with stress under most conditions, which suggests that the more difficult, the more stressful. Also correlated with confidence in There-and-Then tasks, suggesting that the more difficult, the more stressful. Negatively correlated with interest and motivation under Condition 2.	Protocol analysis showed that when learners could not find or did not know the words to narrate a story, they rated the task as difficult, stressful, and they thought they had not done it well. Difficulty was also associated with how easily learners understood the storyline or pictures, whether it had to be narrated in the present or past, and with the time they had had to plan.
Stress	As Task Complexity increases, tasks are perceived to be more stressful, both along planning time and the +/- Here-and-Now variable. Condition 1 was perceived as easier than other conditions.	Correlated positively with fluency, suggesting that the faster learners spoke the more relaxed they felt. It also correlated with structural complexity. The less stressful, the more complex.	Correlated with confidence under all conditions, which can be interpreted as the more stressful the less confident they felt about the task. It correlated with motivation under Condition 2.	Stress was also related to monitoring of performance, and it increased as learners realized they were performing poorly and making mistakes, because they found the task difficult.
Confidence	Increases in Task Complexity made learners feel less confident about performing the tasks. Again, Condition 1 was thought to be less stressful than the other conditions.	Correlated positively with fluency. The more fluently learners spoke, the higher they rated their performance.	Confidence negatively correlated with difficulty and positively with stress, suggesting that less confident they felt, they more difficult and stressful they perceived tasks to be.	Perception of confidence was similar to that of stress. In addition to not finding words, confidence was assessed against the learners' own proficiency, standards of quality, and detection of errors.
Interest	Increases in Task Complexity did not affect the perception of interest.	Correlated with the percentage of self-repairs, suggesting that the more they corrected themselves, the more interesting they found the task.	Interest correlated positively with motivation and only negatively with difficulty under Condition 1.	Interest was mainly interpreted as the opportunity to practice and improve their English but also against previous learning experiences, and for some it was a synonym of "challenging".
Motivation	Increases in Task Complexity did not affect the perception of motivation.	Did not correlate with any production variable.	A similar pattern to that of interest was found.	Motivation was interpreted in a similar way to interest but it referred to the opportunity to practice and improve in the future.

difficulty/stress group was formed of subjects who perceived tasks as rather difficulty and stressful⁹.

Although the results reported above did not reach significance, they point towards a certain impact of affective perception on production. Hence, when tasks were made more complex along the +/- Here-and-Now variable, learners in the low difficulty/stress group showed a trend towards higher levels of lexical complexity, as shown both by the percentage of lexical words and the ratio of lexical to function words. This, however, only happened when planning time was short. When measuring the percentage of error-free T-units, the There-and-Then tasks triggered higher levels of accuracy than the Here-and-Now ones for the low difficulty/stress group, under conditions of 10-minute planning time. Finally, the TLU of articles showed a very strong trend ($p=.06$) for learners in the low difficulty/stress group to be more accurate when tasks were made more complex along the +/- Here-and-Now variable under unplanned conditions.

It can therefore be concluded that affective perception may play a role in the way learners meet task demands. This discussion, however, will take place in Chapter VIII.

⁹ This was done by adding the scores of Difficulty (i.e. if they rated the task with a 7 that figure was used in the computation) and Stress (i.e. if they rated the task 3 then 6 was the figure used in the computation) and obtaining the average of the ratings of the four conditions.

7.9 Sequencing results

The following is both a quantitative and qualitative analysis of the effects of sequence on production. In this research a Latin square (See section 5.2) design was used to counterbalance any effect of sequence of condition, and no hypotheses were advanced regarding the effects of sequencing on the different dimensions of production. However, it was pointed out that repeated-measures analyses of variance with sequence as the *between subjects* factor would be performed for each of the dependent variables in order to ascertain any effects of sequence on production.

As far as fluency is concerned, repeated measures analyses with sequence as the *between subjects* variable did not show any significant interaction between the two variables for either Rate A or Rate B. This suggests that differences among the different levels of Task Complexity, that is, differences in the simultaneous manipulation of planning time and cognitive complexity could override any differences in the sequence of conditions under which each group of learners narrated the tasks.

The interaction between task condition and task sequence displayed significant levels for the percentage of lexical words ($p < .01$) and the ratio of lexical to function words ($p < .01$). Although *post hoc* tests for sequence did not reveal any significant differences between the four groups because the number of subjects per group ranged from just 9 to 12, with a more descriptive analysis it can be observed that sequence 3 generated higher levels of lexical complexity than the other three

sequences. Figures 42 and 43 show how conditions 3 and 4 displayed higher levels of lexical complexity when performed under sequence 3. No significant interaction was found between condition and sequence for the Guiraud's index.

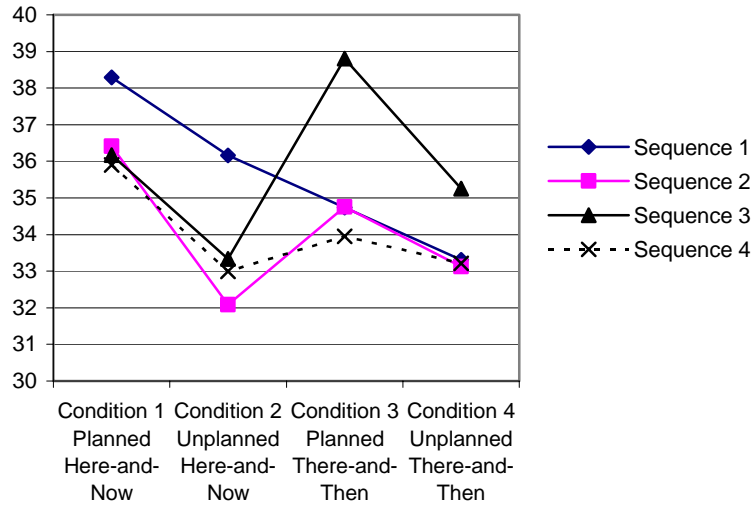


Figure 42. Interaction between condition and sequence for the percentage of lexical words.

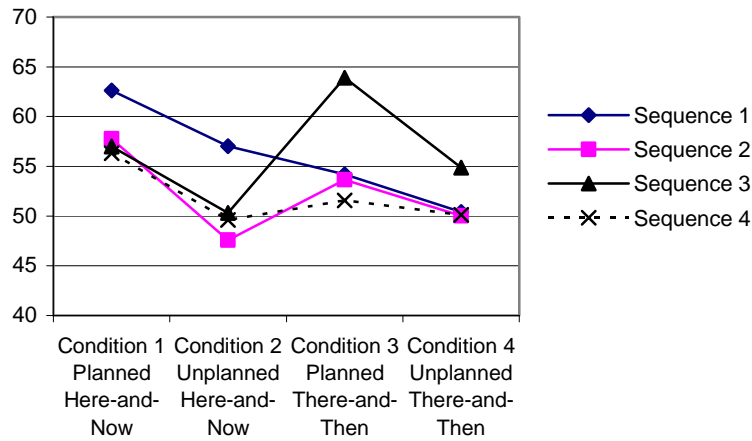


Figure 43. Interaction between condition and sequence for the ratio of lexical to function words.

Regarding the interaction between condition and sequence for structural complexity, although again sequence 3 triggered a higher level of structural complexity than any of the other sequences, these differences were not significant ($p=.054$). As we saw in Section 6.2, there was a significant interaction between story and condition for story 2. This interaction, nevertheless, did not affect the differences among the four conditions.

Finally, none of the measurements used to calculate accuracy displayed any significant interaction between condition and sequence, suggesting that the complexity differentials of the four combinations of the planning time and the Here-and-Now/There-and-Then variables were strong enough to override any differences in sequence of presentation.

7.10 Summary of Chapter VII

This chapter began with the comparison of conditions which were not covered by the four hypotheses in the previous chapter. Hence, planned Here-and-Now tasks (Condition 1) were compared to unplanned There-and-Then ones (Condition 4), and unplanned Here-and-Now tasks (Condition 2) was compared to planned There-and-Then ones (Condition 3). After this, statistical evidence was presented to describe the impact of the different conditions under which tasks were performed on learners' subjective perception of task difficulty, stress, confidence, interest, and motivation. Correlations were also investigated between production measures and

ratings of the five affective variables. Protocol analysis results were presented, which established learners' interpretations of the affective variables questionnaire. This was followed by a section devoted to measuring the impact of complexity on production as mediated by perception. Finally, the issue of sequencing was tackled by providing both a qualitative and quantitative analysis of the data.

Chapter VIII, the last chapter in this dissertation, provides an interpretation of and explanation for all the different sets of results described in this chapter.