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Task-based instruction: the effect of motivational and cognitive pre-tasks on second language oral French production

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TASK-BASED INSTRUCTION:

THE EFFECT OF MOTIVATIONAL AND COGNITIVE PRE-TASKS

ON SECOND LANGUAGE ORAL FRENCH PRODUCTION

by

Svetlana Borisovna Dembovskaya

An Abstract

Of a thesis submitted in partial fulfillment of the
requirements for the Doctor of Philosophy degree in
Teaching and Learning (Foreign Language and ESL Education)
in the Graduate College of
The University of Iowa

May 2009

Thesis Supervisor: Associate Professor L. Kathy Heilenman

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The results of the study did not show any significant differences between the motivation, cognitive and control treatments in terms of accuracy, fluency or complexity of their speech. Possible reasons contributing to the findings are discussed and interpretations are proposed. Specifically, it is suggested that strategies for motivating students and providing cognitive support for a language task need to be coupled with focus on the task content and/or form and addressed in the target language, in order to differentially affect the fluency, accuracy, and complexity aspects of L2 speech.

At the same time, the motivation group participants reported significantly higher interest in the task, higher perception of its value, and higher perception of their own autonomy, which indicates that the motivation pre-task did positively affect their motivation in relation to the task. Interest and value subcategories of the motivation survey were particularly sensitive to differences between the groups. It is suggested that regular support and promotion of positive motivational dispositions in a language class may, in the long run, result in an observable positive effect on certain aspects of the learners' speech.

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CERTIFICATE OF APPROVAL

PH.D. THESIS

This is to certify that the Ph.D. thesis of

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ABSTRACT

The study investigated the effects of a motivational and cognitive pre-tasks on oral task production by intermediate and low advanced college learners of French at a large public university in the United States. The motivation and cognitive groups engaged in an information-gap group discussion task in French following brief motivationally and strategically oriented pre-tasks conducted in the participants' native language, while the control group completed the discussion task without a pre-task. In addition, all groups completed a dictation as a measure of proficiency and a post-task motivation survey.

The results of the study did not show any significant differences between the motivation, cognitive and control treatments in terms of accuracy, fluency or complexity of their speech. Possible reasons contributing to the findings are discussed and interpretations are proposed. Particularly, it is suggested that strategies for motivating students and providing cognitive support for a language task need to be coupled with focus on the task content and/or form, addressed in the target language, in order to differentially affect the fluency, accuracy, and complexity aspects of the second language speech.

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LIST OF ABBREVIATIONS

L1	native language
L2	foreign language
NP/100	number of pauses per 100 words
LP/100	length of pauses per 100 words
SR	speech rate
SRpr	pruned speech rate
NW	total number of words
NSyl	total number of syllables
NSylpr	total number of pruned syllables
AS-unit	analysis of speech unit
EW	exact word scoring method
PS	phonetic similarity scoring method
CM	conveyance of meaning scoring method
SDT	Self-Determination Theory
OPI	Oral Proficiency Interview
IMI	Intrinsic Motivation Inventory
Year 2	refers to third semester students of French in the study
Year 3	refers to fifth and sixth semester students of French in the study

CHAPTER 1

INTRODUCTION

One of the most intriguing questions in instructed language learning research is why some students are more successful than others in learning a foreign language in the classroom. In the pursuit of the answer to this question, second language acquisition researchers have identified and studied a number of relevant characteristics and processes. We know that successful language learners use effective cognitive strategies as they approach learning tasks and spend their time efficiently by focusing on the essential aspects of the assigned task while disregarding minor distracting and unessential details. We also know that successful language learners have a large reservoir of motivation, which allows them to persist when confronted with difficulties during this long and not always smooth process of language acquisition.

Motivation in SLA

Motivational constructs have received a lot of interest in second language acquisition research in the past several decades. Ushioda (2009) summarizes reasons for interest in motivation in SLA: "Primarily, SLA researchers have been interested in motivation because it seems to play such an important role in whether learners learn or not, how much effort they put into learning, how long they persist at learning, and how successfully they learn a language" (p. 218).

The second language motivation research was influenced by two main directions: Gardner's social motivation research and the cognitive motivation research. Gardner and Lambert (1959, 1972) suggested that learners' attitudes to L2 community have a motivational effect on language learning progress and achievement. The two researchers differentiated between two motivational orientations: integrative orientation (desire to relate to speakers of the L2 community) and instrumental orientation (learning a language for the purposes of achieving some external reward or gain). Gardner and Lambert argued

for superiority of integrative motivation in promoting second language acquisition, although later studies did not consistently support this claim, with instrumental orientation correlating equally well or even better with language achievement then the integrative orientation (Noels et. al, 2006). Clement and Kruidenier (1983) investigated various motivational orientations and found that integrative orientation was relevant in contexts with a clear dominant language group, while four other motivational orientations emerged as relevant in all learning contexts: travel, friendship, knowledge, and the instrumental orientations. At the same time, the concept of integrative motivation appears to remain influential in the SLA literature, probably due to its intuitive appeal.

Beginning in the 1990s SLA motivation research was characterized by an interest in motivation constructs identified in the general psychology research and in their relevancy in the SLA context. The following motivational constructs were found relevant to and having an effect on second language acquisition: intrinsic and extrinsic motivation (e.g,. Noels, 2001), attribution beliefs (e.g., Williams, Burden, & Al-Baharna, 2001), goal setting (e.g., Clement & Kruidenier, 1983), self-confidence (Clement, Dornyei, & Noels, 1994; Gardner, Tremblay, & Masgoret, 1997). During the same period attention was given to more situated and classroom related constructs of L2 motivation. Crookes and Schmidt's (1991) article was influential in drawing attention to motivational processes in the classroom and stressing the need to study motivation on the classroom micro level as contrasted with Gardner's macro social approach. In Dornyei's (2005) terms, this "cognitive-situated period" of the study of motivation in the language classroom environment resulted in a growing number of studies of classroom level motivation, task level motivation, and motivation related to group dynamics. The study of L2 motivation from this angle reveals important motivational influences that can inform language teaching practice on a day-to-day and even a task-to-task basis. Dornyei and Kormos (2000) and Dornyei (2002) argue that considerably higher correlations can be achieved between motivation and some specific behavioral measures of learning (such as measures

of productiveness in their study: amount of speech and number of turns) than between motivation and some global measures (such as language attainment and grades) because "general proficiency/achievement scores are less directly related to motivation in that they are further away on the motivation–behaviour –achievement chain" (Dornyei & Kormos, 2000, p. 294). The findings in their studies support this claim. Both studies found correlations above .40 between motivation constructs and learner speech productiveness during various learning tasks, "which is rarely achieved in L2 motivation studies" (Dornyei & Kormos, 2000, p. 294). Additional support comes from particularly high correlations found in both studies between task situation-specific motives (task attitudes, class attitudes, and linguistic self-confidence associated with a particular task) rather than global motivation constructs (attitudes towards English speakers, need for achievement) and task engagement, measured in amount of speech produced during the task.

Language learning is a kind of sustained learning that requires from a learner an investment of time and focus over a rather extended period of time in order to progress in language proficiency. During this period of time even the most motivated learners are very likely to experience situations when their initial motivation to learn the language of their choice will not be at a high. This may happen for various reasons. For example, other personal or academic pressing issues may take over the learners' mind and take priority over the assigned language learning task. The learner may not consider the task useful for his or her personal goals and decide not to engage fully in it. The learner may feel that a particular task is not challenging or interesting enough, or may not see its value, and therefore decide not to engage in it. The learner may simply feel tired, under the weather, or be ill on a particular day. These motivational ups and downs illustrate the distinction between trait and state motivation that has been studied in the general motivational psychology and was also found applicable in the second language acquisition research. Trait motivation refers to stable and enduring dispositions, while

state motivation refers to transitory and temporary responses (Tremblay, Goldberg, & Gardner, 1995). However, the idea that the learner's motivation during a particular language task is composed of his/her trait motivation plus state motivation was challenged by Dornyei and Kormos who concluded on the basis of their finding that there exist at least two levels of the situation-specific (state) L2 motivation: task-specific and course-specific. Dornyei (2002) argues that on-task motivation is influenced by at least the following forces: language course, language task, and language of focus. In addition to multiple influences, Dorneyi and Otto (1998) proposed a Process Model of L2 motivation and described task motivation as a complex process, developing in time and subject to a number of motivational influences. Motivational stages in the Process Model of L2 motivation include: (1) the preactional phase during which goals are set and intentions are formed for further action, (2) actional phase during which the action taken is subject to various executive motivational influences, and (3) postactional stage during which evaluation of the action is performed and the results of which influence future goal setting. Dornyei and Otto emphasize that it is important to study the dynamic nature of learner motivation whose levels fluctuate not only from one course to another, from one course unit to another, and from one language class to another, but also within one class period or one instructional activity because motivation is a process that is constantly re-evaluated depending on conditions. Support for the dynamic view of motivation also comes from the findings in MacIntyre, MacMaster and Baker (2001), which suggest a factor analytical distinction between Gardnerian "attitudinal motivation" and a process oriented "action motivation".

Given the complex and dynamic nature of motivational attributes and processes and their important role in classroom language learning, it is imperative to study L2 motivation in all its complexity and translate the findings into specific motivational strategies and motivational support in the classroom. This is crucial because no matter how thoroughly an L2 instructor designs a learning unit, the unit may lose all of its

potential if the learners have little or no motivation to engage in learning and refuse to cooperate with the instructor.

Dornyei (2001a) defines motivational strategies as

> techniques that promote the individual's goal-related behavior. Because human behavior is rather complex, there are many diverse ways of promoting it – in fact, almost any influence a person is exposed to might potentially affect his/her behavior. Motivational strategies refer to those *motivational influences that are consciously exerted to achieve some systematic and enduring positive effect.* (p. 28)

There exist several theoretical models and practical guidebooks of motivational strategies in the language classroom (for example, Brophy, 1998; Chambers, 1999; Dornyei 2001a), but what is lacking is research on the effects of specific motivational designs in carefully planned and controlled studies (Dornyei, 2001a).

Many practitioners agree that students' motivation constitutes one of the major components of their success in language learning, and that motivation needs to be protected and fostered. However, there is evidence that teachers do not always consciously address motivation in designing their lessons. Brophy et al. (1983) analyzed about 100 hours of classroom observation of math and reading teachers and found that during that time only 9 task introductions included a substantial motivational focus. Only one third of the introductions had brief motivational comments, but even such introductions were not associated with the highest levels of student performance, as they were most likely undermined by other not motivating remarks. It is even more surprising considering that the study included experienced, above average teachers. Dornyei and Csizer (1998) investigated ESL teachers' motivational strategies and frequency of their use. They started with a list of 51 motivational strategies that were further condensed into 10 "motivational commandments". Out of the 10 commandments teachers reported under using some strategies they reported considering very important. The results of the two studies remind of the importance of investigating the effect of the use of motivational strategies in the classroom.

Cognition in SLA

In addition to motivational fluctuations, learners may also experience cognitive difficulties while engaged in a learning activity. For example, the task input may be too advanced for the learner's current proficiency level or the task output requirements may be beyond the learner's current level. A task may be too demanding both in terms of its linguistic and content processing and thus perceived as too difficult by the learner. Learners may get distracted by non-essential details and fail to engage in the processes envisioned by the task designer. These deficiencies can be tackled in a language classroom, at least to some extent: teachers can teach cognitive strategies to increase learners' effectiveness and reduce the cognitive demands of the task. This is crucial because of the limitations in the human cognitive processing capacity (Huitt, 2003; Skehan, 1998a): in order to focus students' attention on desired processes, other less significant processes need to be off-loaded, or removed, prior to engaging in a task. Clear instructions can also direct learner attention to the essential processes of the task.

Thus the two basic aspects of human activity, motivation and cognition, have been studied and applied in SLA, although cognition has been more integrated with the linguistic direction than the study of motivation (Dornyei, 2005). The difficulty of investigating the role of motivation and cognition in SLA also lies in the complex interrelation between the two. Cognition and motivation are two aspects of the traditional tripartite division of human activity in psychology into cognition (thinking and analyzing), conation (motivation and volition) and affect (feelings and emotions) (Hilgard, 1987). The relation between motivation and cognition in SLA was tackled by Schumann (1994): he suggested that both are inseparable but distinguishable parts that interact with one another and constrain one another, and therefore need to be studied together in their effect on language acquisition.

Task-Based Methodology

As discussed above, it is important to investigate the role of motivation and cognition in second language acquisition at the micro level, or classroom level. In this regard, task-based methodology offers research as well as methodological advantages: tasks have clearly defined boundaries and are amenable to comparison across various studies, as well as allow for a focused instructional design. Task-based learning has been a viable methodology in language pedagogy and a prominent area in language acquisition research in the past 30 years (Ellis, 2005). Although individual tasks differ in input variables (presence or absence of contextual support, number of elements in the task, task topic), task conditions (shared vs. split information, task demands), task outcomes (closed vs. open tasks, inherent structure of the outcome, discourse mode), aspects of task implementation (presence or absence of planning, the type of planning in pre-task, task rehearsal, post-task requirement), certain common features with predictable effect on language learner L2 production have emerged after years of task-based research. For example, it is known that giving learners planning time prior to engaging in a task leads to higher fluency of speech during the task (for example, Skehan & Foster, 1997; Mehnert, 1998; Ortega, 1999) and greater complexity of speech (for example, Crookes, 1989; Foster & Skehan, 1996; Ortega, 1999; Yuan & Ellis, 2003). The results for accuracy are mixed, with some studies finding an effect of planning on accuracy (Ellis, 1987; Foster & Skehan, 1999; Ortega, 1999), and other not finding an effect (for example, Crookes, 1989; Iwashita, Elder, & McNamara, 2001; Wendel, 1997; Yuan & Ellis, 2003). It seems that accuracy of speech is less amenable to manipulation by pre-task planning. In contrast, opportunity for on-line planning, while the learner is performing the task, seems to lead to greater accuracy (Ellis, 1987; Hulstijn & Hulstijn, 1984; Yuan & Ellis, 2003) and complexity (Yuan & Ellis, 2003).

Output in SLA

The important role of output in language acquisition has been one of the main justifications behind the task-based teaching approach. It is based on the premise that output coupled with noticing the "gaps" is necessary for successful SLA (Swain, 1995). We know that L2 output is necessary for successful language learning, and that good language learners seek opportunities to speak and actively use their language.

The quality of oral production has been the main focus of task-based research. Three aspects of output – fluency, accuracy, and complexity (Skehan, 1996) – are hypothesized to influence the interlanguage system in different ways. Accuracy is the capacity to handle whatever level of interlanguage complexity the learner has currently attained. Complexity is associated with testing the boundaries of the underlying interlanguage system by attempting to produce new vocabulary and structures that have not been well integrated into the interlanguage system. Fluency is the capacity to mobilize the interlanguage system to communicate meaning in real time. Each of the three aspects of language production is important for language acquisition, and each affects language acquisition in a different way. Knowing the effect of various task variables on learners' production, teachers can manipulate learners' attention to the three aspects of speech and thus promote the learners' language acquisition in desirable ways.

Analysis of the results of multiple studies shows that task design and implementation variables do not determine but certainly influence language production during the task in terms of learners' focus on fluency, accuracy, and complexity of their speech (Ellis, 2003; Skehan, 2003), thus contributing to language acquisition.

Although advances have been made in understanding the effects of task characteristics on language production, the research needs to continue to uncover other task characteristics that can have a potentially stable effect on task language production.

Motivation in Tasks

We began by saying that in the ideal conditions, language learners are cognitively prepared for a particular activity and are highly motivated to engage in this activity. However, learners rarely choose classroom tasks. Instead, classroom tasks and activities are often imposed on learners. This undermines the initial choice motivation, or the "pre-actional" motivation stage in Dornyei and Otto's (1998) Process Model of L2 motivation which is crucial in forming the impetus ("instigation force") for further action. This stage is very important because the degree, or the force, of the initial instigation force determines further action during the actional stage. However, it is possible that by showing the value of an activity and by providing reasons for which the learners may want to engage in this activity, the teacher may compensate for the fact that learners did not have a say in choosing an activity. In fact, providing learners with the value of the task is listed as a motivational strategy in a number of SLA motivational handbooks (Chambers, 1999; Dornyei, 2001). The results in Dornyei and Kormos (2000) support the importance of ensuring that learners perceive the task as valuable and useful to them. In summarizing the findings, Dornyei and Kormos conclude that "the effect of some variables in our study appeared to be conditioned on the existence or absence of some others: WTC [willingness to communicate], need for achievement, and social status had a positive effect only on those learners' task-engagement who had favourable task-attitudes, whereas social status had a negative effect when accompanied by negative task attitudes" (p. 292).

There are very few (Dornyei, 2005) studies that investigate specific motivational designs in the classrooms. The challenge lies in the highly individualized nature of motivation: what may encourage one learner may not appeal to his/her peer in the class. Also, the effectiveness of a strategy or an instructional activity is not always guaranteed: what may work well today with a given group of learners may not work tomorrow with the same class for various reasons, such as the level of enthusiasm of the teacher, the

learners' mood, learners' perception of the novelty of the activity/strategy, absence of individual learners and the effect their absence may have on group dynamics. At the same time, there are some basic aspects of motivation that, when fostered, allow individuals to actively engage in an activity. For example, such basic motivational constructs are postulated in the self-determination theory (SDT) by Ryan and Deci (2000, 2002): autonomy, perception of competence, and relatedness. The three constructs have been studied in very versatile contexts (education, business, health care, religion, and others) and have been found to produce a positive effect on all three factors on individual's motivations, which led Ryan and Deci (2002) to hypothesize universality of the three constructs as basic human needs. When human beings find themselves in a situation where such needs are fostered, they behave in a highly efficient and fulfilling manner, or they are intrinsically motivated to act. Thus, a motivational pre-task intervention rooted in the SDT theory may produce an overall positive effect on learners' attitudes to the task and motivation to engage in the task.

The notions of intrinsic and extrinsic motivations central to the SDT theory are well known in the SLA literature. For example, intrinsic motivation is often compared to Gardner's integrative motivation, even though the latter is rooted in a social psychology approach and is associated with positive attitudes to members of the target language community. In contrast, an intrinsically motivated learner, as conceptualized in SDT, engages in a learning (or any other) activity for the joy and other positive emotions that this activity brings. Extrinsic motivation is treated as a unitary concept in SLA: an extrinsically motivated learner engages in an activity in order to obtain some external gain or reward (a job, a grade in class). SDT also conceptualized extrinsic motivation as stemming from an externally perceived motive, but at the same time it distinguishes between four different degrees of extrinsic motivation, from clearly extrinsic (such as material rewards) to gradually more integrated into the one's own self (such as the need to speak a foreign language because one considers such a skill an attribute of a well-

educated person that one wants to become). This most integrative kind of extrinsic motivation has a lot in common with the intrinsic motivation. For example, even though the need to speak a foreign language in order to become an educated person may initially be suggested by the demands and conditions of the world external to us, with time this need may become so integrated into one's system of values that a person may perceive the need is as one's own, stemming from one's own self. The integrated motivation appears to be more relevant in the adult world where most activities are not chosen for their intrinsically motivating appeal but are rather chosen on the basis of their value to the individual.

Given the importance of motivational factors in task engagement and the need to foster motivation in the classroom, this study investigates a specific motivational intervention designed to increase the pre-task impetus for task engagement. The motivational pre-task will precede the oral production task and will present the task to the learners as an intrinsically motivating and interesting activity. The pre-task will emphasize the value of the oral production task as an activity purposefully designed to help the learners achieve their goals of becoming fluent in the foreign language. The question is whether learners who will receive such motivational intervention will produce a more accurate, fluent, or complex speech, as well as a larger amount of speech when compared to the learners in the control group, who will not receive such intervention.

Cognition in Tasks

Due to on-going cognitive demands during task engagement even the most motivated learners may not engage in a task the way their teacher wants them to engage. The effect of cognitive aspects of task production has also been studied by Skehan (1998) and Robinson (2001). Both researchers investigated relations between the three aspects of production: fluency, accuracy, and complexity. Peter Skehan adheres to the limited processing capacity premise and states that when learners engage in a demanding task

requiring a lot of attentional resources, fluency will be accompanied by either complexity or accuracy, but not both. Peter Robinson, on the other hand, argues that learners are able to attend to multiple processes at the same time, in other words, to accuracy and complexity at the expense of fluency. In the current study a cognitively demanding task will be used, for which the students in the cognitive group will receive pre-task support by means of activating their background schema necessary for the task and suggesting effective strategies for successful task completion. Such cognitive pre-task intervention is aimed at making the task less demanding for the cognitive group of learners. The question is whether such cognitive intervention will help the learners cope with the task demands and encourage them to prioritize any aspects of their speech (accuracy, fluency, or complexity) differently from the students in the control group, who will not receive such intervention.

Participants

The participants in this study are college level students of French as a foreign language at a large Midwestern university in the United States, at two levels: second year students (third semester) and third year students (fourth and fifth semesters). The two levels of students differ not only in the number of semesters they have been studying French, but also in their motivations for enrolling in the French courses. Unlike the second year students, the third year students are not required to take language courses, but chose to enroll in the French courses voluntarily, since only four semesters of foreign language study is required for graduation at this particular university.

Research Questions

The study will investigate the effect of 3 conditions: (a) motivational intervention, (b) cognitive intervention, and (c) no intervention on the speech of the second and third year students of French. In view of the preceding discussion, the following research questions will be addressed in the study:

Research question 1: Do third year college students of French produce a more accurate, more complex, and more fluent speech sample than do the second year college students of French?

Research question 2: Do second and third year college students of French prioritize accuracy, fluency, or complexity of speech differentially when exposed to (a) motivational intervention, (b) cognitive intervention, or (c) no intervention?

The participants will complete the same oral production task, preceded by (a) a motivational pre-task (motivation group), (b) cognitive pre-task (cognitive group), or (c) no pre-task (control group). The participants will also be asked to complete a dictation as a measure of French language proficiency and a motivation survey as a self-report measure of task motivation.

The results of the study will allow for the evaluation and discussion of the merits of the SDT-based motivational design and its application to the second and third year college level French language instruction, as well as for the discussion of the effect of the two pre-task designs (motivational and cognitive) on the quality of L2 speech production.

Definition of Terms

A number of key terms used throughout this and further chapters will be defined below to assure clarity for the reader.

Task: A task is an activity performed by learners in the target language. A task has some relationship to the real world and is characterized by primarily meaning-focused language use. A task specifies clear objectives and outcomes for learners to attain in order to successfully complete the task.

Accuracy: Accuracy refers to the capacity to handle whatever level of interlanguage complexity the learner has currently attained.

Fluency: Fluency refers to the capacity to mobilize the interlanguage system to communicate meaning in real time.

Complexity: Complexity is associated with testing the boundaries of the underlying interlanguage system by attempting to produce new vocabulary and structures that have not been well integrated into the interlanguage system.

Self-determination theory (SDT): SDT is one of the most comprehensive current theories of motivation proposed by Ryan and Deci (2000, 2002). SDT puts forward three basic human needs that are essential for the overall well-being and healthy development of human beings (competence, autonomy, and relatedness) and investigates the distinction between the intrinsic and extrinsic motivations.

CHAPTER 2

REVIEW OF LITERATURE

Cognition, Conation, and Affect

A significant development of the language acquisition research in the 1970s was a growing attention to individual variables and their effect on language acquisition (Stern, 1983). Individual variables proved to have a very consistent predictive power of language learning success (Dornyei, 2005). Many of the individual variables studied within the language acquisition framework come from the general psychology and educational psychology research. Individual variables can be broadly grouped into three different clusters: conative (motivation and volition), cognitive (thinking and analyzing) and affective (feelings and emotions). This distinction is not recent, but has been part of psychological models for centuries (Hilgard, 1987).

One of the most accepted and often cited definitions of conation, cognition and affect by English and English (1958) was compiled and reorganized by Snow, Corno, and Jackson (1996):

> Historically three modes of mental functioning were usually distinguished: *Cognition, conation* (or volition) and *affect* (more often called *affection*). (p. 15) In most systems *cognition, affection* and *conation* are the three categories under which all mental processes are classified. (pp. 92-93) Some writers, however, combined conation and affection. (p. 15)
>
> *Cognition* - a generic term for any process whereby an organism becomes aware or obtains knowledge of an object… It includes *perceiving, recognizing, conceiving, judging, reasoning*… [I]n modern usage sensing is usually included under cognition. (p. 92)
>
> *Affection* - A class name for *feeling, emotion, mood, temperament*… a single feeling-response to a particular object or idea… the general reaction toward something liked or disliked… the dynamic or essential quality of an emotion; the energy of an emotion. (p. 15)
>
> *Conation* - That aspect of mental process or behavior by which it tends to develop into something else; an intrinsic "unrest" of the organism… almost the opposite of *homeostasis*. A *conscious* tendency to act; a conscious striving… It is now seldom used as a

> specific form of behavior, rather for an aspect found in all. Impulse, desire, volition, purposive striving all emphasize the conative aspect. (p. 104)

In the previous centuries the three aspects were treated with equal consideration. However, since the advent of the behaviorist framework at the beginning of the 20th century this tri-fold distinction lost its prominence, as theoretical and research emphases shifted away from the study of internal psychological processes to the study of externally observable human behavior. With the exception of few research efforts (see Snow, Corno, & Jackson, 1996, p. 244) the majority of scientists did not consider internal affective, conative and cognitive aspects of the human mind worthy of sound investigation. Later in the 1960s another pendulum swing brought about change in theoretical orientation towards the cognitive side of human psychology. This renewed interest in cognitive characteristics and processes resulted in a better understanding of the variation in the human behavior and particularly in educational psychology, and ultimately in a better prediction of student achievement. At the same time, as a result of this research focus on cognition, affect was given much less attention, and conation was not considered at all, or considered either as part of affective phenomena, but not as a separate function (Snow & Farr, 1987). Starting from the 1980s, researchers began to recognize the one sidedness of the prevailing efforts, as many have stressed the need to consider all three aspects in order to come to a fuller description of the complexities of human behavior (e.g., the collection of papers in Snow & Farr, 1987; Sorrentino & Higgins, 1986).

Some research results pointed out the effect of conation and affect on the level and quality of cognitive performance (e.g., Clark & Fiske, 1982; Snow & Farr, 1987). Differences in cognitive abilities alone, though having a high predictive power, still cannot account for all the variability in performance. During the following decades research efforts were directed at untangling a complex picture of cognitive-conative-affective interaction and went far beyond earlier views of affective and conative states

and processes producing only random error variables or having only a limited number of functions, such as, for example, *interrupting* and *arousal* (Simon, 1967, 1982). Schacter and Singer's (1962) "cognitive arousal theory of emotions" was influential in drawing attention to the cognitive aspects of emotions, while later research shifted its focus to the reverse impact of emotions on cognition. Conative research has also begun to reveal the complexity of cognitive-conative interactions: we have a number of significant constructs of cognitively motivated learning, such as, for example: goal setting, task value beliefs, attribution beliefs (see Rueda & Dembo, 1995; Weiner 1990), and we also have results showing the effect of motivation on learning processes and performance (see Schiefele & Rheinberg, 1997). There is no denial of the value of one variable at a time research because such work results in enlarging our repertoire of variables that account for differences in performance. However, it is the study of the interaction of all variables – affective, conative and cognitive – that will help to come to a better understanding of the complex reality of human activity. Ackerman and Lohman (2006) warn against artificial separation of the conative and affective variables from cognitive processing and stress the importance of studying all aspects in their complex interaction.

Knowing how a certain cognitive style affects students' performance on certain subjects is incomplete without understanding how certain affective states impede or facilitate the successful application of this cognitive style. Likewise, high or low motivation may affect the realization of certain cognitive abilities. For example, of two students with comparable cognitive abilities, one may be highly motivated to complete a task, may apply all his or her available cognitive resources and succeed as a result, while the second non motivated student may choose a path of the lowest effort, may not employ all available resources and therefore fail a task. Such interplay of cognitive and motivational aspects is of interest to the current study, even though the study does not investigate the interaction of the two aspects, but explores comparable effects of motivational and cognitive pre-task conditions on student performance. This requires an

understanding of the distinction between the two aspects, even though such distinction is complicated by the interaction between the two.

Motivation and Cognition

The effect is two way: motivation can have an effect on the formation of cognitive structures and on information processing; cognition can affect motivation (e.g., attributing one's past successes or failures to stable or non-stable factors, or increasing one's goal-oriented efforts after a realization that reaching this goal can bring external or internal benefits, such as a job or peer respect). The two aspects are so interconnected that it is hard to separate the two. This interaction is complicated by the effect of the third, affective class of variables, and all three are situated in the social context with which they also interact. Because of such complex interactions, we have cognitive theories of emotion and can distinguish between cognitive vs. affective theories of motivation. However, motivation and cognition are still two distinct aspects, and can differentially affect performance (Snow, Corno, & Jackson, 1996). As mentioned earlier, all three aspects were theorized as three distinct aspects of human activity for several centuries (Hilgard, 1980), and the distinction is clearly seen in the definition by English and English (1958) cited above. As Howe (1987) put it,

> when we try to understand the contribution of cognitive mechanisms to human abilities we are looking at how the computing systems underlying learning actually operate. When we investigate motivation we are asking certain questions about why those cognitive mechanisms are being activated. (p. 133)

One can imagine a student who is very interested in the subject and motivated to do well in a class, but does not possess the necessary learning strategies or background knowledge to succeed on his own. And on the contrary, there are students who have already developed adequate learning strategies and possess certain background knowledge about the subject, but are not interested in succeeding because they are

required (forced) to take the class. It is possible that both students will demonstrate medium performance, but for different reasons.

Motivation Research

Motivational considerations have always been part of instructional methodologies in the 20th century and have been part of the theoretical thinking behind them, under one disguise or another (Farr, 1987). To illustrate the early educational psychology research on motivation, the contents of the instructional section on motivation in the 1941 and 1950 *Encyclopedia of Educational Research* by Paul Thomas Young (1941, 1950) seem to be in line with many contemporary research topics, including subsections on praise and reproof, success and failure, knowledge of results, cooperation and competition, reward and punishment (Weiner, 1990). At the time of behaviorist thinking, the reinforcement theory employed rewards and punishment as tools to induce people to learn more efficiently and to shape their behavior. The resulting behavior change was explained through a process whereby stimulus-response connections were reinforced. The following cognitively-framed methodology employed reinforcement and feedback as tools to influence students' behaviors and learning. A more cognitive explanation was given, that is of students analyzing relationships between previous actions and action consequences, and acting accordingly (Farr, 1987). Snow and Farr (1987) observe that inherent in the information-processing framework was the assumption of the purposefulness of behavior, thus relating it to the conative aspects of human cognitive operations. They describe the nature of this relationship:

> Purposive action is motivated - one might be tempted to say *conated* - all along the line of a cognitive processing plan, and in its grainy details. Motivation cannot merely be the energizing push that starts the cognitive system in a certain direction, plus the level of arousal that sustains it. Human beings create, transform, and drop plans, and rearrange their priorities and goals, sometimes in midplan, with and without reason. Sometimes goals and circumstances are ambiguous. Sometimes the goal is to discover new goals. Sometimes plans are playful. Different plans may well come with different affective tones or conations. But affective

> reactions to particular circumstances may also alter or disrupt the details of adopted plans. (Snow & Farr, 1987, p. 5)

It is now clear that motivation has an effect on learning; however, the relation is complex and requires more investigation of the precise nature of this relationship. Currently there are a significant number of theories of motivation in learning, a large number of relevant variables, each addressing a separate aspect of this complex construct. Unlike cognitive factors, the conative field remains fragmented and unorganized (Snow, Corno, & Jackson, 1996). When considered together, these variables do not combine into a larger theoretical construct: the relationships between many of them are unclear and there still remain untouched areas for further research (Weiner, 1990). This is partially because motivation study is an attempt to answer one of the fundamental questions: why do human beings behave the way they do? (Dornyei, 2003).

To describe current theories of motivation I will refer to the affective-conative-cognitive framework of Snow, Corno, and Jackson (1996). The advantage of this framework is its comprehensiveness: it allows for discussion of all current major and minor conative constructs and variables, and has a potential of incorporating yet undiscovered variables. Due to its organization along an affect-conation-cognition continuum, it also provides a conceptual base for a comprehensive discussion of motivation theories in relation to the constructs of cognition and affect.

Motivation forms part of a larger human function of conation. According to Snow, Corno, and Jackson (1996, p. 264) "conation is the tendency to take and maintain purposive action or direction towards goals". Conation includes motivational and volitional processes. The model of Heckhausen and Kuhl (1985) unites motivational and volitional functions into one theory. According to this theory, conative function can be represented along a continuum of motivational to volitional influences. Motivational influences direct behavior and affect the processes of behavior direction and goal selection. Once a goal is selected and an implementation plan is outlined, a person passes to the stage of goal implementation (crosses "the Rubicon"). At this next stage, different

processes (volitional, action controls) come into play and direct the implementation of the plan until its successful accomplishment or until its abandonment.

Within the motivational side of the conative function, Snow, Corno, and Jackson (1996, p. 264) list 3 categories of constructs:

1) achievement orientations (need for achievement, fear of failure, evaluation anxiety, attribution theory, learned helplessness, various intrinsic and extrinsic goals, goal setting and goal orientation, and future time perspectives with respect to goals);

2) self-directed orientations (self-concept, self-worth, self-efficacy); and

3) values, attitudes, interests.

Volition, or an ability to persist through a plan towards the goal comprises:

1) action controls (self-regulated learning, mindfulness, effort, persistence);

2) other-directed orientations (persuasability, empathy, machiavellianism, social intelligence); and

3) personal styles (repeating and characteristic patterns of strategies chosen in learning and studying).

There is lack of studies investigating the effect of motivation on learning processes and "specific indicators of learning" as opposed to the traditionally studied effect on global achievement indicators (e.g., grades) or on achievement-related behavior (e.g., persistence) (Schiefele & Rheinberg, 1997, p. 252). These authors describe a framework of motivational influences on learning, specifically on (a) the duration and frequency of learning activities (e.g., time on task), (b) the mode of the executed learning activities (e.g., effort invested, use of volitional controls, use of strategies), and (c) the functional state of the learner (arousal, concentration, availability of processing resources). However, just to illustrate the complexity of the matter and the multitude of variables at play, Schiefele and Rheinberg (1997) observe that the exact effect of motivation on learning may depend on the learner's abilities and the task difficulty: an over-motivated learner may exhibit anxiety, which will produce task-irrelevant

processing and take up the available limited processing capacity, thus negatively affecting learning and performance. The task difficulty will determine how much this anxiety will interfere with performance. The difficulty also lies in determining the point of arousal when under-motivation becomes over-motivation (McKeachie, 1987). A motivated learner may employ a variety of volitional controls, which usually ensure action implementation and are necessary for reaching goals, but an excessive number of such controls may use up the limited information-processing resources and thus interfere with learning. A motivated learner may exhibit a lot of effort, which may lead to increased quantity of output, which in its turn, may result in lower quality. However, the actual results will depend on the task difficulty level and the nature of the outcome (Schiefele & Rheinberg, 1997). Effort, which is often seen by teachers as a positive sign of a well motivated student, may have an adverse effect on students' perception of self-efficacy when it is combined with failure (Covington & Omelich, 1979). Extensive effort, even when combined with success, may be perceived by students as an indicator of low ability (Paris & Byrnes, 1989), leading again to low self-efficacy and self-worth beliefs, and creating grounds for future attributions of failure to low ability and thus undermining future effort. Our understanding of reward has likewise become more complex compared with its conceptualization and implementation in behaviorist methodologies: reward for fulfilling easy tasks can be taken by a student as a sign of low ability and impede future motivation, while reward for difficult tasks can be interpreted as an indicator of hard work and high ability, motivating future action (Weiner, 1990).

Self-Determination Theory

Self-determination theory (SDT) is one of the most comprehensive and well tested current theories of motivation. The main premises and constructs of SDT are outlined and discussed in Ryan and Deci (2000, 2002). SDT proposes three basic human needs that are essential for the overall well-being and healthy development of human

beings: competence, autonomy, and relatedness (for a discussion of needs see Deci & Ryan, 2000). Competence refers to perceiving one's effectiveness in exercising one's own skills; autonomy refers to perceiving one's self as the source of action; and relatedness refers to a feeling of security and attachment to others. SDT maintains that humans behave in a most efficient and fulfilling manner when social and situational factors support the satisfaction of the three basic needs. In contrast, when situations do not provide for the satisfaction of the basic needs, individuals show less motivation. The three constructs were extensively tested in experimental settings and were shown to have an effect on both intrinsically and extrinsically motivated behaviors (Ryan & Deci, 2000).

The distinction between intrinsic and extrinsic motivations is central to SDT. Individuals are said to be intrinsically motivated when they undertake a task for the feeling of joy, interest, and satisfaction they experience while engaged in that task. In contrast, when individuals engage in a task for the sake of some external benefits it entails, then extrinsic motivation is at play. Amotivation is a state in which individuals are neither extrinsically nor intrinsically motivated, but rather experience apathy, or no desire and intent to act. Extrinsic motivation is situated between the two extremes: intrinsic motivation on the one end of a continuum and amotivation on the other end. The organismic integration theory (OIT), a sub-theory of SDT, has developed the earlier monolithic construct of extrinsic motivation into a continuum of extrinsic motivations distinguished by different degrees of self-determination and integration of the motivation, as well as by the kind of external regulation. The external kind of extrinsic motivation is located next to the amotivation extreme of the continuum. It is the least integrated type of extrinsic motivation, observed in the presence of salient external rewards or punishment. Next on the continuum is somewhat external introjected motivation, which characterizes actions that individuals perform to avoid the feeling of gilt, shame, anxiety, or in order to enhance one's feeling of self-worth. The third type, identified behavior, is performed for reasons that individuals accept as valuable, endorsing the goals of the activity. Even

though motivated by reasons external to the activity itself, the identified motivation is described by SDT authors as somewhat internal because of the individuals' acceptance of the value and goals of the activity (in contrast with the introjection, where the regulation is perceived as located outside of the self). And finally the fourth type of extrinsic motivation, integrated motivation, is characterized by acceptance and integration of the values and goals of an activity by individuals as their own. Even though integrated behaviors are performed for the values and goals external to the activity itself, they bear a lot of resemblance to intrinsically motivated behaviors and result in the most fulfilling and self-sustained types of extrinsically motivated behaviors. Both the intrinsic and integrated extrinsic motivations are characteristic of the optimal states of human activity, qualified by curiosity, agency, persistence, desire to explore, develop and achieve. They contrast with the external and introjected motivations associated with situations in which some external variables coerce individuals to act. An externally perceived motivation may eventually be internalized and integrated by the individual, to the point of being perceived as one's own:

> Whenever a person (be it a parent, teacher, boss, coach, or therapist) attempts to foster certain behaviors in others, the others' motivation for the behavior can range from amotivation or unwillingness, to passive compliance, to active personal commitment. According to SDT, these different motivations reflect differing degrees to which the value and regulation of the requested behavior have been internalized and integrated. Internalization refers to people's "taking in" a value or regulation, and integration refers to the further transformation of that regulation into their own so that, subsequently, it will emanate from their sense of self. (Ryan & Deci, 2000b, p. 71)

The SDT theory offers an excellent framework for designing conditions supportive of self-determined behavior. The theory has been successfully applied in various contexts, such as education (Reeve, 2002; Vansteenkiste, Lens, & Deci, 2006), sports and exercise (Frederick-Recascino, 2002; Hagger & Chatzisarantis, 2007), healthcare (Ryan, Patrick, Deci, & Williams, 2008; Williams, 2002), counseling (Ryan & Deci, 2008), business and work environment (Baard, 2002; Gagné & Deci, 2005; Lam, &

Gurland, 2008). The results of the studies from such versatile contexts consistently found a positive effect of three particular factors on individuals' motivations: autonomy support, perceived competence, and relatedness. This led Ryan and Deci to theorize universality of the three factors as fundamental human needs and identify the benefits of implementing SDT principles by those individuals who seek to motivate others in various settings, such as teachers, sports trainers, health workers, counselors, managers. Thus SDT can serve as an excellent framework for designing the motivational conditions in the current study, in which the instructor will aim at motivating students to actively engage in the experimental discussion task (see Reeve, et al., 2008, for applications of SDT and autonomy to the classroom learning).

The first fundamental need of autonomy refers to perceiving oneself as the origin of one's activity. Ryan and Deci (2002) elaborate the construct of autonomy as follows:

> Autonomy concerns acting from interest and integrated values. When autonomous, individuals experience their behavior as an expression of the self, such that, even when actions are influenced by outside sources, the actors concur with those influences, feeling both initiative and value with regard to them. (p. 8)

The second basic need, competence, refers to perceiving oneself as effective in exercising one's capacities in relation with the environment:

> The need for competence leads people to seek challenges that are optimal for their capacities and to persistently attempt to maintain and enhance those skills and capacities through activity. Competence is not, then, an attained skills or capacity, but rather is a felt sense of confidence and effectance in action. (Ryan & Deci, 2002, p. 7)

The third basic need of relatedness refers to a feeling of security and attachment to others:

> Relatedness reflects the homonomous aspect of the integrative tendency of life, the tendency to connect with and be integral to and accepted by others. The need to feel oneself as being in relation to others is thus not concerned with the attainment of a certain outcome (e.g., sex) or a formal status (e.g., becoming a spouse, or a group member), but instead concerns the psychological sense of being with others insecure communion or unity. (Ryan & Deci, 2002, p. 7)

Similarly to autonomy and competence, relatedness is essential in promoting optimal performance and well-being. However, relatedness is a less universally applicable construct than autonomy and competence, because many actions can be happily performed individually in the absence of other individuals to which to relate (Ryan & Deci, 2000).

The SDT focus on the extrinsic motivation and the differentiation between four degrees of integration of extrinsic motivation will allow to discuss motivation in the context of a language classroom, where students' behaviors are often externally motivated. Students often engage in tasks in a foreign language classroom for different reasons external to the tasks themselves and the pleasant sensations of joy and satisfaction they bring.

SDT provides a framework for discussing intrinsic motivation, or motivation devoid of cognitive appraisals of the task value, in contrast to extrinsic motivation, which involves cognitive appraisal of the reasons external to the activity itself and different degrees of integration of such reasons within the individual's system of values.

Motivation and Cognition in Second Language Acquisition

All three clusters of variables (affective, conative, and cognitive) have proved to be relevant to our understanding of the second language acquisition processes (Dornyei, 2005; Stern, 1983). Within the *conative* and *affective* dimensions, the study of language attitude and motivation has shown that these two variables can predict language learning success (Dörnyei & Kormos, 2000). A number of general psychology constructs were studied by second language acquisition researchers and proved to be relevant to language learning, such as intrinsic and extrinsic motivation (e.g,. Noels, 2001), attribution beliefs (e.g,. Williams, Burden, & Al-Baharna, 2001), goal setting (e.g., Clément & Kruidenier, 1983).

Many practitioners agree that students' motivation constitutes one of the major components of their success in language learning, but there is evidence that teachers do not always consciously address motivation in designing their lessons. Brophy et al. (1983) analyzed about 100 hours of classroom observation of math and reading teachers and found that even very experienced teachers who participated in the study did not use motivational strategies on a regular basis in class. During the 100 hours of class observation only 9 task introductions included a substantial motivational focus. There exist several theoretical models of motivational strategies in the classroom (for example, Brophy, 1998; Chambers, 1999; Dornyei 2001a), but what is lacking is research on the effects of specific motivational designs in carefully planned and controlled studies.

Likewise, a number of important variables have emerged in the *cognitive* line of research on second language acquisition. Such aspects of human cognition related to second language learning have been investigated: negotiating meaning (Pica, 1994), noticing gaps in output (Swain, 1995), the role of formulaic expression (chunks) and the rule-based systems in language production (Myles, Mitchell, & Hooper, 1999), focus on form (Doughty & Williams, 1998), practice and automatization, specifically in the framework of task-based learning (Bygate & Samuda, 2005), implicit learning (French & Cleeremans, 2002), learners' background knowledge (available schema) of the task content (Foster & Skehan, 1996; Skehan & Foster, 1997b).

The study of attentional capacities and information processing (Huitt, 2003) in relation to language learning is of particular interest to the present study. This research direction postulates limited processing capacity for input and output that create bottlenecks in working memory when processing demands are high, which in turn result in one or another aspect of language processing being prioritized over other aspects. Robinson (1995) outlined main processes and constructs of the information processing models applied to the study of language learning processes: attending to information, storing information in the working memory and long-term memory, and retrieving

information from long-term memory. This principle of limited attentional capacity is at the heart of the cognitive models of Skehan (1998) and Robinson (2001b). Both authors discuss three main aspects of language production: fluency, accuracy, and complexity. Skehan's model predicts trade-offs between fluency, which relies on the formulaic, lexical system of language, and the other two aspects of L2 production (accuracy and complexity), which rely on the rule-based system of language. When attentional capacities are limited due to increased output demands of a language task, a learner will prioritize either complexity or accuracy. In contrast, Robinson postulates multiple-resource processing, whereby language learners are able to attend to multiple aspects of their speech. When faced with a demanding task, learners will attend to both accuracy and complexity of production, at the expense of fluency. Thus, Robinson argues that the accuracy and complexity aspects of production are not in competition with one another, but rather both compete with the fluency aspect.

Although several generalizations and tendencies emerge, the picture is far from complete. More research is needed on the effect of the aspects of motivation and cognition and the task design variables on language acquisition. The present study is designed to contribute to the understanding of the effect of task design on language production. The study will investigate the effects of motivational and cognitive instructional pre-tasks on the learners' task production.

Task-based Learning

As a framework for the study I will use the task-based line of research. Task based learning has been a viable methodology in language pedagogy and a prominent area in language acquisition research in the past 30 years (Ellis, 2005). Task based methodology came to the fore in the second half of the 1970s when communicative language learning began replacing the dominant behaviorist methodology. At the same time language acquisition researchers also saw it as a promising framework for studying

language acquisition in instructional settings. Nowadays task-based learning is a common practice in many language classrooms and has produced a significant amount of research in classroom language acquisition (Bygate, Skehan, & Swain, 2001; Eckerth & Siekmann, 2008; Ellis 2003, 2005; Van den Branden, 2006; Van den Branden, Gorp, & Verhelst, 2007), task-based language courses and programs (Leaver & Willis, 2004), and task-based methodological guides (Nunan, 2004; Willis & Willis, 2007). In fact, the task based framework is one of the most fruitful areas of second language acquisition research as it provides distinct units with clear boundaries for comparison in various contexts and under various conditions (Dornyei, 2003). The amount of research findings accumulated up to date allows us to form generalizations about the effects of various aspects of task design and implementation on language production in the classroom. The aspects of task design include input variables (presence or absence of contextual support, number of elements in the task, task topic), task conditions (shared vs. split information, task demands), task outcomes (closed as opposed to open tasks, inherent structure of the outcome, discourse mode), and the aspects of task implementation include presence or absence of planning, the type of planning in pre-task, task rehearsal and a post-task requirement (Ellis, 2005). Currently there is a consensus among language acquisition specialists that what is necessary for the successful development of communicative competence is the output, or language production, coupled with the noticing of the "gaps" in the interlanguage system (Ellis, 2003). This general agreement justifies the line of research that analyzes characteristics of learners' language production and hypothesizes its effect on the underlying interlanguage system, i.e. on the processes of language acquisition.

Task based learning offers a useful framework for operationalization of motivational and cognitive factors. Of all the aspects of task design and implementation, it is the pre-task that offers itself as a very natural and suitable task phase for introducing motivational and cognitive support to the students. It seems natural for the teacher to

motivate students before the start of the task, and to offer cognitive scaffolding before the task in order to minimize interruption of the task flow. This is not to say that motivational and cognitive support cannot or should not be offered during or after the task. On the contrary, it is quite possible for the students to experience problems in the middle of a task and to ask for help. Similarly, post-task clarifications of cognitively challenging moments of the task, as well as praise and encouragement can be crucial for students' self-belief and further attempts to fulfill similar tasks. However, if the students do not have adequate motivation or cognitive preparation for a task, they will not be able to approach it productively, and time will be wasted in class. For this reason, the current study will investigate the ways and effects of preparing students motivationally and cognitively in the pre-task phase.

Ellis (2005) distinguishes between 4 alternatives in the pre-task phase: (1) performing a task similar to the main task; (2) providing the students a model of the "ideal" performance to observe, with or without accompanying activities; (3) non-task preparation activities without access to the task (providing background knowledge, activating students' content schemata, brainstorming, mind maps, pre-teaching vocabulary or grammar); and (4) strategic planning with access to the main task (with or without guidance). It is the third and the fourth alternatives that are of interest for the present study.

A great number of studies investigated the impact of strategic planning on language production, and smaller proportion of studies looked at the impact of different pre-tasks. Earlier studies in strategic planning introduced the students to an oral task, gave them some time to prepare, and then measured the language produced during the task (Foster & Skehan, 1996; Mehnert, 1998; Skehan & Foster, 1997; Wendel, 1997; Wigglesworth, 1997). The results were compared with groups that had no planning time, or had a different amount of planning time.

For example, Foster and Skehan (1996) conducted a study with pre-intermediate ESL college students of various L1 backgrounds. They asked pairs of participants to engage in three different tasks (personal information exchange, narrative task, and decision-making task) under three different conditions: unplanned condition, non detailed planned condition, and detailed planned condition. In the unplanned condition, the participants were not given any time to plan their performance but were only given instructions to complete the task. In the two planned conditions the participants were given 10 minutes to prepare their performance. The detailed planners received guidance on how to plan for the syntax, lexis, content and organization of their performance, while the no-planners did not. The results of the study showed a clear positive effect of the degree of planning on the accuracy and complexity aspects of the participants' speech. With regard to the accuracy aspect, surprisingly the participants in the less detailed planning condition produced the most accurate speech as measured by a proportion of error-free clauses. The planning condition interacted with the type of task, with the narrative and personal information exchange tasks benefiting more from the pre-task planning than the less demanding personal task.

In a follow-up study Skehan and Foster (1997) continued investigation into the interplay between the planning time and task type. The same three types of tasks were as in the previous study: personal, narrative and decision-making, in addition to the following conditions: planning time (10 minute or no planning time) and knowledge of the post-task (some pairs of participants were told they would have to perform the task again in front of the class, and other pairs knew they were not facing public performance after the task). The results showed that planning time had a clear effect on most aspects of language performance (planning time increased fluency in all tasks, accuracy only in the personal and narrative tasks, and complexity only the personal and decision making task). Knowledge of the post-task did not result in any clear effect on the speech quality. The type of tasks benefited differentially from the preceding planning time, which led to

increased accuracy in more structured tasks and increased complexity in less structured tasks that required considerable online processing.

Wendel (1997) showed two short silent movies to low to intermediate Japanese learners of English and asked them to retell the films under two planning conditions: 10 minute planning prior to the narrative and no planning time. The results showed that planners produced more fluent and complex speech than non-planners. However, the accuracy and richness of lexis of the participants' speech did not improve as a function of planning time.

Mehnert (1998) investigated the effect of different length of planning time (1 minute, 5 minutes, and 10 minutes) on the speech of intermediate learners of German. One minute of planning time was enough for the study participants to improve on the accuracy, as compared to the control group who were asked to complete the tasks without any planning time. However, participants did not make any gains on accuracy with increasingly longer planning time. Fluency improved increasingly as a function of the length of the planning time, while complexity improved only after 10 minutes of planning.

Wigglesworth (1997) investigated the effect of planning time in a language testing setting by allowing participants to plan the performance during one minute prior to engaging in a semi-direct oral interaction task. The results showed that the higher proficiency participants improved on the accuracy of speech (verb morphology and articles) when given an opportunity to plan for cognitively complex tasks, while the lower proficiency participants did not.

The solitary pre-task planning employed in most studies discussed above was preferred to a teacher-led pre-task activity, because the solitary planning was thought to be more controlled, while the teacher-led preparations were judged to be more prone to unexpected variation (Foster & Skehan, 1999). However, a concern was raised that during solitary planning, it is hard to say what kind of preparation activities students

engage in, and whether such activities are similar across all students. For example, are the students focusing on form or meaning when they are planning for the task? The understanding of the students' mental activities during strategic preparation is crucial because it arguably affects the subsequent language production during the task. Several studies investigated the processes students engage in while preparing.

For example, Wendel (1997) conducted retrospective interviews with the Japanese learners of English in his study of narrative retellings of short silent films and found that during the planning time most participants focused on the content and sequencing of events rather than on form. In another investigation of mental processes during strategic planning, Ortega (1999) asked English speaking advanced learners of Spanish to listen to a story in their L1 and retell it in L2 under two conditions: without planning time and with 10 minutes of planning prior to retelling. Ortega found that planning time resulted in increased fluency and complexity of speech, but not in lexical range or accuracy. Retrospective interviews with the participants regarding the strategies they used during planning time revealed that priority was given first to global structural organization and main ideas and then to details, that participants attended both to content and form (with wide individual differences with respect to this aspect), and that they planned at the utterance level. Ortega (2005) continued this line of research and argued that when given opportunity to plan strategically, learners attend first to content and then to form.

Other studies (Foster & Skehan, 1996; Foster & Skehan, 1999; Sangarun, 2001) approached the issue of mental processes during planning differently - by focusing students' attention on form or meaning, that is, by giving explicit suggestions and instructions on how to plan. For example Foster and Skehan (1996) gave suggestions to detailed planning group to plan for syntax, lexis, content, and organization of language performance, while non-detailed planning group did not receive any guidance but were told to plan for the task. As reported above, both planned conditions outperformed the

participants in the no-planning condition, while the detailed planners produced a less accurate speech than the undetailed planners on the personal task. Foster and Skehan (1999) compared teacher led content-based and form-based planning and found surprisingly that teacher led focus on form planning did not lead to a more accurate speech than the teacher led focus on content. Sangarun (2001) compared the effect of three types of pre-task planning conditions (content focused, language focused, and content plus language focused tasks) on the language performance during two types of tasks (with high and low demand in terms of cognitive and linguistic loads). Sangarun found that both the content based and the content plus language based pre-tasks resulted in higher complexity, while all three planning conditions led to improved accuracy and fluency on one or both tasks compared to the no planning control group. With respect to the types of tasks, it is not surprising that the high demand task promoted complexity of speech while the low demand task promoted the accuracy and fluency of speech and proved to help direct the participants' attention to content while planning.

And finally, Foster and Skehan (1999), in addition to focus of planning (form vs. content), introduced another dimension to their study - the source of planning (teacher-led vs. group-based). Teacher led planning task in their study produced a more accurate speech than in the group based and solitary (control) planning conditions.

The results of Foster and Skehan (1999) are of particular interest to the present study. This is the only study of the above mentioned that included a teacher-fronted condition, where the entire pre-task was led by the teacher, with no time allowed for solitary planning. The other conditions were groups-based planning, solitary planning (10 minutes), and no planning. In addition, the teacher-fronted and the group-based conditions each consisted of two groups, which differed in the foci of attention during planning: form-focused vs. content-focused. The results showed that solitary planners were more fluent, produced a more complex speech based on longer terms. The students in the group-based condition were less fluent. The no-planners lacked complexity, but

otherwise did not differ from other language conditions. And finally, the students in the teacher-fronted condition were more accurate.

Another recent study by Pesce (2008) compared two different sources of task planning: teacher-led and self discovery use of the Spanish imperfective/indefinite past tense verbal forms. Pesce reports that the two sources of planning did not seem to differentially affect the strategies to which the participants resorted during pair based speaking tasks (discussion and completion of a cloze exercise and a narrative based on a series of pictures). Interestingly, Pesce observed that a number of students who formed incorrect hypotheses in the self discovery planning condition used them in spite of the whole class discussion of the perfective/imperfective usage following the self discovery task and before the actual language task.

The analysis of the results of the above described studies allows us to form some generalizations about the effect of planning and pre-task conditions on the nature of language production during the task:

1) Allowing students to plan does seem to lead to more *fluent* speech during task completion (Foster & Skehan, 1996; Skehan & Foster, 1997; Wigglesworth, 1997; Wendel, 1997; Mehnert, 1998; Ortega, 1999).

2) Planning time also seems to result in more *complex* speech (Crookes, 1989; Foster & Skehan, 1996; Skehan & Foster, 1997; Wigglesworth, 1997; Mehnert, 1998; Ortega, 1999; Yuan & Ellis, 2003; Sangarun, 2001).

3) The results for *accuracy* are more complex. In some of the studies described above, planning time led to more accurate speech in terms of generalized measures of accuracy, such as the percentage of error-free clauses (Foster & Skehan, 1996: personal task and decision making task; Foster & Skehan, 1999; Skehan & Foster, 1997: personal and narrative tasks), or in terms of a more specific speech measures (Ellis, 1987: accurate use of regular past tense; Ortega, 1999: noun-modifier agreement). However, some studies did not find any effect on accuracy (Crookes, 1989; Foster & Skehan, 1996:

narrative task; Iwashita, Elder, & McNamara, 2001; Skehan & Foster (1996): decision-making task; Wendel, 1997; Yuan & Ellis, 2003). The findings suggest that accuracy, unlike fluency and complexity, is less prone to manipulation by means of providing learners time for pre-task planning.

Measures of Fluency, Accuracy, Complexity

Studies investigating the impact of task design factors on language production have often analyzed students' speech in terms of accuracy, complexity and fluency, as proposed by Skehan (1996). In order to test whether the three aspects did indeed represent 3 distinct factors of speech, several studies subjected their data to a factor analysis and found that different measures loaded on three factors of fluency, accuracy and complexity (Mehnert, 1998; Skehan & Foster, 1997). Skehan (1996a) defines the three aspects of second language learners' speech as follows:

> accuracy is concerned with a learners' capacity to handle whatever level of interlanguage complexity s/he has currently attained. Complexity, and its attendant process, restructuring, relates to the stage and elaboration of the underlying interlanguage system. Fluency, finally, concerns the learner's capacity to mobilize an interlanguage system to communicate meaning in real time. (p. 46)

In other words, accuracy is associated with conservatism and use of the better controlled and more restricted structures, complexity follows from taking greater risks in using less controlled and more exploratory structures at the edge of the interlanguage, and fluency is related to the needs of coping with communicative demands in real time and is probably more lexically based (Foster & Skehan, 1999).

Different measures have been used to estimate the three aspects of speech. Ellis (2003) compiled a list of measures used in studies to measure

a) fluency: number of words/syllables per minute, number of pauses of one/two second(s) or longer, mean length of pauses, number of repetitions, number of false starts, number of reformulations, length of run, number of words per unit;

b) accuracy: number of self-corrections, percentage of error-free clauses, target-like use of verb tenses, articles, vocabulary, plurals, negation, ratio of definite to indefinite articles;

c) complexity: number of turns per minute, anaphoric reference, lexical richness (number of word families used, percentage of lexical to structural words, type-token ratio), proportion of lexical verbs to copula, percentage of words functioning as lexical verbs, percentage of occurrence of multi-prepositional utterances, amount of subordination, frequency of use of conjunctions, frequency of use of prepositions, frequency of hypothesizing statements.

The use of various measures to draw conclusions about the three aspects of speech complicates cross-study comparison. In addition, if a study used several measures for one aspect, often certain measures showed significance and others did not. For example, in Foster and Skehan (1996), the number of pauses and total silence time as measures of fluency did show significant differences for different planning conditions, while other measures of fluency such as false starts, reformulations, passives, repetitions and hesitations, did not show significance. Ortega (1999) used two measures of accuracy: target-like use of noun-modifier agreement and target-like use of articles in Spanish: the first measure showed significant differences between the planned and unplanned conditions, while the latter did not. Although factor analyses show that various measures do load on three distinct factors (accuracy, fluency and complexity), the above results indicate that not all measures are sensitive enough to capture useful variance, and that the particular choice of measures needs to be well justified.

Until very recently, there was little or no data on the reliability or sensitivity of various measures. The work of Skehan and Foster clarifies the validity of a range of operationalizations of fluency, accuracy and complexity (Foster & Skehan, 1996; Skehan & Foster, 1997, 1999). In terms of complexity, Foster and Skehan found that an index of subordination provides a reliable measure, and correlates with other measures of

complexity (e.g., range of structures used) (Foster & Skehan, 1999). It is arrived at by dividing the total number of clauses in a speech sample by the number of c-units. A c-unit is an utterance that provides referential or pragmatic meaning and consists of either an independent finite clause or a finite clause with its subordinate finite and/or non-finite clauses. Recently, Foster et al. (2000) proposed a similar unit of dividing speech into units, although better suited for second language production: analysis of speech unit, or AS-unit (this measure is discussed in detail in the Methodology chapter). As a measure of accuracy, Foster and Skehan (1996) found that more generalized measures (for example, percentage of error-free clauses) are more sensitive than specific measures (target-like use of certain aspects of grammar, such as articles or verb forms), because the first accounts for all, rather than a select number of errors in a speech sample. In terms of fluency, Skehan (1998a) found by means of a factor analysis that fluency measures load on two factors, which he termed *breakdown fluency* (number of pauses, amount of silence), and *repair fluency* (repetition, false starts, reformulations, replacement). The first factor is indicative of speech disruption for on-line processing, the latter refers to on the spot readjustments under the pressure of real-time communication.

In order to ensure comparability of the results of the present study with previous research, I will use measures that were already used in similar studies, and that proved to be sensitive to various experimental conditions. I will also use more than one measure for each aspect of speech, to investigate whether the experimental conditions will differentially affect various aspects of fluency, accuracy or complexity, as other studies have showed.

The following measures will be used in this study to measure each of the three factors: accuracy, complexity and fluency.

Accuracy Measure

Percentage of error-free clauses. This is a generalized measure of accuracy, and was found to be sensitive to detecting differences in students' speech (Foster & Skehan, 1996). This measure was used in Foster and Skehan (1996), Foster and Skehan (1999), Yuan and Ellis (2003).

Complexity Measure

Subordination. It is measured by dividing the total number of clauses in the speech sample by the total number of AS-units. AS-unit is defined as "a single speaker's utterance consisting of an *independent clause, or sub-clause unit,* together with any *subordinate clause*(s) associated with either" (Foster et al., 2000, p. 365; emphasis in the original). AS-unit is a syntactic measure that additionally uses pause and intonation phenomena to cut oral data into independent AS-units. Earlier studies (Crookes, 1989; Foster & Skehan, 1999) used a similar c-unit, defined as

> each independent utterance providing referential or pragmatic meaning. Thus, a c-unit may be made up of one simple independent finite clause or else an independent finite clause plus one or more dependent finite/non-finite clauses. (Foster & Skehan, 1999, pp. 228-229)

Menhert (1998) and Yuan and Ellis (2003) also used a similar complexity measure, although with T-units which differ from c-units in that they do not include elliptical sentences. T-unit, c-unit, and AS-unit differ in that they allow for the inclusion of progressively more data in the analysis of the second language speech, which is known for being fragmentary.

Fluency Measures

- *Total number of pauses.* The measure was used in Foster and Skehan (1996), Foster and Skehan (1999), Mehnert (1998).

- *Total amount of silence.* The measure was used in Foster and Skehan (1996), Foster and Skehan (1999), Mehnert (1998).

- *Speech rate.* It refers to the number of syllables produced on average per minute. The measure is arrived at by dividing the number of syllable in the speech sample by the number of seconds of the speech sample and multiplied by 60. The measure was used in Mehnert (1998), Wendel (1997), Yuan and Ellis (2003).

- *Pruned speech rate.* Estimated similarly the speech rate above, only excluding all words, phrases, and syllables that were subsequently repeated, reformulated, or replaced. The measure was used in Mehnert (1998), and Yuan and Ellis (2003).

Research Questions and Research Hypotheses

The current study will investigate the effects of a teacher-led motivation pre-task, a teacher-led cognitive pre-task, and a no planning (control) pre-task at two levels: second year (third-semester) college students of French and third year (fourth and fifth semesters) college students of French. The results will be compared to the results in previous studies that investigated the effects of planning and no planning conditions (Foster, 1996; Mehnert, 1998; Skehan & Foster, 1997; Wendel, 1997; Wigglesworth, 1997), teacher-led form-focused and teacher led content-focused tasks (Foster & Skehan, 1999), and solitary planning with form-focused and content-focused suggestions given prior to planning (Foster & Skehan, 1996; Foster & Skehan, 1999; Sangarun, 2001).

Two research questions were stated earlier in Chapter 1:

Research question 1: Do third year college students of French produce a more accurate, more complex and more fluent speech than the second year college students of French?

Research question 2: Do second and third year college students of French prioritize accuracy, fluency, or complexity of speech differentially when exposed to (a) motivational intervention, (b) cognitive intervention, and (c) no intervention?

Given the preceding literature review, the following research hypotheses will be tested for the purpose of answering the two research questions. Hypotheses 1, 2, and 3 relate to Research Question 1:

Hypothesis 1: The third year participants will perform significantly better on all measures of fluency than the second year participants.

Hypothesis 2: The third year participants will produce a higher complexity mean score than the second year participants.

Hypothesis 3: The third year participants will perform more accurately than the second year participants. Hypotheses 1, 2 and 3 are based on an assumption that the third year students have had more exposure to the target language, have acquired more vocabulary and more grammar structures, and have different motivations for studying the target language (unlike the second year students, they are not required to take language courses, but chose to enroll in the French courses voluntarily).

Hypotheses 4 through 7 relate to Research Question 2:

Hypothesis 4: The participants in the motivation and cognitive pre-task conditions will produce a more fluent speech (fewer pauses, smaller amount of total silence time, higher speech rate, higher pruned speech rate) than the participants in the control condition. This hypothesis is based on the results of previous studies showing that engaging in planning prior to a task results in a more fluent speech (Ellis, 2003).

Hypothesis 5: The participants in the motivation and cognitive pre-task conditions will produce a more complex speech (higher proportion of subordination) than the participants in the control condition. This hypothesis is based on the results of previous studies showing that engaging in planning prior to a task results in a more complex speech (Ellis, 2003).

Hypothesis 6: There will be no differences in the accuracy of speech between the motivational, cognitive, and control conditions. In contrast to the fluency and complexity aspects of speech, previous research results were mixed with regard to the effect of

planning time on the accuracy of speech. The only study that employed teacher-led pre-tasks similarly to the current study (Foster & Skehan, 1999) found that the teacher-led groups, both form-focused and content-focused, produced a more accurate speech. However, the pre-task in Foster and Skehan's study was delivered in the target language (English) to the ESL students, while the pre-tasks in the current study will be delivered in the native language (English) to the students learning French as a foreign language. Therefore, no differences in accuracy are expected between the three experimental conditions because the pre-tasks will not provide the participants any rehearsal of the target language structure.

Hypothesis 7: There will be differences in the language performance of the motivation pre-task condition and the cognitive pre-task condition. Each will differ from the no-planning condition. This hypothesis is exploratory because the effects of motivation vs. cognitive pre-tasks have not been yet investigated in the pre-task planning and task-based literature.

CHAPTER 3

RESEARCH METHODS

Design

The design of the study is a between groups analysis of variance. The two independent variables are the type of pre-task (motivation, cognitive, or a no pre-task control) and participants' level (second year and third year). All groups were randomly assigned to treatments. Following the motivation, cognitive, or no pre-task, all groups were asked to engage in the same communicative task. The dependent measure is the nature of language production during the task, operationalized in terms of measures of accuracy (percentage of error-free clauses), complexity (proportion of subordinate clauses) and four measures of fluency (number of pauses per 100 words, length of pauses per 100 words, speech rate, pruned speech rate). In addition, two other instruments were used in the study: a dictation aimed at assessing the participants' proficiency level in the target language, and a motivation survey designed to measure the participants' self-reported level of motivation during the task. Both instruments were administered on the day of the experiment.

Participants

The participants in the study were 197 college level students of French as a foreign language at a large Midwestern university in the United States, at two levels: third semester French and third year French courses. I selected all available French third semester and third year classes during two consecutive semesters at this university (total of 17 classes), and assigned them randomly to treatments. In every class participants were randomly assigned to groups of three individuals. However, some classes were composed of the number of participants not evenly divisible by 3, which resulted in an extra group of 2 participants or 1 participant completing the task alone (n =17 across all classes), whose data were discarded. The data of 9 participants were not used in the study because

three recording devices failed to record their speech (one recording device per group of 3 participants), in spite of the fact that all recording devices were tested prior to the experiment. One group of 3 participants failed to speak French during the task, and their data were not used in the study.

In a brief survey attached to the dictation sheet the participants were asked to describe their exposure to the French language (number and level of French courses taken, time spent in French speaking countries). Two participants in the third year indicated unusually extensive previous exposure to the French language: one described himself/herself as a native speaker of French who had used French in all classes at school, and another stated having lived in France for a year. The data of both participants were discarded, because their proficiency was not representative of the third year French college students population.

Finally, a cutoff point of 10 words minimum per participant transcript was set, which eliminated the data of 1 participant from the sample. Some participants contributed less to the task discussion than others. Transcripts of fewer than 10 words were judged too short to produce any meaningful measures on the three dependent measures of accuracy, fluency and complexity of speech. Transcripts with more than 10 words contained three to four utterances that could be subjected to analysis.

As a result, the study was based on the data of 165 participants. The numbers of participants in each experimental condition are presented in Table 1.

Table 1 *Number of Participants by Year and by Experimental Condition* ($N = 165$)

	Motivation	Cognitive	Control
Year 2	33	24	23
Year 3	32	39	14

Every participant was assigned an ID number, for example A21, where the letter stands for the participant's class plus a random number. Participants were not asked to provide their names and were informed that their identities would be kept anonymous in the study. The participants were informed of the nature of the study and were given a chance to voice any concerns or objections, but no one did. Throughout the data collection and the data analysis all participants were referred to by their ID numbers, which I asked them to write on the dictation sheets, motivation survey sheets and handout sheets. In order to match the voice in the recording and the ID number, I asked all participants to say their ID numbers loudly and clearly before switching off the tape recorder.

Pilot Study

All components but one of the treatment conditions were piloted several weeks before the experiment. The motivation survey was the only component that was added to the study after the pilot experiment. The pilot test was conducted with two classes (33 students) of intermediate French at a medium size Midwestern University in the United States. A number of modifications made to the design of experimental conditions will be mentioned where relevant further in this chapter as I describe the details of pre-task design, task specifications, and materials used.

Materials

Tasks Handouts

Participants in every class were randomly assigned to groups of three in order to complete a communicative task following the experimental pre-tasks. The goal of the communicative task was to create a detailed description of a suspect in an arson crime by discussing the clues found in the apartment of the suspect, as well as the significance of the clues with regards to the suspect's gender, family situation, occupation, personal life,

personality, etc. For the handout, I compiled a list of clues and divided them evenly among three handouts, one handout per member of the three person group. Thus, every member of the 3 person group received a different list of clues found in the same apartment of the suspect. I designed the clues and distributed them among the three handouts in such a way that was aimed to provoke discussion. For example, the list from Handout 1 contained a photo of football players with a note in French *Ralphe the captain*, Handout 2 contained among its clues a photo of a father and a son playing football, signed *Ralphe and me, Marseille, 1976*, and Handout 3 listed a credit card in the name of Ralphe Larouche found in the apartment. Thus, the participants were encouraged to make connections and discover that the name of the apartment owner was most likely Ralphe Larouche, who was a football player born in France or who had lived in Marseille as a child. The majority of the clues on one handout contained clues connected to the other two handouts. Handouts are given in Appendix B.

The lists of clues used during the pilot study were more extensive than the ones found in Appendix B. Analysis of pilot group discussions revealed that the lists of clues were too long and most groups of students in both pilot classes needed more than 15 minutes to discuss all connections and incorporate all clues into the overall picture of the suspect's life and personality. Some clues were distracting and did not fit well in the overall picture of the suspect's personality, which brought a couple of groups to a dead end and halted discussion. That is why I shortened the pilot handouts by deleting the clues that proved to be not essential to the task completion, that were not frequently brought up by the pilot students and did not provoke discussion.

Motivation Survey

Survey Construction

The motivation survey used in this study is based on the Post-Experimental Intrinsic Motivation Inventory (IMI), a scale developed within the framework of the self-

determination theory of motivation (Ryan & Deci, n.d.). Participants' engagement in the experimental task in this study cannot be described as intrinsically motivated in the strict meaning of the concept as defined by Ryan and Deci (2000) because of the external reasons shaping their participation in the task. For example, the participants attended class on the day of the experiment and complied with the experimenter's request to participate because of the negative consequences on the class grade for missing the class. The presence of and proctoring by the class instructors may have also had an external influence on the participants' engagement in the task. Nonetheless, the use of IMI was judged appropriate in the current study, because the scale assesses students' motivation in relation to task participation, and because the constructs included the IMI are also relevant for extrinsically motivated contexts, namely, such constructs as competence and autonomy. The purpose of the IMI is to assess aspects of intrinsic motivation related to an activity conducted in experimental settings. The instrument consists of 7 subscales (interest/enjoyment, perceived competence, effort, value/usefulness, felt pressure and tension, perceived choice, and relatedness) that can be modified for use in the particular experimental context, depending on what variables of the scale are targeted in the experiment.

The following aspects of the motivation were targeted during motivation pre-task of this study: interest /enjoyment (5 items), perceived competence (4 items), effort (4 items), perceived choice (4 items), value/usefulness (4 items). These same aspects were included in the post-experimental motivation survey (see Appendix C). The use of 5 items for interest/enjoyment subscale is justified by the fact that this subscale is the only one directly targeting intrinsic motivation, and thus can and usually does have more weight in the survey (Ryan & Deci, n.d.). The perceived competence and perceived choice subscales target two situational factors (competence and autonomy) that are essential in promoting intrinsic motivation and the two more integrated extrinsic types of motivation (identification and integration). The value/usefulness subscale assesses

participants' perception of the task value associated with more integrative types of extrinsic motivation. Finally, the effort subscale is included because greater effort is associated with more integrated and less externally regulated behaviors (Ryan & Connell, 1989).

Table 2 *Motivation Survey Subscales and Individual Items*

Subscales	Items in each subscale
Interest/ enjoyment	1. I enjoyed doing this activity very much. 2. This activity was fun to do. 3. I thought this was a boring activity. (R) 4. I would describe this activity as very interesting. 5. I thought this activity was quite enjoyable.
Perceived competence	1. I think I am pretty good at this activity. 2. After working at this activity for awhile, I felt pretty competent. 3. I am satisfied with my performance at this task. 4. This was an activity that I couldn't do very well. (R)
Effort	1. I put a lot of effort into this. 2. I didn't try very hard to do well at this activity. (R) 3. I tried very hard on this activity. 4. I didn't put much energy into this. (R)
Perceived choice	1. For the most part, I felt like I was doing this activity because I wanted to. 2. For the most part, I felt like I was doing what I wanted to do while working on the task. 3. For the most part, I felt like I was doing this activity only because the experimenter wanted me to. (R) 4. For the most part, I felt like I was doing what the experimenter wanted me to do. (R)
Value/ usefulness	1. I believe this activity could be of some value to me. 2. I think that doing this activity is useful for learning to speak French. 3. I would be willing to do this activity again because it is somewhat useful. 4. I think doing this activity could help me to become better at speaking French.

Note. (R) indicates items whose score was reversed for data analysis.

Survey Administration and Scoring

The survey was distributed on the day of the experiment after the participants had completed the task.

In adapting the IMI to the context of the current study and following the guidelines in Ryan and Deci (n.d.), I added whenever relevant phrases such as *speaking French*, particularly to two value/usefulness subscale questions: *I think that doing this activity is useful for learning to speak French*, and *I think doing this activity could help me to become better at speaking French*. No other changes were made to the original IMI items. Table 2 lists items for each subscale of the motivation survey. For the actual survey (Appendix C) I arranged 21 survey statements in random order and added the response scale from 1 (not at all true) to 7 (very true) in accordance with the guidelines in Ryan and Deci (n.d.).

Letter R in Table 2 stands for reversed on items whose scores were reversed for final analysis (subtract the survey score from 8 and use the resulting score in data analysis). Every participant received a score on each of the 21 items of the survey, an average score on each of the 5 subscales of the survey, and an overall average score for all 21 items of the survey.

Dictation

On the day of the experiment all participants completed a dictation as a measure of overall language proficiency at the second year and third year levels. It may seem counterintuitive to administer a test of dictation that involves listening comprehension to draw conclusions about the students' oral language proficiency. However, previous studies have found positive correlations between a dictation test of any kind (conventional dictation, reduced redundancy test, noise test, partial dictation) and an oral interview of any kind, ranging from $r = .58$ to $r = .86$ (for example, Bacheller, 1980; Caulfield & Smith, 1981; Gradman & Spolsky, 1975; Heller et al., 1995; Johansson, 1973; Young, 1987).

Dictation Construction

To assess participants' language proficiency in this study, I used 2 dictation passages from Savignon (1982) (see Appendix D). The reasons for selecting the two mentioned passages are the following:

1) the passages had been used with a comparable population in Savignon's study (college level students of French at a large Illinois university);

2) the properties of these passages had already been investigated across a wide range of student levels (second semester, second year, third year, graduate students);

3) the two passages had proved to discriminate well across different proficiency levels, and the rank ordering of students by group means across all levels was as expected for both passages;

4) passage A discriminated better at lower levels, while passage C proved to discriminate better at higher levels. Thus, passage A was administered to the second year students in the current study, and passage C was administered to the third year students;

5) the reliability (*KR-20*) for all scoring methods on both passages was found high in Savignon (1982): on passage A r =.844 (exact word scoring method), .875 (phonetic similarity), .893 (conveyance of meaning), on passage C r = .945 (exact word), .940 (phonetic similarity), and .941 (conveyance of meaning);

6) the interrater reliability for both passages proved very high: on passage A r = .97 and .98 (exact word and conveyance of meaning respectively), and on passage C r = .99 and .99 (by method).

Savignon (1982) chose authentic passages of general interest for the study. The passages were then divided into chunks by a teacher (non-native speaker of French) and a native speaker. The length of chunks had to be acceptable to the native speakers who would later dictate the passages. The original chunking was preserved for the purposes of the current study. The pauses between chunks were determined in Savignon (1982) by 2 non-native speakers writing down the dictation as it was dictated. The current study used

the same method of determining pauses during the recording. I recruited a native speaker of French to dictate the passages and two non-native speakers to write down the two dictated passages. The proficiency of the non-native speakers of French was comparable to the proficiency level of the participants in the current study: one at the intermediate level and the other advanced. The recording took place in a language laboratory classroom equipped with the Sanako Lab 100 digital audio system. The native speaker of French read each passage three times: first, at a moderate speed, second with pauses between segments to allow for writing, and a third time at a moderate speed with short pauses at the end of each sentence. The length of pauses on the second reading was determined by allowing sufficient time for the two non-native speakers to write down the segments as they were being dictated, pause to check their writing, and signal the speaker to continue.

In addition, I recruited a native speaker of English to read the introductory dictation instructions in English. The audio version of the introductory instructions preceded the dictated passages in the recording, and was also available to participants in writing on the front page of the dictation sheet. The dictation sheet distributed to participants is given in Appendix E.

Dictation administration

The majority of studies investigating dictation properties have used recorded rather than "live" dictation passages, which ensured consistency of administration. In the current study, the audio of the instructions and the dictation were saved in an audio format .cda on a compact disc and were played on a CD player during the experiment.

Dictation Scoring

The issue of what errors should be counted in a dictation is an important one, as it has implications for the validity of the test. The traditional approach has been to score dictations on an exact word basis (1 point for each correctly spelled word in a correct

sequence of words). Such a method lacks face validity and resulted in claims that dictation was a mere test of spelling. The results of Bacheller's (1980) study, for example, showed that spelling errors were unrelated to any other proficiency measure used in the study (correlations ranged from r = -.02 to r = .26).

Suggestions were made to improve scoring by disregarding spelling errors (Oller, 1971). For example, Savignon (1982) investigated the properties of 3 methods of scoring by chunk: exact word (EW), where 1 point was awarded for each correct chunk, phonetic similarity (PS), where 1 point was awarded for each chunk which was a phonetic rendering of the dictation chunk, and conveyance of meaning (CM), where 1 point was awarded if a scorer judged that the student had understood the meaning. The CM scoring method was found to discriminate between student levels comparably to the other two methods. In addition, the reliability indices for the CM scores were as high if not higher than the reliability of the other two methods (interrator reliability ranging from .98 to .99 for CM and from .97 to .99 for EW for 3 different passages). The speed of scoring by chunk rather than by word increases the usefulness of this method. These results led Savignon (1982) to conclude that "[s]coring of French dictation for conveyance of meaning appears to offer a useful alternative to the tradition of exact word scoring" (p. 45). Young (1987) used the same three scoring methods (EW, PS, CM) and found that CM scores correlated more highly with the Oral Proficiency Interview scores than did the PS or EW dictation scores. Young concludes that "a particular type of dictation test where construction, administration, and scoring method emphasize meaningful units, may be an effective measure of the communicative component of language proficiency" (1980, p. 648).

In the current study the dictation was scored using two methods: CM and PS. Higher correlations of the CM method with an oral test in Young (1987) make this method desirable because the purpose of the dictation in the current study is to determine how groups of students compare to one another with regard to their oral proficiency level.

In order to have an external check of this scoring method results, the dictations were also scored following a more conventional PS method. The PS rather than the EW method was chosen because it appears to be more effective in tapping the skills necessary for oral production in a conversation (namely, comprehension of the oral message), whereas the EW method is often criticized as being primarily a test of spelling. Spelling errors are not of interest for the purposes of the current study because they are not part of oral production, and because even native speakers often make spelling errors (Bacheller, 1980). The overwhelming majority of studies that have correlated a dictation with a direct oral proficiency measure, scored the dictations disregarding either pure spelling errors, or misspellings that were understood, such as *rainfull* for *rainfall* (Heller et al., 1995), or errors that did not violate pronunciation rules.

Given the above, the dictations were then scored following the guidelines taken from Savignon (1982):

1) CM scoring method: 1 point was award to a segment if the scorer considered that the student has understood the segment.

2) PS scoring method: 1 point was awarded to a word if the transcribed word represented a phonetic rendering of the dictated word in the original sequence. When a word was out of sequence, no credit was given for it.

The dictations were scored by word (not by segment) in the PS method, to ensure that this scoring method differs from CM. In Savignon (1982) and Young (1987), CM and PS resemble each other to a high degree. Both are scored by segment; in PS not only spelling is disregarded, but also paraphrases and brief omissions that do not alter the meaning of the chunk. In Savignon's study a credit on PS always resulted in a credit on CM, which is bound to ensure little difference between the scores on PS and CM. Savignon mentions that the decision to combine paraphrase with PS rather than with CM was arbitrary. It was judged here that both paraphrase and brief omission not affecting meaning belong with the CM method rather than with the PS method (for example, if a

student omits a repeated preposition, the meaning is not affected while the phonetic sequence of the dictated chunk *is* modified). Thus no credit was given to paraphrases and brief omissions in PS scoring method. Dictation scoring instructions and scoring sheets are reproduced in Appendices E and F.

Procedure: Overview

At the beginning of the two semesters during which the experiment was conducted, I contacted the instructors of all available French third semester and third year courses at the university, asking for their permission to use one class period of 50 minutes to conduct the experiment. I provided the instructors with general information about the kind of activities in which I intended to engage the students and about the nature of the task, without specifying what variables I was investigating. Specifically, I informed the instructors that I planned to give the students a dictation in French appropriate for their level, followed by a speaking task in groups also appropriate for the students' level requiring use of familiar everyday vocabulary. I mentioned that my goal was the analysis of the students' dictations and of task discussions, but asked the instructors not to inform the students of my goals, to avoid any impact on the results of the study. Instead, I asked the instructors to announce my visit the class before, to introduce me as a guest lecturer and researcher who would take over during that class period. I also asked the instructors to inform the students that missing that class would be counted as a regular class absence, and that the course instructor would be present in class on that day. I also mentioned that I was willing to provide to interested instructors diagnostic feedback on the students' performance on the dictation, a good integrative measure of proficiency.

To ensure consistency in administration of experimental treatments and to eliminate instructor effect, the researcher was the only person conducting experiments in all classes. The sequence of instruments and tasks administered in all treatments is outlined in Table 3.

The day of the experiment I arrived in class 10 minutes before class started and arranged the recording devices (tape recorders) on desks, with sufficient space between them to allow for groups of three to converse without interference from other students in class. I also placed a CD player for dictation administration in the front of the class and checked audibility of the recording throughout the classroom. At the beginning of the class period the instructor introduced me and gave me control of the class. I greeted the participants, thanked them for participating in the study, briefly introduced myself, and informed the students that they were asked to participate in a dictation and a communicative task during the class period. I also told the student that they could voice any objections or concerns they had related to the activities, but no one did.

Table 3 *Sequence of Instruments, Pre-tasks and Tasks Administered in All Experimental Conditions*

Sequence of events	Motivation group	Cognitive group	Control group
1. Introduction	+	+	+
2. Dictation	+	+	+
3. Randomly assign students in groups of 3	+	+	+
4. Task introduction	+	+	+
5. Pre-task	Motivation pre-task	Cognitive pre-task	No pre-task (skip this step)
6. Distribute task materials	+	+	+
7. Give instructions	Give instructions (emphasis on success criteria in terms of linguistic output quality)	Give instructions (emphasis on detailed action schemata)	Give instructions to complete task (no emphasis)
8. Conduct task	+	+	+
9. Motivation survey	+	+	+

Note. The plus sign indicates the procedures carried out identically in all conditions.

Following the introduction, the dictation was administered. I informed the participants that I would be willing to provide the results of their dictations if they contacted me, as a means of encouraging them to invest reasonable effort into writing the dictation.

After the dictation the participants were randomly placed in groups of three. Every participant picked an index card at random from a box. All index cards were color coded (every three cards with a different color), and the participants were asked to find their group members with matching color cards. When the number of the participants in class was not divisible by 3, I asked the remaining students to work in pairs or individually. The data of groups composed of fewer than 3 students were not used in the study to ensure comparability of task implementation conditions.

Further I introduced the task, by giving the same instructions in all experimental conditions. The participants were told that they were going to construct a description of a suspect in an arson crime based on clues found in the suspect's apartment by the police

Next, the Motivation and Cognitive groups received the motivation and cognitive pre-tasks respectively, while the Control group did not receive a pre-task, but instead engaged in the task immediately after the general task instructions.

All groups were given 1.5 minutes to read task handouts containing task instructions and a list of clues. After that I turned on the tape-recorders and instructed the participants to begin discussion. I instructed all groups to avoid reading but instead engage in a discussion in French. The participants were also instructed not to show their handouts to one another in the group. All groups completed the same communicative task in the course of 7 to 10 minutes.

During the discussion both the researcher and the class instructor kept at a distance from the participants, in order to avoid any effect on the quality of the participants' speech. At the end of 10 minute discussion the participants were asked to

say their IDs (e.g., A21) to the tape recorder loudly and distinctly before switching off the tape recorders.

Finally, I asked the participants to fill out motivation surveys before leaving the class.

Pre-tasks

In order to design motivation and cognitive pre-tasks it is necessary formulate a theoretical distinction between motivation and cognition, and then operationalize it. The difficulty in distinguishing between the two functions lies in the complexity of the real life inner processes of a human being. As discussed in the Literature review chapter, many theories of motivation are cognitive in that they specify cognitive processes that can produce motivational effect on individuals. For example, below is a list of motivational influences relevant to the pre-actional stage of Dornyei's (2003) dynamic model of motivation. The pre-actional stage is of interest to this study because it is this stage that corresponds temporarily to the pre-tasks. At this stage a student sets goals and forms intention for future action. The pre-actional stage continues until a student crosses "the Rubicon" by committing him/herself to action and embarks on action implementation. The subsequent two stages of Dornyei's model (the actional stage involving various volition and motivation controls, and the postactional stage dealing with various evaluation processes) are not controlled or affected by the researcher and are beyond the scope of this study. A brief review of the pre-actional motivational influences listed below reveals that most of them are cognitive in nature and have been part of cognitive theories of motivation (see Rueda & Dembo, 1995):

- various goal properties (e.g., goal relevance, specificity and proximity)
- values associated with learning process itself, as well as with its outcomes and consequences
- attitudes towards the L2 and its speakers

- expectancy of success and perceived coping potential
- learner beliefs and strategies
- environmental support or hindrance

The cognitive side of the above motivational influences is manifest in such cognitive processes as appraisal of goals (goal setting theory), appraisal of task value for the student (task value beliefs), appraisal of expectancy of success (self-efficacy beliefs based on attributions of past successes and failures), and selection of strategies for task completion, which is influenced by all of the above. At the same time these influences are motivational as all of them affect the direction and intensity of students' further actions and effort invested. Thus, motivational influences in their turn can have an effect on the intensity and depth of cognitive processing. This makes it difficult to design pre-task strategies that would solely affect either motivation or cognition of the students.

Given the close interrelation of the motivational and the cognitive processes, the experimental pre-tasks in the study were designed to maximally distinguish between the *I want to do it* and the *How to do it* aspects of approaching task completion. In other words, the distinction was made between:

(a) strategies inducing learners to want to fulfill the task (motivational): suggesting to the students the task and learning process values, presenting task as appealing and challenging, increasing student self-confidence and autonomy, and

(b) strategies easing the processing load of the task (cognitive): activating students' background schemata, retrieving a range of relevant L1 vocabulary necessary for the task, suggesting strategies for effective task accomplishment, providing clear and detailed action schemata for the task (clear instructions as to what the students have to do).

The motivation pre-task condition was directed at making the participants *want* to embark on the task and complete it, while the cognitive pre-task condition provided the participants with linguistic (although in L1) and strategic tools to successfully fulfill the

challenging task. The question is whether motivation alone can compensate for (a possibly) overwhelming cognitive load of task processing (trying to cope with parallel logistical, organizational aspects of the task, such as organizing all group members to fulfill the task efficiently using effective task strategies, using strategies to aid memory to keep track of all objects found, searching and retrieving a range of vocabulary to describe people, coming up with a range of occupation vocabulary, lifestyle vocabulary etc.). It is also of interest to see whether the two conditions will differentially affect the three aspects of the students' speech: accuracy, fluency, and complexity.

Operationalizing Pre-task Conditions

The idea of distinguishing between a motivation and a cognitive pre-task was, to my knowledge, first proposed by Zoltan Dornyei and Ema Ushioda (personal communication, May 26, 2004). They distinguished between a motivational task preparation (explaining the purpose and value of the activity, providing clear performance standards and success criteria, arousing the learners' curiosity, asking learners to do their best, adopt a talkative style) and a strategic task preparation (activating the domain-specific knowledge, providing action schemata, suggesting relevant cognitive and metacognitive strategies learners can use). The approach to designing pre-tasks in this study was largely inspired by Dornyei and Ushioda's conceptualization of a motivational versus strategic task preparation, with modifications pertinent to this study, such as aligning the motivational pre-task with the SDT theory of motivation.

Motivation Pre-task

The motivation pre-task was grounded in self-determination theory and operationalized as a speech addressing major internally motivating variables. The pre-task also involved brief interaction with the participants and elicitation of their responses. The motivation pre-task was conducted in the students' mother tongue (English) and

addressed such aspects of motivation as interest, perceived competence, choice, value, and effort. Below I describe what was said during the motivation pre-task, in the order listed, and in what way the participants engaged in the pre-task.

1) Interest. The task was presented to the participants as designed purposefully to be interesting and enjoyable. I informed the participants that other students who had already completed the task indeed found it fun to do and added that I hoped the participants would find it interesting too.

2) Competence. I told the participants that I was sure they would do well on the activity, which meant listening well to one another and communicating with one another in French, without falling back on English words. I gave the participants the reasons for my confidence in their ability to fulfill the task, namely because their instructor had assured me of their ability to do well on this activity, and also because other groups students of a comparable level had completed the task successfully.

3) Choice. I told the participants that the activity had been designed to give them a chance to practice speaking French in a meaningful context, but that it was up to the participants how much effort to put into it, and what kind of things to say during the activity.

4) Value. First, I elicited from the participants their reasons for learning French by asking the participants to provide from two to three responses in every class. I said that the reasons they had just mentioned were very common among students of French, and that the most common of all was to be able to communicate in French, particularly during travel. I told the participants that in order to improve on speaking skills, one thing was absolutely indispensible, namely, to practice speaking French. I told the participants that this common sense observation was also supported by research. The information gap activity they were about to engage in was one of the best activities to encourage learners to speak. In addition the activity involved practicing common vocabulary they had

learned in this and previous French courses, highly necessary in everyday communication and travel.

Cognitive Pre-task

The cognitive pre-task focused on providing the participants with linguistic and strategic tools to complete the task. The main goal of the strategic pre-task is to off-load some of the processing demand, so that the students can invest additional processing capacity in the linguistic form of their output (Skehan, 1996). The strategic pre-task was conducted in English and consisted of the following, in the order listed:

1) activating students' background knowledge schemata and brainstorming a range of relevant L1 vocabulary necessary for the task completion, and

2) brainstorming with the students metacognitive strategies helpful in fulfilling the task effectively.

The rationale for the first point (a) is based on the research that shows that once a background schemata is activated, students can tap into it more effectively than if it were not activated (Anderson & Pearson, 1984), thus saving attentional capacity for other ongoing processes, such as oral production and comprehension. In order to activate the relevant schemata,

The second component of the cognitive pre-task was modified following the pilot experiment. The pre-pilot version of the cognitive pre-task included brainstorming ideas to effectively approach the task at hand. This step was motivated by the research showing that successful language learners employ effective learning strategies (Chamot & O'Malley, 1994), while their less successful peers do not. The goal of the task at hand was to come up with a complete description of the suspect (male or female, family situation, relations, occupation, lifestyle: eating habits, daily activities, and a physical portrait). In order to do that, groups needed to draw on the pieces of the puzzle available to all 3 participants. An effective strategy to approach such a task was suggested to the

pilot Cognitive group: outlining columns with personality aspects as labels (family situation, daily activities), and marking down the objects found in the relevant columns. This layout could be helpful for the final presentation of the groups' conclusions and the approach is more effective and time consuming than randomly discussing various objects and aspects of the portrait. However, the pilot showed that such suggestion encouraged students to spend most of the time on writing instead of discussing, and this step was eliminated from the Cognitive pre-task during the actual experiment.

Following the post-pilot modifications, the final version of the cognitive pre-task consisted of the following:

1) Background schemata. I reminded the participants in the Cognitive groups of several famous detective story characters (Sherlock Holmes, Agatha Christie's stories, detectives from the *Law and Order* and *CSI Miami* shows), and briefly surveyed the participants' popular detective shows/stories (two to three responses from every class). I asked the participants to come with possible details that detectives pay attention to when looking for clues. I asked them to name several famous clues that helped solve particular crimes, for example in a well-known actively discussed corporate investigation at the time of the experiment (two to three responses from every class). I asked the participants to list clues they would look for in the apartment of a fugitive suspect and what information they could provide about the suspect. As participants named clues, I organized them on the board in a form of mind map, following the suggestions in Willis (1996, p. 44). The map was organized around the central bubble named "Clues", with secondary bubbles radiating from the center with different types of clues. I limited myself to six clues on the board in every class. The content of the mind map differed in every class, depending on the clues that each class supplied. This activity simultaneously served the purpose of brainstorming L1 vocabulary relevant to the task. The activity was purposefully conducted in the participants' L1, to avoid having any effect on their L2 oral production during the task.

2) Task strategies. I suggested to the participants that one way to approach the task efficiently was to circle important clues as they go through the list, note down what the clues could tell about the suspect, and then discuss their hypotheses with the group.

The motivation and the cognitive pre-tasks took four to five minutes before the students were asked to engage in the experimental task common to all conditions.

Task

The topic of the task was very broad: personality, family, daily life, eating habits, physical appearance, and professional life. The broad scope of the task was designed purposefully to ensure that the participants draw on all available vocabulary they have acquired and produce enough language for the researcher to analyze across the levels represented in the study.

In addition to the topic of the task, other task design variables have potential effects on the language produced during the task, such as task input, conditions, implementation, and outcomes, as described below.

Task Input

All participants in a class were randomly assigned to groups of three. Each group member received a list of objects, or clues, found in the apartment of a crime suspect (see Appendix B for lists of clues handed out to participants). Each group of 3 participants was given the same list of objects found in the apartment, distributed among the three group members. However, every single group member had a list different from the lists of his/her group mates (that is, handouts for participants A, B, and C in Appendix B).

Task Outcome

The participants were asked to come up with a psychological and physical description of the suspect: whether the suspect was male or female; the suspect's family situation (single, married or divorced, children, extended family); relations

(acquaintances and friends), the suspect's professional occupation; the suspect's lifestyle (eating habits, daily activities). The pre-pilot task outcome of presenting a group poster with conclusions regarding the suspect's profile was eliminated from the final study because (1) it was not the focus of the study, and (2) there was no sufficient time remaining for this activity in the 50 minute class period.

Task Implementation

Participants were randomly assigned to groups of 3. If the total number of students in the class was not divisible by 3, than one group 2 was created or one participant was asked to record his conclusions individually. The data of such groups and individuals were not used in the study. Only the data of groups of 3 were used in the study to ensure comparability of task implementation conditions.

Task Conditions

The information necessary to complete this task was not shared by all task participants, but split (an information-gap task). The objects found in the apartment were split among group members. This condition required that group members communicate with one another in order to complete the task.

Data Collection and Analysis

Group discussions were recorded using audio cassette recorders with built-in and external microphones, depending on the tape-recorder model and its features. The analogue audio data (on audio cassettes) with recordings of the participants' speech was digitized in a laboratory classroom using Sanako Lab 100 equipment, and saved on compact discs in WAV and MP3 formats. The first 5 minutes of speech in every 3 participant group discussion was transcribed and used for analysis. A sample transcript is given in Appendix G. Transcription included all meaningful words, syllables, and all pause fillers (e.g., ahm, eh, hm).

The dependent measures in this study were four measures of fluency, a measure of speech accuracy, and a measure of speech complexity. In addition to the dependent measures of interest, a reading measure was used to calculate the proportion of reading production to the overall production. I will now describe each measure in detail.

Measuring Reading

In the process of data transcription and analysis I noticed that a number of participants spent most of the 5 minutes on reading the text from task handouts to the other group members, rather than speaking in their own words. Excessive reliance on the handout could affect the dependent measures of accuracy, fluency and complexity in an unexpected manner. For this reason I used a reading index to measure the relative amount of reading and speaking in all transcripts. Reading index was calculated by dividing the number of words "read" by the total number of words in the transcript, with the resulting values ranging from 0 (no reading) to 1 (all reading). Reading was defined as three or more lexical words (nouns, adjectives, verbs) from the task handout produced in the same order as they appear in the handout (e.g., *un nouveau vélo pour un enfant* [*a new bike for a child*]). Two lexical words produced without modification of word order were counted as speaking (for example, *un petit garcon* [*a little boy*]), because it was judged that such short word combinations could be reproduced from memory. The order and form of function words (articles, prepositions) were ignored in the reading index count because it was apparent that the participants made frequent errors in function words even when reading from the task handout. Proper names standing for concepts familiar to the participants were treated as one word for the purposes of this analysis, because they could be reproduced from memory (for example, *Ralphe Lauren, New York Times, Travelocity dot com*). The transcript in Appendix G provides an example of the analysis.

In an effort to reduce the overall amount of reading across all data, I indentified 11 group transcripts (3 participants per group) in which a second chunk with less reading

was available. Such were the groups where students spent longer than the required 5 minutes on the task because the conditions of task implementation in those groups allowed for extra time on task at the end of the class period. In 10 minute or longer transcripts I analyzed the second 5 minutes of the transcript. In transcripts that were shorter than 10 minutes I selected the last 5 minutes of the available speech, which meant that the second transcript overlapped with the first chunk by including varying lengths of the ending of the first chunk. Of the 11 second chunk groups, 3 groups had new speech segments for the whole duration of the second chunk, and 8 groups included a range of 17 to 108 seconds of the end of the first chunk.

Further in this chapter I will refer to Chunk 1 data and Chunk 2 data. Chunk 1 data consist of the initially selected transcripts, i.e., the first 5 minute of the recorded discussion for every participant in the study. Chunk 2 data consist of the second chunk transcripts for the 11 groups (33 participants), plus the initially selected transcripts for the remaining 132 participants in the study.

Table 4 *Means (and Standard Deviations) for Words Read and Syllables Read Measures by Treatment and by Data Chunk in Year 2 and Year 3*

	Motivation		Cognitive		Control	
	Chunk 1	Chunk 2	Chunk 1	Chunk 2	Chunk 1	Chunk 2
			Year 2			
Words	.38 (.19)	.33 (.18)	.32 (.22)	.31 (.21)	.39 (.25)	.31 (.23)
Syllables	.42 (.21)	.36 (.19)	.35 (.23)	.34 (.22)	.42 (.24)	.34 (.23)
			Year 3			
Words	.28 (.20)	.26 (.21)	.15 (.11)	.15 (.11)	.21 (.16)	.17 (.16)
Syllables	.31 (.21)	.29 (.22)	.18 (.13)	.17 (.13)	.23 (.19)	.19 (.16)

Note. The statistics in the table are based on the following sample sizes: Year 2 motivation $n = 33$, Year 2 cognitive $n = 24$, Year 2 control $n = 23$, Year 3 motivation $n = 32$, Year 3 cognitive $n = 39$, Year 3 control $n = 14$.

The descriptive statistics for the reading index are presented in Table 4. The mean reading index went down in Chunk 2 across all data, but far from producing a dramatic change: it decreased by .01 to .08 for both reading measures across all data. Although the most extreme reading indices were eliminated in Chunk 2 data, not all high reading scores were reduced because for some groups of participants there were no additional chunks of speech with less reading available.

Across all treatments, the syllables read mean values are higher than the words read mean values, which can be accounted for by the presence of multisyllabic words in the task handouts, and suggests that participants read longer words and spoke shorter words.

The cognitive groups in both years tended to produce a lower reading index than the motivation and control groups, particularly on Chunk 1 data. This suggests that the Cognitive group approached the task from the very start by reading less than the Motivation and the Control groups.

The reading index measure was added due to a concern that reading the correctly formulated text from handouts instead of the expected speaking behavior might affect the dependent measures, for example by inflating or deflating the accuracy, complexity or fluency scores. To investigate the relationship between the reading index scores and the dependent measures, I calculated correlations between all reading indices and all accuracy, fluency and complexity measures for the combined Year 2 and 3 data (see Table 5). The correlation analysis is presented here rather than in the Results chapter because its outcomes informed my decision to use Chunk 1 data throughout most of the data analysis. In contrast, t-tests comparing Year 2 and Year 3 on the reading measure, and ANOVAs comparing the three treatments on the reading measure will be more appropriately presented in the Results chapter.

I conducted two-tailed tests because there was no clear indication in what way the reading activity may be related to the accuracy, complexity and fluency scores, if at all.

The correlations between the amount of reading and the accuracy of produced speech were all negative suggesting that there might be a tendency of for the participants who read more to get lower accuracy scores, which may seem contrary to common sense, because the text the participants read was grammatically correct. The fact that correlations are stronger for Chunk 1 data with a higher proportion of reading versus speech might also suggest that as students read more, their production tended to become less accurate.

Table 5 *Correlations of Reading Indices with Measures of Accuracy, Complexity, and Fluency* (N =165)

Dependent measures	Words read Chunk 1	Words read Chunk 2	Syllables read Chunk 1	Syllables read Chunk 2
Accuracy				
Accuracy index Chunk 1	-.17*	-.18*	-.16*	-.16*
Accuracy index Chunk 2	-.05	-.12	-.04	-.11
Complexity				
Complexity index Chunk 1	-.46**	-.37**	-.45**	-.36**
Complexity index Chunk 2	-.43**	-.36**	-.42**	-.34**
Fluency				
NP/100 Chunk 1	.11	.12	.10	.11
NP/100 Chunk 2	.12	.13	.10	.12
LP/100 Chunk 1	.07	.08	.06	.07
LP/100 Chunk 2	.10	.10	.08	.08
SR Chunk 1	-.16*	-.16*	-.15	-.15*
SR Chunk 2	-.15	-.13	-.14	-.12
SRpr Chunk 1	-.15	-.15	-.14	-.14
SRpr Chunk 2	-.12	-.11	-.11	-.10

Note. NP/100 = number of pauses per 100 words; LP/100 = length of pauses per 100 words; SR = speech rate; SRpr = speech rate pruned.

*p < .05, two-tailed. **p < .01, two-tailed.

It is surprising that even with some extreme reading indices present in the data, and with some participants spending as much as 70% to 80% of their time reading rather than speaking, the higher amount of reading was not associated with higher accuracy, but quite on the contrary. However, very weak correlations, ranging from $r = -.16$ to $r = -.18$, even though significant at the .05 level (only for Chunk 1 data), for all practical reasons are too low to be seriously considered. Therefore, in discussing accuracy measures further in this chapter I will primarily use Chunk 1 data, since the conditions for choosing this chunk were identical for all students.

The correlations between reading and complexity of speech are medium, ranging from $r = -.34$ to $r = -.46$, all significant at the .01 level. Even though the relationship is only moderate, it is high enough not to be ignored. The negative correlation values suggest that more reading was associated with less complex speech as measured by the proportion of subordinate clauses in the participants' speech. This can be partially explained by the fact that the language of the handouts from which the participants read contained only simple sentences. The only complex sentence present in one of the handouts was ignored during complexity index calculation; in other words, the participants who read that particular complex sentence, did not receive credit for it, because it was counted as two simple sentences. Therefore, the complexity index reflects the participants' own complexity, because all complex sentences in the data were formulated by the participants themselves, either when speaking in their own words or when modifying the structure of the language in the handouts by combining simple sentences into complex ones. The fact that some participants spent more time reading than speaking might have resulted in suppressed complexity scores for those individuals. At the same time the presence of correlations does not allow to conclude the cause and effect relation between the two factors. It is possible that lower complexity indices were produced by lower proficiency students who also tended to read more. There is some indication of this stemming from the negative significant, although very low correlations

between the amount of reading and the participants' proficiency level as measured by the dictation test, r = -.23, -.25, p < .05 in the second year, and r = -.31 -.32, p < .001 in the third year.

Given the medium strength of association between reading amount and speech complexity, it will be prudent to rely more on Chunk 2 data in investigating the complexity variable, as it seems to be less associated with the amount of reading than Chunk 1 data. In describing the complexity measure further in the chapter I will present both Chunk 1 and Chunk 2 data.

The negative correlations between the reading index and all fluency measures are consistent, and suggest that there might be a tendency for participants who read more to appear less fluent. The negative and the positive values in the fluency segment of the correlation table indicate the same direction of the relationship because the first two fluency measures, number of pauses per 100 words (NP/100) and length of pauses per 100 words (LP/100), are inversely related to the last two fluency measures, speech rate (SR) and pruned speech rate (SRpr). Higher values on NP/100 and LP/100 are indicative of lower fluency, while higher values on SR and SRpr indicate higher fluency. At the same time, the relationships are very low, ranging from .097 to .127 (NP/100), from .055 to .097 (LP/100), from -.118 to -.163 (SR), from -.101 to -.147 (SRpr), and therefore can be safely ignored. In discussing fluency measures further in the study I will report the results for Chunk 1 data.

Measuring Fluency

Speech fluency was measured with four measures, all utilized previously in task based research: total number of pauses (Foster & Skehan, 1996, 1999; Mehnert, 1998), total amount of silence (Foster & Skehan, 1996, 1999; Mehnert, 1998), speech rate (Mehnert, 1998; Wendel, 1997; Yuan & Ellis, 2003), and pruned speech rate (Mehnert, 1998; Yuan & Ellis, 2003).

For the purposes of this study a pause is a break in speech of 1.0 sec or longer. For every 5 minute transcript, all pauses within the participants' turns were counted and their length was summed. The two resulting measures were divided by the number of words in the transcript and multiplied by 100 to arrive at the number of pauses per 100 words and the length of pauses per 100 words.

The speech rate fluency measure, or number of syllables per minute, was arrived at by dividing the number of syllables in the transcript by the length of speech of an individual participant and multiplying the resulting value by 60. The pruned speech rate fluency measure was arrived at by dividing the number of syllables in the transcript, excluding all syllables that were repeated, reformulated or rephrased, by the length of speech of an individual participant and multiplying the resulting value by 60. The length of speech for each individual participant in a group was calculated by subtracting total length of pauses between the participant's turns form the duration of the task discussion, which was 5 minutes.

All pauses of 0.9 seconds or longer in the participants' speech were identified and measured using the digital MultiTrack Stopwatch 2.3, featuring displays of the 0.1 and 0.01 second resolutions. Due to the recording conditions, specifically in a classroom setting, all audio data contained background noise that did not allow for automatic detection of pauses by an audio editing computer program. Therefore, the stopwatch method had to be used. Since the stopwatch measuring method is subject to human reaction time, its reliability was checked by measuring all pauses in 3 random transcripts by way of waveform and spectrogram analysis in the sound editing program SoundForge, version 8.0. I randomly selected one transcript from the beginning of the transcription process (first third of all transcribed discussions, in the order of transcription), one from the middle (second third), and one from the end (last third of the transcripts). The correlation of the two methods of pause measuring was significant at $r = 1.0$, $p < .000$, allowing the acceptance of the more efficient stopwatch method. Out of the total 89

pauses from the three analyzed transcripts, the difference between the stopwatch measured pause and waveform/spectrogram measured pause was -0.1 seconds in 6 pauses (6.7%), 0 seconds in 33 pauses (37.1%), +0.1 in 27 pauses (30.3%), +0.2 in 20 pauses (22.5%), and +0.3 in 3 pauses (3.4%). Thus, for the most part pauses measured with the stopwatch were accurate (37.1%), overestimated the length of a pause by 0.1 to 0.3 seconds (56.2%), or underestimated it by 0.1 seconds (6.7%). In order to minimize the effect of such variation on the number of pauses per 100 words measure, I checked waveforms/spectrograms of all stopwatch pauses that could potentially be inaccurately measured and affect the number of pauses measure. Specifically, inaccuracies in measuring pauses between 0.9 and 1.2 seconds could affect the count of total number of pauses. Every transcript contained up to 20 short pauses between 0.9 and 1.2 seconds as measured with stopwatch. Inaccurate measure of short pauses could have significantly distorted the total number of pauses measure. Pauses larger than 1.2 seconds, if measured inaccurately, would only affect the length of the overall pausing time. I chose the 1.2 cut off point for checking small pauses because the discrepancy between stopwatch and software measures did not exceed 0.3 seconds in the three transcripts analyzed in SoundForge. All pauses between .9 and 1.2 seconds were subject to waveform analysis. I marked the three values in the transcripts in the following format: (1.2 → 1.132 → 1.1). The first value indicates the initial pause length measured with the stopwatch, the second exact pause length measured by means of waveform analysis, and the third rounded value used in the final analysis (see sample transcript in Appendix G with three pause values indicated).

Measuring Complexity

A complexity index was arrived at by dividing the total number of clauses by the total number of Analysis of Speech units (AS-units). The AS-unit was proposed by Foster et al. (2000) as a unit of speech analysis designed specifically to cope with

challenges in measuring oral speech produced by second language learners. AS-unit is defined as "a single speaker's utterance consisting of an *independent clause, or sub-clause unit,* together with any *subordinate clause*(s) associated with either" (Foster et al., 2000, p. 365; emphasis in the original). AS-unit is a syntactic measure that additionally uses pause and intonation phenomena to cut oral data into independent AS-units. Possible complexity index values range from 1 (all AS-units are simple, consisting of 1 clause) to above 2 and higher. Complexity index equal to 2 signifies that the participant produced on average 2 clauses per AS unit.

The reasons for choosing Foster's AS-unit over the previously used T-unit and c-unit were as follows:

1) An AS-unit is a clearly defined unit and well exemplified in Foster et al. (2000). Past research utilized several measuring units of spoken speech (T-units, c-units, semantic units, intonation units), which were variously defined and rarely clearly exemplified, thus making the choice and reliable application of a particular measure difficult.

2) An AS-unit is designed specifically to deal with second language spoken data, which is the focus of analysis in this study. A lot of such data is fragmentary, especially when produced by second language speakers at the beginning and intermediate levels of language study. The AS-unit is more sensitive to elliptical second language speech and allows the researcher to award the second language speaker credit for more data of this nature than does the T-unit, often used in the past. The AS-unit and c-unit share a lot of features because both are designed to deal with the oral data; however, the AS-unit is more reliable in application because it provides guidelines in dealing with ambiguous cases common in second language speech, such as false starts, repetitions, self-corrections, interruptions and scaffolding, final adverbial clauses, topicalized noun phrases, coordinate verb phrases.

In order to differentiate between independent AS-units and dependent clauses, I

used a pause of 1 second, instead of the recommended in 0.5 seconds in Foster et al. (2000) for the following reason: since I could not use automatic pause detection because of the classroom background noise in the audio data, I had to measure pauses with a digital stopwatch, a method that in my judgment did not allow for a reliable measure of a pause as short as 0.5 seconds.

The AS-unit was designed for analysis of oral data in the English language. Although Foster et al. (2000) do acknowledge limitations of this unit's applicability across different languages; they however consider this unit useful in comparing English language research results to research in languages with syntax similar to that of English (p. 357). This is the case for French, the target language of this study, which shares many syntactical features with English. What is most pertinent to this study, is that both languages similarly distinguish between simple and complex sentences, with the latter further subdivided into coordinate and subordinate sentences. There are some differences in what reference grammars of English and French describe as subordinate sentences. In the context of the present study, given the intermediate proficiency level of French of the participants in the study, I indentified one structure that caused difficulty in categorizing, namely subordinate infinitive clauses. Most reference works in French grammar would accept infinitive subordinate clauses only when the subject of the infinitive is the direct object of the main verb (Judge and Healey, 1985, p.195), as in the following example:

Je regarde passer le train. (1)
I watch the train pass.

Grevisse (2007) considers the following French sentences simple, since the subject of the conjugated verb and of the infinitive is the same:

Il préfère partir demain. (2)
He prefers to leave tomorrow.

J'aime lire les journaux. (3)
I like to read magazines.

In contrast, Foster et al. (2000) would categorize equivalent sentences in English as complex, with one main clause (*Il préfère* in Example 2 and *J'aime* in Example 3) and one subordinate clause (*partir demain* in Example 2 and *lire les journaux* in Example 3), guided by the definition of a subordinate clause as "a finite or non-finite Verb element plus at least one other clause element (Subject, Object, Complement or Adverbial)." (p. 366). Thus, Example 2 contains one non-finite Verb element (infinitive *partir*) and one other clause element (adverbial *demain*). For the purposes of current analysis, in order to allow for comparability with data in English and in languages with similar syntactic structure, I followed Foster's definition and categorized structures similar to those in Examples 2 and 3, as complex.

For different research purposes, Foster et al. (2000) suggests different levels of data inclusion. For the purposes of this study, Level Two for highly interactive data is most appropriate. At this level all data is analyzed excluding one-word minor utterances and echo responses which are verbatim, because they occur frequently in highly interactional data and their inclusion could inflate the number AS-units and distort the degree of complexity of the speech.

Examples of an echo response verbatim from the current study are given below. In the examples the following transcription conventions are used: straight brackets (|…|) mark the boundaries of one AS-unit, double colon (::) separate subordinate clauses from the main clause, and curly brackets ({…}) mark the boundaries of false starts, repetitions, self-corrections and all data that was not included at Level Two of the analysis.

line 1 A: | je pense :: le suspect est { Ralphe } Ralphe | (4)
line 2 B: { Ralphe oui }

Translation of Example 4:

line 1 A: | I think :: the suspect is { Ralphe } Ralphe |
line 2 B: { Ralphe yes }

In Example 4 speaker B's line is an echo response and a repetition of speaker A's last word *Ralphe*. In Example 5 speaker B received credit for replying to speaker A's question, but speaker C's utterance was a repetition verbatim of speaker B's utterance, and thus was not categorized as an AS-unit. Although omitting the conjunction *que* is considered unacceptable in French (such as in Example 4, line 1), this frequent error was ignored in complexity count and participants received credit the subordinate clause.

line 1 A: | comment dit-on daughter? | (5)
line 2 B: | fille |
line 3 C: { fille }

Translation of Example 5:

line 1 A: | how do you say daughter? |
line 2 B: | fille |
line 3 C: { fille }
Note: fille = daughter

Following Foster et al. (2000), examples of frequent one-word utterances excluded from analysis in the current study are: *oui; non; okay, désolé(e), d'accord, peut-être* [*yes, no, okay, sorry, alright, maybe*]**.** However, speakers received credit for one-word responses that did not occur frequently, such as *vraiment; bien sûr; possiblement, intéressant* [*really, for sure, possibly, interesting*]. Interrogative pronouns *Quoi? Quand? Qui? Pourquoi?* [*What? When? Who? Why?*], etc. were counted as independent AS-units because of their essential role in eliciting responses and advancing task discussion. Speakers also received credit for one-word independent subclausal units (Foster et al., 2000, p. 366) for which missing elements could be supplied from the surrounding discourse or situation. This principle was applied to all short elliptical and verbless sentences, regardless of whether they occurred within the speaker's turn or constituted the whole turn.

line 1 A: | il a des enfants | { oui } ? (6)
line 2 B: { yeah }
line 3 A: | j'ai trois enfants |
line 4 B: | deux ? |
line 5 A: | oh je pense |

Translation of Example 6:

line 1 A: | he has children | { yes } ?
line 2 B: { yeah }
line 3 A: | I have three children |
line 4 B: | two ? |
line 5 A: | oh I think |

In Example 6 speaker B's utterance can be elaborated to *tu as deux enfants?*[*you have two children?*] (Line 4) and thus was counted as one AS-unit. Utterances in English such as in line 2 in Example 6 were ignored, unless they were words used in French and essential to task completion (such as un *iPod, le rap, Monaco*, etc.)

Measuring Accuracy

Accuracy was defined as percentage of error-free clauses and was arrived at by dividing the number of error-free clauses by the total number of clauses and multiplying the resulting quotient by 100. Possible accuracy index values range from 0 (zero error-free clauses) to 100 (all clauses are error-free). This is a generalized measure of accuracy, found to be sensitive to detecting differences in students' speech (Foster & Skehan, 1996). This measure was used in Foster and Skehan (1996, 1999), and Yuan and Ellis (2003).

Errors were defined as errors in syntax, morphology and lexical choice. Following Foster and Skehan (1996), errors in lexical choice were recorded when a word was undoubtedly wrong, but not in cases of fine distinctions of appropriacy. The use of English words was counted as an error, unless the word was used in French (such as *iPod, rap, Monaco, enfant, DVD,* etc.)

Limitations

Several limitations of this study must be acknowledged. The classes participating in the current study were randomly assigned to treatments; however, the classes themselves were selected on the basis of availability at the site of the experiment. Such data selection method can result in group effects that may affect the dependent measures

of interest. Therefore, preliminary analysis of variance was conducted during data analysis to determine if groups indeed exhibited differences larger than can be expected from such sample sizes.

The motivation survey was included in the study after the pilot study had already been conducted; as a result, the motivation survey was not piloted. However, the self-report motivation survey used in the study, the Intrinsic Motivation Inventory, is an instrument that has been used in a number of previous studies and is known to be a reliable and valid measure of intrinsic motivation in various contexts (e.g., McAuley, Duncan, & Tammen, 1989; Tsigilis & Theodosiou, 2003).

It should be noted also that the dictations were scored and the speech transcripts were analyzed by only one rater.

CHAPTER 4

RESULTS

The preceding chapter presented the design of the study, as well as the data collection and analysis procedures. Procedures for measuring the dependent variables of focus in the study (accuracy, complexity and fluency of the participants' speech) were outlined, and decisions regarding the design and administration of the materials used in the study (task handouts, motivation survey, and dictation) were described.

In this chapter I will first present the results for the dependent variables (accuracy, complexity, and fluency), which will be followed by the results of the motivation survey and the dictation.

Due to the cluster sampling approach in this study using intact classes, group effect is potentially an issue that can cause the dependent variables to differ for reasons other than the treatment effect. The fact that the participants in each class share common educational experiences throughout the semester and are instructed by the same teacher may result in a unique group character, or a group effect, causing classes to differ on the dependent measures because of their unique characteristics. To investigate clustering within treatments, a preliminary analysis of variance was conducted for each measure used in the study, and the results are reported in this chapter along with one-way ANOVA results for that measure.

Accuracy

The accuracy measure was arrived at by dividing the number of error-free clauses by the total number of clauses and then multiplying the resulting quotient by 100. As expected, the third year accuracy mean value was higher than the mean value in the second year (see Table 6). T-test analysis showed that the means of Year 2 and Year 3 accuracy scores were significantly different (p = .008), indicating that the third year participants produced a higher percentage of error-free clauses.

The differences between the three group mean values in the second and third years are not very prominent, except for the control group in the second year that appears to have lower mean values compared to the treatment groups (Table 7). Third year mean values also seem to exhibit little difference. Visual inspection of the second and third year box plots and frequency distributions confirmed comparability of the second year accuracy score distributions. Third year cognitive group scores appeared less spread out than the cognitive and motivation group scores.

Table 6 *Descriptive Statistics for Accuracy Scores in Year 2 and Year 3*

	Year 2 (n = 80)	Year 3 (n = 85)
M	57.0	64.0
SE	2.0	1.6
SD	18.3	14.9

Table 7 *Descriptive Statistics for Accuracy scores in Year 2 and Year 3 by Treatment*

	Year 2			Year 3		
	Motivation	Cognitive	Control	Motivation	Cognitive	Control
M	58.1	57.6	54.8	62.7	65.0	64.0
SE	3.3	3.2	4.2	3.1	2.0	4.3
SD	19.1	15.6	20.2	17.4	12.3	16.2

The differences between the three group mean values in the second and third years are not very prominent, except for the control group in the second year that appears to have lower mean values compared to the treatment groups (Table 7). Third year mean values also seem to exhibit little difference. Visual inspection of the second and third year box plots and frequency distributions confirmed comparability of the second year

accuracy score distributions. Third year cognitive group scores appeared less spread out than the cognitive and motivation group scores.

Results of the analysis of variance of the accuracy scores were not significant for either year: Year 2 (F (2, 77) = .23, p = .792) and Year 3 (F (2, 82) = .19, p = .825). Thus I concluded that the motivation, cognitive and control groups within year 2 and within year 3 did not differ in the proportion of error-free clauses. Preliminary analysis of variance of the accuracy measures in both years did not give any evidence of clustering within treatments: the mean values of classes within each treatment in Year 2 and of classes within each treatment in Year 3 did not differ more than expected from such small sample of individuals (F (5, 72) = 2.21, $p > .05$ in Year 2, and F (6, 76) = 1.88, $p > .05$ in Year 3). Since there is no reason to believe that the accuracy measure was affected by any group related differences, the above ANOVA accuracy results can be generalized to the population of interest, namely third semester and third year students of French at large public universities in the United States.

In sum, the results demonstrated that third year participants produced significantly more accurate speech than the second year participants. The results also indicated that the second and third year participants did not differ in terms of speech accuracy as a function of being exposed to different pre-tasks.

Complexity

The complexity measure was arrived at by dividing the total number of clauses by the total number of Analysis of Speech units. First, the data will be presented by year irrespective of treatment, and then will be analyzed by treatment and by year.

As can be seen in Table 8, third year participants have higher means values for complexity. The difference in the complexity mean values between Year 2 and Year 3 (-.22) is rather large considering that such difference constitutes at least 7 times the standard error of the mean. The results of the t-test confirmed that third year participants

produced significantly higher complexity scores ($p < .001$). Thus, third year participants' speech was more complex than was second year participants' speech as measured by degree of syntactic subordination.

Table 8 *Descriptive Statistics for Complexity Scores in Year 2 and Year 3*

	Year 2 ($n = 80$)	Year 3 ($n = 85$)
M	1.14	1.36
SE	.02	.03
SD	.19	.26

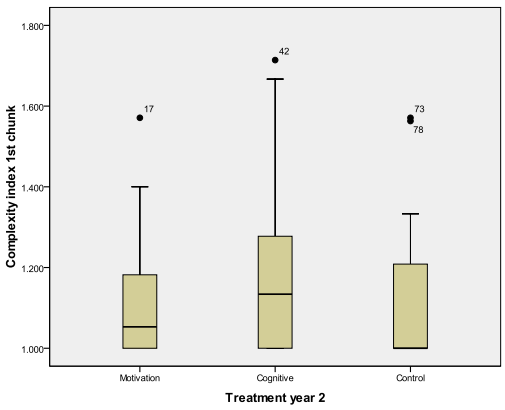
Table 9 *Descriptive Statistics for Complexity scores by Treatment and by Year*

	Motivation	Cognitive	Control
	Year 2		
M	1.11	1.19	1.13
SE	.03	.05	.04
Mdn	1.05	1.13	1.00
SD	.15	.22	.18
	Year 3		
M	1.26	1.40	1.44
SE	.05	.04	.09
Mdn	1.24	1.45	1.31
SD	.25	.22	.32

The complexity data are broken down by year and by treatment in Table 9. The data show similar tendencies for the second and third year motivation and cognitive groups: cognitive groups have higher mean values than the Motivation groups, although the difference is more prominent in the third year. The results for the control groups

depend on the year considered. In Year 2 the control group mean exceeds the motivation group mean but not the median. In year 3 the control group mean value exceeds the mean value in the cognitive and motivation groups. However, when the median is considered, then the control group score is consistently lower than the cognitive group, and is the lowest of the three groups in the second year data. The median values are given in Table 9 and can be visually inspected in boxplots in Figure 1. The boxplots clearly illustrate the tendencies for the cognitive group to outperform the control and the motivation group, and for the motivation group to score lowest of the three groups, in both years. The control third year group stands out in terms of the difference of the spread of its interquartile range: the scores appear more spread out (*SD* = .32) than in the second year Control group (*SD* = .18) and in the motivation and cognitive groups (see Table 9).

Year 2 complexity scores



Year 3 complexity scores

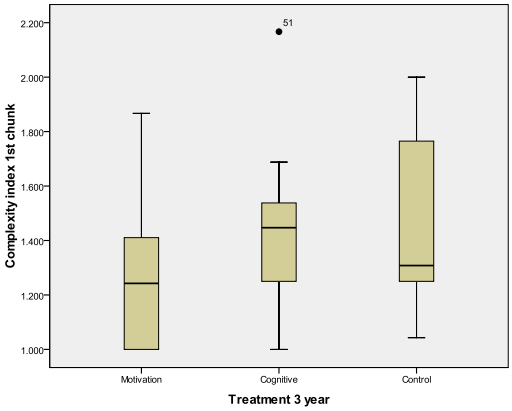


Figure 1 *Box Plots of Complexity Score Distributions for Year 2 and Year 3*

Preliminary analysis of variance of the complexity measure proved to be significant in Year 2, F (5, 27) = 5.07, $p < .05$, and for Year 3 data, F (6, 76) = 2.25, $p <$ .05. This suggests that the classes within treatments showed more than chance differences

on the complexity measure due to unique group characteristics. Therefore, their results can only be used to describe the sample at hand, rather than to generalize to the population of interest. However, the results of the preliminary analysis of variance for the complexity measure in Year 3 Chunk 2 data proved to be non-significant (F (6, 76) = 1.20, $p > .05$), thus allowing conclusions to be drawn about the population.

Table 10 *One-Way Analyses of Variance for Chunk 1 and Chunk 2 Complexity Scores in Year 2 and Year 3*

	Year 2		Year 3	
	F (2, 77)	p	F (2, 82)	p
Chunk 1	1.51	.227	3.69*	.029
Chunk 2	1.58	.213	2.77	.069

*$p < .05$.

I conducted one-way ANOVA tests to compare complexity mean values of the three treatments in the second year and in the third year, with the alpha value pre-set at .05 (Table 10). The results were not significant for the second year data (F (2, 77) = 1.51, p = .227). The difference proved to be significant for Year 3 first chunk data (p = .029 in Table 10) but not for Year 3 second chunk data (p = .069). As the reader will remember, second chunks with less reading were selected in the initial stages of analysis to investigate the potential effect of the reading behavior on the interpretation of the three dependent variables of interest: accuracy, fluency, and complexity. The procedure for selecting second chunks was described in the Methodology chapter. I report second chunk complexity results here because they differ from the first chunk results; in addition, they do not seem to reflect any clustering effect and thus can be generalized to the population of interest.

Post-hoc Tukey analysis in Table 11 revealed that the ANOVA test difference in Year 3 was contributed to by the difference between the motivation and cognitive group means, although the post-hoc test results failed to reach significance by a very slight margin ($p = .057$). Although close to the .05 alpha level, the confidence level is not sufficiently high to consider second and third year cognitive and motivation groups significantly different on the complexity measure. It is possible that the sample size in this study did not provide enough power to confidently reject the hypothesis of equal means.

Table 11 *Post Hoc Tukey Multiple Comparisons for Complexity Scores by data chunk in Year 3*

	Compared pairs of groups		*p*
Chunk 1	Motivation 3	Cognitive 3	.057
	Motivation 3	Control 3	.072
	Cognitive 3	Control 3	.865
Chunk 2	Motivation 3	Cognitive 3	.058
	Motivation 3	Control 3	.813
	Cognitive 3	Control 3	.488

Note. The first group of each pair in a row has a higher mean value.

In sum, the results indicate that the third year participants produced significantly more complex speech than did second year participants. The results also indicate that the second and third year participants did not differ in terms of speech complexity as a function of being exposed to different pre-tasks, although the results failed to reach significance by a very close margin in the third year between the cognitive and the motivational conditions.

Fluency

I will first investigate Year 2 and Year 3 fluency data. In addition to the data on the four dependent measures of fluency (number of pauses per 100 words (NP/100), length of pauses per 100 words (LP/100), speech rate (SR), pruned speech rate (SRpr)), I also included the data on the three absolute measures of fluency used in calculating the relative measures. The absolute measures are included because they provide additional insight into fluency analysis. The three absolute measures are: total number of words (NW), total number of syllables (NS), and total pruned number of syllabus (NSpr), all counted for the duration of the five minute transcript. The NW measure was used in calculating the dependent measures NP/100 and LP/100. The NS and NSpr measures were used in calculating the dependent measures SR and SRpr. SR and SRpr measures were calculated using the same formula (divide the number of syllables by the length of speech, and multiply the resulting value by 60), except that SRpr excluded all syllables that were repeated, reformulated and rephrased.

Table 12 *Descriptive Statistics for All Fluency Measures in Year 2 and Year 3*

Fluency measures	Year 2 (n = 80)		Year 3 (n = 85)	
	M	*SD*	*M*	*SD*
NP/100	11.2	5.3	9.3	4.7
LP/100	26.0	17.8	18.1	10.9
SR	110.2	25.9	126.4	33.0
SRpr	103.3	25.3	119.9	32.7
NW	108	48	151	76
NS	139	61	182	91
NSpr	129	54	171	84

Note. NP/100 = number of pauses per 100 words; LP/100 = length of pauses per 100 words; SR = speech rate; SRpr = speech rate pruned; NW = total number of words, NS = total number of syllables, NSpr = total number of pruned syllables.

Fluency descriptive statistics are presented in Table 12. All mean values of fluency measures are higher for Year 3 as compared to Year 2. This direction is not surprising, and the large distance between the means suggests that the third year French participants in this sample are more proficient than the second year French participants with respect to their speech fluency. There also seems to be more variability among scores in Year 3, specifically on SR and SRpr measures, and on all absolute measures. At the same time there is less variability on the NP/100 and LP/100.

T-tests were conducted to compare second and third year students on all fluency measures (see Table 13). The differences between means are significant on all measures below the .01 level, except for NP/100 measure, which was significant at p =.014. These results clearly indicate that the third year participants produced more fluent speech during task discussion than did the second year participants.

Table 13 *Mean Differences between Year 2 and Year 3 on All Fluency Measures*

Fluency measures	T-tests for equality of means		
	t	*df*	*p* (2-tailed)
NP/100	2.48**	157.9	.014
LP/100	3.43**	129.4	.001
SR	-3.52**	158.0	.001
SRpr	-3.65***	157.2	.000
NW	-4.31***	142.4	.000
NS	-3.61***	147.3	.000
NSpr	-3.84***	145.0	.000

Note. For this test equality of variances was not assumed.

**$p < .01$. ***$p < .001$.

Descriptive statistics for Year 2 by treatment and Year 3 by treatment are presented in Table 14. The results for Year 2 are mixed. There seems to be little difference between the mean values of NP/100 and LP/100 of the three groups. The

Table 14 *Descriptive Statistics for All Fluency Measures in Year 2 and Year 3*

	Motivation		Cognitive		Control	
	M	*SD*	*M*	*SD*	*M*	*SD*
			Year 2			
NP/100	11.3	5.3	11.6	5.2	10.8	5.6
LP/100	25.0	18.1	27.7	17.4	25.8	18.3
SR	108.1	26.3	107.0	26.9	116.6	24.2
SRpr	100.9	24.1	101.7	26.1	108.5	26.5
NW	112	46	106	40	105	59
NS	143	60	135	51	138	72
NSpr	133	55	128	48	126	61
			Year 3			
NP/100	10.4	4.7	8.8	5.1	7.9	3.4
LP/100	20.5	11.0	17.0	11.5	15.7	7.9
SR	119.3	26.5	132.0	36.9	127.2	33.8
SRpr	112.8	27.2	124.7	36.6	122.6	32.3
NW	141	73	164	82	134	65
NS	174	90	196	97	163	74
NSpr	163	82	183	90	156	72

Table 15 *Preliminary Group Effect Analyses of Variance for All Fluency Measures in Year 2 and Year 3*

	Year 2, F (5, 72)	Year 3, F (6, 76)
NP/100	1.23	1.11
LP/100	1.90	3.22*
SR	0.36	5.00*
SRpr	0.71	4.51*
NW	0.54	2.18
NS	0.41	1.67
NSpr	0.50	1.76

*$p < .01$.

control group seems to have an advantage on both SR and SRpr measures, and the motivation group on NW, NS and NSpr. In Year 3 the motivation group has the highest mean values for the NP/100 and LP/100, followed by the cognitive group and control groups. At the same time, the motivation group has the lowest SR and SRpr, while the cognitive group has the highest SR and SRpr values. Finally, on the NW measure, the cognitive group also comes first, followed by the motivation and the control groups. Overall, in the third year the cognitive group tends to have higher values on fluency measures, while the motivation group tends to have the lowest, with the control group coming in the second position. Nonetheless, analyses of variance showed that all fluency mean differences were non-significant in both Year 2 and Year 3, with $p > .2$ for all measures.

The results of the preliminary analysis of variance for the fluency measures are given in Table 15. Group effect size proved to be significant in Year 3 on three measures: LP/100, SR and SRpr, $p < .01$. This suggests that third year classes showed bigger than chance differences on the three above mentioned measures due to unique group characteristics. Therefore, their results can only be used to describe the sample at hand, rather than to generalize to the population of interest. The results of the test for group effects for the remaining fluency measures proved to be non-significant ($p > .05$), thus allowing conclusions to be drawn about the population.

In sum, the third year cognitive group tended to have higher fluency mean values on a number of fluency measures when analyzed descriptively, while the results in the second year were mixed. However, the analysis of variance tests did not show any significance for any of the fluency measures used in the study.

Motivation Survey

The motivation survey was conducted after the experimental task in order to investigate whether the motivation pre-task produced variable effects in the motivation,

cognitive and control groups. Descriptive statistics for the motivation survey are presented in Table 16. The data are based on 164 surveys out of 165 total participants in the study because one subject failed to return the survey before leaving the classroom.

At first glance it appears that the mean values are in the expected direction: the Motivation group mean is higher than that of the cognitive group, and the cognitive group mean is higher than that of the control group. The difference in the means between the motivation and the cognitive groups is three times as large as the difference in the means between the cognitive and the control groups. The scores in the control group

Table 16 *Descriptive Statistics for the Average of 21 Questions of the Motivation Survey*

	Motivation 2 and 3 (n = 65)	Cognitive 2 and 3 (n = 63)	Control 2 and 3 (n = 36)
M	4.99	4.57	4.43
SD	.80	.82	1.08
Min - Max	3.05 – 7.00	2.57 – 5.86	1.24 – 6.71

appear to be more spread and less uniform than in the two treatment groups, judging from a higher *SD* value (1.08, compared to .82 and .80 in the cognitive and motivation groups respectively), and a larger range of values (5.48, compared to 3.29 and 3.95 in the cognitive and motivation groups). The control group scores also seem to exhibit more variability on all question categories of the survey, particularly on the effort and value questions (see *SD* values in Table 16 further in this chapter). It is also clear from Table 16 that the control group scores have wider range values and lower extreme values at the bottom of the distribution on all question categories, as seen from the *Range* and *Min-Max* rows of the table.

Analysis of variance of the three treatment groups regardless of their level showed that the mean values were significantly different, F (2, 161) = 6.02, p = .003. Post hoc Tukey test results revealed that there was a difference between the motivation groups and the cognitive groups (p = .018), and between the motivation groups and control groups (p = .007). Results suggest that participants exposed to the motivation pre-task across two levels reported more motivation to complete the experimental task than the cognitive and the control groups.

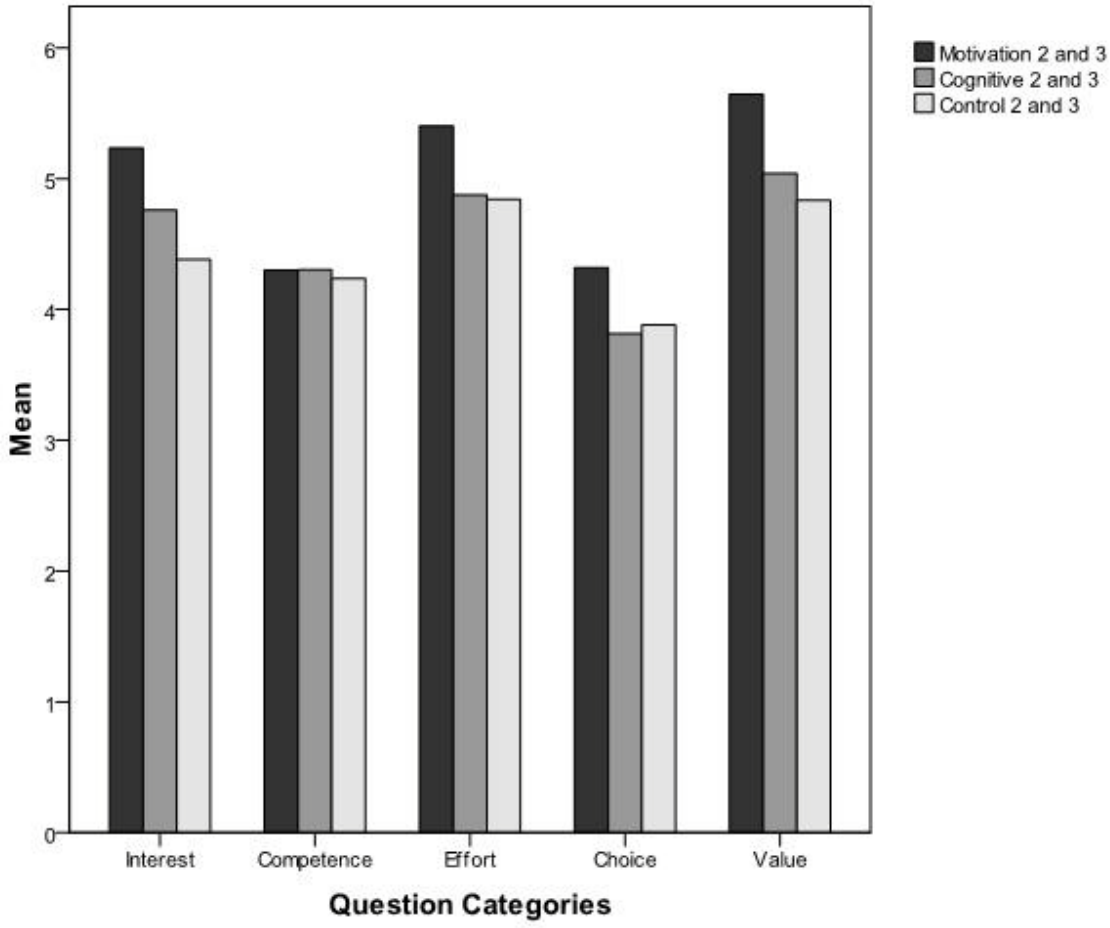


Figure 2 *Mean Values of Responses on Five Question Categories for Three Conditions: Motivation Year 2 and 3* (n = 65), *Cognitive Years 2 and 3* (n = 63), *and Control Years 2 and 3* (n = 36).

Figure 2 represents a breakdown of treatment means by 5 question categories: interest, perceived competence, effort, choice, and value. The majority of mean value relations are consistent with the direction illustrated in Table 16: the motivation group with the highest mean (4.99) followed by the cognitive group mean (4.57), followed closely by the control group mean (4.53). Similarly, the motivation group means in Figure 3 are higher than the cognitive group means for all question categories except the perceived competence category, for which the means are equal at 4.30. The cognitive group means are higher than the control group means for all question categories except for the choice category, in which the control group mean exceeds the cognitive group mean (3.88 and 3.82 respectively). As I will illustrate further, the perceived competence and the choice question categories seem to stand out in the motivation survey compared to the remaining question categories of interest, effort and value. Table 17 presents descriptive statistics of the distributions depicted by the graphs in Figure 2.

Closer inspection of the descriptive statistics of each of the 21 questions revealed that the subjects' answers to choice Question 9 did not conform to expectation, nor did their answers agree with the overall trend of responses on the choice questions and on the all survey questions. All three groups (motivation, cognitive, control) showed such divergence. Question 9 states: *For the most part, I felt like I was doing what the experimenter wanted me to do*. The expectation was that the subjects who felt that they were brought to participate in the experiment activity by the experimenter without their will would feel less motivated than those who felt that they acted on their own will during the experimental task. Possible answers ranged from 1 (*not at all true*) to 7 (*very true*). Participant scores on Question 9 were reversed for final analysis in order to be consistent with the overall direction of the degree of motivation in the survey: scores towards the higher end of the 1-7 scale indicating a higher degree of motivation, and scores towards the lower end as indicative of a lower degree of motivation. The central tendency values of the final scores on this question ranging from 2 to 3 denote that the participants

Table 17 *Descriptive Statistics for the Motivation Survey Five Question Categories by Treatment*

Question category	Statistic	Motivation 2 and 3 (n = 65)	Cognitive 2 and 3 (n = 63)	Control 2 and 3 (n = 36)
Interest	*M*	5.24	4.76	4.38
	SD	1.07	1.28	1.27
	Range	4.40	5.60	6.00
	Min – Max	2.60 – 7.00	1.40 – 7.00	1.00 – 7.00
Competence	*M*	4.30	4.30	4.24
	SD	1.22	.94	1.25
	Range	5.50	3.75	6.00
	Min – Max	1.50 - 7.00	2.25 – 6.00	1.00 – 7.00
Effort	*M*	5.40	4.88	4.84
	SD	.99	1.20	1.41
	Range	3.75	5.25	6.00
	Min – Max	3.25 – 7.00	1.50 – 6.75	1.00 – 7.00
Choice	*M*	4.32	3.82	3.88
	SD	.97	.88	1.03
	Range	4.75	3.25	5.00
	Min – Max	2.25 – 7.00	2.25 - 7.00	1.00 – 6.00
Value	*M*	5.65	5.04	4.83
	SD	.98	1.09	1.40
	Range	3.65	4.75	5.50
	Min – Max	3.35 – 7.00	2.25 – 7.00	1.50 – 7.00

Table 18 *Mean Scores on Four Choice Questions and Standard Deviations for All Participants* (N = 165)

	Question 4		Question 9		Question 14		Question 19	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Motivation	4.95	1.55	2.78	1.49	4.65	1.68	4.89	1.39
Cognitive	3.94	1.75	2.59	1.24	4.34	1.73	4.40	1.13
Control	4.03	1.75	2.75	1.50	4.25	1.87	4.50	1.40

answered in the range of 5-6 on the survey sheet, and interpreted this question differently than it was originally conceived (see Table 18). That is, it is possible that the participants marked 5 and 6 to answer this question indicating, in a positive way, that they did notdisrupt the experiment but rather did what they were asked to do. Answers to the other three choice questions (Questions 4, 14, 19) were interpreted by the participants as intended by the experimenter and the mean values on Questions 4, 14, 19 conformed to the overall range of means on all survey questions.

With regard to the two levels, Year 3 students appear to exhibit higher scores on the survey even when the two treatments and the control groups are collapsed. Table 18 shows that the third year central tendency values are consistently higher than those of the second year. In addition, the range of scores is narrower in the third year motivation surveys compared to the second year. However, t-test for independent samples did not find significant differences between Year 2 and Year 3 groups with treatments collapsed ($p. > .05$).

Breaking down the data from Table 19 by treatment and by year shows that it is the second year Control group that contributed to the high variability of the control group scores, the finding discussed earlier in this section. The standard deviation of the control group at 1.24 stands out from the *SD* values of the other groups ranging from .70 to .82, and the *Min – Max* range 5.48 in the second year control group seems to markedly exceed the range values in the remaining 5 groups with *Min – Max* ranges from 2.48 to 3.95. All statistics in Table 19 below are based on the average of 21 survey questions for every participant, and not on the raw scores as in Tables 16 and 17 presented above, which explains the differences in averages and other statistics between Table 19 and Tables 16, 17.

I conducted one-way analysis of variance on all motivation measures in Year 2 and Year 3 (see Table 21). The results show significant differences between groups within both second and third year groups on the following measures: average of all 21

Table 19 *Descriptive Statistics for Five Question Categories of the Motivation Survey by Year*

		Years across treatments	
Question category	Statistic	Year 2 (n = 79)	Year3 (n = 85)
Interest	*M*	4.68	5.04
	SD	1.32	1.13
	Min – Max	1.00 – 7.00	2.60 – 7.00
Competence	*M*	4.17	4.40
	SD	1.23	1.00
	Min – Max	1.00 – 7.00	1.50 – 6.50
Effort	*M*	4.91	5.23
	SD	1.34	1.03
	Min – Max	1.00 – 7.00	3.00 – 7.00
Choice	*M*	3.93	4.12
	SD	1.02	.93
	Min – Max	1.00 - 7.00	2.25 – 6.75
Value	*M*	5.19	5.27
	SD	1.25	1.10
	Min – Max	1.50 - 7.00	2.75 - 7.00

Table 20 *Descriptive Statistics for Averages of 21 Survey Questions by Year and by Treatment*

	Motivation		Cognitive		Control	
	Year 2 (n = 33)	Year 3 (n = 32)	Year 2 (n = 24)	Year 3 (n = 39)	Year 2 (n = 22)	Year 3 (n = 14)
M	4.94	5.05	4.15	4.83	4.51	4.31
SD	.82	.80	.82	.70	1.24	.82
Range	3.95	3.52	3.00	2.48	5.48	2.90
Min – Max	3.05 – 7.00	3.14 – 6.67	2.57 – 5.57	3.38 – 5.86	1.24 – 6.71	3.05 – 5.95

Table 21 *One-Way Analyses of Variance for Motivation Survey Overall Average and Five Question Category Averages*

	Year 2		Year 3	
Score averages	*F* (2, 76)	*p*	*F* (2, 82)	*p*
21 survey questions	4.88*	.010	4.53*	.014
5 interest questions	5.92**	.004	4.73*	.011
4 competence quest	.76	.469	2.24	.113
4 effort questions	2.91	.061	2.01	.140
4 choice questions	6.25**	.003	1.43	.245
4 value questions	6.87**	.002	3.12*	.049

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

questions, average of 5 interest questions, average of 4 value questions, and only in the second year on the average of 4 choice questions (all $p < .05$).

Post-hoc Tukey comparisons (Table 22) provided further detail about the difference between the pairs of the mean scores: in the second year the motivation group scored significantly higher than the cognitive group on the survey average score, on the interest average score, on choice average score and the value average score. In addition, the motivation group had significantly higher scores than the control group only on one question category: average of 4 value questions. In the third year the motivation group scored significantly higher than the control group on the survey average score, on the interest average score and on the value average score. In addition, the cognitive group had significantly higher scores than the control group on only one question category: average of 5 interest questions.

The results of the preliminary analysis of variance for the motivation survey scores are given in Table 23. Group effect size proved to be significant in the second and third years on the average of 5 interest questions ($p < .05$), as well as in Year 3 on the average of all 21 survey questions ($p < .05$). This suggests that second and third year

Table 22 *Pairs of Groups That Differed Significantly on Post Hoc Tukey Multiple Comparisons for All Question Categories*

	Compared pairs of groups		*p*
	Year 2		
21 survey questions	Motivation 2	Cognitive 2	.008
5 interest questions	Motivation 2	Cognitive 2	.004
4 choice questions	Motivation 2	Cognitive 2	.002
4 value questions	Motivation 2	Cognitive 2	.002
	Motivation 2	Control 2	.034
	Year 3		
21 survey questions	Motivation 3	Control 3	.010
5 interest questions	Motivation 3	Control 3	.012
	Cognitive 3	Control 3	.020
4 value questions	Motivation 3	Control 3	.038

Note. Each pair of groups presented in the table differed significantly on the question category in the same row. The first group of each pair has a higher score.

Table 23 *Preliminary Group Effect Analyses of Variance for Motivation Survey Question Categories in Year 2 and Year 3*

Question categories	Year 2, F (5, 71)	Year 3, F (6, 76)
21 questions	2.11	2.40*
5 interest questions	2.81*	2.53*
4 effort questions	1.79	1.96
4 perceived competence quest	1.59	1.72
4 choice questions	1.42	1.51
4 value questions	0.82	0.79

*p < .05.

classes showed bigger than chance differences on the above mentioned measures due to unique group characteristics. Therefore, their results can only be used to describe the sample at hand, rather than to generalize to the population of interest. However, the

results of the test for group effects for the remaining survey measures proved to be non-significant ($p > .05$), thus allowing to draw conclusions about the population.

Further analysis by individual survey question revealed that in case of the second year average of 5 interest questions, only interest Questions 2 and 17 of the five interest questions were significant on the group effect (F (5, 72) = 3.24 and 2.70 respectively, $p < .05$). Therefore, I eliminated Questions 2 and 17 from the interest average, and conducted a one-way ANOVA test to compare the three second year groups with respect to the new interest average consisting of only three questions that were not affected by unique group characteristics. The results of the ANOVA test were significant, F (2, 76) = 5.097, $p = .008$. Post-hoc Tukey comparisons showed that only the motivation and cognitive groups in the second year differed significantly on the new average of three interest questions ($p = .009$), with the motivation group outperforming the cognitive group. This is consistent with the results of the earlier analysis of variance based on the average of five interest questions (see Table 22).

The same principle was applied to the third year data. The new average of four interest questions was calculated excluding the only interest Question 5 significant on group effect, F (6, 76) = 2.41, p < .05. The average of the remaining four interest questions proved to be significant on a one-way ANOVA test, F (2, 82) = 4.57, $p < .05$. Post-hoc Tukey comparisons showed that both the Motivation group and the cognitive group significantly outperformed the control group on the new average of four interest questions not affected by unique group differences, $p = .017$ and .018 respectively. This is consistent with the results of the earlier analysis of variance based on the average of five interest questions (see Table 22).

Finally, a new average of all survey questions in the third year was calculated, excluding the only two questions significant on group effect, interest Question 5 and competence Question 12, F (5, 71) = 2.41 and 2.47 respectively, $p < .05$. The new average of the remaining 19 survey questions proved to be significant on a one-way

ANOVA test, F (2, 82) = 4.42, $p < .05$. Post-hoc Tukey comparisons showed that only the Motivation significantly outperformed the control group ($p < .05$). Similarly to the new interest averages discussed above, the 19 question average results are consistent with the earlier analysis of variance based on the average of all 21 survey questions (see Table 22).

Motivation survey scores (average of 21 questions measure) were correlated with the scores on dependent measures of accuracy, complexity, and fluency, in addition to the reading index and the dictation scores. Motivation scores appeared to be moderately related to the number of words and syllables students produced during the 5 minutes spent on task. Pearson r correlations ranged from .34 to .36, significant in two-tailed tests ($p < .01$). However, number of syllables read and number of words read are measures relative to how much participants monopolized time on task, and are not the dependent measures used in this study. Correlations of motivation survey scores with all dependent fluency measures were very weak and not significant (r ranging from -.06 to .12, $p > .05$). Correlations were also very low with the accuracy ($r = .18$, $p < .05$), complexity ($r = .10$, $p > .05$), and dictation scores ($r = .12$, $p > .05$).

In sum, the second year and third year survey results revealed different patterns of relationships with regards to the motivation survey scores. In the second year, the motivation group reported higher interest in the task, higher perception of choice when engaged in the task, and higher perception of task value, in addition to the higher overall motivation in relation to the experimental task, when compared to the cognitive group. The second year motivation group also perceived the task as more valuable than did the control group. In the third year the motivation group reported higher interest in the task and higher perception of task value, in addition to the higher overall motivation with regards to the experimental task, when compared to the control group. The third year cognitive group also perceived the task as more interesting than did the control group.

Overall, the motivation group participants in both years tended to report higher motivation in relation to the experimental task.

Dictation

A dictation was administered in all groups in order to collect additional data on the comparability of the participants' proficiency levels in each of the two levels. Descriptive statistics are presented separately for Year 2 and Year 3 data because the dictation score scales are different in Year 2 and Year 3 dictations, as presented in Table 24. All dictations were scored with two methods, the phonetic similarity (PS) and the conveyance of meaning (CM) methods, described in detail in the Methodology chapter.

Table 24 *Ranges of Possible Values on Two Dictation Measures*

	Year 2	Year 3
Phonetic similarity	0 – 89	0 – 123
Conveyance of meaning	0 – 16	0 – 27

Table 25 presents the scores on the two dictation measures in Year 2 and Year 3. Year 2 groups appear to be comparable in terms of their mean scores on both measures. Judging from the standard deviation values, the three distributions on PS value and the CM value seem to be normally distributed. Visual inspection of the box plots and frequency distributions confirmed this analysis.

In Year 3 (Table 25) it is the cognitive group that appears to have higher mean scores (79 compared to 73 and 74 for the motivation and the control group for PS, and 10 compared to 8 in the motivation and control groups for CM). The motivation PS median has a higher value (77 in the motivation group compared to 74 in the cognitive group). However, results of the analyses of variance for the dictation scores on the two scoring

Table 25 *Descriptive Statistics for Dictation Scores on Two Scoring Methods by Treatment and by Year*

	Phonetic Similarity			Conveyance of meaning		
	Motivation	Cognitive	Control	Motivation	Cognitive	Control
			Year 2			
M	57	59	57	8	8	7
Mdn	55	56	58	8	8	8
SD	13	14	14	3	3	3
Min-Max	25 - 80	22 - 82	31 - 86	1 - 13	2 - 13	2- 15
			Year 3			
M	73	79	74	8	10	8
Mdn	77	74	74	8	9	7
SD	18	18	21	4	5	5
Min-Max	37 - 105	31 - 116	30 - 106	1 - 16	2 - 23	2 - 19

Note. Motivation 2 group: $n = 32$; Cognitive 2 group: $n = 24$; Control 2 group: $n = 23$; Motivation 3 group: $n = 31$; Cognitive 3 group: $n = 39$; Control 3 group: $n = 14$.

methods were not significant in both years: Year 2 (F (2, 76) = .17 and .25, p = .844 and .777 by method) and Year 3 (F (2, 81) = .82 and 1.29, p = .443 and .282 by method). This suggests that the participants within Year 2 and the participants within Year 3 were comparable in terms of their language proficiency.

Preliminary analyses of variance of the PS and CM dictation scores in both years did not provide any evidence of clustering within treatments. The mean values of classes within each treatment in Year 2 and of classes within each treatment in Year 3 did not differ more than expected for such small samples of individuals (in Year 2 F (5, 71) = .70 and 1.90, $p > .05$ for PS and CM scoring methods respectively, and in Year 3 F (6, 75) = 1.42 and 2.08, $p > .05$ for PS and CM scoring methods respectively).

Reading

The reading measure was included in the study to investigate its potential interrelations with the dependent variables of accuracy, complexity and fluency of the

oral production. In the Methodology chapter I presented and discussed the results of the correlation analysis that informed the decision to rely primarily on Chunk 1 data. Here I will present the results of the t-tests comparing the proportion of reading in Year 2 and Year 3, as well as the ANOVAs comparing the three treatments on the reading measure.

T-tests comparing the means of the second year and third year reading on both words read and syllables read measures and on both chunks were all significant with $p <$ .001 (Table 26), indicating that the third year participants read significantly less than the second year participants.

Table 26 *Reading Index Differences between Second Year Participants* (n = 80) *and Third Year Participants* (n = 85) *and T-test Results*

	Year 2	Year 3	
	M (SD)	*M (SD)*	*t*
Words read Chunk 1	.36 (.22)	.21 (.17)	5.08***
Words read Chunk 2	.31 (.20)	.19 (.17)	4.22***
Syllables read Chunk 1	.39 (.23)	.24(.18)	4.99***
Syllables read Chunk 2	.35 (.21)	.22 (.18)	4.15***

*** $p < .001$

Table 27 *One-Way Analyses of Variance for Differences in the Amount of Reading in* Year *2 and in Year 3*

	Year 2		Year 3	
	F (2, 77)	*p*	*F* (2, 82)	*P*
Words read Chunk 1	.83	.442	5.55**	.005
Words read Chunk 2	.08	.925	4.50*	.014
Syllables read Chunk 1	.83	.441	5.50**	.006
Syllables read Chunk 2	.10	.903	4.23*	.018

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

Analysis of variance for each year (Table 27) revealed that the second year motivation, cognitive and control groups did not differ in the amount of reading during the task. Third year groups were significantly different on both chunks, although there is more confidence in the difference of Chunk 1 results (p = .005 and p = .006) than of Chunk 2 results (p =.014 and p =.018). Post hoc Tukey test for Year 3 showed that only the motivation and cognitive groups differed significantly on Chunk 1 data for words and syllables (p = .004 for both measures) and for Chunk 2 data (p = .011 on words read measure and p = .017 on syllables read measure). Thus, we can conclude that third year motivation group students read significantly more than third year cognitive group, while all other groups within each level did not differ in the amount of reading during the task.

Table 28 *Preliminary Group Effect Analyses of Variance for All Reading Indices in Year 2 and in Year 3*

	Year 2, F (5, 72)	Year 3, F (6, 76)
Words read Chunk 1	1.57	2.38*
Words read Chunk 2	1.16	1.32
Syllables read Chunk 1	1.28	2.08
Syllables read Chunk 2	1.10	1.27

*p < .05.

The results of the preliminary analysis of variance for the reading index measure in both years and for both chunks are given in Table 28. Group effect size proved to be significant only in Year 3 for Chunk 1 data, F (6, 76) = 2.38, p < .05. This suggests that third year classes showed bigger than chance differences on Chunk 1 reading index measure due to unique group characteristics. Therefore, their results can only be used to describe the sample at hand, rather than to generalize to the population of interest. The initial cluster analysis results for the remaining reading index measures proved to be non-

significant ($p > .05$), thus allowing conclusions about the population with respect to those groups.

In sum, the results show that participants in all groups engaged in reading to various degrees. Third year participants read significantly less than the second year participants. Second year groups did not differ in the amount of reading, while in the third year the Motivation group read significantly more than the cognitive group.

To conclude, the results of the study showed that the third year participants outperformed the second year participants on all three dependent variables: accuracy, fluency, and complexity. However, the motivation, cognitive and control groups within each year did not show any differences in terms of the accuracy, fluency, and complexity aspects of their speech during task discussion. The motivation groups within each year tended to report a higher degree of motivation in relation to the experimental task. The second year motivation group reported perceiving themselves as more autonomous during the task, and perceiving the task as more interesting and valuable when compared to the second year cognitive participants; the motivation group also saw more value in the task than did the control group in the second year. The third year motivation group reported perceiving the task as more interesting and valuable than did the control group. In addition, the third year cognitive group reported more interest in the task than did the third year control group. The groups within each year were found to be comparable in terms of their proficiency, as measured by the phonetic similarity and conveyance of meaning scores on a dictation.

CHAPTER 5

DISCUSSION

Fluency, Accuracy, and Complexity

The current study investigated the effects of the teacher-led motivational, cognitive, and no planning (control) pre-task conditions on the accuracy, complexity, and fluency of the oral production during a group discussion task by second year and third year students of French. The initial hypotheses predicted better performance of the third year participants compared to the second year participants on complexity, fluency, and accuracy; better performance of the participants in the motivational and cognitive pre-task conditions compared to the control condition on the complexity and fluency measures, but not on the accuracy measure; and differences between the speech of the participants in the motivational and cognitive pre-task conditions (without specifying particular measures).

Second Year and Third Year

Hypothesis 1 stated that the third year participants would perform better on all measures of fluency than the second year participants. The results confirmed this hypothesis, with the third year participants producing significantly more fluent speech as measured by all four dependent measures of fluency (number of pauses per 100 words, length of pauses per 100 words, speech rate, and pruned speech rate). The third year participants produced significantly fewer and shorter pauses, higher speech rate and pruned speech rate, and overall more words and syllables during the five minute task discussion.

Hypothesis 2 stated that the third year participants would perform better on the complexity measure than the second year participants. The hypothesis was confirmed by the results: the third year students produced significantly more complex speech as measured by the proportion of subordinate clauses in their speech.

Hypothesis 3 proposed that the third year participants would perform more accurately than the second year participants. The results supported this hypothesis: the third year participants indeed produced a higher proportion of error-free clauses than the participants in the second year during the experimental task.

Generally the results in Hypotheses 1, 2, and 3 indicate a higher proficiency of the third year students in the current study. Third year French students in the present study differ from the second year students not only in having a longer exposure to the target language (reported by the students in a short language experience survey distributed prior to the experimental task), but also most likely in their motivations for language study. At the university in which the experiment was conducted students are required to complete 2 years, or 4 semesters, of foreign language study as part of their general undergraduate education requirement. Most students who do not have strong reasons to continue studying French, or who find it difficult to cope with the demands of a language class, do not continue their language studies beyond the fourth semester. Students who enroll in the third year language courses do so not because they are required to take them, but because they choose to do so out of personal interest and personal motivations to develop their proficiency in the target language. Such students tend to invest more effort in the study of the language and be more proactive in seeking opportunities to develop their language skills. Therefore, given a more extensive experience with the target language and a different overall profile of the students in the third year, it is not surprising that the results of the study showed significant differences on all three dependent measures of speech between Year 2 students (precisely, only third semester students) and Year 3 students (fifth and sixth semester students).

Motivation, Cognitive, and Control groups

Hypothesis 4 proposed that the participants in the motivation and cognitive pre-task conditions would produce a more fluent speech than the participants in the control

condition. This hypothesis was based on the results of previous studies showing that engaging in planning prior to a task resulted in a more fluent speech (Foster, 1996; Foster and Skehan, 1996; Mehnert, 1998; Ortega, 1999; Skehan & Foster, 1997; Wendel, 1997; Wigglesworth, 1997). However, the hypothesis was not supported by the results of the study: there was no significant difference between the conditions within Year 2 and Year 3 on any of the fluency measures. In addition, the fluency mean values did not reveal any pattern or tendency for a particular condition to produce more or less fluent speech. The fact that the third year cognitive group tended to produce fluency values highest of the three conditions (fastest speech rate, highest overall productivity in terms of the total number of words and syllables) and that the motivation group tended to produce the lowest fluency values (longest and most frequent pauses, slowest speech rate) could be attributed to pre-existing group differences revealed during the preliminary group effect analysis. In particular, the group effect analysis uncovered that the third year groups seemed to exhibit more than chance differences on three dependent fluency measures: length of pauses per 100 words, speech rate, and pruned speech rate.

Hypothesis 5 proposed that the participants in the motivation and cognitive pre-task conditions would produce more complex speech (higher proportion of subordination) than the participants in the control condition. This hypothesis was based on the results of previous studies showing that engaging in planning prior to a task results in a more complex speech (Crookes, 1989; Foster & Skehan, 1996; Mehnert, 1998; Ortega, 1999; Sangarun, 2001; Skehan & Foster, 1997; Wigglesworth, 1997; Yuan & Ellis, 2003). Contrary to expectation, the hypothesis was not supported: the motivational, cognitive, and control groups produced equally complex speech within Year 2 and Year 3.

Hypothesis 6 stated that there would be no differences in the accuracy of speech between the motivational, cognitive, and control conditions within Year 2 and within Year 3. The hypothesis was supported by the results of the study, with all three conditions (motivation, cognitive, control) in both years producing equally accurate

speech as measured by the proportion of error-free clauses. Originally this hypothesis was based on earlier research findings, namely that pre-task planning manipulations tended to produce inconsistent results with regard to improved speech accuracy, in contrast to rather stable results with regard to improved speech fluency and complexity. The fact that Hypotheses 4 and 5 vis-à-vis speech fluency and complexity were not supported diminishes the validity of results of Hypothesis 6. It suggests that non-significant accuracy results were not necessarily due to the failure of the motivation and cognitive pre-tasks to affect differentially the participants' speech accuracy as compared to their effect on speech fluency and complexity, but more likely due to an overall no effect of the pre-tasks on all speech aspects.

Hypothesis 7 advanced differences in the language performance of the participants in the motivation pre-task condition and the cognitive pre-task condition. This exploratory hypothesis was not supported: the speech of the participants in motivation pre-task condition did not differ significantly from the speech of the participants in the cognitive condition on any of the three dependent measures of fluency, complexity, and accuracy. At the same time, it is worth pointing out that the complexity results failed to reach significance by a very close margin in the third year between the cognitive and the motivational conditions ($p = .058$), with a higher complexity mean value in the cognitive condition. It is possible that the sample size in this study did not provide enough power to confidently reject the null hypothesis of equal means.

Common Factors

There are two aspects to consider when discussing the non-significant results on all three dependent measures within each year, or level: first, why the control group did not differ from the motivational and cognitive pre-task groups contrary to the expectation, and second, why the motivational pre-task group did not differ from the cognitive pre-task group.

There were several factors common to all three experimental conditions in the study, and it is possible that these factors had a similar effect on the speech of the participants in each condition. The first and most salient common factor is the information-gap problem-solving task that the participants in all three conditions completed. The second factor has to do with the novelty of the experimental activities in which the students engaged during their regular class time. It is possible that both factors had a leveling motivating effect on the students' willingness to participate in all activities (the dictation, the pre-task, and the task) on the day of the experiment, and particularly on the fluency, accuracy, and complexity of their speech.

It is difficult to eliminate the novelty of the experimental conditions factor, unless the participants engage in a habitual classroom task conducted by their own instructor, which in turn will result in variability of experimental conditions across different instructors. Conducting multiple experiments was practically not feasible in the setting of the current study, and only one instructor (the experimenter), unfamiliar to the participants, administered the experimental treatments in all classes in order to ensure comparability of experimental conditions.

Concerning the experimental information-gap task, its choice was conditioned by the task-based methodology framework of this study. It is true that studies investigating the effects of implementation of the task-based courses often report heightened student motivation compared to the student motivation in more traditional classes (Leaver & Kaplan, 2004; Saito-Abbott, 2004; Van Avermaet, Colpin, Van Gorp, Bogaert, & Van den Branden, 2006). However, not all activities that students engage in throughout the course of language learning are intrinsically motivating. In fact, as Ryan and Deci (2000b, 2002) argue, as children grow older, they are faced with increasingly more responsibilities and obligations and fewer intrinsically motivating tasks in the strict meaning of this concept. Intrinsically motivating activities, as defined by Ryan and Deci, are activities one engages in because of the interest and enjoyment he/she experiences

while engaged, with no external reasons or values at play to induce the individual to participate. Strictly intrinsically motivating tasks become more rare with age, and individuals participate in tasks increasingly more often for reasons and values external to the tasks themselves. As viewed by the self-determination theory of motivation, engaging in an activity for some external benefits is not necessarily detrimental, but can result in very efficient and sustained behavior if the external values associated with a particular task are sufficiently integrated into the individual's own system of values. In a language class students may participate in required activities that they would not immediately perceive as intrinsically motivating and whose value would not always be clear to them. It is possible that motivating students to invest effort into such less motivating language activities by means of a short motivational pre-task would result in a greater effect on various aspects of the students' speech, when compared to students who engage in the identical task without a motivational pre-task.

Another factor that the motivation, cognitive, and control groups had in common and that might have provided a leveling effect, is the fact that following the pre-task and prior to the task all participants were given exactly 1.5 minutes to read through the handout with the task input and familiarize themselves with the clues necessary for solving the task. The initial pilot study had shown that 1.5 minutes was sufficient time for all participants to read through the clues, but without allotting time for further preparation for the task performance. It is possible that as the participants read through the list of clues in the handout, they simultaneously planned for their performance during the task. Such planning could have similarly affected the participants' speech in all experimental treatments because earlier findings indicated that the fluency, complexity, and accuracy aspects of speech are very sensitive to the experimental manipulation of planning time. For example, Mehnert (1998) found that the students' speech accuracy improved as a function of only 1 minute of planning time when compared to the students who had no planning time before performing the same task, while fluency and complexity improved

after 5 and 10 minutes of planning time. In order to manipulate this factor in relation to the current study, further research may provide pictorial instead of text input for a task similar to the one used in this study. Input in a form of images will require very little processing time and participants may be asked to engage in a task immediately after receiving the task handouts, since it would take only a few seconds for them to glance over and familiarize themselves with the pictures. Pictorial task input will also allow students to speak in their own words and eliminate reliance on the text of the handout which was observed in the current study. These and other issues related to the task input and the reading measure used in this study are discussed further in this chapter.

Variation in the Pre-tasks

The task in this current study was designed to maximally resemble an authentic language classroom activity in order to increase the validity of the results and to ensure greater naturalness of the participants' speech (Foster & Skehan, 1996). The dictation, the experimental pre-tasks, and the task were conducted in the students' regular classrooms in the presence of their class instructor. The experimenter was introduced to the students as a teacher of French, a colleague of the class instructor, who was investigating issues related to French instruction. I took all possible measures to ensure the consistency of experimental treatments across all classes by following a step by step plan for administering the experimental pre-task, as well as the dictation and the task. However, such teacher-led interventions are known to be prone to variation, especially when it involves interaction with the class (Dornyei, 2007; Gass & Mackey, 2007). Foster and Skehan (1999) found that the teacher-led interaction in a study that investigated the effect of types of pre-tasks, although authentic, was also prone to variation. The variation in the present study was expressed in different degrees of enthusiasm with which the participants reacted to my questions and in different answers they provided to my questions. There was interaction of this kind in both the motivational and the cognitive

conditions. In the motivational condition the participants were asked to provide their reasons and motivations for learning the French language. In the cognitive condition the participants were asked to list their favorite detective shows, to name some clues that detectives often look for at the crime scene, and suggest conclusions to be possibly drawn from such clues. The pilot study showed that such interaction engaged the participants and allowed them to keep their attention on the pre-task. In order to reduce pre-task variation in further investigations, the motivational and cognitive interaction could be replaced by a solitary pre-task multiple choice and/or short answer activity, in which the participants will, for example, indicate their reasons for studying French and favorite detective shows, or other task relevant content. It will be interesting to observe if such pre-task design will differentially affect the participants' language use during the oral production task. As an option, participants could be asked to read a short statement explaining the value of the task they are about to engage in, or a short statement with suggestions of cognitive strategies for completing the task. A short motivational statement highlighting the value of the task did produce differences in task performance in a study conducted Deci et al. (1994) who asked the participants to engage in a boring light detection task and provided the participants with such statement of the task value prior to the experiment:

> Doing this activity has been shown to be useful. We have found that those subjects who have done it have learned about their own concentration. This has occurred because the activity involves focused attention which is important in concentration. For example, this is the type of task that air traffic controllers use in order to enhance their signal detection abilities. (Deci et al., 1994, p. 127)

The participants who read the statement presented in a non-controlling language and with acknowledgement of negative feelings performed the task better than those who did not read the statement prior to the task, and who read the statement in controlling language and without acknowledgement of negative feelings. It will be interesting to see if the students in the language learning context will produce more fluent, complex, or

accurate speech if provided with a statement of the task value, especially for a less motivating task than the information-gap problem solving activity used in this study. Such a statement could be provided in the students' native language or the target language, depending on their L2 proficiency level.

Language and Content of the Pre-Tasks

This leads me to consider another important issue, that of the language of the pre-task. The pre-tasks in the current study were designed and conducted in English, the participants' native language, to ensure full comprehension of the pre-task content by every participant regardless of their L2 proficiency level. In this respect the study differs from previous planning and pre-task studies where pre-tasks were conducted in the ESL setting in the target language (English). For example, the study of Skehan and Foster (1999) conducted in the ESL context found that teacher-led interaction, both content-focused and form-focused, resulted in higher accuracy of the students' speech. The current study also differs from the previous planning studies with respect to the content of the pre-task. The pre-tasks in the previous studies were conceived as time spent on preparing the task relevant vocabulary and grammar structures *in the target language*. This is one of the possible approaches to pre-task design, while other designs are also possible depending on the instructional goals. The current study differed from the pre-tasks in Skehan and Foster (1999), in that that pre-tasks in this study were conducted in the students' first language and at least in the motivational condition did not bring up any task-related vocabulary. The task-related L1 vocabulary was brought up in the cognitive group as the participants listed in English possible crime clues and deductions to be made from them. The design of the earlier studies was thought to be relevant to the current study, because planning time in all forms generally led to higher fluency and complexity during the task. Even solitary planning condition led to improved speech, a condition in which the participants' could engage in various mental processes uncontrolled by the

experimenter. However, the major difference between all pre-task planning activities in the previous research and the pre-task in the current study is in the language of the pre-task. The use of L1 in the pre-task could have possibly led to no difference in language performance between the groups, since no task relevant target language material was activated from the participants' interlanguage system during the pre-task.

The cognitive task is the only one in which the participants planned directly for the content and possibly for linguistic aspects of their performance during the task. During the cognitive pre-task I elicited task-relevant L1 vocabulary: the participants were asked to list cause and consequence relationships, for example: discovery of credit cards, passports, and other documents in someone's apartment may lead investigators to uncover the identity of the missing tenant, discovery of footprints may help investigators link a person to the crime scene by his foot ware. During the 1.5 minutes given in all conditions alike, the cognitive group participants received instructions to read the handout and circle important clues, making notes of their possible significance to the task, that is, what each particular clue can say about the missing person. In other words, they were asked to come up with logical deductions. I collected the handouts after the experimental treatments and noticed that in the cognitive treatment 23 of 65 participants (35.4%) followed my instructions by marking the clues and making notes about the suspect. In contrast, only 5 of 65 participants (7.7%) in the motivation group and 2 of 37 participants it the control group (5.4%) made any notes in the handouts. It is possible that as the cognitive group participants read through the handout during the 1.5 minutes allotted, they planned their speech in a more specific way by making inferences about the suspect based on the information in the handout. It is likely that this focus on inferences contributed to higher complexity mean scores of the cognitive groups in the second and the third years. Analysis of the speech transcripts showed that the predominant structure of the complex sentences that students used in both years was the subordinate clause of cause with the conjunction *parce que* (because). The cognitive group tended to have

higher complexity scores compared to the control group on the second data chunk and the motivation group on both data chunks, although the results failed to reach significance by a slight margin (p = .058 and .057) between the third year cognitive and motivation groups on both chunks. It is possible that there was not enough power to detect a significant difference on the complexity measure. It is also possible that a cognitive task conducted in L2 rather than in L1 would have resulted in real advantage for the cognitive group on complexity scores, by means of pre-task practice of making inferences, deductions, and forming complex sentences of cause in the target language.

Unlike the cognitive treatment, the motivational pre-task did not activate any task relevant L1 vocabulary and the participants in the motivation pre-task were not instructed to plan for the content of their speech. Their speech did not differ from the speech of the other two groups on any of the three dependent measures. At the same time they did report a higher overall motivation in relation to the task as compared to both the cognitive and the control groups, which is discussed in the following section.

Task Motivation

In addition to the higher overall motivation score, the second year motivation participants reported perceiving the task as more interesting, valuable and perceiving themselves as more autonomous when compared to the second year cognitive group participants. The second year motivation group participants also saw more value in the task than did the control group. In the third year, in addition to the higher overall motivation score, the motivation group participants reported perceiving the task as more interesting and valuable than did the control group.

It is interesting that the third year motivation and cognitive groups did not differ on any specific subcategories of the motivation survey. In other words, the third year motivation and cognitive groups perceived the task as equally interesting and valuable, perceived themselves as equally autonomous and competent in completing the task, and

reported investing equal effort in the task. This speaks once again to the differing profiles of the second and third year groups. The cognitive pre-task in the third year seems to have produced a motivating effect comparable to that of the motivation pre-task, while in the second year the students did perceive the task as more motivating as a function of the motivation pre-task. As was discussed earlier, the third year students are more likely to be enrolled in the French courses for strong personal or professional reasons and have stronger motivations for language study than the second year students. This leads me to conclude that beginning French students who take French language courses for a university requirement would benefit more from a presentation of a communicative task as interesting and valuable than the students who continue to study the language beyond college requirement.

Although the motivational pre-task did not produce any variable effect on the participants' speech, it is possible that such motivational interventions, if conducted in class on a regular basis, may have a long term effect on the students' overall attitude to classroom activities, as well as various aspects of their speech. Depending on the level of the students, the motivational strategies could be conducted in the target language and be more focused. The motivational pre-task in the current study took only five minutes, seemingly a very short time. However, it is true that every five minutes in a language classroom are valuable, and a teacher would not be able to spend five minutes before every activity to motivate the students. However, a motivational intervention could be shorter and more focused on the aspects of motivation that proved to be more sensitive to manipulation in the current study, namely task interest and value. Whenever possible, a task can be presented as interesting and exciting activity, as well as a valuable activity for the students' ultimate goals of becoming proficient in a language (or any other relevant goals). At the same time such a motivational intervention should be coupled with a task planning activity with a focus on form or a focus on content conducted in the target language in order to encourage the students to improve on a specific aspect of their

speech, such as fluency, complexity, or accuracy. It is also possible that such a motivational intervention alone would produce a differentiating effect on the students' speech if it immediately precedes a less interesting task than the one used in the current study, but nonetheless indispensable for the students' progress.

Reading

The study found that the participants relied on the text of the handout to various degrees. Some participants read several lines at a time, some inserted short phrases from the handout in their speech, and some referred to the objects in the handout in their own words. The proportion of reading to speaking did not seem to be related to the participants' fluency and accuracy of speech. At the same time the higher proportion of reading was moderately associated with lower complexity of the participants' speech, most likely due to the nature of the language in the handouts the participants read from: the handouts contained simple sentences, and the only complex sentence in the handouts was not counted towards the participants' complexity measure if they happened to read it. In order to avoid such reading behavior, the task input can be presented in a form of images, although this will eliminate the rich textual input many students relied on during the task and recycled in their speech. There is some evidence that lower proficiency students relied more on the handout input, more so in the third year than in the second: the results found moderate significant correlations between the reading measure and the participants' proficiency level as measured by the dictation ($r = -.32$, $p < .001$ in the third year, and $r = -.23$ and $-.25$, $p < .005$, by scoring method in the second year). At the same, providing students with vocabulary necessary for the task completion and making the vocabulary available to the students during the task will create conditions for the students to recycle the desired vocabulary in a similar information-gap problem-solving task.

Teaching Implications

The results of the present study suggest a number of implications for language teaching practice. A motivational intervention designed to present a group discussion task as an interesting activity beneficial for the students' goals of improving their target language speaking skills is a useful strategy to employ in a language class. Such motivational strategy increases the students' perception of the task interest and value, although most likely it needs to be coupled with a target language activity in which the students focus on the language aspects required by the task or plan for the content of their performance in the target language. There is evidence that presenting the task as interesting and valuable provides a stronger motivational support to the beginning and intermediate students whose choice to enroll in a French language course is based partially on the institutional requirement for the foreign language study, as compared to the intermediate and advanced students who choose to continue to learn French beyond the language requirement, for their own personal and professional reasons.

Suggestions for Further Research

Further research needs to be done to investigate the effect of various motivational approaches and strategies in foreign and second language classes on the students' language performance and perceived motivation, particularly at the beginning stages of language learning. Particularly, it remains to be seen if motivating students to engage in different types of classroom tasks, more and less intrinsically motivating, will produce a variable effect on the quality of the students' performance during the tasks. Perhaps combining language focus prior to a task with a motivational intervention will produce a stronger effect on the students' task performance than a language focus alone.

CONCLUSIONS

The study was conducted to investigate the effects of a motivational and a strategic pre-tasks on oral task production by intermediate and low advanced college learners of French at a large public university in the United States. The study was grounded in the task-based framework of research investigating the relationship between various properties of foreign language communicative tasks and the aspects of language learners' speech. The results of the study did not show any significant differences between the motivation, cognitive and control treatments in terms of accuracy, fluency or complexity of their speech. Possible reasons contributing to the findings are discussed and interpretations proposed. Particularly, it is suggested that strategies for motivating students and providing cognitive support for the task need to be coupled with focus on the task content and/or form, addressed in the target language. This suggestion is based on the tendency in the cognitive groups to produce higher complexity scores as compared to the motivation and the control groups, failing to reach significance by a very slight margin at the higher proficiency third year level between the cognitive and motivation groups. The cognitive groups were different from the motivation and control groups in that the focus on the content of the task was addressed in this group, although not in the target language but in the participants' first language. At the same time, the motivation group participants reported significantly higher interest in the task, higher perception of its value and higher perception of their own autonomy, which indicates that the pre-task did positively affect their motivation in relation to the task. Interest and value subcategories of the motivation survey were particularly sensitive to differences between the groups, allowing to suggest the importance of addressing these aspects in class, more so at the lower levels of required language study. It is possible that with regular support and promotion of positive motivational dispositions there will be an observable effect on certain aspects of the learners' speech in the long run.

APPENDIX A

TASK INSTRUCTIONS

The instructions were given orally by the researcher to all experimental groups, prior to the pre-task in the motivation and the cognitive groups, and prior to the task in the control groups:

You are going to construct a description of a suspect in an arson crime, in French, based on clues found in his or her apartment. Each of you in a group of three has a different piece of the puzzle, and you will need to share your piece with the two group mates and discuss it in order to come up with a complete portrait of the suspect. At the end, you will be asked to describe to the rest of the class what you were able to find out about the suspect. So, here is what happened: one of the offices in a large office building in Chicago had been set on fire, which destroyed very important business documentation. Nobody was hurt. The police have a number of suspects. One of the suspects is nowhere to be found, and the police have searched his/her apartment in order to find some clues and find the suspect. An eye witness had led the police to this suspect's apartment, and the police do not have any information about the suspect yet - not even the name. But they found a number of objects in his or her apartment. Each of you in a group of three has a list of objects found in the apartment of the suspect, and each of you has different objects on the list. As a group, you need to come up with a portrait of the suspect based on the objects found (gender, family situation, relations, occupation, life style, personality, etc) but you can't show your lists to the others in the group, you can only tell them what objects you have. All 3 members of the group have access to the same objects of course, because it's the same suspect and the same apartment we are talking about, so that in the end we can compare the final descriptions every group will come up with.

APPENDIX B

TASK HANDOUTS

Handout for participant A in a group of 3

Instructions:

Pendant une ou deux minutes, étudiez les objets trouvés dans l'appartement du (de la) suspect(e). Qu'est-ce que les objets signifient du (de la) suspect(e)?

- est-ce que c'est une femme ou un homme?
- la situation familiale d'un(e) suspect(e) (marié(e)? divorcé(e)? célibataire? des enfants? la famille?);
- les relations (des amis? des collègues?),
- la profession / l'occupation
- le style de vie (habitudes alimentaires, les intérêts, les activités pendant la journée)
- sa personnalité
- etc.

Dans votre groupe, discutez des objets.

(You can tell your group mates what objects you have on the list, but DO NOT show them your list: do not let them read it!).

Les objets trouvés (1) :

- un petit appartement
- pas beaucoup de meubles: une télé, un canapé, deux lits dans la chambre (un lit plus grand, un lit plus petit)
- de vieux jouets (*toys*) ; de vieux skis pour un petit enfant
- un iPod avec des chansons de rap (Eminem, Nelly, 50 Cent, etc.), de vieilles chansons françaises (Edith Piaf, Ives Montand, Charles Aznavour) et d'autres groupes (Beatles, Rolling Stones, Aerosmith)
- deux raquettes de tennis

- beaucoup de littérature en anglais, en français, 2 livres en chinois “La Chine et les Chinois”, “La Chine mon amour”. Beaucoup de bandes dessinées en français.

- album de photos:

- une photo d’une très belle jeune fille ; la fille est sur un bateau et elle porte un maillot de bain ; une note sur la photo : « Mireille, Monaco, 2003 »
- une photo de cette jeune fille avec un jeune homme à Chicago
- une photo de ce jeune homme avec des joueurs de tennis
- une photo de ce jeune homme avec des joueurs de football avec une note : « Ralphe le capitaine »

Handout for participant B in a group of 3

Instructions:

Pendant une ou deux minutes, étudiez les objets trouvés dans l’appartement du (de la) suspect(e). Qu’est-ce que les objets signifient du (de la) suspect(e)?

- est-ce que c’est une femme ou un homme?
- la situation familiale d’un(e) suspect(e) (marié(e)? divorcé(e)? célibataire? des enfants? la famille?);
- les relations (des amis? des collègues?),
- la profession / l‘occupation
- le style de vie (habitudes alimentaires, les intérêts, les activités pendant la journée)
- sa personnalité
- etc.

Dans votre groupe, discutez des objets.

(You can tell your group mates what objects you have on the list, but DO NOT show them your list: do not let them read it!).

Les objets trouvés (2) :

- peu de choses dans le réfrigérateur dans la cuisine: du lait, du lait au chocolat, de la bière, du fromage (américain, français et suisse), du poulet, du jambon, quelques sandwichs, beaucoup de desserts et de pizzas congelés (*frozen*).
- beaucoup de cigarettes, des bouteilles vides (*empty*) de vin et de champagne
- un nouveau vélo pour un enfant
- un ballon de football
- des costumes Gucci, des shirts Ralph Lauren, des cravates, des chaussures très chic. Des T-shirts et des foulards (*bandanas)* Harley Davidson. Des jeans et des shirts très chics et habillés.
- des dictionnaires anglais-chinois, anglais-espagnol. Un livre avec des leçons de chinois.
- album de photos:
    - de photos d'une petite fille de 5 ans et de 2 ans (la même fille)
- les DVD de 3 dessins animés comme "Cinderella", « Care Bears », « Barbie », aussi les DVDs "Star Wars", "Troy"
- une nouvelle carte de crédit au nom de Ralphe Larouche (10,000 dollars de limite)
- un chèque écrit au nom de Catherine Johnston à 500 dollars avec une note « Sophie »

Handout for participant C in a group of 3

Instructions:

Pendant une ou deux minutes, étudiez les objets trouvés dans l'appartement du (de la) suspect(e). Qu'est-ce que les objets signifient du (de la) suspect(e)?

- est-ce que c'est une femme ou un homme?
- la situation familiale d'un(e) suspect(e) (marié(e)? divorcé(e)? célibataire? des enfants? la famille?);
- les relations (des amis? des collègues?),
- la profession / l'occupation

- le style de vie (habitudes alimentaires, les intérêts, les activités pendant la journée)
- sa personnalité
- etc.

Dans votre groupe, discutez des objets.

(You can tell your group mates what objects you have on the list, but DO NOT show them your list: do not let them read it!).

Les objets trouvés (3) :

- dans la cuisine: du pain, des céréales, des chips, beaucoup de bonbons et de chocolat
- une cafetière électrique (*coffee maker*)
- un poster d'une plage à Monaco, un poster d'un hôtel et d'une plage à Marseille
- un ordinateur avec des pages favorites visitées sur internet: travelcity.com, expedia.com, ebay.com, des journaux sur internet :
  - travelocity.com, expedia.com
  - Wall Street Journal, New York Times, Le Monde, Le Monde Diplomatique (en anglais), China Daily (en anglais), Inside China Today (en anglais)
- album de photos:
  - des photos d'une famille des années 1980s (le père, la mère, et 2 enfants - un petit garçon et une petite fille)
  - une vieille photo de ce petit garçon qui joue au football avec son père (marquée : Ralphe et moi, Marseille, 1976)
- des billets d'avion pour le 2 mai 2006 pour 2 personnes au Mexique (simple, sans retour)
- une liste de courses à acheter: des légumes, des fruits, du fromage, du pain, du jus de fruit, du champagne, du vin.
- un cadeau d'un parfum pour une femme, emballé (*wrapped*), avec une note : « Je t'aime Mireille mon amour !

APPENDIX C

MOTIVATION SURVEY

Questionnaire

ID:_____ Date:_____ French course:_____

The following questions concern your experience with the French speaking activity you just did. For each of the following statements, please indicate how true it is for you, using the following scale:

1 not at all true **2** **3** **4** somewhat true **5** **6** **7** very true

I think I am pretty good at this activity.	1	2	3	4	5	6	7
I enjoyed doing this activity very much.	1	2	3	4	5	6	7
I put a lot of effort into this.	1	2	3	4	5	6	7
For the most part, I felt like I was doing this activity because I wanted to.	1	2	3	4	5	6	7
I thought this was a boring activity.	1	2	3	4	5	6	7
I believe this activity could be of some value to me.	1	2	3	4	5	6	7
After working at this activity for awhile, I felt pretty competent.	1	2	3	4	5	6	7
This activity was fun to do.	1	2	3	4	5	6	7
For the most part, I felt like I was doing what the experimenter wanted me to.	1	2	3	4	5	6	7
I didn't try very hard to do well at this activity.	1	2	3	4	5	6	7
I would describe this activity as very interesting.	1	2	3	4	5	6	7
This was an activity that I couldn't do very well.	1	2	3	4	5	6	7
I think that doing this activity is useful for learning to speak French	1	2	3	4	5	6	7
For the most part, I felt like I was doing this activity only because the experimenter wanted me to.	1	2	3	4	5	6	7
I didn't put much energy into this.	1	2	3	4	5	6	7
I think doing this activity could help me to become better at speaking French.	1	2	3	4	5	6	7

I thought this activity was quite enjoyable.	1	2	3	4	5	6	7
I tried very hard on this activity.	1	2	3	4	5	6	7
For the most part, I felt like I was doing what I wanted to do while working on the task.	1	2	3	4	5	6	7
I am satisfied with my performance at this task.	1	2	3	4	5	6	7
I would be willing to do this activity again because it is somewhat useful.	1	2	3	4	5	6	7

APPENDIX D

DICTATION PASSAGES

Dictation passages A and C from Savignon (1982) were used in the current study with permission from Savignon.

Passage A:

Une petite fille se regardait dans le miroir / pendant que sa mère la peignait. / "Maman," dit-elle, / "est-ce que le bon Dieu a créé ma grand-mère?" / - "Oui, mon enfant," dit la mère./ - "Est-ce que le bon Dieu a aussi créé mon grand-père?" / - "Mais oui," dit la mère. / - "Et mon père?" / - "Oui."/ - "Et toi aussi?" / - "Certainement." / La petite fille se regarde encore dans le miroir, / puis / après quelques instants de réflexion, / elle dit: / "Maman, le bon Dieu a fait beaucoup de progrès, n'est-ce pas?" /

Passage C:

En concédant l'investiture du parti démocrate / à Monsieur Carter, / le sénateur Edward Kennedy / a connu la plus cuisante défaite / subie par sa famille / depuis que celle-ci était entrée / dans la politique et la légende américaine. La campagne de sénateur du Massachusetts / a été / à bien des égards / paradoxale. / Il apparaissait en novembre 1980 / comme un redoutable concurrent du président, / qu'il devançait de très loin / dans les sondages effectués / chez les électeurs démocrates. / Son image de "leader" libéral, / soucieux de réformes sociales, / soutenu par les minorités, / les syndicats / - et plus discrètement par l'église catholique, / - était à son zénith. / Il a suffi / qu'il annonce officiellement sa candidature, / le 7 novembre 1980, / pour que s'effondre cet empire / qui paraissait solidement bâti. /

APPENDIX E

DICTATION SHEET

Dictation instructions were taken with permission from Savignon (1982), with slight modifications. See next page for the actual dictation sheet.

Instructions

French Dictation Test

Here are the instructions for the test.

You will hear the test passage three times.

First, the passage will be read at normal speed. You will not write anything on your paper: you will just listen carefully, and try to understand as much as you can.

The second time, the passage will be dictated at a slower speed, and you must write down what you hear. For this, the passage will be divided into small parts. Each part will be read only once, so you must listen very carefully. You will be given enough time to write down each part before the next one is read. There are several sentences in the passage.

The third time, the passage will be read again at normal speed. There will be a short pause at the end of each sentence, to enable you to check your work. After the third reading, you will have exactly one minute to make any final corrections to your dictation before handing it in. You should make sure that what you have written is grammatically correct.

ID _____ Date _____

Native Language _____ French course _____

Experience with French prior to the current course:

What other French courses did you take? For how long?

_____

Other experience with French; travel, communication with French speakers, etc.

Dictation

_____

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APPENDIX F

DICTATION SCORING INSTRUCTIONS

To the scorer:

Score the dictation following two sets of instructions for two different methods of scoring: (1) phonetic similarity, and (2) conveyance of meaning. The two columns of blanks correspond to the two sets of scores.

First, score the dictation by phonetic similarity:

Each word correct counts as one point. NB: count as 2 words in Passage 1: *Dit-elle, est-ce, grand-père, grand-mère;* count as 3 words: *n'est-ce*. There is a total of 89 words in Passage 1. Count as 2 words in Passage 2: *l'investiture, celle-ci, qu'il, l'église*, count as 1 word: *s'effondre, 1980*. There is a total of 123 words in Passage 2. Check the student's answer against the original. Underline the words correct in each segment, count them, and write the number in the first column blank next to this segment. Add up the total from the first column "phonetic similarity" and write it at the bottom of the column in the line for TOTAL.

Count as correct:

a) words in the original text;

b) errors in the spelling of proper names, in capitalization, and in punctuation (for example, *Massatchutes* for *Massachusetts; maman* for *Maman*);

c) excluding the above (b), any word that represents a phonetic rendering of the dictated word; that is, errors in accent and spelling not affecting pronunciation should be disregarded (for example, *regarder* for *regardait*; *senateur* for *sénateur*; *cube* for *cubes; environs* for *environ*).

Otherwise count as wrong (for example, *aime* for *aimé, regarde* for *regardait, cent mètres* for *centimeters; campaigne/companions/compagnie* for *campagne; senator* for *sénateur*).

Second, score the dictation by conveyance of meaning:

Each segment counts as one point. There is a total of 16 segments in Passage #1, and a total of 27 segments in Passage #2. Check the student's answer against the original. In the second column, mark either 1 for correct of 0 for wrong. Add up the scores of the second column, and write the total score at the bottom of the column in the line for TOTAL.

Count as correct:

a) a segment in which you consider the student to have understood the segment (for example, *"une petite fille se regarde dans le miroir"* for *"une petite fille se regardait dans le miroir"*);

b) a segment with grapheme inversion, cognate spelling (for example, *"la compaigne du senator de Mass."* for *"la campagne du sénateur du Massachusetts")*, or errors in gender (for example, *enfante* for *enfant*).

Count as wrong if you feel that the student did not understand the segment.

Scoring Sheet for Passage # 1

Passage No 1 Dictation Form No _____ Course _____

	Phonetic similarity	Conveyance of meaning
1. Une petite fille se regardait dans le miroir	_____	_____
2. pendant que sa mère la peignait	_____	_____
3. Maman dit-elle	_____	_____
4. est-ce que le bon Dieu a créé ma grand-mère	_____	_____
5. oui mon enfant dit la mère	_____	_____
6. est-ce que le bon Dieu a aussi créé mon grand-père	_____	_____
7. mais oui dit la mère	_____	_____
8. et mon père	_____	_____

9. oui	_____	_____
10. et toi aussi	_____	_____
11. certainement	_____	_____
12. la petite fille se regarde encore dans le miroir	_____	_____
13. puis	_____	_____
14. après quelques instants de réflexion	_____	_____
15. elle dit	_____	_____
16. Maman le bon Dieu a fait beaucoup de progrès n'est-ce pas	_____	_____

TOTALS:

Scoring Sheet for Passage # 2

Passage No 2 Dictation Form No _____ Course _____

	Phonetic similarity	Conveyance of meaning
1. En concédant l'investiture du parti démocrate	_____	_____
2. à Monsieur Carter	_____	_____
3. le sénateur Edward Kennedy	_____	_____
4. a connu la plus cuisante défaite	_____	_____
5. subie par sa famille	_____	_____
6. depuis que celle-ci était entrée	_____	_____
7. dans la politique et la légende américaine	_____	_____
8. la campagne de sénateur du Massachusetts	_____	_____
9. a été	_____	_____
10. à bien des égards	_____	_____
11. paradoxale	_____	_____
12. il apparaissait en novembre 1980	_____	_____

13. comme un redoutable concurrent du président _____ _____
14. qu'il devançait de très loin _____ _____
15. dans les sondages effectués _____ _____
16. chez les électeurs démocrates _____ _____
17. son image de leader libéral _____ _____
18. soucieux de réformes socials _____ _____
19. soutenu par les minorités _____ _____
20. les syndicats _____ _____
21. et plus discrètement par l'église catholique _____ _____
22. était à son zénith _____ _____
23. il a suffi _____ _____
24. qu'il annonce officiellement sa candidature _____ _____
25. le 7 novembre 1980 _____ _____
26. pour que s'effondre cet empire _____ _____
27. qui paraissait solidement bâti _____ _____

TOTALS:

APPENDIX G

SAMPLE TRANSCRIPT

Transcription conventions:

(1.5) within turn and between turn pauses in seconds are given in round brackets. Pauses at the beginning and the end of each participant's turn indicate between turn pauses. In the three value sequences (1.0 → 1.061 → 1.1) the first value stands for the pause measured with the stopwatch, the second value stands for the corrected pause measure using the sound editing software SoundForge, and the third value stands for the final value used in the analysis.

|…| straight brackets mark the boundaries of one AS-unit

:: double colon separate subordinate clauses from the main clause

{…} curly brackets mark the boundaries of false starts, repetitions, self-corrections and all data that was not included at Level Two of the analysis.

words in italics indicate error-free clauses

underlined words indicate words counted as read rather than spoken

Letter C stands for the participant's class

ID numbers (4, 9, 19) are random ID numbers assigned to every participant to preserve their anonymity.

Group C4-C9-C19

IDs in their voices at 9:36 of the file

C4 – handout #1

C9 – handout #2

C19 – handout #3 (see Appendix B for handouts)

First turn starts at 00:10

1. C9 | il y a un garçon (1.1 → 1.021 → 1.0) :: parce que il y a des costumes de Gucci (1.3) et des shirts Ralphe Lauren, des cravates | donc il y a (1.2 →

1.095 → 1.1) un garçon | (44.8)

2. C19 (16.1) | moi aussi :: parce que (2.3) ah il a un cadeau (2.3) { oui } ah avec une note | je t'aime Miriel mon amour | (1.9)
3. C4 (30.1) { d'accord } (5.3)
4. C19 | je pense :: Miriel est un fille | (16.4)
5. C4 | je pense :: que il y a un garçon :: parce que { il } (1.8) ah il a un { iPod } iPod avec de rap M&M, Nelly et Fifty Cent | (1.9) et il jouer tennis | et il parler (1.0 → 0.952 → 1.0) français anglais et kinois | (15.6)
6. C9 { oui ah (3.7) oui } | il a aussi des dictionnaires anglais chinois anglais espagnol et un livre avec des leçons de chinois | (3.8)
7. C4 { d'accord } (6.3)
8. C9 | il étudier chinois | (14.7)
9. C4 | ah il a un petit appartement (1.0 → 1.113 → 1.1) et des vieux jouets (1.8) ahm et des vieux skis pour un petit enfant | je pense :: que il a un petit enfant | (6.8)
10. C9 { oui } ah (1.6) | il a des albums de photos (1.0 → 0.987 → 1.0)
11. C4 { oui } (34.6)
12. C9 avec des photos d'une petite fille de (1.1 → 1.075 → 1.1) ah cinq ans et de deux ans deux ans | (1.5)
13. C19 { deux ans } (5.1)
14. C9 | mais c'est { le même } la même fille | (3.2)
15. C19 { oui } (4.9)
16. C9 | donc il y a une (4.5)
17. C19 { deux petites } ahm (2.1)
18. C9 fille? | (2.4)
19. C19 | no garçons? | (1.3)
20. C9 { garçons? } (8.9)

21. C19 { oui } ah (3.3) | { tu sais pas? } (1.1 → 1.100 → 1.1) tu sais pas? | Ralphe? | (30.1)
22. C4 { oui } (16.4)
23. C9 { oui } (8.3) ahm | il fume (1.5) ah :: parce que { il y a } er il a beaucoup de cigarettes | (50.8)
24. C4 { oh! d'accord } (3.3) ah | { il } ah il jouer (1.3) ah des football (1.4) ah et de tennis | { oui } (18.6)
25. C19 ah { il (3.3) ah { voyager? } voyage (1.1 → 1.030 → 1.0) ah :: parce que (2.6) ah dans un ordinateur (1.4) ah il y a travelocity dot com et expedia dot com | (1.5)
26. C4 { d'accord } (37.4)
27. C19 | et ah (1.4) il a un poster d'une plage à { Monaco } Monaco? et un poster d'un hôtel et d'une plage à Marseille | (70.7)
28. C9 ah | je pense :: que il n'a pas une bonne santé | (1.4) { you know } (1.4)
29. C19 ha ha
30. C9 | parce que (1.7) ahm il a beaucoup des bouteilles (1.3) de vin de vine et de champagne | (39.5)
31. C4 { oh oui! d'accord } (5.6) ah | il y a une très belle { jeu jeune fille } (1.3) ahm jeune fille | (2.6) ahm elle s'appelle Mirelle | (1.4) et { elle } (2.4) elle porte un maillon de bain { de un sur la photo } (1.2 → 1.322 → 1.3) dans une photo | { d'accord } (1.3) Je pense que :: ah elle a les (2.8) ah { madre } (1.4) mother? | (6.2)
32. C9 { mother? } | je ne sais pas | (2.5) ah oh! maman | (13.5)
33. C4 | maman!
34. C19 { maman! } (7.1)
35. C4 de le (1.2 → 1.152 → 1.2) enfant | oh! (36.7)
36. ALL ha ha

37. C19 | { il intéresse intéresse intéresse? } (1.4) il est intéresse? (1.8)

38. C9 { il oui } (13.4)

39. C19 ah business :: parce que <u>des journaux sur internet</u> (1.1 → 1.185 → 1.2) sont <u>wall street journal, new york times, chicago tribune</u> (1.4) <u>et cetera</u> | (14.2)

40. C9 | je pense :: que il a divorcé (1.6) ah :: parce que{ il } il a <u>une chèque écrit au nom de Catherine Johnston</u> |

5 min over (in recording - 5:14)

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