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**A COGNITIVE PERSPECTIVE  
ON THE LISTENING COMPREHENSION STRATEGIES  
OF SECOND LANGUAGE LEARNERS  
IN THE INTERMEDIATE GRADES**

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## Abstract

This study investigated the comprehension strategies used by 12 and 13 year old core French students in listening tasks. French was a third language for all participants. The range and types of strategies used by these young language learners were investigated, and the differences in strategy use between the participants who attained higher and lower levels of comprehension in the listening tasks were compared.

Six students from all ranges of ability participated in two separate research procedures. In phase one, semi-structured individual interviews were utilized for the learners to retrospectively report on their conscious use of learning strategies in different listening contexts. In phase two, think-aloud sessions were used for the students to report their thought processes concurrently while listening to three different texts. All reporting sessions were recorded, transcribed verbatim, and coded according to an established taxonomy.

In interviews, all students reported using a wide range of metacognitive, cognitive and socio-affective strategies. In the think-aloud sessions, during the actual execution of the listening tasks, these learners reported predominantly cognitive strategies, chiefly direct linguistic intake, elaboration, and inferencing. Metacognitive strategies, principally monitoring and planning, accounted for all other strategies reported by the students. Wide variations appeared in the overall strategy use reported by the individual participants. Moreover, quantitative analyses revealed no apparent relationship between the range or number of strategies reported by the learners and individual comprehension outcomes.

The qualitative analysis of the data, however, suggested clear differences in the strategy use of more successful listeners. To a significantly greater degree than less successful listeners, more successful listeners exhibited a flexible top-down and bottom-up interactive approach to the aural comprehension tasks. They appeared to monitor their comprehension throughout the tasks, and to continually question and evaluate their elaborations, inferences, and understanding of the units of meaning against their general knowledge and internal measures of plausibility. In sharp contrast, less successful listeners appeared to rely chiefly on a bottom-up approach of word by word deciphering of the aural texts for comprehension. A level of linguistic proficiency appropriate for the demands of the task and strategic processing ability emerged as equally essential conditions for successful listening comprehension.

A detailed discussion of theoretical and methodological issues in listening comprehension research concludes the study.

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# Chapter I

## Introduction

Comprehension makes material available for learning. Recent language acquisition theorists have emphasized the role of listening comprehension in promoting the assimilation of both implicit and explicit information about the target language. Comprehension theory suggests that the development of listening fluency can produce a "rather complete cognitive map" which has a beneficial effect on the development of speaking, reading, and writing skills in the new language (Nord, 1981).

In order to arrive successfully at a reasonable interpretation of utterances, listeners deploy strategies. Recent research has established that learners vary considerably in their listening strategy use. The range and types of strategies learners use, and the way in which they deploy these strategies have been found to play a crucial role in listening comprehension success (O'Malley and Chamot, 1990). Researchers have further argued that listening ability can be trained. In an attempt to determine effective approaches to strategy training, studies have investigated language learners' listening strategy use.

Canada is a bilingual nation where French language instruction is compulsory in most English language schools. The National Core French Study (Leblanc, 1990), in its general language education syllabus, recommended that explicit strategy training be incorporated at all levels of the French language curriculum. However, the great majority

of listening comprehension strategy studies have examined adult learners' strategy use. There exist very little data on children's listening strategy use to guide the development of strategy training methods appropriate for that particular age group of learners. Many questions remain unanswered. For example, which types of listening strategies do young language learners use? Which strategies appear to most assist or, conversely, hamper their listening comprehension?

The rationale for this study stemmed from the documented need in the literature for an increased understanding of the listening skill in language acquisition, in particular, of the listening comprehension strategies used by second or foreign language child language learners (see Cohen, 1987; O'Malley & Chamot, 1990, for example). In providing an assessment of this understudied group's strategy use, this study aimed to help fill a void in existing literature.

The methodology involved both quantitative and qualitative analyses of the data. Although any qualitative enquiry is unavoidably value laden, this study set out neither to challenge nor confirm any previous finding or theoretical construct in the field of listening comprehension research. In a first phase, the aim of this study was to describe, as faithfully as possible, the listening comprehension strategies as reported by young language learners in their own words. In a second phase, the aim was to analyze whether any salient relationship appeared between the strategy use reported by the subjects and comprehension outcomes. All descriptions and analyses in this study were based upon the subjects' verbal reports.

Chapter II of this study reviews the literature on listening comprehension in a second or foreign language, and introduces some of the major studies conducted into listening comprehension strategies. Chapter III describes the research methodology used in the present study. Chapter IV presents the results of the different phases of this study. In Chapter V, these results are summarized and discussed. The study concludes with an examination of methodological issues in listening comprehension research.

## **Chapter II**

### **Literature Review**

This chapter begins with a brief historical review of the evolution in the importance accorded to listening comprehension in second and foreign language pedagogy and research. We describe the current understanding and the newly perceived role of listening in second and foreign language (L2/FL) pedagogy and research. We then focus on the research into the specific learning strategies which can influence success in L2/FL listening comprehension. Next, we present some of the most significant findings of research into language learners' strategy use, focusing more particularly on the strategies which appear to contribute to success in listening comprehension.

#### **II.1 Historical background of second and foreign language listening comprehension**

The study of how learners learn a second or foreign language does not have a long history. The surge of empirical work that informs current thinking did not begin until the late 1960's. Although there have been several developments since its inception, fundamental questions remain for which researchers are seeking answers (Ellis, 1994). One of these questions is: What contributions do internal factors make to language acquisition, in particular to success in listening comprehension?

Listening, "the process of receiving, attending to, and assigning meaning to aural stimuli" (Wolvin and Coakley, 1985: 74), is a fundamental language skill that typically develops faster than speaking and that influences the development of reading and writing ability in the new language (Scarcella and Oxford, 1992). Yet the skill of listening has not always occupied the forefront in language pedagogy. The acknowledgement and recognition of its crucial role in second and foreign language (L2/FL) acquisition represented "a fundamental shift in the basic assumptions underlying the psychological and linguistic framework from which language teaching methodologies emerged" (Nord, 1980): a fundamental shift in our understanding of "language" and in our understanding of "learning".

Language learning was previously conceived as an almost mechanical response to stimuli. Learners were considered limited in the development of their comprehension and memory capabilities (Duquette, 1987). While reading, writing and speaking received direct instructional attention, students were frequently expected to develop their listening capability by osmosis and without help (Mendelsohn, 1984). Language was commonly assumed to be learned separately from cognitive skills, and to operate according to different principles from most learned behaviours (Spolsky, 1985).

It is only in 1975 that Rubin and Stern first suggested that rather than simply having an "ear" or inherent ability for language learning, some learners might be applying strategies which assist second or foreign language acquisition. The study of the role of strategies, of the "behaviours and thoughts that a learner engages in during learning and

that are intended to influence the learners' encoding process" (Weinstein and Mayer, 1986: 315), has seen an "explosion of activity" in recent years (Skehan, 1991: 285). Research (Naiman, Fröhlich, Stern and Todesco, 1978; Rubin, 1975) confirmed not only that students apply strategies while learning a new language, and that these strategies can be described and classified (Oxford, 1985; O'Malley and Chamot, 1990), but also that these techniques are not the preserve of highly capable individuals, that learners can even perhaps be trained to use listening strategies efficiently (O'Malley & Chamot, 1990).

Movement toward a more cognitive view of second or foreign language acquisition became evident in the information processing approach formulated by McLaughlin, Rossman, and McLeod (1983). Theories which are "cognitive" in nature view adult language acquisition as a mental process involving gradual mastery of items and structures through the application of general strategies of perception and production (Ellis, 1994: 392). In McLaughlin's approach, the learner was viewed as an active organizer of information, with processing limitations and capabilities. While motivation was considered an important element in language learning, the learner's cognitive system was seen as central to processing. One implication of information processing for L2/FL language acquisition is that learners actively impose cognitive schemata on incoming data in an effort to organize the information. The degree of cognitive involvement is set by the interaction between the requirements of the task and the knowledge and mental processes used by the learner (O'Malley & Chamot, 1990).

Nagle and Sanders (1986) formulated the first model of listening comprehension in the adult language learner. In their perspective, comprehension both adds to and draws upon learning, but it involves more than simple retrieval from discrete long-term storage. Not only is it influenced by various psychological and task-specific variables, but it also draws upon an individual's inferences about new data on all types of knowledge about language and the world. In this view, comprehension and learning are distinctive, but interrelated, and interdependent cognitive phenomena.

Although one of the merits of models like Nagle and Sanders' was to contribute to our understanding of the many different factors which come into play in the process of listening in a second or foreign language, these theoretical constructs could hardly be directly transferred to listening comprehension contexts. Researchers have therefore been focusing their attention on more restricted mental processes which can be described: the strategies which ensure learners success in specific tasks. It is hypothesized that examining how it is possible to learn should permit, by extension, to know how to teach that skill, in this particular case, listening comprehension (Cornaire, 1998: 53).

As a result of the embryonic state of second language acquisition (SLA) research into a skill which further presents numerous intricate complexities, there is yet no universally accepted theory concerning the construct of L2/FL listening comprehension (Cornaire, 1998; Ellis, 1994). Research findings have sometimes been contradictory or inconclusive. There is a need for more empirical research to investigate the many yet unanswered questions and verify previous findings (Ellis, 1994; Rubin, 1994). However,

significant progress is evident.

## **II.2 Current understanding of the listening comprehension process in a second or foreign language**

This section describes the understanding of the listening comprehension process currently prevailing in L2/FL acquisition research and pedagogy.

New research in L2/FL listening established the complexity of this skill. All aspects of listening involve a transformation of "input" into "intake": into a meaningful subset that is internalized by the learner (Cohen, 1990). Research established the importance of the distinction between input and intake (Krashen, Terrell, Ehrman, and Herzog, 1984; Krashen, 1985). Not everything to which a student is exposed becomes intake: only the part that is significant and to which the student is paying attention (Oxford, 1993). Listening is not just a "bottom-up" skill in which the meaning can be derived from perception or comprehension of the sum of the discrete sounds, syllables, words, or phrases (Ur, 1984).

Drawing upon cognitive theories of declarative and procedural knowledge, and complex skill acquisition theories, O'Malley, Chamot, and their collaborators (O'Malley & Chamot, 1985a; 1985b; 1990; O'Malley, Chamot & Küpper 1989; O'Malley, Chamot & Walker, 1987) attempted to ground the study of listening comprehension within Anderson's (1980, 1983, 1985) information-processing model of learning. Listening has been acknowledged in second language theory to consist of active and

complex processes that determine the content and level of what is comprehended (Byrnes, 1984; Call, 1985; Howard, 1985; Richards, 1983). In O'Malley and Chamot's framework of the components of listening comprehension, these processes use utterances as the basis for constructing meaning-based propositional representations that are identified initially in short-term memory and stored in long-term memory.

Listening comprehension is differentiated into three interrelated and recursive processes: perceptual processing, parsing, and utilization (O'Malley, Chamot & Walker, 1987). In these researchers' perspective, during perceptual processing, attention is focused on the oral text and the sounds are retained in echoic memory. In the second process, parsing, words and messages are used to construct meaningful mental representations. The basic unit of listening comprehension is a proposition, which consists of a relation followed by an ordered list of arguments. Through parsing, a meaning-based representation of the original sequence of words can be retained in short-term memory. This representation is an abstraction of the original word sequences, but can be used to recreate the original sequences or at least their intended meaning. The size of the segment of information processed will depend on the learner's knowledge of the language, general knowledge of the topic, and how the information is presented. The principal clue for segmentation in listening comprehension is meaning, which may be represented syntactically, semantically, phonologically, or by any combination of these. The third listening comprehension process, utilization, consists of relating a mental representation of the text meaning to existing knowledge. Existing knowledge is stored in long-term memory in propositions and in schemata, or interconnected networks of concepts.

Connections between the new text meaning and existing knowledge occur through spreading activation in which knowledge in long-term memory is activated to the degree that it is related to the new meanings in short-term memory.

Listeners make use of two kinds of information to identify the meaning of propositions: real world knowledge and linguistic knowledge. Listeners may augment existing propositions or schemata with new information instead of being required to build entirely new knowledge structures. The listener elaborates on the new information by using what is known, or in some cases by connecting interrelated portions of the new text. The more processing one does that results in related or redundant propositions, the better memory for the material processed will be. The advantages of schemata are that they enable the listener to anticipate what will occur next, to predict conclusions, and to infer meaning where a portion of text has been incompletely understood. Listeners who make effective use of schematic knowledge can be said to use "top-down" processing, because they are drawing upon information in memory or upon analysis of text meaning for comprehension. Listeners who make use of linguistic knowledge are also using propositions and schemata in long-term memory, but the information used consists of grammatical or syntactic rules. Listeners who interpret meaning based on the linguistic characteristics of the text are using "bottom-up" processing and are forced to determine the meaning of individual words and then aggregate upwards to larger units of meaning. O'Malley and Chamot (1990) identified this approach as problematic in that the sounds, segmentations, and linguistic markers are subject to interference from the first language.

There is rarely a perfect match between the input and the listeners' knowledge. Hence, in order to understand new information that is ambiguous, or to learn and retain new information, listeners activate learning strategies. In O'Malley and Chamot's view, the defining features of learning strategies are that they are conscious, and that they are intended to enhance comprehension, learning, or retention. The importance of strategic processing in listening comprehension lies in three research-based conclusions: (1) the frequency and type of strategies used differentiates effective from ineffective learners (O'Malley, Chamot, Stewner-Manzanares, Küpper, & Russo, 1985a), (2) strategic modes of processing can be trained (Chamot, O'Malley, Küpper, & Impink-Hernandez, 1987; Chamot, Küpper, & Impink-Hernandez, 1988a, b), and (3) use of strategic processing can be shown to enhance learning (O'Malley, Chamot, & Küpper, 1989). One additional finding of significance is that, although their specific applications may differ, strategies for second language acquisition do not appear to differ from general strategies used in other skills such as reading and problem solving (Anderson, 1983, 1985; Gagné, 1985; O'Malley & Chamot, 1990).

### **II.3 Role of listening in second or foreign language acquisition**

This section describes the current understanding of the role which listening comprehension plays in L2/FL learning.

Initial emphasis on production while trying to develop listening comprehension was found to interfere with the students' learning, disrupting the association process

necessary for integration and recall of the language (Asher 1969; Gary 1978; Postovsky 1974, 1975). There is strong empirical evidence to suggest that requiring learners to produce material they have not yet stored in their memory can lead to language interference and overload of short-term memory. Experimental studies have shown a high degree of positive transfer between a listening-only initial focus and other language skills, whereas lower scores were reported in all four skills when the students attempted to develop speaking and listening simultaneously (Gary, 1978). An initial emphasis on listening rather than immediate oral production has also been found to present a significant affective advantage for many learners, beneficially influencing concentration, effectiveness in language learning (Asher, 1969; Gary, 1978) and motivation (Ingram *et al.*, 1974). Since a considerable lag exists between the development of receptive competence and the development of productive competence in native as in any language learning, an initial emphasis on listening can further permit efficient exposure to much more of the target language in much less time (Gary, 1978; Ingram, Nord, and Dragt, 1974).

Some of the most compelling empirical evidence of the crucial role of listening in language acquisition was provided by Feyten's (1991) study of ninety university students of French and Spanish. Multiple quantitative and qualitative measurements were conducted under careful experimental controls in order to determine the relationship between listening ability and foreign language proficiency, as well as the strength of the relationship between FL proficiency and five identified predictor variables (the 1987

Watson-Barker test, gender, length of previous exposure to the target language, target language, and last contact with the target language). Feyten found significant correlations between listening ability and overall FL proficiency, as well as between listening ability and FL oral proficiency skills. When listening was examined as a set of skills and correlated with the FL variables using multiple correlation coefficients, the portions of variance in FL acquisition that can be explained by listening ability ranged from eleven to thirty-eight percent. Feyten's study also found that listening ability contributed more to the predictability of FL proficiency than all other identified variables: gender, length of previous exposure to the target language, target language, and last contact with the target language.

Research has established that several external and internal factors can influence listening comprehension in a second or foreign language (Ellis, 1994; Rubin, 1994). Among these factors, the learning strategies used by the student have been found to exert a crucial influence on success in listening comprehension (O'Malley & Chamot, 1990). According to Chamot (1987), individual learner differences (beliefs, affective states, general factors, and previous learning experiences) together with various situational factors (target language being studied, nature of setting, of instruction, and of tasks) determine the learners' choice of learning strategies. These then influence two aspects of learning: the rate of acquisition and the ultimate level of achievement.

The next section presents a review of research into this crucial mediating role of learning strategies in listening comprehension.

#### **II.4 Listening comprehension strategies: description and classification**

Oxford (1990) provided a comprehensive synthesis of her own and other learning strategies classifications. She divided individual strategies into two main groups: primary strategies and support strategies. Oxford's Strategy Inventory for Language Learning provided a useful tool for systematically classifying and coding strategies. However, it is not grounded in theory.

O'Malley, Chamot, and their collaborators (O'Malley & Chamot, 1985a, 1985b, 1990; O'Malley, Chamot, & Küpper, 1989; O'Malley, Chamot, & Walker, 1987) grounded the study of language learning strategies into cognitive theories of declarative and procedural knowledge, and complex skill acquisition theory. O'Malley and Chamot described a subset of learning strategies concerned with perceptual processes applicable to listening comprehension. They differentiated these into cognitive, metacognitive, and social/affective strategies, depending on the level or type of processing involved. In O'Malley and Chamot's (1990) framework, cognitive strategies are "the steps or operations used in problem-solving that require direct analysis, transformation or synthesis of learning materials". They include rehearsal, organization, inferencing, summarizing, deducing, imagery, transfer, translation, and elaboration. In this view, cognitive strategies have an operative or cognitive-processing function, and appear

directly linked to the performance of particular learning tasks. Metacognitive strategies make use of knowledge about cognitive processes, and constitute an attempt to regulate language learning by means of planning, monitoring, and evaluating. They include planning, directed attention, selective attention, self-management, self-monitoring, problem identification and self-evaluation. Metacognitive strategies have an executive function. Social/affective strategies are considered applicable to a variety of tasks. Among those cited as useful in listening comprehension are cooperation, questioning for clarification and control of anxiety. The O'Malley and Chamot framework has provided a basis for studying which strategies or combinations of strategies are effective in promoting learning (Ellis, 1994).

## **II.5 Listening comprehension strategies research methodology and fields of investigation**

The majority of listening comprehension strategies studies have examined adult L2/FL learners. Attempts have been made to identify different learning strategies by observing learners performing a variety of tasks, usually in classroom settings. This approach, however, was found to reveal very little of the mental operations learners used (Cohen and Aphek, 1981; Naiman *et al.*, 1978; Rubin, 1981; O'Malley & Chamot, 1990). A method which has been found to be more successful involves the use of structured interviews and questionnaires which call for the retrospective accounts of the strategies learners employ. "Think-aloud" tasks requiring concurrent reporting have also been used profitably, as well as "pair thinking aloud". In addition, diary studies have

been conducted, to investigate for example the influence of learners' affective states on learning, or learners' metacognitive awareness (Goh, 1997).

Studies investigating the differences in strategy use between "effective" and "ineffective" language learners have yielded valuable information concerning the kinds of strategy uses which appear to lead to success in language learning. This choice of research methodology is explained by the fact that some of the major discoveries in understanding cognition are based on differences in the mental processes of experts and novices. O'Malley and Chamot (1990) posited that the mental processing of experts is learned, and that it results from persistence with a task rather than innate differences in ability or skill. Anderson (1985) noted that experts learn to perceive recurring patterns in a problem and to link their solution to these patterns. They learn to represent the problem in terms of abstract features, which may be predictive of the problem solution as contrasted with surface features of the problem. Experts also reorganize their approach to the problem in terms of the features of the domain. Finally, Anderson noted that experts develop better memories for information that is involved in the problem solution. While these conclusions regarding the differences between experts and novices were originally developed on studies of mathematical problem solving and similar areas such as physics, parallels have been found in the study of second and foreign language acquisition (O'Malley & Chamot, 1990).

Research on listening strategies includes work on several languages (principally ESL, but also French, Italian, Russian and Spanish); work contrasting strategy use at

several proficiency levels; work with audio or video texts; work with interactive or transactional listening; work with cognitive and metacognitive strategies, as well as work considering the relation of strategy use to text, task, and setting (Rubin, 1994).

## **II.6 Review of research into second and foreign language learners listening strategy use**

Learners have been found to vary considerably in the overall frequency with which they employ strategies, and also in the particular types of strategies they use (Chamot *et al.*, 1987, 1988; O'Malley *et al.*, 1985a; Vandergrift, 1996, 1997). This section presents a review of some of the most significant findings of research into second and foreign language learners' strategy use.

### **Studies by O'Malley and Chamot**

#### **II.6.1 Beginning and intermediate level ESL learners' strategy use**

In 1983, O'Malley, Chamot and their collaborators (O'Malley, Chamot, Stewner-Manzanares, Küpper, & Russo, 1985a) undertook the first study of learning strategies in second language acquisition integrating the work performed in cognitive psychology and studies in second language research. This study was designed to provide retrospective interview data from high school ESL students on their uses of learning strategies in second language acquisition activities occurring both within and outside the classroom. The researchers were particularly interested in better-performing students at both the

beginning and intermediate levels of English proficiency. All participants were native speakers of Spanish except for a group of five Vietnamese students.

Overall, both beginning and intermediate level students used far more cognitive strategies. No single cognitive strategy seemed to emerge as dominant, with the highest use mentioned for repetition, note taking, imagery, and translation. In contrast, the various types of planning accounted for 85 percent of all metacognitive strategies, with selective attention, advance preparation, and self-management assuming predominant roles. The pattern of use for the different types of strategies among beginning and intermediate level students was highly similar. Multiple strategies were reported with all language tasks. However, metacognitive strategies occurred in combination with cognitive strategies in only 7 percent of all strategies identified. The highest reported strategy uses were for isolated language learning tasks, and the lowest were for integrative language tasks. One incidental finding of interest was the students' high overall level of metacognitive awareness.

O'Malley and Chamot (1990) noted that one of the implications of their findings is that a strategy training approach could be useful for students. Second, the strategies reported in this study did not appear to be different from those reported in the cognitive literature, suggesting that strategic processing is a generic activity applied to all areas of learning. Furthermore, strategy use and conscious analysis of learning occur with both classroom and non-classroom learning. Two implications of this conclusion are that the learning versus acquisition distinction drawn in the second language acquisition literature

may be misleading, and that students can profit from learning about strategies outside as well as inside the classroom (O'Malley & Chamot, 1990).

This study's authors augmented the list of strategies used by students from fourteen to twenty-five independent strategies. While retaining the basic metacognitive and cognitive strategies classification scheme proposed by Brown and Palincsar (1982), O'Malley, Chamot and their collaborators added a third classification, consisting of strategies requiring social mediation, described in the students' self-reports. They also differentiated metacognitive strategies to show those that illustrate planning, monitoring, and evaluating a learning activity (O'Malley & Chamot, 1990).

### **II.6.2 Strategy use of native English-speaking students of Spanish and Russian at different levels of proficiency**

In a second study (Chamot *et al.*, 1987), these researchers sought to extend their research to the identification of learning strategies used by native English-speaking high school students of Spanish, and native English-speaking college students of Russian, at different levels of proficiency. The instrument selected to collect data on the students' strategy use was the General Interview Guide.

Both students of Spanish and students of Russian at all levels of study reported using far more cognitive than metacognitive strategies, though the differences were not as great as those reported in the ESL study (O'Malley *et al.*, 1985a). Patterns emerged in analyses of the three major metacognitive, cognitive, and social/affective categories. In

metacognitive strategy use, both students of Spanish and students of Russian predominantly reported using planning strategies, such as selective attention, organizational planning, and self-management. In cognitive strategy use, students at all levels of Spanish instruction reported using translation most frequently, whereas beginning level students of Russian reported using repetition and translation most often, and intermediate /advanced students of Russian reported greater use of note taking. In both language groups, students at the beginning levels of language study relied most on repetition, translation, and transfer, whereas more advanced students relied most on inferencing, though without abandoning repetition and translation (O'Malley & Chamot, 1990). The students of Spanish and Russian in this study reported using relatively few instances of more cognitively active strategies. Use of social and affective strategies accounted for less than 1 percent of all strategies reported. Students of all ability levels were found to use learning strategies. More effective students used learning strategies more often, and had a wider repertoire of learning strategies than did less effective students. Nonetheless, less effective students were at least acquainted with some learning strategies, and able to report on their own mental language processes. The researchers suggested that this fact provides a starting point for instruction of learning strategies that may benefit those students who are not yet encountering significant success in their learning of a new language (O'Malley & Chamot, 1990).

### **II.6.3 Longitudinal study of strategy use among native English-speaking students of Spanish and Russian at all levels of study**

A sample of the students of Spanish and of Russian who participated in the study we previously presented also participated in a longitudinal strategy identification study (Chamot *et al.*, 1988a, b). Students drawn from beginning, intermediate, and advanced levels of Spanish and Russian study were followed for four semesters. Data were gathered from think-aloud sessions with both effective and ineffective students.

The think-aloud interviews revealed a variety of complex strategy applications which enabled Chamot and her collaborators to refine existing strategy definitions and classifications. Several important new strategies applying to the listening comprehension process were revealed, such as advance organization, directed attention, selective attention, self-monitoring, problem identification and self-evaluation. Elaboration emerged as a major cognitive strategy, which not only co-occurred frequently with inferencing, but also with imagery and transfer. Social and affective strategies were mentioned infrequently, perhaps, the researchers suggested, because of the inhibiting influence of the adult-student interview situation. A number of factors were found to influence the students strategy use, such as the objectives of the language course, the learners' degree of language learning expertise, and the characteristics and demands of the tasks. Furthermore, the students' motivation for learning and studying the language emerged as a primary influence in all interviews. One of the conclusions Chamot and her collaborators drew from this study is that factors such as program objectives, prior

foreign language study, task demands and student motivation must be taken into account in understanding the use of learning strategies (O'Malley & Chamot, 1990).

In general, more effective students made more frequent and more varied use of learning strategies, in ways that led to a successful completion of the task. The qualitative analyses revealed that effective foreign language students were more purposeful in their approach to a task, monitored their comprehension and production for overall meaningfulness rather than only for individual components, and effectively used their prior general knowledge as well as their linguistic knowledge (O'Malley & Chamot, 1990). Successful language learners also displayed a greater motivation for learning the language (O'Malley & Chamot, 1990). No clear pattern of strategy shift appeared for students interviewed over a period of one school year, although there were both increases and decreases of individual strategies related to the type of task assigned. Affective factors were noted to possibly also influence language performance.

#### **II.6.4 Intermediate level ESL learners' listening strategy use**

In the study we now present, O'Malley, Chamot and Küpper (1989) departed from the broader focus of the previous studies, and focused specifically on listening comprehension strategies. The data in this study came from the think-aloud reports of effective and ineffective native Spanish-speaking ESL high school students at the intermediate level.

Statistical analyses of strategy use revealed significant differences between

effective and ineffective listeners on self-monitoring, elaboration, and inferencing. Qualitative analyses of the transcripts further indicated that strategies used by students could be differentiated in terms of the phase of the listening comprehension process referred to earlier. During perceptual processing, students reported using attentional strategies that maintained their concentration on the task. Attentional factors during processing emerged as fundamental for comprehension. Data revealed that in this phase, effective listeners were less easily distracted than ineffective students, and were more able to consciously maintain or redirect their attention. The length and difficulty of a passage were found to sometimes detract students from attending to the task. In addition, elaborations sometimes interfered with, rather than assisted comprehension, if the students did not concurrently and carefully monitor their attention (O'Malley, Chamot, & Küpper, 1989). During the parsing phase, students segmented and parsed portions of the oral text based on cues to meaning or on structural characteristics. The basis for chunking and the size of the segments were found to vary depending on the student's proficiency level and whether they were effective or ineffective listeners (O'Malley, Chamot, & Küpper, 1989). The general approach of the more effective learners was to use top-down processing, and to rely upon bottom-up processing only as needed. In contrast, the approach of less effective listeners was consistently a bottom-up approach. In utilization, listeners in this study appeared to make use of prior knowledge to assist comprehension, as well as to assist recall. Effective listeners predominantly deployed the strategies of self-monitoring, elaboration and inferencing in three major ways: using their world knowledge, personal experiences, and self-questioning. The familiarity of the

information students listened to was found to also have an effect on their ability to use prior knowledge.

O'Malley and Chamot (1989) argued that listening comprehension entails active and conscious processes in which the listener constructs meaning by using cues from contextual information and from existing knowledge, while relying upon multiple strategic resources to fulfill the task requirements. They contended that the fact that effective listeners used strategies more successfully than less effective listeners suggests that the less successful students may need assistance in becoming more strategic learners. They further remarked that one implication of their findings is that instructional approaches that rely exclusively upon teacher input or other teacher techniques functioning independently of how students process information are failing to draw upon what the students can contribute to the learning process.

### **Studies by Vandergrift**

#### **II.6.5 FSL learners' listening comprehension strategy use**

Vandergrift examined the relationship between the types of listening comprehension strategies reported, the frequency of their use, and the differences in reported use across four variables: level of language proficiency, gender, listening ability, and learning style. The participants in this study were English speaking high school students from novice and intermediate levels of FSL study. Data were elicited from both

retrospective (1996) and concurrent (1997) procedures.

Vandergrift's (1996) retrospective studies confirmed O'Malley and Chamot's findings. Overall, students displayed a relatively high degree of metacognitive awareness. Cognitive strategies were predominantly reported by all students, and were often reported in combination with other strategies. Reporting of distinct metacognitive strategies steadily increased with each course level, and planning strategies were used predominantly across all course levels. As students advanced in their language learning, they deployed a wider repertoire of strategies. Vandergrift refined O'Malley and Chamot's (1990) language learning strategy taxonomy, and adapted it specifically for the listening comprehension process (Vandergrift, 1996).

Vandergrift's (1997) concurrent analyses further confirmed O'Malley and Chamot's findings: cognitive strategies were reported most by all participants (87.54 % of all strategy use), followed by metacognitive strategies. Socio-affective strategies were very seldom reported, owing most probably to the fact that think-aloud procedures are not conducive to eliciting these particular strategies (Vandergrift, 1997). Reported metacognitive strategy use was found to increase significantly by proficiency level, while reported use of certain cognitive strategies (transfer and translation) decreased sharply. The metacognitive strategies of comprehension monitoring, planning and problem identification were reported twice as often by intermediate than by novice students. Summarization, elaboration and inferencing (all cognitive strategies) were predominantly reported by both novice and intermediate listeners.

However, a major difference appeared in the strategies reported most frequently after these three most salient cognitive strategies. Thus, novice listeners reported more surface-processing strategies such as translation, transfer, and repetition. In contrast, intermediate listeners reported more use of deep-processing metacognitive strategies such as comprehension monitoring and problem identification. Vandergrift suggested that a shift in depth of processing may be an important distinction between novice and intermediate listeners. Data from this study identified very few differences when reported listening strategy uses for male and female participants were compared. Comparative analyses of reported strategy uses of successful and less successful FSL listeners revealed that the major difference between the two groups appears to lie in the reported use of metacognitive strategies. Successful listeners reported using twice as many metacognitive strategies as less successful listeners. The most notable differences were in the reported use of comprehension monitoring and problem identification. The most striking difference found lies in the report of transfer: less successful listeners reported using this strategy almost twice as much as more successful listeners. Vandergrift argued that their limited linguistic base may force less successful listeners to rely more on cognates as a basis for inferencing. Although analyses of data uncovered only modest differences in strategy use by learning style, Vandergrift (1997) suggested that it remains reasonable to hypothesize that a strong relationship may exist between the listeners' cognitive style and their pattern of strategy use. He further suggested that metacognitive strategies play a key role in what successful listeners choose to select for processing, and that the beginning two years of language learning may be pivotal in acquiring these strategies and in

fostering successful language learning.

### **Studies by Bacon**

#### **II.6.6 Relationship between gender, comprehension, processing strategies, and cognitive and affective response in second or foreign language listening**

Bacon (1992) investigated whether or not there exist gender differences in the processing of, comprehension of, or affective response to authentic input in a foreign language. Data were gathered from think-aloud interviews with motivated - though not yet highly proficient - first year university students of Spanish. The native English speaking students listened to two passages, of varying degrees of difficulty, in Spanish. The passages were counterbalanced so that an equal number of men and women heard the easier passage first, while the others heard the more challenging passage first.

Men and woman reported using different strategies depending on both the passage order and passage difficulty. The women in this study were more apt to report using metacognitive strategies, and were more likely to adjust that usage when passage difficulty demanded it. Women used cognitive strategies almost formulaically, as if they had rehearsed their listening procedures and always applied the same routine. In contrast, men dealt with the more difficult passage with strategies that depended on linear processing and reference to English. Passage order had a significantly greater effect on the level of confidence of women than of men. Passage difficulty had a significantly greater effect on the level of affective response of women than of men. These variations

in strategy use had no significant effect on comprehension, even though women reported less confidence and positive affective response than men (Bacon, 1992).

### **Study by Peters**

The great majority of listening comprehension strategy studies have examined adult learners' strategy use. Whereas the study of strategies in adults has relied largely on self-report data, the few studies involving children have largely made use of observational data. Studies of adults have emphasized cognitive and metacognitive strategies, while social and discourse strategies were predominantly identified by early observational studies of child language learners (Chesterfield and Chesterfield, 1985; Wong-Fillmore, 1976, cited in Ellis, 1994). However, as was previously mentioned, the observational approach was subsequently found to reveal very little of the mental operations learners use (Cohen and Aphek, 1981; Naiman *et al.*, 1978; Rubin, 1981; O'Malley & Chamot, 1990).

In the next section, we present a recent study relying on self-report data where child language learners, like adults, were found to predominantly make use of cognitive strategies.

#### **II.6.7 Primary level FSL learners' listening comprehension strategy use**

In one of the first longitudinal exploratory studies of primary level language learners, Peters (1999) used the think-aloud methodology to describe and analyze the

listening comprehension process of grade 5 and 6 French language learners. Peters found that the 8 participants in her study predominantly made use of cognitive (89%) strategies. Metacognitive and socio-affective strategies accounted for only 6% and 5% respectively of all strategies reported by the 10 to 12 year old learners in think-alouds.

Inferencing (49% of total cognitive strategy use) and summarization (41% of total cognitive strategy use) were the two strategies most frequently reported by the grade 5 and 6 FSL students in this study. Peters' qualitative analyses further revealed that inferencing and summarization were also the cognitive strategies which appeared to most assist the participants' comprehension, whereas elaboration (7% of total cognitive strategy use), the third strategy most often reported, sometimes interfered with, rather than assisted the children's comprehension. Linguistic inferencing accounted for 67% of all incidences of inferencing strategy use reported by the participants.

Planning was reported as the most frequently used metacognitive strategy (46% of total metacognitive strategy use), followed by monitoring (23% of total metacognitive strategy use). Within the planning strategy group, selective attention (23% of total metacognitive strategy use) was most reported by the participants, while comprehension monitoring (14% of total metacognitive strategy use) figured dominantly in the self-monitoring strategy group. Peters' qualitative analyses suggest that comprehension monitoring also plays a significant role in assisting young language learners' comprehension, and that more effective listeners tend to make greater use of that particular strategy. The more effective listeners in Peters' study also used a wider range

of cognitive and metacognitive strategies, more frequently combined top-down and bottom-up processing interactively, and they relied on top-down processing of the aural input for comprehension to a greater degree than the less effective listeners.

Peters suggested that the predominance of cognitive strategies in the reports of the grade 5 and 6 learners in her study reflects the type of declarative knowledge which dominates when learners begin the study of a new language. As a result of their limited linguistic knowledge, beginners concentrate on attempting to understand the input, by resorting principally to cognitive strategies, such as inferencing and elaboration. Understanding the input frequently presents difficulties for the learners, and their short-term memory can easily become overloaded. Peters argued that beginning language learners, limited in the amount of input which they can process, will tend to employ cognitive strategies, because these “surface” strategies are easier to use than deeper level strategies. In Peters’ view, more successful listeners are able to allocate more attentional resources to draw on world knowledge and life experiences (deploying elaborations) and to use top-down processes to guide, monitor and evaluate their interpretations than less successful listeners.

In sharp contrast with the findings of early observational studies, the 10 to 12 year old second language learners in Peters’ study very seldom reported using socio-affective strategies (5% of all strategy reports). Peters suggested that this may be due largely to the fact that the think-aloud procedure is not conducive to the elicitation of these particular strategies. Questioning for clarification was the socio-affective strategy predominantly

reported by the grade 5 and 6 learners (94% of total socio-affective strategy use).

## **II.7 Conclusion of research findings**

Several conclusions appear to emerge from the research into language learners' listening comprehension strategy use (Bacon, 1992; Ellis, 1994; O'Malley & Chamot, 1990; Oxford, 1994; Vandergrift, 1996, 1997).

- Language learners are able to report about the listening strategies they use. More successful language learners appear generally more able to talk about their listening strategies.
- The strategies listeners elect to use reflect their general stage of second or foreign language development. Strategies are deployed in all listening tasks, and often, in combination.
- Cognitive strategies are used most by all listeners, particularly repetition, grouping, deduction/induction, elaboration, summarization, transfer, translation and inferencing.
- Metacognitive strategies involving problem identification, planning, monitoring and evaluation appear to assume considerable importance in listening comprehension success, at least for adult listeners. However, many learners appear to underutilize this type of strategy.
- Socio-affective strategies are seldom reported, owing chiefly to the fact that strategy investigation methods are often not conducive to their elicitation. The precise influence of socio-affective factors and the contribution of socio-affective strategies in the success

of listening comprehension remain to be established.

- Successful listeners appear to use strategies more flexibly, more frequently, and in ways which are qualitatively different from learners who are less successful.
- Although modest gender differences have been identified in listening strategy use, these variations have not been established to exert a significant influence on listening comprehension outcomes.
- Program objectives, proficiency level, task characteristics and student motivation have been found to significantly influence listening comprehension strategy use and success.
- The learners' individual learning style may also exert an influence on the deployment of listening comprehension strategies.
- Parallels and differences between adult and child language learners' listening comprehension strategy use remain to be established.

Chapter II reviewed the evolution in our understanding and knowledge of the listening comprehension skill in second and foreign language pedagogy and research. Some of the major research into L2/FL listening comprehension strategies was described. The next chapter presents the methodology used in this study.

## Chapter III

### Research methodology

The tacit understanding in this study was as expressed by Ericsson and Simon (1987) that:

Human cognition is information processing. A cognitive process can be seen as a series of information processes. Information is stored in several memories having different capacities and accessing characteristics: several sensory stores of very short duration, a short-term memory (STM) with limited capacity and/or intermediate duration, and a long-term memory (LTM) with very large capacity and relatively permanent storage, but with relatively slow fixation and access times compared with the other memories.

Within the framework of this information processing model, it is assumed that information recently acquired (attended to or heeded) by the central processor is kept in STM, and is directly accessible for further processing (e.g. for producing verbal reports), whereas information from LTM must first be retrieved (transferred to STM) before it can be reported. Subjects' thought processes can therefore be described as a sequence of states of heeded information. A subset of this heeded information is stored in LTM and is retrievable after the thought processes are completed at the end of a task.

In this study, two data collection procedures were used to investigate the listening comprehension strategies of 12 and 13 year old core French learners. This third chapter presents the research questions which guided this study. The participants and the data collection and analysis methodology used are described, and the rationale for the methods chosen is provided.

### III.1 Research questions

This study addressed the following questions:

1. What are the strategies deployed by 12 and 13 year old core French students in different listening activities?
2. Do students who performed better on the listening comprehension tasks exhibit a pattern of strategy use which is different from those students who were less successful in these comprehension tasks? If so, what are the differences?

*Strategies*, in the present study, are understood as: the conscious operations and thoughts which a listener engages in during the comprehension process and that are intended to enhance the listener's encoding process, as similarly defined by Weinstein & Mayer (1986: 315) and O'Malley & Chamot (1990).

The methodology used for this study is an embedded design multiple-case study. The embedded design starts with an examination of subunits and allows for a detailed perspective of the research questions (Creswell, 1997). A multiple-case study further allows for cross-case comparative analyses, in addition to within-case analyses.

One of the purposes of examining themes across, as well as within cases is to discern common themes or recurring patterns. An embedded design multiple-case study may reveal whether more successful 12 and 13 year old listeners use strategies in ways which differ from less successful 12 and 13 year old listeners. A similar methodology

enabled Peters (1999) to comprehensively describe and analyze the listening comprehension process of 10 to 12 year old language learners.

### III.2 Participants

Individual case studies were conducted of six volunteer 12 and 13 year old core French students from a suburban Canadian intermediate school, all of whom were taught by the same teacher. The six subjects were selected on a purely random basis: the first 3 male and the first 3 female students able to report to the interview room depending on their varying class schedules (see Table 1). Their teacher further confirmed that these first 6 students were representative of the range of core French abilities in the class and that their prior academic records displayed no evidence of learning disabilities.

As is illustrated in Table 1, all subjects' first language was a language other than French or English, and none of the subjects in this study received French language instruction at a level more intensive than core French. All participants were 12 years old at the time of the study, with the exception of 1 student (SA) who was 13 years of age. The students' length of exposure to French instruction varied from 1 to 7 years. In a questionnaire administered before the individual interviews, 2 of the 6 students rated listening as *easy*, 2 rated their listening ability as *average*, and 2 students rated listening as *average or difficult*. French was a third language for all of the students in this study.

Table 1 Characteristics of participants

Student	Gender and Age	Language(s) spoken at home	No. of Years of residence in Canada	Proficiency in English	No. of Years of French study	Self-rating of listening ability
BE	F 12	Bosnian, English	2	near-native	1-2	average to difficult
EN	M 12	Spanish, English	12	native-like	7	easy
IM	M 12	Arabic, English	12	native-like	7	average
NE	F 12	Arabic, English	6	native-like	6	average
SA	F 13	Bengali, English	3	native-like	3	easy
SH	M 12	Dari (Afghan Farsi)	1	fluent	1	average to difficult

Table 2 presents a synthesis of the six participants' reported interest in the study of the target language, their reported amount of exposure to the target language outside of the academic setting, and some general observations concerning these learners.

Table 2 Participants' reported interest in target language study, amount of exposure to target language outside of academic setting, and general observations from interviews (Part A)

Students	Reported interest in target language study	Amount of exposure to target language outside of academic setting	General observations
BE	<ul style="list-style-type: none"> <li>• Reported having "always liked French" and having wished to learn French from a very early age</li> <li>• Reported intention to continue French study beyond compulsory academic requirements</li> <li>• Reported desire to do well and obtain high marks in French study</li> </ul>	<ul style="list-style-type: none"> <li>• Reported having regularly watched French television (subtitled) in Bosnia (before having undertaken target language study)</li> <li>• Continues to regularly watch French language television since arrival in Canada 3 years ago</li> </ul>	<ul style="list-style-type: none"> <li>• Outgoing personality</li> <li>• Nervous, shy, at beginning of interview, but quickly relaxed after a short pause</li> <li>• Stressed the importance of teacher's cooperation in facilitating her comprehension through repetition, translation and body language</li> </ul>
EN	<ul style="list-style-type: none"> <li>• Expressed a general interest in languages and their study</li> <li>• Expressed high desire to "do his best", to find the "ways to succeed" when presented with linguistic comprehension difficulties</li> </ul>	<ul style="list-style-type: none"> <li>• Described occasional brief verbal exchanges with native French speakers</li> </ul>	<ul style="list-style-type: none"> <li>• Confident</li> <li>• Highly analytical, systematic, applied and reflective in responses to interview questions</li> <li>• Facility to understand questions and purpose of research, high metacognitive awareness, and facility to comprehensively describe his use of strategies</li> </ul>
IM	<ul style="list-style-type: none"> <li>• Reported limited interest and motivation for target language study</li> </ul>	<ul style="list-style-type: none"> <li>• Reported occasionally watching English language movies (dubbed) on French language television</li> </ul>	<ul style="list-style-type: none"> <li>• Reserved, shy</li> <li>• Difficulties being specific or speaking about himself</li> <li>• Frequently displaying uncertainty or hesitancy in his replies to the interview questions</li> </ul>

**Table 2** Participants' reported interest in target language study, amount of exposure to target language outside of academic setting, and general observations from interviews (Part B)

Students	Reported interest in target language study	Amount of exposure to target language outside of academic setting	General observations
NE	<ul style="list-style-type: none"> <li>• Described a conscientious, applied approach to French study</li> <li>• Expressed an eagerness to overcome difficulties and to succeed in her study of French</li> </ul>	none	<ul style="list-style-type: none"> <li>• Very shy and nervous at beginning of interview, but relaxed after a pause</li> <li>• Difficulties describing abstract concepts, and being specific or speaking about herself</li> </ul>
SA	<ul style="list-style-type: none"> <li>• Reported a strong general eagerness to learn and succeed</li> <li>• Stressed strong ties and high value accorded to French in her family</li> <li>• Reported a wish to continue French study beyond compulsory academic requirements for long term career goals</li> </ul>	<ul style="list-style-type: none"> <li>• Reported frequently watching movies on French language television</li> <li>• Described regular brief verbal exchanges with native French speakers</li> </ul>	<ul style="list-style-type: none"> <li>• Outgoing, confident</li> <li>• analytical, methodical, applied and systematic in reasoning and responses to interview questions</li> </ul>
SH	<ul style="list-style-type: none"> <li>• Stressed the fact that he had only resided in Canada for one year, and reported feeling frequently overwhelmed by difficulty of grade 7 core French class</li> <li>• As a result of the level of difficulty presented by French study for this new student, he reported only limited interest and motivation for the target language study, but stressed a willingness to learn and persevere in his efforts</li> </ul>	<ul style="list-style-type: none"> <li>• Reported frequently watching English language movies or cartoons (dubbed) on French language television</li> </ul>	<ul style="list-style-type: none"> <li>• Reserved</li> <li>• Difficulties expressing abstract concepts such as his listening comprehension strategy use</li> <li>• Stressed the importance of teacher's cooperation in facilitating his comprehension through repetition, translation and body language</li> </ul>

### **III.3 Description of data collection**

#### **III.3.1 Phase 1 - Interviews -**

The first phase of this study involved semi-structured individual interviews. The purpose of the individual interviews was to determine the range and types of strategies used by 12 and 13 year old listeners in different listening contexts. The interview was structured around prepared questions such as: if there are words that you do not understand in a listening exercise, what “tricks” do you use to try to still understand the message? (see Appendix A). The interview was sufficiently open for the researcher to pursue different avenues as prompted by the responses of the participants, or to probe the less verbal participants for more information. Another purpose of the semi-structured interviews was to foster feelings of confidence and ease in the participants prior to the think-aloud procedures.

The semi-structured individual interviews (20 minute sessions) required students to recall the strategies they used to comprehend spoken French in a number of different contexts such as in and outside of school, with different speakers, and in different listening situations. It also sought to investigate how the students prepare themselves immediately prior to a listening exercise and how they manage any anxiety. The questionnaire used for these interviews was an adaptation by the researcher of Vandergrift's (1996) structured interview questionnaire (see Appendix A). Vandergrift's (1996) questionnaire was designed for young adults. For the purposes of this study, the

wording of the questions was adapted to a terminology which could more readily be understood by 12 and 13 year old learners.

All interviews took place within a one week period. They were conducted in English and audio-recorded. The researcher spent several minutes with each participant before the beginning of the interview, in order to help the students feel at ease, and to answer any questions. The purpose of this study was explained again to the volunteer participants, and they were given a written copy of the interview questionnaire. The researcher reviewed the interview questions with each participant, and answered any questions. Interviews started when the student felt at ease.

### **III.3.2 Phase 2 - Think-alouds -**

Due to temporal constraints, interviews can not reveal the learners' complete pattern of specific thought steps or their complete thought patterns while engaged in a listening task. The introspective technique of thinking-aloud encourages students to reveal specific steps in their thought processes concurrently while engaged in a task (Vandergrift, 1992). Think-alouds can provide precise and detailed information about not only which types of strategies learners use in listening tasks, but also about *how* they deploy these comprehension strategies. One of the features of concurrent analysis of an ongoing task is that the mental processing in short-term memory can be described and reported, whereas it is lost in retrospection. The think aloud - concurrent - procedure may hence provide different kinds of information concerning the learners' strategy use

(O'Malley, Chamot, & Küpper, 1989; O'Malley & Chamot, 1990) from those elicited by the interview procedure. Other advantages of the think-aloud data collection technique noted by Færch & Kasper (1987) include providing information about 1) the individuals' approach to the task, 2) their level of decision making, and 3) the factors which govern their decisions.

The purpose of the think-alouds was to determine the types and combinations of strategies used by the participants during actual listening tasks. Individual think-aloud (30 minute) sessions required students to report their thought processes in their own words, as they listened to three different texts (see Appendix C). The listening texts were selected in consultation with the participants' French teacher, for similarities with other tasks conducted in accordance with the regular Grade 7 core French curriculum. These similarities included a level of difficulty appropriate for a Grade 7 core French class, but sufficiently challenging to elicit the use of multiple strategies; a natural speech rate; clear diction; references to concepts and life experiences familiar to Grade 7 Canadian students, and a variety of non-linguistic clues appropriate to the oral texts. The level of difficulty of the three tasks was approximately equivalent. The first, second and third listening passages were respectively 35, 40, and 60 seconds in length.

Warm-up procedures were conducted prior to the actual think-aloud data collection sessions. The purpose of the practice session was to familiarize the participants with the concurrent tasks of listening and reporting of thought processes. Students heard each passage twice. During the first listen, the tape was stopped at

regular intervals corresponding to natural discourse boundaries, so that the students could report on their thought processes. Great care was exercised so that the pauses were sufficient to enable the students to report their thought processes, but not so numerous or lengthy as to disrupt the students' comprehension or concentration on the listening task. In order that questions from the interviewer could not influence the students' reporting, only non-cueing probes were used, such as: "Anything going on in the back of your head right now?", "How did you figure that out?" or "What are you thinking now?" (see Appendix D). During the second listen, the entire passage was played again. The participants were free to interrupt the second listen any time they wished to report. All think-aloud protocols were audio-recorded. Two tape-recorders were used for the think-aloud sessions: one played the tape of the listening tasks, while the other simultaneously recorded the student's report, interviewer's questions and listening tasks excerpts.

### **III.4 Description of data analysis**

#### **III.4.1 Quantitative data analysis**

The students' interview and think-aloud reports, transcribed verbatim, were coded according to O'Malley & Chamot's (1990) taxonomy adapted for listening comprehension by Vandergrift (1996, 1997). This taxonomy was selected because O'Malley and Chamot's framework is grounded in cognitive theories of declarative and procedural knowledge and complex skill acquisition theory, and constitutes a

comprehensive research-based tool for classifying and coding strategies. Based upon his research studies into listening comprehension strategy use in young adults, Vandergrift (1996, 1997) refined O'Malley and Chamot's (1990) taxonomy specifically for the listening comprehension skill.

Coding of the transcripts consisted of indicating each separate incidence of strategy use in the margin, alongside its occurrence (see example in Appendix E). All transcripts coding was compared with an independent coding of the same transcripts, and questions and discrepancies were resolved through discussion.

The purpose of the quantitative analysis of the interviews was to identify the range of listening strategies used by the participants in different contexts. In order to compare strategy use among subjects, each strategy was counted only once, to determine the range of strategies with which these students were familiar. An individual strategy profile was established for each student, representing the range of strategies reported.

The purpose of the analysis of the think-alouds was to provide a precise description of the listening strategies used by the learners in the execution of a listening task. An individual strategy profile was established for each student, based on the coding and tabulation of the strategies reported in the think-aloud sessions. These profiles provide the frequency of strategy use reported by each student. In addition, each strategy and strategy group has been represented as a relative frequency (percentage) of total strategy use reported by the individual participants.

### III.4.2 Qualitative data analysis

Quantitative analyses can provide answers to the question: *What* are the strategies deployed by 12 and 13 year old core French language learners in different listening activities? However, research has shown that only qualitative analyses can provide further insights into crucial questions such as: *How* are strategies deployed by different language learners? With what consistency are specific strategies deployed by different language learners? *How* does the manner in which learners deploy strategies influence their listening comprehension? Qualitative analyses enabled O'Malley, Chamot and Küpper (1989), for example, to assess the crucial importance of attentional factors in processing. Their qualitative analyses also revealed that elaborations sometimes interfere with, rather than assist comprehension, if students do not concurrently and carefully monitor their attention. Qualitative analyses enabled Peters (1999) to confirm the strategic importance of comprehension monitoring in the case of young language learners. In the present study, think-aloud sessions were conducted in addition to retrospective interviews, because they appeared indispensable in order to gain adequate insights into the mental process of the language learners while engaged in a listening task. Similarly, qualitative analyses of these data were conducted in addition to the quantitative analyses, because the former also appeared indispensable to describe or explain the participants' listening comprehension process.

A complementary qualitative analysis of the individual think-aloud reports was

therefore conducted in order to identify the particular combinations of strategies used by the various learners, and to identify possible patterns in individual strategy use reported. Individual profiles were then compared to identify variations in strategy use, and to examine whether any specific pattern of strategy use could be linked to higher or lower individual levels of comprehension reached in the execution of the listening tasks.

The complementary qualitative analysis revealed that the students varied widely in their overall level of comprehension of the aural texts. In certain cases, for example, a student accurately understood a high number of linguistic items within a passage, yet failed entirely to grasp the general topic. In other cases, a student correctly grasped the general topic, but accurately understood only a limited number of linguistic items within a passage. In some cases, the students' level of comprehension was consistently very good across all passages. In other cases, their level of comprehension varied among the passages, from good to fair, or from fair to incomplete, for example. In light of these wide variations in some of the students' comprehension, the assessment of their level of overall comprehension on the listening tasks was done as follows: Each passage was divided into individual units of meaning corresponding to the units of lexicological elements (one or several words) concurring to the expression of one thought, or to one mental association (for example: *Au forum, / c'est / un match / de hockey / extraordinaire* = 5 units). The first, second and third passages were divided into 48, 36 and 70 units of meaning respectively. The students' level of overall comprehension was assessed based upon (1) their grasp of the general topic or overall meaning of the passages, and upon

(2) the number of units of meaning correctly understood. These criteria and levels are summarized in Table 3.

Table 3 Criteria for evaluation of level of comprehension in listening tasks

very good	good	fair	incomplete
The student grasped the general topic and correctly understood 80% or more units of meaning within a passage	The student grasped the general topic and correctly understood 70% to 80% of the units of meaning within a passage	The student grasped the general topic and correctly understood 60% to 70% of the units of meaning within a passage	The student failed to grasp the general topic of a passage and/or correctly understood less than 60% of the total number of units within a passage

The students' level of overall comprehension in the listening tasks was based on the level of comprehension they attained in each of the three passages. In instances where the students' comprehension level was equivalent in all three listening tasks, their overall comprehension was assessed as: *good* or *incomplete*, for example. In cases where the students attained different levels of comprehension among the three aural texts, the overall comprehension was assessed as *ranging from good to fair*, or *ranging from fair to incomplete*, for example. The purpose of this method of evaluation was to assess the students' comprehension as precisely and as accurately as their think-aloud reports permitted.

This chapter has described the methods used to investigate the research questions examined in this study. Methodological issues were addressed, the participant sample described, and the instruments defined. Finally, the research and data analysis procedures

were outlined. The next chapter presents the results of the quantitative and qualitative analyses of the data.

## **Chapter IV**

### **Results**

The purpose of this study was to identify the types and range of comprehension strategies used by 12 and 13 year old core French students in listening tasks, and to examine possible relationships between the participants' individual strategy use and the level of overall comprehension which they attained in these listening tasks. This chapter presents the data relevant to this study. The results of each research phase are presented separately, using the research questions which directed the analysis of that phase. The chapter concludes with a qualitative analysis of the data, examining differences not discernable through the quantitative analyses.

#### **IV.1.1 Quantitative analyses of interviews**

In this phase of the study, participants were asked to report retrospectively on their listening comprehension strategies. It was directed by the research question: What are the strategies deployed by 12 and 13 year old core French students in different listening activities?

Individual semi-structured interviews were utilized to discover the range of listening comprehension strategies used by the participants in different contexts. The students were asked to describe the particular techniques they used to comprehend what the teacher says, to facilitate comprehension of classroom listening activities, and to

understand any French they may be exposed to outside the classroom context. Interviews were recorded, transcribed verbatim, and coded using O'Malley and Chamot's (1990) taxonomy adapted for listening comprehension by Vandergrift (1996, 1997b). Two new strategies were added to this taxonomy, in light of the fact that the participants frequently reported two specific techniques which were not included in this inventory of strategies.

First of all, the students frequently reported having derived comprehension from a direct, immediate understanding of previously known individual words or units of meaning within a sentence or segment of text. This technique has previously been coded in several studies as "summarization". However, in accordance with its dictionary definition, *summarization* was defined by O'Malley and Chamot (1990) as a "mental summary of language and information presented in a listening task". A summarization therefore necessarily implies the recall and synthesis in memory of several items dispersed across the breadth of a task. The brevity and very limited depth of mental processing involved in the direct immediate understanding of previously known linguistic items within a sentence appear fundamentally different from the arduous and time-consuming mental process of recalling and synthesizing in memory a number of different items dispersed throughout a task. Furthermore, it is reasonable to suggest that the decision to proceed to an arduous and time-consuming summary of language and information commonly arises from a comprehension monitoring goal. Summarization appeared to differ from the technique frequently reported by the students along several important dimensions. Therefore, *direct linguistic intake* was added to the taxonomy, to

establish a clear distinction between incidences where the learner proceeded to a “mental summary of language and information in a task”, and instances where the learner derived comprehension directly from the immediate understanding of a word, a few words, or an expression within a sentence or segment of text.

Second, the students frequently reported a world or personal elaboration and a questioning elaboration concurrently. In these cases, it did not appear appropriate to code two distinct and separate elaboration strategies, because they did not appear as two distinct or unrelated thought processes in the learners’ reports, but as one closely interconnected global thought process. Therefore, *global elaboration* was added to the taxonomy, to represent personal or world elaborations accompanied by a questioning elaboration (see examples in Appendix E).

Since the purpose of this phase was to identify the range and types of strategies used by the participants, an identified discrete strategy was only counted once, even if it was reported a number of times. The data presented in Table 4 shows the types and range of distinct metacognitive, cognitive and socio-affective strategies reported by the six participants in the interviews. The students in this study were all able to report on their cognitive processes, and they reported as wide a range and the same types of strategies as were reported in studies of adult language learners (O’Malley & Chamot, 1990).

Quantitative analyses of the interviews in Table 4 reveal wide variations among

the students in the range of strategies described, from reports of only 6 to reports of 17 distinct strategies. Table 4 reveals wide variations in the students' reported metacognitive strategy use, from reports of only 2 to reports of 6 distinct metacognitive strategies. The metacognitive strategies most reported by the participants were directed / selective attention, auditory / comprehension monitoring, and self-management. The data also reveal wide variations in the students' reported cognitive strategy use. Some students reported using up to 9 distinct cognitive strategies, whereas only 2 were reported by one student. Direct linguistic intake was the only cognitive strategy reported by all students. Next to direct linguistic intake, the students reported using predominantly inferencing and elaboration strategies, in equal proportions. Wide variations similarly appear in the students' reports of socio-affective strategy use. One student reported using 4 distinct socio-affective strategies, while another reported none. Questioning for clarification was predominantly reported by the students, followed by self-encouragement and cooperation. Quantitative analyses of the interviews further reveal wide variations among the participants in the balance between reported cognitive and metacognitive strategy use. Some participants reported using metacognitive and cognitive strategies in an equal proportion, whereas other students reported considerably greater use of cognitive strategies.

In conclusion, quantitative analyses of the interviews indicate that the learners in this study reported using a wide range of listening strategies. Cognitive and metacognitive strategies were dominantly reported. Direct linguistic intake, inferencing

and elaboration were the cognitive strategies most frequently reported in interviews, while selective or directed attention, monitoring and self-management were the most reported metacognitive strategies. The analyses of the data revealed wide variations in the learners' individual strategy use.

Table 4 Types of listening comprehension strategies reported by each student in interviews

Students	BE	EN	IM	NE	SA	SH
<b>Strategies</b>						
Advance organisation		•				
Directed attention	•	•	•		•	•
Selective attention		•	•	•		•
Self-management		•	•		•	•
Comprehension monitoring		•		•		•
Auditory monitoring	•	•			•	•
<b>Metacognitive total</b>	<b>2</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>5</b>
Direct linguistic intake	•	•	•	•	•	•
Linguistic inferencing	•	•		•	•	
Voice/paralinguistic inferencing					•	
Kinesic inferencing					•	
Extralinguistic inferencing	•	•			•	•
Between parts inferencing	•					
Global elaboration	•	•			•	•
Personal elaboration	•	•				•
World elaboration	•	•	•			
Questioning elaboration						•
Imagery	•					
Translation		•				•
Transfer	•	•				
Repetition		•				
Resourcing			•			
<b>Cognitive total</b>	<b>9</b>	<b>9</b>	<b>3</b>	<b>2</b>	<b>6</b>	<b>6</b>
Questioning for clarification	•	•		•	•	•
Cooperation	•			•		
Anxiety management				•		
Self-encouragement	•	•		•		
<b>Socio-affective total</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>1</b>
<b>TOTAL</b>	<b>14</b>	<b>17</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>12</b>

#### **IV.1.2 Quantitative analyses of think-aloud reports**

The purpose of the second phase of this study was to provide further insights into the research question: What are the strategies deployed by 12 and 13 year old core French students in different listening activities? By means of a think-aloud procedure, the participants were asked to describe their thought processes as completely as possible, while listening to three oral texts in French.

These think-aloud sessions were audio-recorded, transcribed verbatim and coded using the same taxonomy. However, whereas in analyses of the interviews each strategy was coded only once, in this second phase, each occurrence of a strategy was counted, in order to determine the frequency of use of each strategy as students were engaged in a listening task. Totals for each strategy were tallied, and the use of the strategy was then represented as a percentage of total strategy use for that participant. Individual strategy profiles for each listener presenting the absolute and relative frequency of use for each strategy appear in Tables 5 and 6.

Table 5 Frequency of strategy use reported by each student in think-aloud sessions

Students	BE	EN	IM	NE	SA	SH
<b>Strategies</b>						
Directed attention		1				
Selective attention	1	3			1	1
Self-management		2	2	1		
<b>Planning Total</b>	<b>1</b>	<b>6</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>
Comprehension monitoring	8	15	1	2	3	5
Auditory monitoring	2		1	2	1	1
Double-check monitoring	2	7				2
<b>Monitoring Total</b>	<b>12</b>	<b>22</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>8</b>
Performance evaluation	2	4				
<b>Metacognitive Total</b>	<b>15</b>	<b>32</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>9</b>
Direct linguistic intake	25	25	21	16	20	8
Linguistic inferencing	4	3	2	1	1	2
Voice/paraling. inferencing	1	1	2		2	2
Extralinguistic inferencing	2	4	3	3	3	6
Between parts inferencing	1	2				1
<b>Inferencing Total</b>	<b>8</b>	<b>10</b>	<b>7</b>	<b>4</b>	<b>6</b>	<b>11</b>
Global elaboration	3	6	3	4	3	2
Personal elaboration		2				
World elaboration	4	8	2	5	4	6
Questioning elaboration	2	2		2	3	2
<b>Elaboration Total</b>	<b>9</b>	<b>18</b>	<b>5</b>	<b>11</b>	<b>10</b>	<b>10</b>
Imagery		3				
Summarization		5			2	
Translation	2	3	1		1	1
Transfer	2	2	2		1	1
<b>Cognitive Total</b>	<b>46</b>	<b>66</b>	<b>36</b>	<b>31</b>	<b>40</b>	<b>31</b>
<b>TOTAL</b>	<b>61</b>	<b>98</b>	<b>41</b>	<b>36</b>	<b>45</b>	<b>40</b>

Table 6 Relative frequency (in percentage) of strategy use reported by each student in think-aloud sessions \*

Students	BE	EN	IM	NE	SA	SH	Average
<b>Strategies</b>							
Directed attention		0.9					0.1%
Selective attention	1.4	2.9	3.9	2.6	2.1	2.4	2.5%
Self-management		1.9		2.6			0.7%
<b>Planning Total</b>	<b>1.4%</b>	<b>5.7%</b>	<b>3.9%</b>	<b>5.2%</b>	<b>2.1%</b>	<b>2.4%</b>	<b>3.4%</b>
Comprehension monitoring	13	15.4	2.0	5.3	8.3	12	9.3%
Auditory monitoring	2.8		2.0		2.1	2.4	1.5%
Double-check monitoring	4.2	7.7				4.9	2.8%
<b>Monitoring Total</b>	<b>20%</b>	<b>23%</b>	<b>4%</b>	<b>5.3%</b>	<b>10%</b>	<b>19%</b>	<b>14%</b>
Performance evaluation	4.2	3.8					1.3%
<b>Metacognitive Total</b>	<b>25%</b>	<b>33%</b>	<b>8%</b>	<b>11%</b>	<b>12%</b>	<b>22%</b>	<b>18.5%</b>
Direct linguistic intake	41%	26%	52%	50%	46%	21%	39%
Linguistic inferencing	7.0	2.9	5.9	2.6	2.1	4.9	4.2%
Voice/paraling. inferencing	1.4	0.9	5.9		4.2	4.9	2.8%
Extralinguistic inferencing	2.8	3.8	8.0	7.9	6.3	15	7.3%
Between parts inferencing	1.4	1.9				2.4	0.9%
<b>Inferencing Total</b>	<b>13%</b>	<b>9%</b>	<b>20%</b>	<b>10%</b>	<b>13%</b>	<b>27%</b>	<b>15%</b>
Global elaboration	5.6	5.8	8.0	11	6.3	4.9	7%
Personal elaboration		1.9					0.3%
World elaboration	7.0	8.6	5.9	13	8.3	15	9.6%
Questioning elaboration	2.8	1.9		5.3	6.3	4.9	3.5%
<b>Elaboration Total</b>	<b>15%</b>	<b>18%</b>	<b>14%</b>	<b>29%</b>	<b>21%</b>	<b>25%</b>	<b>20%</b>
Imagery		2.9					0.4%
Summarization		4.8			4.2		1.5%
Translation	2.8	2.9	2.0		2.1	1.4	1.8%
Transfer	2.8	1.9	3.9		2.1	2.4	2%
Grouping		1.9					0.3%
<b>Cognitive Total</b>	<b>75%</b>	<b>67%</b>	<b>92%</b>	<b>89%</b>	<b>88%</b>	<b>78%</b>	<b>81.5%</b>
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

\* rounded percentages

Tables 5 and 6 demonstrate that in the think-aloud reports, all students reported using predominantly cognitive strategies (an average of 81.5% of all strategy reports), followed by metacognitive strategies (an average of 18.5% of all strategy reports). Owing most probably to the fact that think-alouds are not conducive to the elicitation of social or affective strategies, none was reported by any participant. All students reported using predominantly direct linguistic intake, elaboration, inferencing and monitoring strategies. Wide variations exist, however, in the strategy use individually reported by the students.

Table 7 presents a summary of the average reported frequency of use for the strategy groups predominantly reported by all students. It also provides the range of reported frequency of use for the strategy groups predominantly reported, in order to illustrate the wide variations in the learners' individual strategy use. Direct linguistic intake was reported predominantly by all learners (39% average reported frequency of use). However, individual students reported using this strategy in proportions varying from 21% to 52% of total strategy use. Elaboration was the strategy most dominantly reported after direct linguistic intake (20% average reported frequency of use). In this case also, students varied greatly in their reports (from 14% to 29% reported frequency of use of elaboration). Inferencing was the third type of strategy most reported in think-alouds (15% average reported frequency of use). Students varied widely, once again, in their individual reports (from 9% to 27% reported frequency of use of inferencing). Monitoring accounted for 14% of average reported strategy use, but students reported this strategy in proportions varying from 5% to 23%.

Table 7 Ranked frequency of listening comprehension strategy use by strategy group reported in think-alouds \*

<b>Rank in reported frequency of use</b>	<b>Strategy group</b>	<b>Strategy Category</b>	<b>Range of reported frequency of use</b>	<b>Average reported frequency of use</b>
1	Direct ling. intake	Cognitive	21 to 52 %	39 %
2	Elaboration	Cognitive	14 to 29 %	20 %
3	Inferencing	Cognitive	9 to 27 %	15 %
4	Monitoring	Metacognitive	5 to 23 %	14 %
5	Planning	Metacognitive	1 to 6 %	3 %

\* rounded percentages

Table 8 details the frequency with which the distinct strategies were reported within the elaboration, inferencing, monitoring and planning strategy groups. It highlights that comprehension monitoring was in fact the third strategy most dominantly reported by all students. It highlights that the students more frequently reported the use of world or global types of elaboration. Table 8 further illustrates that extralinguistic inferencing was reported with a higher frequency than linguistic inferencing. It also demonstrates the relatively low frequency with which the students reported use of double-check monitoring or selective attention. Once again, this table also clearly indicates that wide variations exist in the learners' individual reports of use of all strategies.

Table 8 Order of frequency of distinct strategies reported in think-aloud sessions \*

<b>Distinct strategy</b>	<b>Strategy category</b>	<b>Range of reported frequency of use</b>	<b>Average reported frequency of use</b>
Direct linguistic intake	Cognitive	21 to 52 %	39 %
World elaboration	Cognitive	6 to 15 %	10 %
Comp. monitoring	Metacognitive	2 to 15 %	9 %
Extralinguistic inferencing	Cognitive	3 to 15 %	7 %
Global elaboration	Cognitive	5 to 11 %	7 %
Linguistic inferencing	Cognitive	2 to 7 %	4 %
Questioning elaboration	Cognitive	0 to 6 %	3 %
Voice/para. inferencing	Cognitive	1 to 6 %	3 %
d-c. monitoring	Metacognitive	0 to 8 %	3 %
Selective attention	Metacognitive	1 to 4 %	2.5 %
Transfer	Cognitive	0 to 4%	2 %
Translation	Cognitive	0 to 3 %	2 %

\* rounded percentages

Tables 5, 6, 7 and 8 provide many detailed answers to the first research question which guided this study. The participants reported using predominantly direct linguistic intake, elaboration, inferencing and monitoring strategies. These tables also indicate that there exist wide variations in the proportion in which strategies were reported by the individual learners. The marked differences in the individual proportional use of all strategies reported suggest therefore that all learners appear to reach interpretations of the aural texts using strategies very differently.

This leads to the second question in this study, concerning the potential difference between successful and less successful listeners.

#### **IV.1.3 Comparative quantitative analysis of strategy use by level of comprehension attained in the listening tasks**

In an attempt to provide answers to the second research question, the strategy use reported by the students was compared by level of overall comprehension attained in the listening tasks. Table 9 highlights the strategy use reported by the students in order of level of overall comprehension attained, for each of the strategies predominantly reported by all learners.

**Table 9 Percentage of strategy use reported by each student by level of comprehension attained in the listening tasks**

	SA	NE	EN	IM	BE	SH
Overall level of comprehension on listening tasks	consistently very good	consistently good	ranging from fair to very good	ranging from fair to good	ranging from incomplete to fair	incomplete
Direct linguistic intake	46	50	26	52	41	21
World elaboration	8.3	13	8.6	5.9	7.0	15
comprehension monitoring	8.3	5.3	15	2.0	13	12
extralinguistic inferencing	6.3	7.9	3.8	8.0	2.8	15
Global elaboration	6.3	11	5.8	8.0	5.6	4.9
Linguistic inferencing	2.1	2.6	2.9	5.9	7.0	4.9
Questioning elaboration	6.3	5.3	1.9		2.8	4.9
Voice/paraling. inferencing	4.2		0.9	5.9	1.4	4.9
Double-check monitoring			7.7		4.2	4.9
Selective attention	2.1	2.6	2.9	3.9	1.4	2.4
Transfer	2.1		1.9	3.9	2.8	2.4
Translation	2.1		2.9	2.0	2.8	2.4

As can be seen, a quantitative analysis reveals no relationship whatsoever between the students' strategy use and comprehension outcomes for any of the distinct strategies reported. For example, the student having attained the highest level of comprehension in the listening tasks (SA) did not report a higher incidence of any strategy except

questioning elaboration. Furthermore, the strategy use reported by the third (EN) and fourth (IM) students, for example, differ markedly, even though their overall level of comprehension was very similar. EN reported using direct linguistic intake in 26% of total strategy use, whereas IM reported relying upon direct linguistic intake in a proportion of 52% of total strategy use. Comprehension monitoring accounted for 15% of EN's total strategy use, whereas it accounted for merely 2% of IM's total strategy use. Moreover, the two students who attained the lowest levels of overall comprehension (BE and SH) did not rely upon strategies such as transfer or translation to any greater extent than more successful listeners. Finally, these two students (BE and SH) did not report the lowest incidences of elaboration, inferencing or monitoring.

**Table 10** Range of strategies reported by each student in interviews in order of comprehension attained in the listening tasks

	SA	NE	EN	IM	BE	SH
Listening comprehension outcomes	very good	good	fair to very good	fair to good	incomplete to fair	incomplete
Metacognitive strategies	3	2	6	3	2	5
Cognitive strategies	6	2	9	3	9	6
Socio-affective strategies	1	4	2	0	3	1
Total range reported	10	8	17	6	14	12

Table 10 examines the range and types of strategies reported by the students in the Phase I interviews by level of comprehension attained in the listening tasks. This table reveals no apparent relationship between reported strategy use and comprehension outcomes. The two students who attained lower comprehension levels on the listening tasks (BE and SH) in fact both reported a wider range of strategies in the interviews than the two students who attained the highest comprehension levels (SA and NE). Neither of the two most successful listeners (SA and NE) reported the highest number of metacognitive strategies, or of cognitive strategies. Table 10 also indicates that, in spite of the fact that EN and IM attained relatively similar levels of comprehension, their reported strategy use differed as widely in the interviews as in the listening tasks. Similar conclusions can be drawn from an analysis of Table 11, which presents the absolute frequency of strategy use reported in the Phase II think-alouds by level of comprehension attained in the listening tasks.

Table 11 Frequency of strategy use reported by each student in think-aloud sessions by level of comprehension attained in the listening tasks

Students	SA	NE	EN	IM	BE	SH
Level of overall comprehension of texts	very good	good	fair to very good	fair to good	incomplete to fair	incomplete
<b>Strategies</b>						
Directed attention			1			
Selective attention	1		3		1	1
Self-management		1	2	2		
<b>Planning Total</b>	<b>1</b>	<b>1</b>	<b>6</b>	<b>2</b>	<b>1</b>	<b>1</b>
Comprehension monitoring	3	2	15	1	8	5
Auditory monitoring	1	2		1	2	1
Double-check monitoring			7		2	2
<b>Monitoring Total</b>	<b>4</b>	<b>4</b>	<b>22</b>	<b>2</b>	<b>12</b>	<b>8</b>
Performance evaluation			4		2	
<b>Metacognitive Total</b>	<b>5</b>	<b>5</b>	<b>32</b>	<b>4</b>	<b>15</b>	<b>9</b>
Direct linguistic intake	20	16	25	21	25	8
Linguistic inferencing	1	1	3	2	4	2
Voice/paraling. inferencing	2		1	2	1	2
Extralinguistic inferencing	3	3	4	3	2	6
Between parts inferencing			2		1	1
<b>Inferencing Total</b>	<b>6</b>	<b>4</b>	<b>10</b>	<b>7</b>	<b>8</b>	<b>11</b>
Global elaboration	3	4	6	3	3	2
Personal elaboration			2			
World elaboration	4	5	8	2	4	6
Questioning elaboration	3	2	2		2	2
<b>Elaboration Total</b>	<b>10</b>	<b>11</b>	<b>18</b>	<b>5</b>	<b>9</b>	<b>10</b>
Imagery			3			
Summarization	2		5			
Translation	1		3	1	2	1
Transfer	1		2	2	2	1
<b>Cognitive Total</b>	<b>40</b>	<b>31</b>	<b>66</b>	<b>36</b>	<b>46</b>	<b>31</b>
<b>TOTAL</b>	<b>45</b>	<b>36</b>	<b>98</b>	<b>41</b>	<b>61</b>	<b>40</b>

In conclusion, the quantitative analyses of the students' interview and think-aloud reports provide detailed data concerning the range of strategies used by the six language learners in this study. The data indicate that these learners deploy a wide range of comprehension strategies. The quantitative analyses of the think-alouds also provide detailed data concerning the proportion in which distinct strategies were reported by the individual learners. Wide variations appear in the learners' reported frequency of strategy use, as well as in the overall range reported by each student. The quantitative analyses reveal no apparent relationship between the number of metacognitive, or cognitive, or socio-affective strategies reported by the learners and comprehension outcomes in the listening tasks.

The conclusion of the quantitative analyses therefore leaves crucial questions unanswered. For example, if there is no necessary relationship between the reported frequency of use of either metacognitive, cognitive or socio-affective strategies and comprehension outcomes, as quantitative analyses suggest, which other relationship may exist between strategy use and the varying levels of comprehension attained in the listening tasks? If more successful listeners did not necessarily use strategies with higher frequency, how were they able to attain higher levels of comprehension in the listening tasks?

In the next section, the results of the qualitative analysis of the students' think-aloud reports are presented, in an attempt to provide further insights into the relation between language learners' strategy use and comprehension outcomes.

## IV.2 Qualitative analysis

The second question addressed in this study was: Do students who performed better on the listening comprehension tasks exhibit a pattern of strategy use which is different from those students who were less successful in these comprehension tasks? If so, what are the differences? Quantitative analyses revealed no apparent relationship between the range or number of strategies reported and individual comprehension outcomes, leaving the second research question partly unanswered. In order to provide further insights into this question, we now present a qualitative analysis of the data. The next two figures present, side by side, the think-aloud reports of two students who attained different levels of comprehension in the first listening task. Figure A is the transcript of the students' first listen to the first text. Figure B is the transcript of the students' second listen to this text. The level of comprehension of the student whose think-aloud report appears in the left column (BE) was assessed as *incomplete*, because she failed to decisively grasp the context of the aural text. The level of comprehension of the student represented in the right column (EN) in the figures was assessed as *good*, because he decisively and accurately grasped the context and understood 70% to 80% of the units of meaning within this first text. These two students were selected for an in-depth qualitative analysis because, on the basis of their reported understanding of this text, no substantial difference appeared in their linguistic knowledge of French. Both students correctly understood the key units of meaning within the first text. However, in spite of their relatively similar linguistic knowledge, one

student (EN) reached an accurate final interpretation of this first text, whereas the other student (BE) remained indecisive with regard to its general context.

Furthermore, as was documented in previous listening comprehension strategy studies (O'Malley & Chamot, 1990), learners vary widely in their ability to provide introspective verbal reports. Although all participants in this study were able to report on their strategy use, they varied widely in their ability to comprehensively describe their thought processes. These two students' (EN and BE) think-alouds were selected for an in-depth analysis because they also constituted the two most explicit and comprehensive strategy use reports collected in this study.

**Figure A Think-aloud reports in the first listen to the first text**

*Au forum, c'est un match de hockey extraordinaire entre les Étoiles soviétiques et les Canadiens!*

BE: It's something about civilization. About war or something. It's Canadian something and that's all I understood. It said something at the end, like civilization, in French.

*Retenez la date! C'est vendredi 31 décembre à 19h au Forum de Montréal.*

BE: O.K. It's the 30th, 31st of December or 30th. It's Wednesday, or Saturday, I didn't really understand. And it said, like I don't know, some time. It's like a circus or something. I think. It might be. The music..., and it says, like what time it is, so it's probably like a circus or something.

*La vente des billets commence lundi à 9h du matin et voici le prix des billets.*

BE: She said something about Monday. I have no idea, I didn't really understand.

*Blancs - 13,50\$, Bleus - 8\$, Bleus du centre - 11,50\$, places debout - 8\$.*

BE: Oh, she's saying like how much are the tickets and how, what do you want to buy, like popcorn, or drinks and stuff. She was saying the prices.

*On peut les acheter aux guichets du Forum et à tous les comptoirs Ticketron. A ne pas oublier: il y a une limite de six billets par personne.*

BE: Oh, I think she said something about civil war or something. And, I don't know. Well, I think it's about, like, maybe a circus. Or maybe about like, something, like a carnival. And then like, people have to dress up. And then it said like, what time it is and when it is, like, what can you buy, like drinks or something. And I thought it's about like civilization or civil war or something.

\* 1st listen

*Au forum, c'est un match de hockey extraordinaire entre les Étoiles soviétiques et les Canadiens!*

EN: I heard like, they see a parade and with the music, it's walking together, and there was a parade going on, I'm not sure.

*Retenez la date! C'est vendredi 31 décembre à 19h au Forum de Montréal.*

EN: I heard them say December 31st in Montreal. So I'm guessing that's the big celebration before the New Year...

*La vente des billets commence lundi à 9h du matin et voici le prix des billets.*

EN: ...I'm thinking it's like a commercial, like a commercial advertising it.... I first thought it was a parade, and then, I heard a second part, which is December 31st. So, I'm like, it can't be a parade, it's going to be too cold...And then...I realized that it was probably on TV because they're probably filming it. So, it was going to be like a TV show (because) ... when I heard that the time, like I think it was 9:30. So, I'm like, why would like, a parade, start this early? Not that many people will be awake by then. They'd be asleep because of holidays. So, I figured that it would probably be going on TV because they said all these times and dates.

*Blancs - 13,50\$, Bleus - 8\$, Bleus du centre - 11,50\$, places debout - 8\$.*

EN: This time, I heard them say like, the prices of like, seating, I guess. So now, I think it's going to be a, sort of like a concert. ...but I still can't fit in how can it be like, a concert? Because all this other facts that I heard and they're like... What I was thinking is, maybe they have like seats there. ... like outside...

*On peut les acheter aux guichets du Forum et à tous les comptoirs Ticketron. A ne pas oublier: il y a une limite de six billets par personne.*

EN: I heard them say something about where to buy them, call this. And buy the tickets. And I heard them say, like, there's a limit but I can't quite like, figure out what they said. They said "CBA", so I'm guessing that's it. I'm still thinking it's kind of like, between a concert and like an outdoor parade that's being filmed. But, now, about this ticket stuff. Why would you buy tickets to go to a parade? The concert idea makes more sense. But, I still can't fit in how big it is, because most of them are like, small. And so, I can't figure it out. Unless it's like, a circus being filmed.

**Figure B Think-aloud reports in the second listen to the first text**

*Au forum, c'est un match de hockey extraordinaire entre les Étoiles soviétiques et les Canadiens! Retenez la date! C'est vendredi...*

BE: OK. Stop! I think, now, she said something about hockey. And I think she said something, I think it's a Canadian team or something.

*...31 décembre à 19h au Forum de Montréal...*

BE: Now, she said what time it is again. The 31st of December, now, I understand that's when it will start. And it's a "vendredi" or something. What is that? Thursday, I think. *La vente des billets commence lundi à 9h du matin et voici le prix des billets...*

BE: Oh! OK, I think she said it's for a Monday. I think that circus or the, I don't know, the carnival or hockey, it's, they'll perform Monday to I think Friday. Or Thursday.

*Blancs - 13,50\$,*

BE: \$30, the ticket.

*Bleus - 8\$, Bleus du centre - 11,50\$, places debout - 8\$. On peut les acheter aux guichets du Forum et à tous les comptoirs Ticketron. A ne pas oublier: il y a une limite de six billets par personne.*

BE: OK, I just heard like more things, now. What they said, something about hockey. And I understood like, it's the 31st of December something. And I just didn't get the last part. She was saying the prices of something. I guess it's something they're selling. I'm still thinking it has something to do with like a carnival or something like a civil war.

\* 2nd listen

*Au forum, c'est un match de hockey extraordinaire ...*

EN: I heard hockey this time. So now, I'm starting to think it's a hockey game. And they're going to be showing at that time, that day, and it's going to be really exciting, because they said "extraordinaire", extraordinary.

*...entre les Étoiles soviétiques et les Canadiens! Retenez la date! C'est vendredi...*

EN: I heard "Canadiens" and "Étoiles", whatever that means, but I know it's two teams' names. So, they have like a, probably a championship game or something.

*...31 décembre à 19h au Forum de Montréal...*

EN: Now, I know. 7:30, December 31st, and like, I think the Montreal Stadium, in Montreal.

*La vente des billets commence lundi à 9h du matin*

EN: Now, they said that it's going to start on Monday.

*...et voici le prix des billets. Blancs - 13,50\$, Bleus - 8\$, Bleus du centre - 11,50\$, ...*

EN: I heard them say like, colours and then the prices. I'm thinking that the seats are painted different colours for the sections. And they're giving the different prices. And then, the middle, when they said it, "le centre", the centre, they said blue too, and I'm guessing it's like different seating arrangements.

*...places debout - 8\$. On peut les acheter aux guichets du Forum et à tous les comptoirs Ticketron. A ne pas oublier: il y a une limite de six billets par personne.*

EN: I'm still trying to figure out what CBA means. It's like I've never heard of that, in both languages. So, I can't figure out what that is. And I'm trying to figure out what number it could be. But, I'm guessing maybe, CBA means C would be three, B would be two, A would be one, so, five tickets.

I think it's a hockey game, because I heard it. And it's going to be one, like, important game. The ticket prices are lower than usual. Now, I don't have the idea of it being a parade or anything like that.

An examination of the think-aloud reports presented in Figure A reveals that in the first listen, both students correctly understood many units of meaning, and that both similarly encountered difficulties with details within certain units of meaning. BE reported having understood that the text referred to something Canadian, that dates and times in December were given, and various ticket prices. She also reported having noticed that a particular music accompanied the narration. By the end of the first listen, BE reported thinking that the text may refer to a civil war, civilization, a circus or a carnival. EN, for his part, reported having understood that the text referred to an event which sounded like a parade, that a place, dates and times in December were given, as well as the price of something like seating, and details concerning where to buy tickets and ticket limits. He also noticed that a particular music accompanied the narration. By the end of the first listen, EN reported thinking that the text may refer to a concert, an outdoor parade or a circus. In the first listen, EN hence reported having understood a few more details within the key units of meaning than BE. However, both students appeared to have understood the same key units of meaning. They also both reported thinking that the text may refer to a circus or parade / carnival.

Figure B illustrates that both students also similarly understood a greater number of units of meaning, and of details within the units, upon the second listen. This time, BE reported having understood that the text referred to hockey, possibly to a Canadian team, that the event referred to would start on such a date, that the performance would be from such a date to such a date, and that ticket prices were given.

EN, for his part, reported having understood that the text referred to hockey, that the event was qualified as “extraordinaire”, that the names of two teams had been given, that the event referred to would take place at the Montreal stadium at such a date and time, and that various ticket prices were given. Once again, EN reported having understood a few more details than BE. However, the two students’ linguistic comprehension of the key units of meaning within the text remained relatively similar. By the end of the second listen, both students had correctly understood that the text had referred to hockey, to teams, Canadian, that dates and times referring to the event were given, as well as ticket prices. Both students had also noticed that a particular anthem accompanied the narration of the text. Hence, from the point of view of linguistic knowledge, by the end of the second listen, the students differed only in the number of details correctly understood within the key units of meaning. However, EN formulated a decisive and accurate final interpretation of the context and overall meaning of this first text. In contrast, BE was not able to formulate a decisive final interpretation of the context, in spite of having correctly understood the same key units of meaning within that text.

The next section examines in greater depth what EN may have done differently.

*Au forum, c’est un match de hockey extra-ordinaire entre les Étoiles soviétiques et les Canadiens!*

**BE:** It’s something about civilization. About war or something. It’s Canadian something and that’s all I understood. It said something at the end, like civilization, in French.

**EN:** I heard like, they see a parade and with the music, it’s walking together, and there was a parade going on, I’m not sure.

From the onset of the first listen to the beginning of the text, BE and EN both deployed several strategies, in an apparent attempt to grasp the general context of the aural text and to assist their comprehension. From the linguistic comprehension of a few words or extralinguistic clues within the beginning of the text, the two students used inferencing and elaboration strategies in order to guess the general context. BE, from her apparent linguistic understanding of Canadiens, forum and/or soviétiques, inferred and elaborated that the context may be Canadian, and about civilization or war. EN appears to have relied in part on imagery associated with extralinguistic inferencing as he heard this first segment. The sound of the music appears to have evoked in EN mental images of a parade, of “walking together”.

*Retenez la date! C'est vendredi 31 décembre à 19h au Forum de Montréal.*

**BE:** O.K. It's the 30th, 31st of December or 30th. It's Wednesday, or Saturday, I didn't really understand. And it said, like I don't know, some time. It's like a circus or something. I think. It might be. The music..., and it says, like what time it is, so it's probably like a circus or something.

**EN:** I heard them say December 31st in Montreal. So I'm guessing that's the big celebration before the New Year...

In the second segment, BE appeared to focus closely on the linguistic input for comprehension. She monitored her comprehension and revised her original elaboration of a war or civilization context to that of a circus, based on her additional linguistic understanding of dates, times, and inferences from the music. EN similarly inferred and elaborated that the text may refer to a New Year's celebration, on the basis of his additional linguistic understanding of date and place.

*La vente des billets commence lundi à 9h du matin et voici le prix des billets.*

BE: She said something about Monday. I have no idea, I didn't really understand.

EN: I'm thinking it's like a commercial, like a commercial advertising it.... I first thought it was a parade, and then, I heard a second part, which is December 31st. So, I'm like, it can't be a parade, it's going to be too cold...And then...I realized that it was probably on TV because they're probably filming it. So, it was going to be like a TV show (because) ... when I heard that the time, like I think it was 9:30. So, I'm like, why would like, a parade, start this early? Not that many people will be awake by then. They'd be asleep because of holidays. So, I figured that it would probably be going on TV because they said all these times and dates.

Neither student reported a clear linguistic understanding of the third segment. BE reported having understood only the word *lundi* and having no further idea. Her inability to have understood the linguistic input appears to have temporarily stalled her progress through the task. She reported no further monitoring of the conceptual frameworks she has developed earlier. In contrast, although EN did not report having understood this segment either, he was monitoring his comprehension through this third segment, and evaluating his original conceptual frameworks. He was summarizing and contrasting his earlier understanding of the linguistic and extralinguistic items presented thus far against his world knowledge and internal measures of plausibility. His monitoring was leading him to begin to eliminate certain hypotheses he had formulated earlier.

*Blancs - 13,50\$, Bleus - 8\$, Bleus du centre - 11,50\$, places debout - 8\$.*

BE: Oh, she's saying like how much are the tickets and how, what do you want to buy, like popcorn, or drinks and stuff. She was saying the prices.

EN: This time, I heard them say like, the prices of like, seating, I guess. So now, I think it's going to be a, sort of like a concert. ...but I still can't fit in how can it be like, a concert? Because all this other facts that I heard and they're like... What I was thinking is, maybe they have like seats there. ... like outside...

Similar observations can be made about the above segment. The level of linguistic

comprehension of the two students remains relatively similar. Both understood the two key units of meaning: that prices were being given, for various tickets or seating. As in the previous segment, BE appears to have been focusing closely on understanding the individual items within the segment. She again reported no further monitoring or new inference or elaboration, in spite of her additional understanding of ticket prices. In contrast, EN continued to cyclically interpret the linguistic input, monitor his linguistic interpretations against his global linguistic comprehension thus far, against his world knowledge, and against internal measures of plausibility, and to then monitor and refine his hypotheses to match his globally monitored linguistic comprehension, world knowledge and internal measures of plausibility. Hence, in this fourth segment, based upon his new linguistic understanding that ticket prices were given, EN again proceeded to a cycle of summarization of the items he had understood thus far and of his hypotheses thus far, then he again contrasted this linguistic understanding and these hypotheses against internal measures of plausibility and his world knowledge. The new questions having arisen from his evaluation led him again to eliminate certain possibilities and to formulate new hypotheses.

*On peut les acheter aux guichets du Forum et à tous les comptoirs Ticketron. A ne pas oublier: il y a une limite de six billets par personne.*

BE: Oh, I think she said something about civil war or something. And, I don't know. Well, I think it's about, like, maybe a circus. Or maybe about like, something, like a carnival. And then like, people have to dress up. And then it said like, what time it is and when it is, like, what can you buy, like drinks or something. And I thought it's about like civilization or civil war or something.

EN: I heard them say something about where to buy them, call this. And buy the tickets. And I heard them say, like, there's a limit but I can't quite like, figure out what they said. They said "CBA", so I'm guessing that's it. I'm still thinking it's kind of like, between a concert and like

an outdoor parade that's being filmed. But, now, about this ticket stuff. Why would you buy tickets to go to a parade? The concert idea makes more sense. But, I still can't fit in how big it is, because most of them are like, small. And so, I can't figure it out. Unless it's like, a circus being filmed.

The repetition, in this last segment, of the word *forum* and BE's report appear to confirm that the word *forum* evoked in this student her original, erroneous conceptual framework of a war or civilization context. This may be explained by the fact that this student had emigrated from the civil war context of Bosnia. Alternatively, BE may have interpreted *forum* in its historical meaning. As a result of her having heard the word *forum* a second time, BE hence reported again thinking that the text may be referring to a civil war, although without abandoning her other hypotheses that it may refer to a circus or a carnival. At this stage, by the end of the first listen, she still had not explicitly reported that she was evaluating or weighing her very different hypotheses against any internal measure of plausibility or against her personal or world knowledge. In contrast again, EN, for his part, continued to apply the same pattern of methodical and systematic "cyclical processing" to the task. He similarly reported experiencing difficulties understanding certain parts of the text. He also erroneously misunderstood certain words. For example, interlinguistic interference led him to the erroneous transfer of *six billets* to the letters CBA in English. However, this student reported relying on monitoring, elaboration and inferencing strategies for comprehension to the same extent in which he relied upon his linguistic understanding of the input. Hence, his misunderstanding of *six billets* had no negative influence on his overall comprehension of the text. The elaboration he formulated from his erroneous understanding of *six billets* did not even

have a negative influence on his more detailed comprehension of the units of meaning within the text, because the formulation of this elaboration was itself carefully monitored and evaluated against his systematically and globally monitored and evaluated comprehension of the entire text thus far. BE, in sharp contrast, never reported having challenged or evaluated her elaboration from the word *forum* or any of her other elaborations on these multiple bases or in this systematic cyclical manner. Consistent with all of his previous reports, for this final segment, EN continued to apply the same mode of repetitive cyclical processing to the task. Based upon his new linguistic understanding that where to buy the tickets and ticket limits were explained, he again very critically and systematically contrasted his linguistic understanding and hypotheses made thus far against internal measures of plausibility and his world knowledge. The new questions continually arising from his repeated monitoring and evaluation led him again to eliminate or further confirm various hypotheses.

In the next section, we examine the two students' think-aloud reports through the second listen to this first text. Whereas during the first listen, the tape was stopped at intervals corresponding to natural boundaries in the text, the pauses during the second listen were dictated by the participants, who were free to interrupt the tape whenever they wished to report their thought processes.

*Au forum, c'est un match de hockey extra-ordinaire entre les Étoiles soviétiques et les Canadiens! Retenez la date! C'est vendredi...*

BE: OK. Stop! I think, now, she said something about hockey. And I think she said something, I think it's a Canadian team or something.

*Au forum, c'est un match de hockey extra-ordinaire ...*

EN: I heard hockey this time. So now, I'm starting to think it's a hockey game. And they're going to be showing at that time, that day, and it's going to be really exciting, because they said "extraordinaire", extraordinary.

From the onset of the second listen, both students correctly understood the key unit of meaning *hockey*. BE reported having understood also that the text may refer to a Canadian team. Nonetheless, as in her previous reports through the first listen, the linguistic understanding of additional units of meaning did not prompt her to report any monitoring or evaluation of her previous hypotheses, nor did she report any new elaboration or inference. As she undertook the final listen to this text, BE appeared to continue to focus closely on the individual linguistic items, and accordingly, she reported principally direct linguistic intake. Consistent with the pattern of strategy use which he exhibited throughout the first listen, EN, for his part, reported having immediately built upon his linguistic understanding of the key word *hockey*. He reported being in the process of revising and eliminating all of his other original hypotheses, based on his linguistic understanding of the word *hockey* and based upon what he evaluated to be the strong congruency of a hockey game with all the other items he summarized having understood during the first listen to the text. At this stage, in the beginning of the final listen, EN hence continued to progress steadily through the task. This did not appear to be the result of a superior linguistic knowledge of French, but rather, of his very different approach to the task.

*...31 décembre à 19h au Forum de Montréal...*

BE: Now, she said what time it is again. The 31st of December, now, I understand that's when it will start. And it's a "vendredi" or something. What is that? Thursday, I think.

*La vente des billets commence lundi à 9h du matin et voici le prix des billets...*

BE: Oh! OK, I think she said it's for a Monday. I think that circus or the, I don't know, the carnival or hockey, it's, they'll perform Monday to I think Friday. Or Thursday.

*Blancs - 13,50\$,*

BE: \$30, the ticket.

*Bleus - 8\$, Bleus du centre - 11,50\$, places debout - 8\$. On peut les acheter aux guichets du Forum et à tous les comptoirs Ticketron. A ne pas oublier: il y a une limite de six billets par personne.*

BE: OK, I just heard like more things, now. What they said, something about hockey. And I understood like, it's the 31st of December something. And I just didn't get the last part. She was saying the prices of something. I guess it's something they're selling. I'm still thinking it has something to do with like a carnival or something like a civil war.

From these excerpts, we can see that the general approach exhibited by BE throughout the first listen was confirmed until the end of the second listen. She continued to focus closely on the linguistic understanding of individual items within the text. Although she understood all the key units of meaning necessary to formulate an accurate interpretation of the text and that she occasionally reported being in the process of contrasting her hypotheses with her linguistic intake, she never reported having consistently or systematically monitored, challenged, or evaluated her comprehension. By the end of the final listen, BE was unable to decide among the various hypotheses which she had formulated in the course of the listening task, and consequently unable to formulate a decisive or accurate final interpretation of the general context or meaning of this first text.

The very different approach exhibited by EN is further confirmed in his last reports for this text:

*...entre les Étoiles soviétiques et les Canadiens! Retenez la date! C'est vendredi...*

EN: I heard "Canadiens" and "Étoiles", whatever that means, but I know it's two teams' names. So, they have like a, probably a championship game or something.

*...31 décembre à 19h au Forum de Montréal...*

EN: Now, I know. 7:30, December 31st, and like, I think the Montreal Stadium, in Montreal.

*La vente des billets commence lundi à 9h du matin*

EN: Now, they said that it's going to start on Monday.

*...et voici le prix des billets. Blancs - 13,50\$, Bleus - 8\$, Bleus du centre - 11,50\$, ...*

EN: I heard them say like, colours and then the prices. I'm thinking that the seats are painted different colours for the sections. And they're giving the different prices. And then, the middle, when they said it, "le centre", the centre, they said blue too, and I'm guessing it's like different seating arrangements.

*...places debout - 8\$. On peut les acheter aux guichets du Forum et à tous les comptoirs Ticketron. A ne pas oublier: il y a une limite de six billets par personne.*

EN: I'm still trying to figure out what CBA means. It's like I've never heard of that, in both languages. So, I can't figure out what that is. And I'm trying to figure out what number it could be. But, I'm guessing maybe, CBA means C would be three, B would be two, A would be one, so, five tickets. I think it's a hockey game, because I heard it. And it's going to be one, like, important game. The ticket prices are lower than usual. Now, I don't have the idea of it being a parade or anything like that.

EN also carefully focused on the linguistic input for comprehension. He reported having understood a few more details within the key units of meaning than BE, but he also encountered difficulties. In contrast to BE, however, he continued to systematically build upon each new unit of meaning linguistically understood. From each newly understood unit, he continued to monitor and evaluate his global linguistic comprehension of the text. He then proceeded to contrast and evaluate his monitored global linguistic

comprehension of the text against strong internal measures of plausibility, and against his personal and world knowledge. His uninterrupted, systematic cyclical pattern of interpreting, monitoring, evaluating and reinterpreting enabled EN to successively eliminate all of his less plausible interpretations.

In summary, the first major difference emerging from this qualitative analysis is that EN clearly appeared more purposeful in his approach to the listening task. He continually reported seeking an interpretation which, in his words, “made sense“, where his interpretation of the linguistic input “fit in” with his elaborations and inferences. He continually reported searching for meaning:

*I’m not sure... So, I’m guessing... I’m thinking... I first thought..., and then I heard..., so it can’t be..., and then..., I realized..., so..., why would...? So I figured..., because of all these... This time, I heard... I guess, so now, I think..., but I still can’t fit in..., how can it be...?, because of all these other facts that I heard... Maybe... I’m still thinking..., but now, about this... why would...?, the... idea makes more sense... but I still can’t fit in ...unless, probably...*

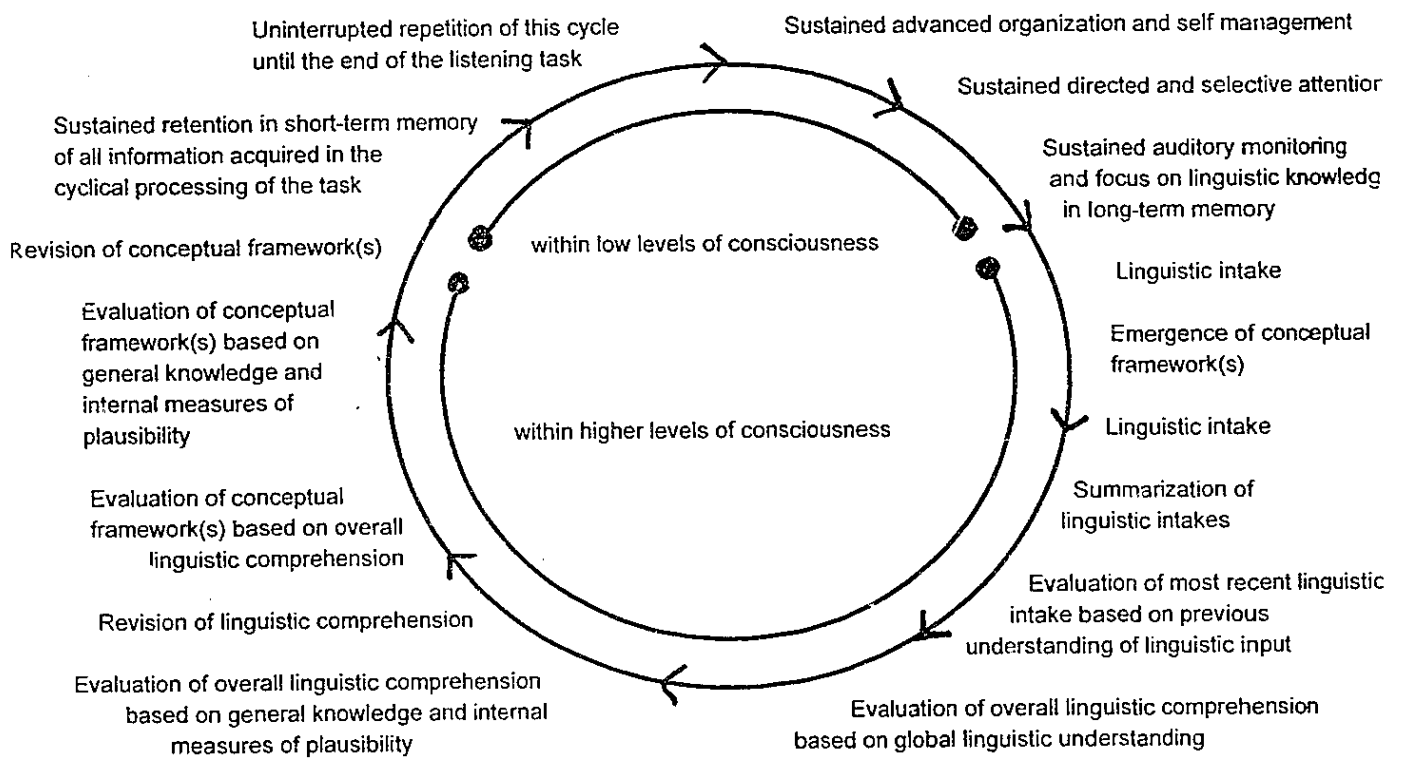
In order to reach his goal of an interpretation of the message that “made sense“, EN consistently deployed strategies in a continuous, systematic cyclical pattern. Each time he linguistically interpreted a new segment of text, he systematically questioned and evaluated his linguistic understanding of that segment against his linguistic interpretation of all previous segments. Once he had evaluated his global linguistic comprehension, he then proceeded to evaluate the plausibility of his elaborations and inferences, based upon his systematically monitored global linguistic comprehension of the text, and based, in equal measure, upon his world or personal knowledge, and upon clear internal measures of plausibility and logic. EN repeated this cyclical pattern of strategy use systematically

throughout the listening task. This constant cyclical monitoring of all of his linguistic intake, elaborations, and inferences enabled EN to progress steadily and consistently through the task, and to successively eliminate all of his less plausible elaborations and inferences until he reached a decisive final interpretation of the texts. His final interpretations were accurate for all three texts. His linguistic knowledge of French was not substantially higher than that of the less successful student in this analysis. Although EN understood more details, all key units of meaning were equally correctly understood by both students. EN also encountered some difficulties understanding details. However, EN did not appear distracted by the few linguistic difficulties he encountered. Furthermore, his linguistic misinterpretations had no negative effects on his final interpretation of the text, because he submitted both these misinterpretations and the elaborations built upon them to the same rigorous monitoring and evaluation screening he consistently applied throughout the task. In summary, this more successful listener clearly exhibited a very systematic and flexible approach of interactive top-down and bottom-up processing to the listening task.

Figure C provides a graphic representation of the continuous, systematic cycle of strategic processing suggested by EN's think-aloud report in the first listening task.

**Figure C**

**Continuous systematic cycle of strategic processing  
suggested by the think-aloud report  
of a more successful listener**



In contrast, BE's report for the first aural task suggests no clear systematic pattern of strategy use. BE appears to have devoted a considerable amount of time and attention to her linguistic comprehension of the input. She only infrequently reported monitoring her global comprehension, and no clear system of monitoring or evaluation of elaborations and inferences is evident from her report. Although she understood all key units of meaning necessary to grasp the general context of the text, she never reported having rigorously or systematically questioned her hypotheses of a civil war, civilization, circus or carnival against her linguistic understanding of these key units, or against her North-American personal or world knowledge, or against internal measures of plausibility and logic. Her report suggests that as a result of not having consistently or rigorously monitored or evaluated her linguistic intake or her elaborations and inferences, this student was unable to perceive the incongruence between her linguistic comprehension of key units of meaning such as hockey, Canadian, teams or ticket prices, and conceptual frameworks such as a civil war or a carnival.

A comparison between BE's report of strategy use and the continuous systematic cycle of strategic processing reported by EN (graphically represented in Figure C) suggests that BE deployed a top-down and bottom-up interactive processing approach at the very beginning of the first listen. However, by the third segment in the first listen, her approach seems to have shifted to principally understanding the individual words in the aural text. This chiefly bottom-up approach appears to have hindered her ability to continue to concurrently cyclically deploy the top-down processes indispensable for

comprehension. The qualitative analysis of EN's and BE's reports hence suggests that, in the case of these two learners, individual modes of strategic processing may have constituted a more important factor in their comprehension of this first text than their linguistic proficiency in the target language.

The qualitative analysis of the other students' think-aloud reports revealed that the two students who attained the highest levels of comprehension in the listening tasks (SA and NE) deployed a systematic pattern of strategy use similar to that exhibited by EN. SA and NE similarly applied a very systematic and cyclical approach of top-down and bottom-up interactive processing to the task. They also appeared very purposeful in their approach to the listening task. They were equally skilled at overcoming the linguistic difficulties which they encountered. Their occasional misinterpretations of details within the units of meaning similarly had no negative effect on their global comprehension, because they systematically submitted their linguistic interpretations, elaborations and inferences to rigorous monitoring and evaluation screening on the bases of their global linguistic comprehension, world knowledge, and clear internal measures of plausibility. As in EN's case, even their misinterpretations were congruent with the general context and meaning of the passage. Consequently, their misinterpretations were only minor deviations from the actual meaning and could not negatively affect their global comprehension. SA and NE also systematically built upon each newly understood segment to progress steadily through the task. They similarly appeared able to retain a clear and complete mental representation of all input introduced, and of all inferences

and elaborations they successively formulated throughout the comprehension tasks. They similarly appeared to monitor their comprehension throughout the tasks, and to continually question and evaluate their hypotheses and linguistic interpretations against their personal and world knowledge and against clear internal measures of plausibility and logic.

SA and NE exhibited a level of French proficiency equal or slightly higher than EN's, and linguistic proficiency in the target language clearly emerged as a crucial factor in the level of comprehension attained by the six participants in this study. All participants' think-aloud reports strongly suggest that the level of listening comprehension attained by the learners was linked, in an equivalent measure, to their linguistic proficiency and their effective strategy use.

The qualitative analysis of the participants' think-alouds revealed that the principal cause of error in comprehension among the students in this study can be linked to erroneous translations or transfers (for example: CBA for *six billets*, an erroneous interlinguistic transfer reported by several of the students). The principal cause of difficulties in overall comprehension, memory recall difficulties, and attention difficulties can be linked to a general bottom-up processing approach where word by word decoding was the student's primary focus of attention. In these cases, memory and attention capabilities were typically considerably weakened, and many fewer elaborations or inferences were reported, or they were reported without any type of monitoring or evaluation.

In conclusion, whereas the quantitative analyses revealed no apparent relationship between the strategies reported and comprehension outcomes, the qualitative analysis of the students' think-aloud reports revealed a clear pattern in the strategy use of the three students who attained higher comprehension levels in the listening tasks. All three consistently reported retaining a clear and complete picture of all input introduced, and of all inferences and elaborations successively formulated in the tasks. All three reported monitoring their comprehension throughout the tasks and continually questioning and evaluating their hypotheses and linguistic interpretations. These students displayed a systematic approach of top-down and bottom-up interactive processing to the tasks. Their success in achieving accurate and rather complete comprehension of the input can be linked in an equal measure to their linguistic proficiency and to their consistent use of inferencing, elaboration, monitoring, evaluation and selective attention. The students who attained higher levels of comprehension in this study consistently exhibited a distinctive pattern of strategy use. In a continuous cyclical pattern, they effectively built upon each newly understood unit of meaning, interpreting the linguistic input, monitoring their individual linguistic interpretations against their global linguistic comprehension of the texts, monitoring and evaluating their elaborations and inferences against their globally monitored linguistic comprehension, their world or personal knowledge and clear personal measures of plausibility, and continually revising and refining their general interpretation of the texts to coherently match their understanding of the linguistic input. The analysis also revealed that although it is a crucial component, linguistic proficiency

cannot ensure success in listening comprehension unless the appropriate comprehension strategies are also efficiently deployed.

Many factors such as prior knowledge, motivation and learning style have been established to exert an influence on success in language learning. The results of the analyses in this study suggest that, among these multiple factors, a linguistic proficiency level appropriate for the requirements of the task and strategic processing ability are particularly crucial factors in listening comprehension.

In Chapter V, the results of the quantitative and qualitative analyses presented in this chapter are discussed in the light of the findings of some of the major listening comprehension studies previously reviewed.

## **Chapter V**

### **Discussion**

In this final chapter, all of the results of the analyses of the data in this study are summarized. These results are discussed and evaluated in the light of the findings of some of the major studies which were reviewed in Chapter II. The implications of these findings for research, methodology, and pedagogy are discussed in detail. The chapter concludes with an examination of the limitations and contributions of this study.

#### **V.1 Summary of results**

This opening section presents a synthesis of the findings of this study. The two major research questions guiding the study were: (1) What are the types and range of listening comprehension strategies used by 12 and 13 year old core French learners, and (2) Do students who performed better on the listening comprehension tasks exhibit a pattern of strategy use which is different from those students who were less successful in these comprehension tasks? If so, what are the differences?

In the first phase of this study - semi-structured individual interviews - six 12 and 13 year old core French students reported retrospectively on the listening strategies they used to comprehend spoken French in a number of different contexts. In the second phase of this study - think-aloud sessions - the six participants reported their thought processes concurrently as they listened to three short texts. Quantitative analyses of the interviews suggest that these learners deploy a wide range of comprehension strategies in different listening contexts. Overall, the learners reported using predominantly cognitive and

metacognitive strategies. Direct linguistic intake, inferencing and elaboration were the cognitive strategies the students most frequently reported using in interviews, while selective or directed attention, monitoring, and self-management were the metacognitive strategies most often reported. Questioning for clarification was the socio-affective strategy which the students most frequently reported. Moreover, wide variations appeared in the overall range of strategies reported by the individual participants. Wide variations also appeared in the range of strategies reported by the individual participants within the metacognitive, cognitive and socio-affective categories. Quantitative analyses of the think-aloud reports suggest that overall, in the actual execution of listening tasks, these language learners predominantly made use of cognitive strategies (81.5%), chiefly direct linguistic intake, elaboration and inferencing. Metacognitive strategies, principally monitoring and planning, accounted for 18.5% of all other strategies reported by the participants in this study. Owing probably to the fact that the think-aloud methodology is not conducive to the elicitation of socio-affective strategies, none was reported by any student during the listening tasks. Quantitative analyses of the think-aloud reports suggest that wide variations exist in the individual learners' deployment of strategies.

A comparative analysis of strategy use among the students having attained higher and lower levels of comprehension in the listening tasks further suggests that there is no apparent relationship between the range or number of strategies reported by the individual learners and individual comprehension outcomes. However, the qualitative

analysis of the think-aloud reports clearly suggests that a relationship exists between the learners' individual pattern of strategy deployment and comprehension outcomes.

Throughout the tasks, the more successful listeners in this study exhibited a clearly distinctive pattern of strategy use. In a continuous cyclical pattern, they effectively built upon each newly understood unit of meaning, interpreting the linguistic input, and then monitoring their individual linguistic interpretations against their global linguistic comprehension of the texts. They subsequently proceeded to monitor and evaluate their elaborations and inferences against their globally monitored linguistic comprehension, their general knowledge, and clear internal measures of plausibility. They continually revised and refined their general interpretation of the texts to most coherently match their understanding of the linguistic input. In contrast, the less successful listeners tended to rely chiefly on bottom-up processing for comprehension. Their attention was focused more narrowly on the comprehension of individual linguistic items. This chiefly bottom-up approach proved detrimental to their ability to monitor or evaluate their overall comprehension based upon their general knowledge or internal measures of plausibility. Proficiency in the target language appeared as a crucial factor in the learners' comprehension. A linguistic proficiency level appropriate for the task demands and strategic processing ability emerged as equally indispensable conditions for the success of listening comprehension in a second or foreign language.

## **V.2 Discussion**

In the following section, the results of this exploratory study are discussed. Each research question is examined again in the light of the findings of some of the major listening comprehension studies presented in the second chapter.

### **V.2.1 Types of listening comprehension strategies used by 12 and 13 year old language learners**

The data presented in Chapter IV suggest that 12 and 13 year old language learners use a wide range of listening comprehension strategies. Moreover, the data suggest that wide variations exist in the learners' individual use of these strategies. These results concur with the findings of other studies which investigated listening comprehension strategy use, such as O'Malley, Chamot and Küpper's (1989), Vandergrift's (1992, 1996, 1997) and Peters' (1999) studies.

The findings of the present study concur with the findings of O'Malley, Chamot and Küpper, Vandergrift, and Peters with regard to the types of strategies used by language learners. These studies similarly found that language learners reported using predominantly cognitive strategies in listening tasks, principally elaboration, inferencing, and direct linguistic intake (coded as summarization in several studies). As in the present study, monitoring and planning strategies were the (metacognitive) strategies most reported after these dominant cognitive strategies. Moreover, these studies similarly

found wide variations in the individual learners' strategy use.

The qualitative data in the present study also concur with O'Malley, Chamot and Küpper's (1989) theory that during a single listening event, the three interrelated and recursive processes of perceptual processing, parsing, and utilization flow from one into the other, recycle, and may be modified based upon what occurred in prior or subsequent processes. In perceptual processing, the attention of the learners in the present study was focused on the oral text. In the second listening comprehension process, parsing, the learners used the words and messages from the oral text to construct meaningful mental representations in "propositions" which consisted of relations followed by an ordered list of arguments. In the third process, utilization, the learners related their mental representations of the text meaning to existing knowledge, as described by O'Malley, Chamot and Küpper.

### **V.2.2 Differences in strategy use between more successful and less successful 12 and 13 year old language learners**

The qualitative analysis of the data presented in Chapter IV suggests that the 12 and 13 year old language learners who attained higher levels of comprehension in the listening tasks deployed strategies in ways which were different from the less successful listeners.

Consistent with these findings, O'Malley, Chamot and Küpper (1989) found significant differences between effective and less effective listeners in monitoring,

elaboration and inferencing. Their qualitative analysis similarly revealed that effective listeners were more purposeful in their approach to the task, less easily distracted by linguistic difficulties, and more able to maintain their attention than were less effective listeners. These researchers also found that the general approach of more effective listeners was to use top-down processing, and to rely upon bottom-up processing only as needed. As was revealed by the qualitative analysis in the present study, effective listeners in O'Malley, Chamot and Küpper's study deployed monitoring, elaboration and inferencing in conjunction with their general knowledge and self-questioning. They similarly tended to process larger segments of text, and to process these segments for general meaning. In contrast, less effective listeners in O'Malley, Chamot and Küpper's study exhibited a chiefly bottom-up approach to the task. They were more easily distracted by linguistic difficulties, and tended to use a word by word decoding approach more frequently. Less effective listeners less frequently monitored or evaluated their elaborations and inferences using their general knowledge or self-questioning than more successful listeners. Once again, these findings concur closely with those of the qualitative analysis in the present study.

The findings of the present study also concur closely with Vandergrift' (1997) findings. He also found sharp differences between successful and less successful learners in the depth of interaction with the text. Like the successful learners in Vandergrift's studies, the more successful listeners in the present study were able to use their world knowledge more productively. They were similarly able to accumulate meaning as new

input interacted with previous knowledge and the expectations generated by their conceptual framework(s). This allowed these successful listeners to devote attentional resources to a continuous cycle of comprehension monitoring, further prediction of new information, and monitoring again. Less successful listeners in Vandergrift's studies experienced difficulties because, in contrast, they focused on what Vandergrift called "inefficient surface processing strategies which consumed time and attention and generally failed to activate conceptual processes". This resulted, he maintains, in "frequent shifting of conceptual frameworks, inadequate suppression of information, and rapid fading of recently comprehended information. The result was an incomplete and disjointed understanding of the aural texts". The same observations were revealed by the qualitative analysis in the present study. An interesting question to consider is *why* this may occur.

Gernsbacher, Varner and Faust (1990) posited that the goal of listening, reading, or visual comprehension is to build a cohesive mental representation or "structure". In these researchers' view, the initial activation of memory cells in response to stimuli forms the "foundations" of mental structures. Individuals develop a structure by mapping on incoming information when that information coheres or relates to the previous information. If the incoming information is less coherent or related, a different set of memory cells may be activated, and individuals may shift to initiate a new substructure. Gernsbacher and colleagues argued that when individuals frequently shift from actively building one structure or substructure to developing another, their access to

recently comprehended information is reduced, because information represented in one substructure is most accessible during the active processing of that particular substructure. Once individuals have shifted to develop a new substructure, information represented in the previous substructures becomes less accessible. Accessibility further decreases if the intervening information is less coherent or less comprehensible. Furthermore, certain memory cells are activated at a higher level than other concepts and affect individuals' ability to suppress irrelevant information and to enhance or suppress the activation of other sets of memory cells.

These arguments provide an interesting explanation for the difficulties experienced by BE, for example, in her interpretation of the first text. In this recently emigrated Bosnian student, the word *forum* appears to have activated the schema of a civil war or civilization. Although she reported having understood all key units of meaning related to the concept of a hockey game, she may have had little familiarity with hockey. The concept of a civil war may hence have been activated at a higher level. The incoherence between the structure of a civil war and the incoming linguistic information related to hockey appears to have prompted the frequent shifting of structures she reported. This frequent building of new structures may indeed have considerably hindered her ability to concurrently keep a clear mental picture of all input introduced, and her ability to evaluate the plausibility of any of the structures which she successively developed. This example illustrates the extent to which a listener's schematic knowledge can influence the comprehension process.

The present study concurs with many of the findings of Peters' (1999) research into child language learners' listening strategy use. The young listeners in Peters' study similarly reported using predominantly cognitive strategies. Peters' qualitative analysis of the data also revealed that monitoring and evaluation play important roles in assisting young language learners' listening comprehension. More successful listeners in Peters' study similarly combined top-down and bottom-up processing interactively more frequently. They also relied upon top-down processing of the input for comprehension to a greater degree than less successful listeners. Finally, Peters' and the present study also similarly found that an excessive reliance on bottom-up processing, isolated elaborations or inferences unaccompanied by any monitoring or evaluation, and erroneous transfers were a frequent source of errors and difficulties in the less successful young listeners' comprehension.

One evident discrepancy between Peters' and the present study lies in the reported use of summarization. This can be explained by the fact that in the present study, a clear distinction was established between *summarization* and *direct linguistic intake*. This explains why summarization, in the Peters study, accounted for 41% of total cognitive strategy use. Coded according to a stricter literal definition, summarization in the present study accounted for less than 2% of total strategy use reported. However, direct linguistic intake accounted for 39% of total strategy use reported. These figures strongly suggest that this apparent discrepancy is therefore due largely to methodological issues of terminology.

A second discrepancy lies in the fact that Vandergrift (1992) and Peters (1999) found that the more successful learners in their studies made a greater overall use of metacognitive strategies than less successful listeners (in particular of comprehension monitoring, but also of planning strategies). In the present study, although comprehension monitoring was the third most dominantly reported strategy, the analyses revealed no apparent quantitative relationship between reported use of this strategy and comprehension outcomes. The more successful listeners in the present study did not necessarily report a higher frequency of comprehension monitoring, nor did less effective listeners report lesser use of this strategy. This discrepancy in the findings raises two questions: (1) Why may comprehension monitoring not have been reported with a higher frequency by more successful listeners in the present study? and (2) Why would metacognitive strategies in general not have been reported with a higher frequency by the more successful listeners in the present study?

The think-aloud reports provided as examples in the qualitative analysis presented in Chapter IV (Figures A and B) may provide the answer to the first question. The analysis of BE and EN's reports revealed that the less successful student (BE) frequently reported monitoring her comprehension of individual linguistic items. As an example, here is the considerable extent of monitoring attention BE devoted to the understanding of one single segment where a date was mentioned in the text:

*... vendredi 31 décembre...*

BE: It's the 30th, 31st of December or 30th. It's Wednesday, or Saturday. The 31st of December... And it's a "vendredi" or something. What is that? Thursday, I think...  
... I think Friday. Or Thursday.

In sharp contrast, here is EN's report for the mention of a date in the text:

EN: I heard them say December 31st... So I'm guessing that's the big celebration before the New Year...

As can be seen from these excerpts, the more successful listener (EN) hence did not devote any lengthy linguistic attention or monitoring time to the mention of the day of the week in this segment, unlike the less successful listener. Instead, he immediately proceeded from the perceptual and parsing processes to the utilization process, immediately processing the entire segment for overall meaning. EN frequently processed and monitored larger segments of linguistic input for overall meaning in this manner. He applied monitoring to his elaborations, inferences, and to large segments of input in an equal degree. In contrast, BE's approach of relying chiefly on a word by word decoding approach for overall comprehension, and the still relatively limited linguistic knowledge of a grade 7 core French student, prompted her to monitor her comprehension with a high frequency. The fact that she reported a high percentage of comprehension monitoring did not however lead to high levels of overall comprehension because, as was revealed in the qualitative analysis, this frequent monitoring of individual linguistic items proved very time-consuming, and detrimental to her attention, in particular, to her ability to concurrently sustain the monitoring of her elaborations and inferences. In answer to this

first question, the qualitative analysis in the present study suggested that the more successful listeners made a sustained use of comprehension monitoring in consistently efficient ways which produced steady progress through the tasks. They monitored larger segments of input and elaborations and inferences to an equal degree. The less successful listeners in the present study applied comprehension monitoring with frequency also, but often ineffectively, because their monitoring was excessively applied to individual linguistic items within the text, to the detriment of their elaborations and inferences. As Vandergrift similarly noted, this often resulted in an erroneous or incomplete comprehension of the general context.

The second question raised by the examination of this discrepancy in the research findings was: why would metacognitive strategies in general not have been reported with a higher frequency by the more successful listeners in the present study? The answer to this second question may lie in an important difference in the research participants. The students in Vandergrift's and Peters' studies were native English speakers for whom French was the first new language being learned. In contrast, all but one of the students in the present study were native speakers of languages sharing very few commonalities with English or French. All had learned English as a second language, and all had become native-like, near-native or fluent in English. French was their third language. It is reasonable to posit that in these learners, planning strategies such as directed or selective attention, advance organization and self-management may have become largely automatized and unconscious. It is also reasonable to expect that this automatization

would be at least equally pronounced in more advanced students.

Research into third language (L3) learning has established that L2 learning lays the foundation for a universal multilingualism which, in turn, has consequences for the learning of languages beyond L2 (Hufeisen, 2000). As Hufeisen pointed out, the L2 learner introduces general life experience, learner experience, and general learning strategies into the L2 learning process. In L3 learning, however, not only does familiarity with foreign language learning exist, but specific experiences and strategies related to foreign language learning are available, in addition to general life and learner experience and general learning strategies. Hufeisen has noted that the factors which affect learning an L3 are not only more complex, but also qualitatively different from those affecting L2 learning. Hence, the fact that the more successful learners in the present study did not necessarily report higher use of metacognitive strategies may reflect the fact that for these L3 learners, planning strategies for example had become largely automatic and unconscious in synchrony with the learners' increasing linguistic knowledge.

In the next section, some of the methodological issues raised by the investigation of the research questions which guided this study are examined in detail.

### V.3 Recommendations for future listening comprehension strategy research

#### V.3.1 Methodological issues

##### V.3.1.1 Selection of taxonomy

The data in this study were coded using O'Malley and Chamot's (1990) taxonomy. This taxonomy is grounded in cognitive theories of declarative and procedural knowledge and complex skill acquisition theory, and is solidly research based. It has provided a useful basis for classifying and coding comprehension strategies (Ellis, 1994). However, it has been noted by several researchers in previous studies that the precise coding of certain strategies according to this taxonomy can prove difficult. The strategy groups established have been found, in some cases, to be "high-inference" in nature, their identification sometimes requiring considerable interpretation on the part of the researcher. The strategies listed as belonging to a single type have also been found to often vary on a number of dimensions such as specificity and the extent to which they are observable (Ellis, 1994).

O'Malley and Chamot's (1990) taxonomy proved generally adequate for coding the transcripts in this study. However, in some cases, precisely delimiting an occurrence of *directed attention* from an instance of *selective attention*, for example, did require an inferencing interpretation on the part of the researcher. The same difficulty applied, in certain cases, to the precise differentiation between *comprehension monitoring* and

*double-check monitoring*, between *self-management* (metacognitive) and *self-talk* or *lowering anxiety* (socio-affective), as well as between certain instances of *extralinguistic inferencing* and *elaboration*. It also proved difficult, in some cases, to precisely differentiate between a world, personal, academic, questioning or creative elaboration. Finally, O'Malley and Chamot's (1990) taxonomy did not provide for two techniques frequently reported by the participants in the present study: a) elaborations accompanied by a self-questioning, and b) the direct, immediate understanding of individual linguistic items within a segment of text.

Some difficulties in assessing mental strategy use therefore remain. These difficulties stem, to a degree, from some of the terminology and definitions within the taxonomy. Vandergrift (1992, 1996, 1997) made a valuable contribution to comprehension strategy research by adapting and significantly enriching O'Malley and Chamot's (1990) taxonomy specifically for the listening skill. It is hoped that the present study will also have made a useful contribution by its addition, in particular, of *direct linguistic intake* to this taxonomy, a strategy which appears primordial, since it represents the principal linguistic units from which learners build meaning. An important focus of future research should be the continued refinement of this taxonomy, so that an ever-increasing precision and accuracy can be attained in descriptions of language learners' cognitive processes.

Difficulties in assessing mental strategy use also stem, to a large degree, from inherent human limitations in reporting and investigating cognitive processes. As noted

by Cohen (1987) and Bacon (1992), it is important to remember three fundamental principles when dealing with any introspective/retrospective data: investigations into cognitive processes can only elicit the strategies which are most salient within a learner's consciousness. Therefore, (1) the subjects will express only conscious strategies and processes; (2) the range and types of strategies reported will vary, depending on the task, and among individual learners and, (3) the time and task constraints of reporting mental processes while concurrently executing a comprehension task can not allow for high levels of precision in reporting.

These inherent human limitations in the report and investigation of cognitive processes are further discussed in the following section.

#### **V.3.1.2 Selection of data collection and analysis**

Data in this study were collected from two sources: individual - retrospective - interviews with the participants, and think-aloud - introspective - reports. The rich data yielded by this dual elicitation procedure confirms the pertinence of Færch & Kasper's (1987) view that a combination of methods is necessary if we wish to substantially improve our understanding of learners' declarative knowledge, their cognitive processes and the affective and social aspects that interact with the cognitive dimension.

For its part, the retrospective procedure of interviews elicited the report of a wider range of listening comprehension strategies, including affective and social strategies. It also enabled the researcher to establish a rapport of confidence and ease

in the participants prior to the think-aloud sessions. The think-aloud sessions provided invaluable additional insights. As was described by Færch & Kasper (1987) in a comprehensive review of introspection in L2 research, this method of continuous introspection of the controlled processes activated during the completion of a language task proved particularly informative about the learners' global approach to the task, the levels of decision making they operated on, and the considerations governing their decisions.

Nonetheless, as was found in previous studies, the participants in the present study varied widely in their ability to comprehensively describe their thought processes. A variety of complex factors may explain these differences. The learners' individual learning style may have exerted a strong influence on their reporting. EN appeared highly analytical in his interview report. He also exhibited a high metacognitive awareness. BE was a highly motivated learner, an enthusiastic research participant, and she displayed an outgoing personality. However, the two students who attained the highest levels of comprehension (SA and NE), and whose reports were yet less comprehensive, also expressed strong motivation. They were also highly cooperative research participants. Furthermore, SA clearly appeared analytical and systematic. Two other factors may have played a role in the learners' ability to report: their ability to efficiently conduct two arduous cognitive processes concurrently, and their affective state. The level of attention and concentration suggested by their performance on the listening tasks may not have enabled the two most successful students to concurrently devote extensive

attention to their reporting. The learners' affective state may also have affected their reporting ability. The intimidating nature of a recorded reporting session, the pressures of concurrently thinking-aloud, and the learners' individual sense of "entitlement" may have influenced the learners' ability to comprehensively describe their thought processes.

The difficulties thinking-aloud presents for some learners highlight the importance of adequately preparing the participants for the reporting sessions. Not only should the participants be adequately trained in thinking-aloud prior to the actual tasks, but the researcher must establish a climate where the learner can feel fully confident and free to report.

A combined quantitative/qualitative data analysis methodology has been used very profitably in a number of listening comprehension research studies (O'Malley & Chamot, 1990; Peters, 1999; Vandergrift, 1992, 1996, 1997). The quantitative/qualitative analyses of the data in this study similarly proved very useful for describing and explaining the young learners' comprehension strategy use. The quantitative analyses provided information about the types, range and proportional importance of strategies used by the subjects in different listening contexts. The qualitative analysis provided crucial additional insights into, for example, how the learners deploy these strategies, or which strategies appear to most assist or, conversely, hinder the learners' comprehension.

However, as was previously noted, certain challenges continue to face listening comprehension researchers. Humans are "limited capacity processors", both in terms of

what they can attend to at a given point in time, and in what they can handle on the basis of knowledge and experience. Different tasks and situations involve different information processing workload requirements, and individuals vary in the amount of information which they can process at any one time, as well as in their strategic modes of processing information. Furthermore, both controlled and automatic information processes can be conscious or, conversely, not within the individual's consciousness (McLaughlin, Rossman & McLeod, 1983).

These theoretical constructs provide a convincing explanation for the differences which can be observed between the strategies elicited in (retrospective) interviews, and those (introspectively) reported in actual listening tasks. They provide a convincing explanation also of why wide variations can be observed in the learners' individual strategy use. This study found no apparent quantitative relationship between reported strategy use and comprehension outcomes. McLaughlin's theory concerning automatic and controlled processes provides a convincing explanation for the fact that the student who attained the highest level of comprehension in the listening tasks (SA) reported one of the lowest incidences of strategy use. Her performance and overall comprehension indeed suggested that many of her strategies had become automatized to the degree that they were no longer within salient consciousness and therefore could not be readily elicited. In many cases, the overall performance and comprehension of the participants in the present study suggested that strategies such as directed/selective attention, self-management and summarization, for example, were consistently deployed. However,

they often were not explicitly reported.

Another interesting issue to consider is whether, and to what extent, simultaneous thinking aloud may have an effect on the learners' reports or performance on the task. According to Ericsson and Simon (1984), simultaneous thinking aloud has no impact on the task performance, if the attended information is already verbally encoded. Færch and Kasper (1987), however, consider that the question of whether the recoding may have an impact on reporting or on the way the task is carried out remains an issue. In the context of the present study, the students were reporting in their second language, on the strategies they used to comprehend a third language. No effect of simultaneous thinking aloud in L2 on their reporting of strategy use or on their performance in the L3 was plainly evident. Hence, as suggested by Ericsson and Simon in research on thinking aloud in L1, in cases where L3 subjects have become near-native or fluent in L2, simultaneous thinking-aloud in L2 may have no effect on the ability to report the thought processes, or on the performance in the target language. In cases, however, where L3 learners would be reporting in an L2 in which they have not yet become near-native or fluent, it is reasonable to wonder whether their ability to report in L2 and their performance in L3 may not be negatively affected to a certain extent, since in such cases, the learners may be conducting different micro-processes simultaneously in three languages to various degrees, as noted by Færch and Kasper (1987). This situation is not uncommon in contemporary language learning contexts such as the Canadian core French context, and Færch and Kasper's reservation deserves to be considered when selecting research

participants for whom the language of reporting is not the native language.

In order to circumvent the apparent discrepancies frequently observed between reported and actual strategy use, some researchers have coded all incidences of apparent, as well as reported strategy use. Whether it can or can not provide a more comprehensive and more accurate description of the learners' strategy use, this coding method entails a high degree of subjective interpretation. Alternatively, in the case of this study, a second individual interview could have been conducted immediately following each think-aloud session. A comprehensive questionnaire - interview immediately following the think-aloud might provide additional information concerning the frequency with which planning, summarization, or socio-affective strategies, for example, may have been deployed by the learners during the listening tasks. Ericsson and Simon (1980) argue that if a subject is interviewed immediately after concurrently performing the task and think-aloud process, some previously heeded information will still be in short term memory, permitting direct reporting and facilitating retrieval of additional information. Grotjahn (1987) described another interesting alternative. In one of her introspective studies, the interviewer and the subject listened to the audiotape together immediately following the think-aloud session. In this retrospective phase, the subject was able to spontaneously comment on his or her thinking-aloud utterances and behaviour during the execution of the task, and to answer any further questions from the interviewer. Although Grotjahn (1987) found that the additional information yielded by this methodology was only minimal, several learner related negative attitudinal factors were cited as possible

explanations for this disappointing finding. This methodology may, however, provide rich additional data in cases where the research sample includes highly motivated language learners or if a more comprehensive questionnaire were used.

### **V.3.2 Suggestion for future listening comprehension strategy research**

One important issue arising from the findings of this study and the review of listening comprehension research literature is that there are apparent differences between language learners' *actual* and *reported* strategy use. Several studies have consequently coded all incidences of apparent as well as reported strategy use (see O'Malley, Chamot & Küpper, 1989; Bacon, 1992, for example). Others have coded only explicitly reported strategy use. It is reasonable to argue that these two coding methods could potentially produce very different results. It is also reasonable to argue that since the interpretations of many studies are based largely on their coding results, coding all strategy use "suggested by the learners' behaviour" in addition to their reported strategy use could prove scientifically controversial, because of the high degree of subjective interpretation involved in coding apparent strategic processes. The results of listening comprehension research studies could therefore gain considerable scientific validity if researchers would concur on one or the other of these coding methods. The questions which need to be explored are: To what extent can the strategy use *reported* by learners in retrospective and in introspective procedures be expected to represent their *actual* strategy use? To what extent are the present human limitations in reporting and investigations of cognitive processes irrevocable? Could different methodological approaches increase the

researchers' ability to control these limitations? It needs to be ascertained whether, as experienced by Grotjahn (1987), very little additional information can indeed be provided by any further questioning of the subjects beyond the think-aloud sessions. In this case, coding of all incidences of apparent as well as reported strategy use may be justifiable for the present time, once human limitations in reporting have reasonably been established to be currently irremediable. Nevertheless, such an eventuality would leave a crucial question unanswered. This crucial question is: How can it be demonstrated with any scientific certainty that the *apparent* strategy use coded in many studies in fact accurately represents learners' *actual* strategy use? New research should investigate whether a precise questionnaire - interview immediately following a think-aloud could elicit further reporting of strategy use, and reduce or eliminate the apparent discrepancy between reported and actual use. The use of an additional data collection procedure immediately following the think-alouds may enable researchers to enhance the scientific validity of their findings to a greater extent than the current method of coding all apparent strategic processing.

### **V.3.3 Implications for second or foreign language pedagogy**

The findings of this study suggest that, as argued by many listening strategy researchers (O'Malley & Chamot, 1990; Eastman, 1991; Thompson & Rubin, 1996; Vandergrift, 1997), some language learners could benefit from instruction in efficient listening strategy use. When a learner's knowledge in a second or foreign language is still limited, research has demonstrated that this learner will tend to focus most on a word by

word decoding strategy. However, as pointed out by Eastman (1991), this technique is highly problematic. The subjects in the present study were at a high beginner level of language study. The findings suggest that the principal source of difficulties or errors in overall comprehension for these language learners stemmed precisely from this word by word decoding approach to the listening tasks.

In his studies of beginner - intermediate L2 listeners, Eastman (1991) found that when listeners direct their attention at the surface features of an aural message, virtually all their attention is absorbed. As was noted by Nagle and Sanders (1986), the learners' excessive sub-divisions of the linguistic input cause an overload of their attention system, filtering out other items and causing a breakdown in processing. Eastman pointed out that the listeners then become effectively cut off from precisely one of the sources of information which could help them most, real world knowledge, which would permit them to infer and anticipate, essential processes in comprehension. Eastman concluded that the word by word approach to deciphering aural material consequently greatly decreases the likelihood that top-down processes can take place. Nagle and Sanders' (1986) and Eastman's (1991) observations provide very convincing further explanations for the difficulties experienced by less successful listeners such as BE in the present study. Moreover, Eastman argued that word by word aural decoding is not a conscious or deliberate choice, but that avoiding this approach more probably is. This convincing argument and the findings of the qualitative analysis in the present study strongly suggest therefore that training language learners in the effective use of listening

strategies could prove beneficial, particularly for less successful listeners.

In many high beginner core French classrooms, an important focus of listening activities remains the selective identification of individual linguistic items in a text, or within isolated sentences, for the purpose of completing “cloze” listening exercises. At an early beginner level of language study, these exercises may undeniably be very useful for fostering selective attention and auditory discrimination in the new language, for example. However, at a high beginner or intermediate level, excessive continued exposure to *right/false* or *fill the blanks* types of activities encourages language learners to continue to use unproductive bottom-up processing approaches while listening. As was argued by Eastman and Nagle and Sanders, the bottom-up processing approach absorbs virtually all of the learners’ attention and seriously hinders their ability to efficiently deploy the top-down processes indispensable for successful comprehension. Therefore, it is reasonable to argue that language learners’ progress in the acquisition of a new language is crucially dependent upon their transition from the inescapable word by word deciphering technique used by all beginners to an interactive and flexible top-down and bottom-up processing approach. The next section discusses the important role language instructors can play in assisting learners in this crucial transition.

It is essential that students distance themselves from the ineffectual word by word decoding or translation strategy as soon as their linguistic knowledge permits. As was suggested by Eastman, language learners may need to be trained to avoid devoting excessive attentional resources or monitoring to the precise understanding of each

individual linguistic item. As soon as instructors judge that their students' linguistic knowledge permits, the learners should gradually be introduced to a variety of authentic listening tasks corresponding to their interests and general knowledge. They should also gradually be provided with more and more frequent opportunities for interactional listening and speaking activities. This initiation could very simply begin with the instructor occasionally, but regularly, asking the students to spontaneously attempt to speak about a topic which interests them, and inviting questions from the other students. In pairs, or in class wide exercises, students should also be provided with regular opportunities to work on a listening task together, and to explain to other students how they made sense of the aural message. Through this simple activity, more effective listeners' different approach to listening comprehension could heighten less effective listeners' awareness of the assistance general knowledge and plausibility can bring to the comprehension process in an unfamiliar language. This realization could in turn have beneficial effects on less effective students' confidence to alter their listening approach and to make this crucial transition away from word by word deciphering.

Much emphasis has been placed, in the last few years, on the importance of pre-listening tasks and of providing language learners with the context before a listening task. This is unquestionably an indispensable practice at an early beginner level. However, at a high beginner level, as in the case of the core French students in this study, excessive systematic advance preparation of the students before listening tasks could once again encourage them to use a bottom-up approach while listening, since only the

individual words remain a mystery to them. When students have reached a level of linguistic proficiency such as the one exhibited by the students in this study, they can and should be provided with regular opportunities to practise speaking and listening in the new language concurrently, in free natural discourse, through the interaction of question and answer types of class activities. These types of activities encourage students to listen for the overall meaning, and to guess the context of utterances, by their own means, without assistance. They foster the deployment of those top-down processes which are essential for comprehension.

The findings of this study suggest that most of the students had already made the transition from word by word deciphering to top-down and bottom-up interactive processing. High beginner level core French students therefore can, and should be encouraged to gradually distance themselves from the ineffectual word by word decoding approach. An increasingly communicative and interactional pedagogical approach is essential to sustain all learners' interest and progress in the acquisition of a new language.

#### **V.4 Conclusion**

The findings of this study confirm that in order to reach a reasonable interpretation of utterances, learners deploy predominantly the cognitive strategies of direct linguistic intake, elaboration and inferencing, as well as the metacognitive strategies of monitoring and planning. Moreover, this study confirms that more effective

listeners deploy strategies in a distinct top-down and bottom-up interactive and cyclical pattern. This suggests that those students who are not yet successful in language learning could benefit from a heightened awareness of the importance of top-down processing in listening comprehension.

The findings of this study further suggest that the quantitative analyses of the relationship between reported strategy use and comprehension outcomes in previous studies may not be scientifically defensible. An in-depth qualitative analysis of learners' verbal reports of strategy use appears to be a more reliable method for uncovering and explaining differences between effective and less effective learners. The findings of this study also suggest that important methodological challenges still face listening comprehension researchers. These challenges include the enhanced refinement of the accuracy and precision of the taxonomy principally used in listening comprehension studies, and enhanced scientific control of current human limitations in reporting and investigations of cognitive processes.

Finally, the findings also strongly suggest that, as argued by Hayes and Flower (1983) in their research into writing strategies, although verbal reports can not be complete because many important processes are unconscious, "the collecting of verbal report data can contribute significantly to our better understanding of thought processes, in that it provides direct evidence about processes which are otherwise invisible, yields rich data and thus promotes exploration of cognitive processes". As argued by Cohen (1987), "as we accumulate descriptions of language learning events, patterns emerge

which begin to take on a certain reality as they are corroborated by more learners. As we find out more about the processes that learners use, we are better equipped to test hypotheses about strategies which we would predict are likely to produce the greatest success for given types of learners“. Hence, verbal report data may well indeed provide invaluable further insights for enhancing learners’ attention to language input, facilitating their efforts, assisting them in conducting language tasks more efficiently, and guiding them in successful learning.

This chapter now concludes with an examination of the limitations of this study, and its contribution to second and foreign language listening comprehension research.

#### **V.5 Limitations and applicability of this study**

In light of the small scale of this research project, and of the human limitations inherent to the reporting and investigation of cognitive processes, the results presented here should be understood as suggestive of trends and patterns in strategy use. The findings of this study are not conclusive, and should be interpreted as distinct possibilities which will need to be validated with a larger sample.

It is hoped that this study may bring a useful contribution to research into listening comprehension processes by the corroborating evidence that it lends to many of the previous findings of the major studies in this field, and by its detailed review of some of the methodological and theoretical issues which need to be taken into consideration in investigations of cognitive processes.

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## **Appendix A**

### **Semi-structured individual listening interview**

## Appendix A

### Semi-structured individual listening interview

1. When your teacher speaks to you in French, making conversation or giving explanations, or talking about a story or something else you've been working on,
  - a) Do you sometimes find it difficult to understand her? What does your teacher do that helps you understand? Can you think of other things that other French teachers did, that helped you understand? specific  
What if it's a test?
  - b) Do you find listening harder than other activities you do in French?  
Why / Why not? specific
  - c) What do you find the most difficult in a listening activity? specific
  - d) Is there anything that you do that helps you understand? specific
2. If your teacher chooses to do a listening activity in class, like listening to a conversation, or a story, or any other kind of a text recorded on a tape:
  - a) Even before she starts the tape, what do you do to get ready to listen?  
Can you think of the steps that you take in your head? specific
  - b) Once the tape has started, what do you do to understand the story, or when you're listening to a tape? specific
  - c) What if there are words that you don't understand, what tricks do you use then to still understand the message? specific
  - d) Do you get nervous, sometimes, when you have to do a listening exercise in class? What do you do to calm yourself down? specific
3. Do you watch TV in French, sometimes, or get a chance to speak with some French people?
  - a) Can you think of any methods or tricks you use to understand French in a situation like that? specific
  - b) What do you do if you don't understand some of the words? specific
  - c) Do you feel a bit of anxiety, a bit nervous, if you don't understand some parts? What do you do then, to calm yourself down? specific
4. Is there anything else you'd like to add? Anything else you can think of?

## **Appendix B**

### **Listening comprehension strategy taxonomy**

## Appendix B

### Listening comprehension strategy taxonomy

#### **METACOGNITIVE STRATEGIES**

**Metacognitive strategies involve thinking about the learning process, planning for learning, monitoring the learning task, and evaluating one's performance.**

**1. PLANNING** Developing an awareness of what needs to be done to accomplish a listening task, developing an appropriate action plan and/or appropriate contingency plans to overcome difficulties that may interfere with the successful completion of the task.

**1a) Advance organization** Clarifying the objectives of an anticipated listening task and/or proposing strategies for handling it.

**1b) Directed attention** Deciding in advance to attend in general to a learning task and to ignore irrelevant distracters; maintaining attention while listening.

**1c) Selective attention** Deciding in advance to attend to specific aspects of language input or situational details that assist in understanding and/or task completion.

**1d) Self-management** Understanding the conditions that help one successfully accomplish listening tasks and arranging for the presence of those conditions.

**2. SELF-MONITORING** Checking, verifying, or correcting one's comprehension or performance in the course of a listening task:

**2a) Comprehension monitoring** Checking, verifying, or correcting one's understanding at the local level / identifying points needing resolution.

**2b) Auditory monitoring** Using one's "ear" for the language (how something sounds) to make decisions.

**2c) Double-check monitoring** Checking, verifying, or correcting one's understanding across the task.

**3. SELF-EVALUATION** Checking the outcomes of one's listening comprehension against an internal measure of completeness and accuracy.

**3a) Performance evaluation** Checking one's overall execution of the task.

**3b) Strategy evaluation** Judging one's strategy use.

## **COGNITIVE STRATEGIES**

**Cognitive strategies involve interacting with the material to be learned, manipulating the material mentally or physically, or applying a specific technique to a learning task.**

**1. DIRECT LINGUISTIC INTAKE** Using known words within the oral text or conversational context to guess the context and general meaning of an utterance.

**2. INFERCING** Using information within the oral text or conversational context to guess the meaning of unfamiliar language items associated with a listening task, to predict outcomes, or to fill in missing information.

**2a) Linguistic inferencing** Using known words in an utterance to guess the meaning of unknown words.

**2b) Voice and paralinguistic inferencing** Using tone of voice and/or paralinguistics to guess the meaning of unknown words in an utterance.

**2c) Kinesic inferencing** Using facial expressions, body language and hand movements to guess the meaning of unknown words used by a speaker.

**2d) Extralinguistic inferencing** Using background sounds and relationships between speakers in an oral text or concrete situational referents to guess the meaning of unknown words.

**2e) Between parts inferencing** Using information beyond the local sentential level to guess at meaning.

**3. ELABORATION** Using prior knowledge from outside the text or conversational context and relating it to knowledge gained from the text or conversation in order to predict outcomes or fill in missing information.

**3a) Personal elaboration** Making judgments about or reacting to the material presented using prior personal experience.

**3b) World elaboration** Using knowledge gained from experience in the world.

**3c) Questioning elaboration** Using a combination of questions and world knowledge to brainstorm logical possibilities.

**3d) Global elaboration** Using a combination of questions, world knowledge and personal experience to brainstorm logical possibilities.

**4. IMAGERY** Using mental or actual pictures or visuals to represent information.

**5. SUMMARIZATION** Making a mental or written summary of language and information presented in a listening task.

**6. TRANSLATION** Rendering ideas from one language to another in a relatively verbatim manner.

7. **TRANSFER** Using knowledge of one language to facilitate listening in another.
8. **REPETITION** Repeating a chunk of language (a word or phrase) in the course of performing a listening task.
9. **RESOURCING** Using available reference sources of information about the target language, including dictionaries, textbooks and prior work.
10. **GROUPING** Recalling information based on groupings according to common attributes.
11. **NOTE TAKING** Writing down key words and concepts in abbreviated verbal, graphic or numerical form to assist performance of a listening task.
12. **DEDUCTION / INDUCTION** Consciously applying learned or self-developed rules to understand the target language.
13. **SUBSTITUTION** Selecting alternative approaches, revised plans, or different words or phrases to accomplish a listening task.

## **SOCIAL AND AFFECTIVE STRATEGIES**

**Social and affective strategies involve interaction with another person to assist learning or using affective control to assist a learning task.**

1. **QUESTIONING FOR CLARIFICATION** Asking for explanation, verification, rephrasing, or examples about the language and/or task.
2. **COOPERATION** Working together with someone other than an interlocutor to solve a problem, pool information, check a learning task, model a language activity, or get feedback on oral or written performance.
3. **ANXIETY MANAGEMENT** Reducing anxiety through the use of mental techniques that make one feel more competent to perform a listening task.
4. **SELF-ENCOURAGEMENT** Approaching and executing a listening task with personal motivation through positive self-talk.

**Adapted from O'Malley and Chamot's (1990) Table 5.3 p. 137 of *Learning strategies in second language acquisition* and Vandergrift's (1996, 1997) Taxonomy of listening comprehension strategies.**

## **Appendix C**

### **Listening comprehension texts**

## Appendix C

### Listening comprehension texts

Au Forum, c'est un match de hockey extra-ordinaire entre les Étoiles soviétiques et les Canadiens! Retenez la date! C'est vendredi 31 décembre à 19h au Forum de Montréal. La vente des billets commence lundi à 9h du matin et voici le prix des billets: Blanc - 13,50 \$, Bleus - 8 \$, Bleus du centre - 11,50 \$, Places debout - 8 \$. On peut les acheter aux guichets du Forum et à tous les comptoirs Ticketron. A ne pas oublier: il y a une limite de six billets par personne.

\*\*\*\*\*

Au Paradis du Hamburger, il y a de tout pour bien fêter votre anniversaire. Ballons, jouets, un sac de surprise pour tous les participants. Et bien sûr, le fameux gâteau de fête du Paradis du Hamburger! Qu'est-ce que vous aimez manger? Du poulet? Des hamburgers? Des hot-dogs? Des frites? Tout est là pour votre plaisir! Quand vous pensez "anniversaire", pensez Paradis du Hamburger! Pour réserver une fête fantastique, téléphonez au numéro 626-0022! On vous attend!

\*\*\*\*\*

- "Allô, est-ce que je peux parler à Mademoiselle Hélène Petit, s'il vous plaît?"
- "C'est moi-même, Monsieur."
- "Ah, bonjour et Joyeuse Saint-Valentin, Hélène! Ici, Robert Bélair de CKAC. J'ai une très bonne nouvelle à vous annoncer aujourd'hui!"
- "Oui?"
- "Mais oui, Hélène. La bonne nouvelle est que vous êtes la gagnante du premier prix de notre tirage "le coeur en fête"."
- "C'est vrai?! Mais c'est formidable! Quelle belle surprise!"
- "C'est bien vrai! Félicitations de nous tous à CKAC! Vous gagnez un week-end de ski pour deux personnes à l'Auberge Nordique, dans les Laurentides."
- "Fantastique! J'aime beaucoup skier!"
- "Alors, je suis certain que vous allez bien vous amuser."
- "Bien sûr! Je peux y aller avec ma soeur Émilie? Elle aussi, elle aime skier!"
- "Bonne idée! Donc, encore une fois, félicitations et au revoir!"
- "Au revoir, Robert, et merci, merci beaucoup!"

## **Appendix D**

**Examples of interviewer's think-alouds probe questions**

## Appendix D

### Examples of interviewer's think-aloud probe questions

What are you thinking?

Anything that helped you decide that?

Are you thinking about anything in your head?

Is there anything else you want to say about what you understood or what you think it's about?

Anything there that you picked up at all?

Anything that helped you understand or anything that you were doing to try to understand better?

Anything else you're thinking?

How did you know that... ?

Anything (else) that helped you figure it out?

Was there anything that you were doing differently the second time from the first or...?

Is that still in your mind, or have you changed your mind?

Can you remember what changed your mind?

What do you mean by ...?

## **Appendix E**

**Example of coding of the think-aloud transcripts**

<p>* 1st listen to first text</p> <p><b>extralinguistic inferencing global (world &amp; questioning) elaboration</b></p> <p><b>direct linguistic intake linguistic inferencing world elaboration</b></p> <p><b>global (world &amp; questioning) elaboration</b></p> <p><b>direct linguistic intake / selective attention double-check monitoring / self-evaluation</b></p> <p><b>linguistic inferencing / imagery</b></p> <p><b>summarization</b></p> <p><b>direct linguistic intake linguistic inferencing global (world and questioning) elaboration comprehension monitoring / self-evaluation summarization</b></p> <p><b>direct linguistic intake comprehension monitoring / self-evaluation global (world and questioning) elaboration (erroneous interlinguistic) transfer (CBA for six billets)</b></p>	<p><i>Au forum, c'est un match de hockey extraordinaire entre les Étoiles soviétiques et les Canadiens!</i></p> <p>EN: I heard like, they see a parade and with the music, it's walking together, and there was a parade going on, I'm not sure. <i>Retenez la date! C'est vendredi 31 décembre à 19h au Forum de Montréal.</i></p> <p>EN: I heard them say December 31st in Montreal. So I'm guessing that's the big celebration before the New Year... <i>La vente des billets commence lundi à 9h du matin et voici le prix des billets.</i></p> <p>EN: ...I'm thinking it's like a commercial, like a commercial advertising it.... I first thought it was a parade, and then, I heard a second part, which is December 31st. So, I'm like, it can't be a parade, it's going to be too cold...And then...I realized that it was probably on TV because they're probably filming it. So, it was going to be like a TV show (because) ... when I heard that the time, like I think it was 9:30. So, I'm like, why would like, a parade, start this early? Not that many people will be awake by then. They'd be asleep because of holidays. So, I figured that it would probably be going on TV because they said all these times and dates. <i>Blancs - 13,50\$, Bleus - 8\$, Bleus du centre - 11,50\$, places debout - 8\$.</i></p> <p>EN: This time, I heard them say like, the prices of like, seating, I guess. So now, I think it's going to be a, sort of like a concert. ...but I still can't fit in how can it be like, a concert? Because all this other facts that I heard and they're like... What I was thinking is, maybe they have like seats there. ... like outside... <i>On peut les acheter aux guichets du Forum et à tous les comptoirs Ticketron. A ne pas oublier: il y a une limite de six billets par personne.</i></p> <p>EN: I heard them say something about where to buy them, call this. And buy the tickets. And I heard them say, like, there's a limit but I can't quite like, figure out what they said. They said "CBA", so I'm guessing that's it. I'm still thinking it's kind of like, between a concert and like an outdoor parade that's being filmed. But, now, about this ticket stuff. Why would you buy tickets to go to a parade? The concert idea makes more sense. But, I still can't fit in how big it is, because most of them are like, small. And so, I can't figure it out. Unless it's like, a circus being filmed.</p>
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