HOW WE READ (BETWEEN) THE LINES: MISCUE ANALYSIS AS AN INDICATOR OF METACOGNITIVE STRATEGY USE IN FOREIGN LANGUAGE READING

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ABSTRACT

What do we do when we read in another language? How do we make sense of the lexical and syntactic structures on the page? This study's development and use of the Miscue Coding for Metacognitive Strategies (MCMS), a foreign language assessment tool, offers language students and instructors a holistic approach to considering these questions. In this study, twenty-two students of French from the University of Notre Dame and Indiana University South Bend were assessed in their use of reading strategies as tools for comprehension. Via the MCMS, a comprehensive analysis of these reading strategies provided the means for examining patterns of metacognition of each reader. Metacognition is difficult to measure because the patterns of cognition and rationale that we use to make choices as we read are highly internalized. In other words, we are unable to identify what takes place in the brain of a reader as s/he manages the many nuances of a given reading task. The MCMS offers a channel by which we can begin to examine these processes that are so integral to the reading

task. This examination thus provides valuable insight into the strengths, weaknesses, and efficacy of students' reading in a foreign language. An informed understanding of students' reading strategies and metacognitive patterns can indicate how and why they succeed or struggle with foreign language reading.

Table of Contents

List of Tables

How We Read (Between) the Lines: Miscue Analysis as an Indicator of Metacognitive Strategy Use in Foreign Language Reading

Of the four possible avenues of communication (reading, writing, listening, speaking), reading offers both a great opportunity and a great challenge to the student of a foreign language. Reading tasks afford the foreign language learner (FLL) a glimpse of the diverse cultural perspectives and rich linguistic structures that serve as a basis for achievement of the American Council on the Teaching of Foreign Languages (ACTFL) standards for learning a foreign language.[1] But at the same time, the act of reading in a foreign language also introduces many inherent challenges to the language student, whether by the difficulty of the topic(s), vocabulary or language structures used, interference from other languages, inadequate reading skills, or a culmination of competing factors. Each time the FLL engages with a text, there are innumerable interpretations and decisions to make regarding the meaning of the text on the page. Alderson (2000) describes this complexity of foreign language reading as "dynamic, variable, and different for the same reader on the same text at a different time or with a different purpose in reading" (p. 3). Similarly, Koda (2005), an authority in the field of second language acquisition and reading, writes that the foreign language reading task "is the product of a complex information-processing system, involving a constellation of closely related mental operations. Each operation is theoretically distinct and empirically separable, serving an identifiable function" (p.19). Thus, given such potential immensity of a foreign language reading task, how do language students manage the challenges? What exactly do readers do to overcome the inherent complexities and

[1] ACTFL is a collaborative unit of national language organizations, supported in part by the U.S. Department of Education. Now in its 3rd edition, the National Standards for Foreign Language Education are based on the "Five C's of Foreign Language Education": Communication; Cultures; Connections; Comparisons; and Communities (American Council on the Teaching of Foreign Languages, 2009).

linguistic anomalies? Through consideration and analysis of these and related questions, the current study aimed to expand existing research on foreign language reading in notably important ways.

At present, research on foreign language reading adequately details some of the pedagogical best practices and trends in the field, highlighted by Grabe's (2002) work on reading strategy instruction in the classroom and Baker & Brown's (1984) examinations of metacognition and reading. Grabe's (2009) most publication, "Reading in a second language: Moving from theory into practice," is a notable contribution to the field of L2 reading, offering an extensive discussion of related topics and synthesizing preceding theories in a convincing and effective manner. It is through seminal studies such as these that we know what kinds of strategies good readers use. But what existing research had not done, prior to this study, is identify and measure *how*, *when*, or *why* readers use strategies the way that they do. What is it that cues a reader's strategic response? When do readers use the strategies that they do? Why do readers elect to use the strategies that they do and why do readers employ different strategies on seemingly-similar reading tasks? In other words, research reveals that readers are using cognitive and metacognitive strategies on reading tasks, but it does not reveal which strategies they use, or when or why they use them. Expanding the existing research to include a consideration of these questions offers a significantly more complete understanding of the cognitive processes that transpire to manage reading tasks. This study aimed to identify the specific strategic and metacognitive responses that readers have on foreign language reading tasks. This data can improve the field of foreign language pedagogy and learning in the following ways:

- To date, most conclusive part of reading research has been in regards to text processing, or decoding; the monitoring and regulating of reading behaviors is an integral partner to the processing skills and needed better understanding to explain how it can pair effectively with the processing portion of a reading task.
- If similar data were collected on L1 reading, a comparative analysis could be between L1 and L2 language processing, which might then suggest how to build on existing metacognitive skills in L1 to improve efficacy in L2 tasks.
- This data may promote a better understanding of the reasons students succeed and fail in their reading endeavors, and it may also indicate a new perception of teaching reading for the foreign language instructor.
- L2 reading comprehension is a corollary of effective metacognitive monitoring[2]; if we can improve students' metacognition, it should stand to reason that reading comprehension would also improve as a result.

Research Question

This study's guiding research question was "What do students' foreign language reading strategies indicate about their metacognitive processing on these tasks?" Because the categories of 'foreign language reading,' 'reading strategies,' and 'metacognition' are in and of themselves large concepts, this research question naturally led to a host of many sub-questions, including: what kinds of reading strategies do students use for L2 reading tasks? In what ways to students use reading strategies for L2 reading tasks – when and for what types of problems? What does students' reading strategy use indicate about their metacognition?

[2] Metacognitive monitoring allows the individual to analyze, evaluate, and make decisions about how s/he is achieving various task goals. Without this monitoring, "there is not guidance about how to regulate learning" (Zimmerman & Schunk, 2001). Foreign language reading tasks, which are not yet automatized, require metacognitive monitoring in order to regulate reading and comprehension of a text.

Do students believe they use reading strategies when reading in L2? Do students believe they use metacognitive strategies when reading in L2? What are the factors that cause students to abandon a reading task prior to completion or understanding?

The research hypothesis for this study was that students' foreign language reading strategies can indicate how metacognitive functioning contributes to overall reading comprehension. The null hypothesis for this study was that students' foreign language reading strategies are not indicative of metacognitive functioning and processes used for reading comprehension.

Review of Literature

Since the 1970s, reading research has focused on readers' selection and implementation of identified reading strategies (Anderson, 1991, Baker & Brown, 1984, Brown, 1980, Chamot & El-Dinary, 1999, Koda, 1988, 1990, 2005). This reader-guided process of planning, monitoring, and evaluating the cognitive functions that are required by a task is referred to as *metacognition* (Flavell, 1978, Brown, 1980, Baker & Brown, 1984, Koda, 2005). More specifically, metacognition can be understood in terms of two distinct but often related functions performed by an individual: the acknowledgement of one's cognition, or thinking, and the deliberate regulation of one's thinking (Flavell, 1978, Baker & Brown, 1984). The suggestion that a reader's metacognition drives his/her capacity for reading comprehension remains the prominent lens through which many reading researchers seek to understand and evaluate the task of reading today (Brown, 1980, Baker & Brown, 1984).

Since the work of Baker & Brown (1984), there has been an increasing interest in the examination of how these two components of metacognition are related to one another and

how each affects a reader's degree of success on reading tasks. In reference to Flavell's (1978) seminal work on metacognition, Baker & Brown (1984) and Koda (2005) distinguish between *knowing that* cognitive reading strategies exist (declarative knowledge) and *knowing how* (procedural knowledge) to implement these strategies effectively. According to Koda (2005) the term *strategic reader* identifies a reader who does both of these things – someone who "monitor[s] [the] reading process carefully, takes immediate steps when encountering comprehension problems, [is] aware of [one's] own cognitive and linguistic resources [and] capable of directing attention to the appropriate clue in anticipating, organizing, and retaining text information" (p. 204). This metacognitive awareness and control, when considered from a linguistic perspective of reading, is described by Grabe (2009) as *metalinguistic* analysis, control, and awareness wherein the "knowledge about language systems," "ability to use metalinguistic knowledge to carry out tasks," and the "explicit [recognition] of the need and directing attention to act on that need" guide the L2 reader in a task (p.132). The characterization of a strategic or metalinguistic reader (and the inherent differentiation from a reader who is simply aware of reading skills) is useful because it identifies and describes the metacognitive qualities that the current study aimed, in part, to evaluate. Researchers now know what kinds of strategies good readers use, but they don't know how, when, or why they use them the way that they do. A better understanding of these variables could prove invaluable to the formulation of effective reading instruction and thus, this investigation attempted to address some of these questions and interests.

Also central to this evaluation were studies that elected to use the established theoretical framework on L1 metacognition and reading to examine specifically the task of reading in a foreign language. (While there continues to be some debate as to the degree of

correlation between reading in one's native language (L1) and reading in a foreign language (L2) (Barnett, 1986, Kern, 1988, Klein, 1986, Koda, 1988, 2005), most researchers agree to the use of the L1 reading theory as a basis for further L2 reading research (Koda, 2005, Klein, 1986).) Within this model for L2 reading research, the works of Patricia Carrell (1989) and Aek Phakiti (2003) were central to the current inquiry's examination of metacognition and L2 reading comprehension. A third, more minor study from Schoonen, Hulstijn, & Bossers (2000) was also considered here.

Carrell's (1989) study "Metacognitive awareness and second language reading" attempted to assess university language students' metacognitive awareness of reading strategies in L1 and L2 and relate their degrees of metacognitive awareness with their reading comprehension levels in L1 and L2. Research subjects were comprised of forty-five native Spanish speakers who studied English, and seventy-five native English speakers who studied Spanish at Southern Illinois University at Carbondale. Students' L2 proficiency levels ranged from introductory/first year to high-intermediate/third year. Phakiti's (2003) study also aimed to identify the relationship of the use of metacognitive strategies to reading comprehension test performance, as well as the types of reading strategies that subjects used to complete the assessment. In addition, Phakiti's (2003) study aimed to determine whether the "highly successful, moderately successful and unsuccessful test-takers differ in the use of cognitive and metacognitive strategies" (p. 33). Phakiti's participants were three-hundred-eighty-four Thai university students who studied English as part of their coursework. Though Phakiti did not identify the language proficiency of these participants, he noted that all students had been studying English for approximately eight years at the time of the study and thus, it may be assumed that students were advanced in their language proficiency. Finally, Schoonen,

Hulstijn, & Bosser (2000) compared 685 Dutch middle school students' "metacognitive and language-specific knowledge in native and foreign language reading comprehension" to determine which age or grade level is most appropriate for reading strategies instruction (p. 71). The researchers examined the "threshold hypothesis," first presented by Alderson (1984), by which metacognitive knowledge and strategies cannot compensate for a pronounced deficiency in linguistic knowledge (Schoonen, Hulstijn, & Bosser, 2000).

To assess reading comprehension, the identified studies used a cloze exercise, multiple choice questions, or a combination of both. Carrell (1989) and Schooner, Hulstijn, & Bosser (2000) presented a series of multiple-choice questions following the provided reading passages. The former study did not specify the source of the texts or accompanying ten multiple-choice questions, but the author detailed the rationale used in selection of the comprehension questions and texts. The latter study's multiple-choice questions were standardized testing materials from the Dutch National Institute for Educational Measurement (Schoonen, Hulstijn, & Bossers, 2000). Phakiti's (2003) use of a national Thai, standardized English language assessment encompassed both multiple-choice and cloze passages to assess students' L2 reading comprehension. These studies' selected methods for assessing reading comprehension are in line with the many precedents of similar reading comprehension assessments. It is interesting however, that none of the three studies was explicit in its definition of the variable it intended to measure - 'reading comprehension.' Carrell's (1989) procedures noted that comprehension questions "call for the drawing of inferences, e.g., saying what statements were *not* true based on the text, and identifying the author's position," (p. 124) thereby merely implying what 'reading comprehension' means for the purpose of her study, but failing to identify clearly this term. Phakiti's (2003) reading

comprehension test "measured the test-takers' ability to read English texts for main ideas, details, and inferences, etc. as defined in the objectives of the course above" (34). The course objectives to which Phakiti (2003) refers were for a "course in teaching reading skills" (34). Phakiti's use of 'reading comprehension' to describe what was, in actuality, a test of 'reading skills' is misleading to the reader and may distort the validity of the study's conclusions because of this small, but arguably crucial distinction. For the purpose of the current study, the use of 'reading comprehension' referred to the degree to which one understands the meaning of a text.

To assess metacognitive awareness, Carrell (1989), Phakiti (2003), and Schoonen, Hulstijn, & Bosser (2000) presented their study participants with metacognitive questionnaires. Those of Carrell and Phakiti used a Likert scale as means of evaluating statements of metacognitive awareness; Schoonen, Hulstijn, & Bosser's questionnaire used a combination of Likert scale, multiple-choice, and open-ended responses. Carrell's (1989) questionnaire asked students to evaluate themselves on thirty-six statements about silent reading strategies in L1 and L2 (p.124). Phakiti's (2003) questionnaire sought to identify cognitive and metacognitive strategies used in reading literature, learning, and taking tests (p.35). The use of a questionnaire as an evaluative tool is not new in the field of metacognitive studies. However, although the questionnaire offers distinct advantages, it also brings well-documented concerns, primarily with the ability to generalize the study's research (Baker & Brown, 1984), which both Carrell (1989) and Phakiti (2003) note. The concerns are particularly strong regarding use of self-reports with children or younger subjects, as in the case of Schoonen, Hulstijn, & Bosser's work (Baker, 1980). Though the current study did not involve young test subjects, the inherent problems in the questionnaire

method of data collection remain nonetheless. Self-report techniques, while offering a valuable window into cognitive and affective processes, cannot guarantee reliable results (Baker, 1980). Participants may not be accurate in their self-assessments of what types of cognitive strategies they use, when they use them, why they use them, and whether or not their use is effective, as Phifer & Glover's (1982) study entitled "Don't take students' word for what they do while reading" revealed (Baker & Brown, 1984). For this reason, the current study did not use a questionnaire as the primary means of measuring participants' metacognitive processes and abilities. Instead, this study used a modified miscue analysis, or Metacognitive Coding for Metacognitive Strategies (MCMS), as the primary means of data on a participant's metacognitive strategies and patterns. The use of the MCMS was supplemented by a short demographic and metacognitive questionnaire and as such, this approach followed researchers' suggestions to improve reading research methodologies through "convergent behavioral evidence" (Baker & Brown, 1984, p. 377) and "data triangulation" (Koda, 2005, p. 217). This important distinction is outlined further in the 'Methodology' section that follows.

This study sought to identify students' patterns in metacognitive strategy use on a foreign language reading task. The methodologies for doing so reflect an improvement upon preliminary work from Baker (1980), Baker & Brown (1984), Phakiti (2003), and Schoonen, Hulstijn, & Bosser (2000).

Methodology

The study's descriptive, non-experimental research methods are first summarized in the table below and then outlined in greater detail.

Table 1

Summary of Research Methods

Variable	Research Question	Means of Assessment	Research population
Use of metacognitive reading strategies	Which strategies does the reader use and for which types of reading problems?	• Miscue Analysis • Miscue Coding for Metacognitive Strategies (MCMS) • Demographic & Metacognitive Awareness Questionnaire	Twenty-two volunteer participants from 2nd year French language courses at IUSB and University of Notre Dame

Participants

Study participants were second-year French language students from Indiana University South Bend (IUSB) and University of Notre Dame. Students had to be enrolled in their institution as either a part-time or full-time student and be age 18 or older to participate. Participation in this study was entirely voluntary.

Data Collection & Analysis

Data collection for this study was comprised of three components: a miscue analysis; a miscue coding for metacognitive strategies (MCMS); and a demographic and metacognitive awareness questionnaire, administered to participants in this order. The purpose and protocol of these three data collection tools are detailed below:

Miscue analysis – A standard assessment of reading comprehension by which the participant reads a provided text aloud. The texts used were of the independent reading level, so as to facilitate independent reading and management of the text (Haley & Austin, 2004). As the participant read, any derivations from the text, including word substitutions, omissions, repetitions, corrections, or pauses, were noted by the proctor on a separate script of the text. Once the participant concluded the reading, the proctor followed with an ‘unaided

retelling,' in which the participant was asked to retell as much of the story or passage as s/he was able. Following the 'unaided retelling' the proctor guided the participant through an 'aided retelling,' using the participant's comments and reading performance to ask the participant for clarifications or details on his/her understanding of the reading. The 'unaided' and 'aided retelling' portions of the miscue analysis were intended to help the proctor elicit a better understanding of the participant's reading comprehension – which components of the reading the reader focused on, which details s/he deemed important, and how the reader identified event sequences, characters, and main ideas. After the meeting with the participant, the miscues noted during the reading were then coded as follows: (1) was the miscue syntactically-acceptable? (yes or no); (2) was the miscue semantically-acceptable? (yes or no); and (3) was there a change in the meaning of the word, sentence, or passage? (yes or no). This miscue coding resulted in a two- or three-letter combination of "Y" and "N" to denote "yes" and "no" to the above qualifications. For example, the miscue below is coded as YYN: the reader's substitution of 'wanting' for 'waiting' is syntactically acceptable (Y); semantically-acceptable (Y); and does not create a major change in meaning (N).

	wanting
YYN	Marcus was waiting to be left alone – would Tuesday ever come?

If a miscue is coded "N" for either or both syntactic- and semantic-acceptability, a third y/n notation is no longer needed because the absence of appropriate syntax or semantics automatically means that the meaning of the text has changed as a result. Consequently, a "YN" or "NN" coding may be used, as in the following example:

YN	After the regional conference, committees elected to meet with department managers. *mergers*

In addition to coding for syntax and semantics, the text script was also coded for graphic similarity. Any time in which the participant's spoken words differed from those on the page (whether in the actual word read or in the pronunciation of a word), the participant's spoken words were analyzed for their graphic similarity to those in the text. The participant's spoken words were categorized as "H" (high graphic similarity), "S" (some graphic similarity), or "N" (no or very little graphic similarity). For example, the following miscue is coded as "H" because the spoken word very closely resembles the word on the page:

YYN	Marcus was waiting to be left alone – would Tuesday ever come? *H wanting*

It is important to note that any miscues that were self-corrected by the reader were noted on the script but were not analyzed for syntactic, semantic, and graphic cues. Analysis of a reader's miscues was used to identify any patterns in the student's reading that may facilitate or inhibit reading comprehension or effective engagement with a text. This study used a miscue analysis as a basis for investigation of the cognitive and metacognitive strategies that readers use in foreign language reading.

MCMS – The Miscue Coding for Metacognitive Strategies (MCMS) (Appendix A) is an extension of the miscue analysis that was developed for the specific queries of this study. In addition to the analysis of syntactic, semantic, and graphophonic reading behaviors, the MCMS coded the reading miscues as to the type(s) of cognitive and metacognitive strategies

that were implied by each miscue. Implications for the cognitive and metacognitive strategies used were based on the proctor's close analysis and interpretations of the reading performance. By describing the nature of the miscue or self-correction, with consideration for the immediate reading context, spoken intonation, body language, and discussion of the reading as part of the unaided and aided retellings, the MCMS may expose metacognitive strategies used by a reader. How did the reader manage unfamiliar vocabulary? Did the reader demonstrate behaviors that signaled planning, monitoring, or evaluation of comprehension while reading? These behaviors might include decoding, use of context clues, pre-reading predictions, self-questioning, or other reading strategies. These behaviors might be directly observed by the proctor, inferred from the reader's behavior and reading performance, and/or emerge from the retelling dialogues. It was through use of the MCMS that this study aimed to identify patterns of when and why L2 readers use the strategies they do.

Questionnaire – Following completion of the miscue analysis and retelling, participants independently completed a demographic and metacognitive awareness questionnaire (Appendix B). The questionnaire began with identification of the participant's gender, age, university, academic year, previous experience with the language of study, and mother language(s). The second part of the questionnaire was a Metacognitive Reading Awareness Inventory (Miholic, 1994), a multiple-choice survey of students' perceived management of various reading tasks and scenarios. Based on the student's responses, the questionnaire was then scored, using the assessment scoring guide (Appendix B), to identify the degree of metacognitive reading awareness possessed by the student.

Procedure

Foreign language department heads at Indiana University South Bend and University of Notre Dame were telephoned to request their cooperation with this study (See Appendix C). With the consent and assistance of French course instructors, volunteer participation in this study was solicited from students in their second year of French language courses. This solicitation consisted of a brief visit to the classrooms of participating instructors, where the study information sheet (Appendix C) was read aloud to the class. Students who were interested in participating then selected a day and time to meet with the assessment proctor and data collection began on the arranged date. Students who opted to do so provided an e-mail address or phone number to which a reminder of their appointment day and time could be sent. All data collection was conducted in a library study room on the home campus of each participant, either the Schurz Library at Indiana University South Bend or the Hesburgh Library at University of Notre Dame.

Upon meeting with a participant, the miscue analysis interview script was read aloud (Appendix C). The audio recording began, the text and instructions for the miscue analysis were distributed to the participant and s/he began the reading task. Following the miscue analysis, the audio recording was stopped and the participant was given a pencil and the Demographic & Metacognitive Questionnaire to complete. The participant could ask questions at any point during the completion of the questionnaire. When the participant concluded the questionnaire, all assessment materials were collected and placed in a large manila envelope, labeled with only the study identification number. (The study identification number is the number provided for each participant and contains no personal data. Participants were numbered 01, 02, 03, etc., in their order of participation.) The participant

was thanked for his/her participation and the participant was dismissed. All collected data was organized by study identification number and will be kept in a single, locked file folder box for three years. Only the administrator of this study may analyze or have access to this data. No part of this study or its data collection asked for a participant's date of birth or mailing address. All data was de-identified.

Data Analysis – In Summary

Following the protocol detailed above, data from the miscue analysis, MCMS, and questionnaire were analyzed to indicate a reader's L2 reading comprehension, metacognitive strategy use, and metacognitive awareness, respectively. Collected data was reviewed on an individual level, with consideration for reading performance and strategies used, but also collectively to identify any existing patterns of strategy use and metacognitive awareness among common levels of reading comprehension or among all study participants.

Results and Discussion

Data was collected from 22 university students in fourth-semester French courses. Thirteen students were from Indiana University South Bend and nine students were from the University of Notre Dame. There were five male students and seventeen female students. Following the conclusion of all interviews, collected data for each participant was assessed for reading comprehension level, reading strategies used, number and nature of reading miscues, and number and nature of metacognitive strategies used. This data is detailed below as it responds to the study's research questions and hypothesis.

What kinds of reading strategies do students use for L2 reading tasks? In what ways do students use reading strategies for L2 reading tasks – when and for what types of problems?

Participants' means of managing the text during reading interviews were identified as one or more of nine different reading strategies. Table 2 below outlines the nine strategies and how they were identified.

Table 2

Description of reading strategies

Reading Strategy	Description of Strategy
Decoding	Reader works to uncover the meaning of an unknown word or phrase. May be done silently or aloud.
Inference/Cognate	Reader connects the meaning of L2 vocabulary to a cognate in L1 vocabulary, or correctly infers meaning through recognition of familiar morphemes.
Previewing	Reader looks ahead in the text to gather information about what s/he is going to read.
Context Clues	Reader uses information outside of the immediate word or phrase to provide meaning and support comprehension.
Elaboration	Reader comments on the text in his/her own words.
Prediction	Reader identifies expectation of what is to come in the text; this includes semantic and syntactic expectations.
Summarize	Reader attempts to identify main idea(s) of a sentence, paragraph, or entire text.
Skip Words	Reader omits a word or words as a means of simplifying text; used effectively, omissions do not affect comprehension.
Self-Questioning	Reader asks questions of himself/herself about the text; used to clarify meaning or monitor comprehension.

Participants' reading strategy use was reviewed collectively to examine any existing patterns of strategy use among all study participants. This analysis revealed that 'decoding' was the most often-employed reading strategy among readers, making up over half of all strategies used in the study. 'Decoding,' as with the second and third most-used reading

strategies, ‘inference/cognate’ and ‘previewing,’ was used for local reading challenges, primarily meaning of individual words and phrases. The combination of these three reading strategies accounted for 77.11% of students’ reading strategies while reading (See Figure 1). That is, most of participants’ reading strategies and efforts were focused on the meaning and relationship of individual words within a sentence. This focus is in contrast to attention on global processing, whereby the reading is concerned with overarching main ideas, inter-textual connections, and conclusions.

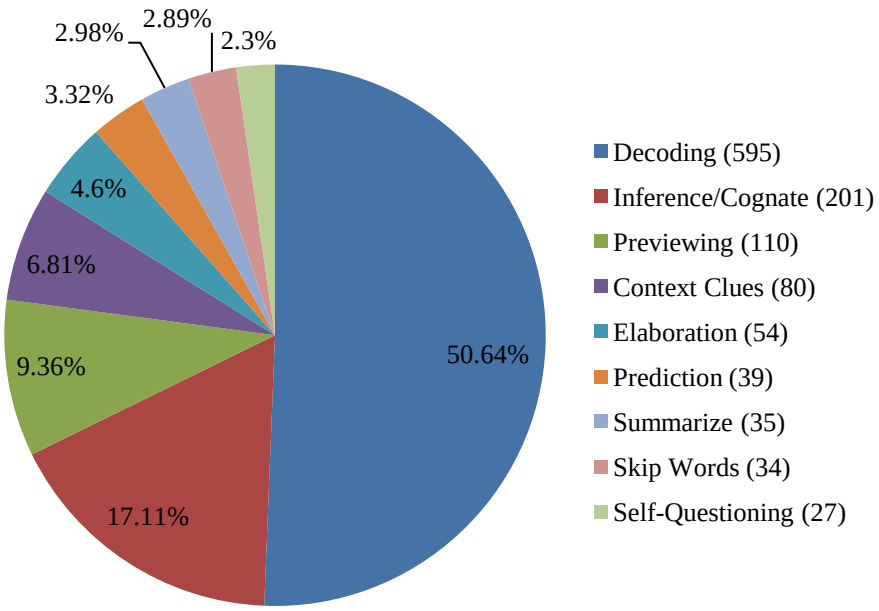

Figure 1 *Frequency of Reading Strategy Use (total number of reading strategies used by study participants = 1,175)*

Use of ‘context clues’ and ‘elaboration’ made up the next 11.4% of readings strategies among study participants. These strategies were most often employed as secondary means of managing novel vocabulary and structures. ‘Elaboration’ in particular often signaled the reader’s acknowledgement of unknown meaning or pronunciation of a word or structure: forty-three cases of elaboration were connected to unknown word or phrase

meaning; six cases were connected to unknown pronunciation of a word; five cases were elaboration for some other motive (See Appendix D). 'Context clues' were often employed as means of filling in knowledge gaps. For example, when a reader substituted '*années'* for the word '*ans'* in the phrase "*Christine, 36 ans, célibataire*…" it can be inferred that the reader understood the nature of the information on the page (Christine's age) from the words and structures surrounding 'ans.' As such, the reader makes uses of context clues and presumes '*ans*' to be an abbreviation of '*années*.' As illustrated in this example, the data on reading strategy use also reveals that use of 'context clues' very often coincided with use of the 'decoding' strategy: 63 out of 80 instances of 'context clues' also contained simultaneous use of 'decoding' (See Appendix D). Such a high correlation of use between these two strategies is not altogether a surprising relationship. Context clues and decoding are similar in nature and are both used to achieve the same reading objective, to find meaning for a single or small group of words within a text. Consequently, the two strategies could feasibly be used simultaneously or interchangeably by L2 readers.

The reading strategies used least frequently among study participants, 'prediction,' 'skipping words,' 'self-questioning,' and 'summarizing,' accounted for the subsequent 11.49% of all strategies used. Participants' use of the 'prediction' strategy primarily concerned the expectation of a particular word to appear next in a sequence, whether for semantic or syntactic reasons. For example, several readers made a semantic prediction after reading the quotation '*J'ai une journée libre par semaine, ça compense[,]'* expecting that the next sentence would continue the personal perspective and would also begin with *'Je'* ('I' in English). The fact that the following sentence begins with a two-letter word would support this prediction if a reader's eyes were to skim ahead for visual clues. Though the next

sentence begins with *'Et'* rather than *'Je,'* readers had good reason to make such a prediction of the text. The interviews also captured syntactic predictions from several participants who expected *'ne travaille'* to be followed by *'pas,'* the structural formation used to make a verb negative in French. Though *'ne travaille'* is followed by *'que'* rather than *'pas'* in the text, some participants initially read this phrase as *'ne travaille pas[.]'* These types of semantic and syntactic predictions thus signaled an active interest from readers to make sense of the text through the imposition of appropriate words and structures. This demonstration of active interest will relate to the study's larger discussion of metacognitive processing.

Participants' use of 'skipping words' was cataloged as a reading strategy only when the omission did not negatively impact reading comprehension. Other cases of 'skipping words' that changed the text's meaning or inhibited reading comprehension were cataloged but not labeled as reading strategies. The few instances of 'skipping words' that did not inhibit reading comprehension concerned either an omission of a small preposition, such as *'de,'* which, though a syntactically unacceptable omission, did not affect the meaning of the text, or an omission of a number, whose meaning is inherent for English speakers because of a shared alphabet. In these cases, a reader might not read the number on the page because s/he understands what the number means without the exercise and effort of pronouncing the word in French. 'Skipping words' was also occasionally used when readers re-read or skimmed a passage, jumping over difficult words to look for meaning in other parts of the phrase, sentence, or paragraph.

Interestingly, within the category of 'skipping words,' all readers in the study omitted the bibliographical citation for the first portion of the text. This would seem notable because a citation may offer the reader important information to support reading comprehension – a

publication date, author's name, or location of publication, for example. Consideration of the readers' strategies and interviews may suggest several explanations for the omission: readers were already overwhelmed by the primary print on the page and were concentrating their decoding and comprehension efforts elsewhere; readers did not believe the citation offered valuable information worth their attention; readers did not see the citation; readers felt satisfied with their comprehension and did not feel the need to seek additional information at the time. Though the omission, it would seem, did not infringe on readers' comprehension of the text, this consistency among participants may serve as a source of future dialogue among language instructors as to whether such an omission is acceptable and/or indicative of reliable reading strategies.

To be used effectively as reading strategies, 'prediction,' 'skipping words,' 'self-questioning,' and 'summarizing' (again, the least-used strategies in the study) require a high sense of awareness, monitoring, and reflection on the reader's behalf.[3] The heightened complexity of these strategies may have prevented some participants from using these strategies more often, despite an indication that these strategies can offer significant benefit to the reader through controlled processing and interpretation of information. This relationship between reading strategies, metacognitive processing, and reading comprehension will be examined at length in the following sections.

[3] Grabe's discussion of metalinguistic awareness suggests that the highest level of strategic reader includes not only the application of comprehension strategies, but also those strategies that "reflect on all aspects of language knowledge that support comprehension" (2009, p. 226). This would imply, it seems, that these reflective strategies require more reading skill and awareness on the reader's behalf; the reader must synthesize and evaluate the text and his/her comprehension of it, skills that rank much higher on the Bloom's Taxonomy scale than the more simplistic 'application' of strategies.

What are the factors that cause a student to abandon a reading task prior to completion or understanding?

For the purposes of this study, 'abandonment' differs from 'skipping words' in that the former designates an initial attempt from the participant to read or comprehend a word or phrase, but who then abandons the effort prior to completion. In contrast, 'skipping words' designates a word or phrase that is never attempted by the reader and is simply overlooked or left out of the oral reading. Miscue analysis of readers who abandoned a word, phrase, or sentence during the reading interviews suggests that they did so as a response to uncertainty of meaning, pronunciation, or both. In four cases, the abandonment concerned the pronunciation of a word or number in the text. For example, a participant began to pronounce the word *'efficace'*: "eff...eeseal?" but then abandoned the word altogether, "I have no idea." In such cases, the reader may stop reading mid-word, mid-sentence, or skip entire sections of the text; the immediate importance of the word is outweighed by an interest in continuing the reading process, perhaps finding meaning more readily in other parts of the sentence or text. Indeed, according to the Demographic & Metacognitive Questionnaire data for the study (See Appendix E), half of the participants indicated that if they encountered a word for which they do not know the meaning, they 'temporarily ignore it and wait for clarification.'

It should also be noted however, that it would be possible for a reader to abandon pronunciation of a word without compromising his/her comprehension of the word. Participants' management of the numbers in the text often illustrated this point. Though several participants abandoned reading '250' aloud, it is possible, perhaps even likely that the readers nonetheless captured the meaning of the word because it represents precisely the same concepts in readers' L1. In addition, though the questionnaire indicates that participants

often tolerate word-level abandonment, the questionnaire also reveals that readers take a different approach when incomprehension is at the sentence-level. In response to Question #2, "What do you do if you don't know what an entire sentence means?" only two respondents selected 'Disregard it completely' while 20 respondents selected both 'Read it again' and 'Think about the other sentences in the paragraph.' This indicates that relatively few L2 readers are willing to abandon an entire sentence prior to understanding, even when it is difficult to comprehend.

To confirm these deductions, it would be wise to investigate the question of task abandonment a bit further. Expanding the Demographic & Metacognitive Questionnaire to include questions that ask respondents to identify when and why they complete or abandon an L2 reading task may help to furnish more satisfactory explanations of these behaviors. Additionally, explicit exploration of this topic during the retelling and reading interviews may illicit more informative responses on the topic.

What do students' foreign language reading strategies indicate about their metacognitive processing on these tasks?

On average, approximately 16.7% of study participants' miscues indicated active metacognitive processing while reading aloud. Phrased conversely, 83.3% of their miscues revealed no planning, monitoring, or evaluating of reading comprehension. From all study miscues that did indicate metacognition, the large majority, 83.9%, were labeled as signs of metacognitive monitoring, with 8.7% of these miscues labeled as metacognitive evaluation, and only 7.3% labeled as metacognitive planning.[4] Additionally, most of the strategies used

[4] The study questionnaire indicates that most readers have a plan for monitoring their reading comprehension; they indicate that for word-level incomprehension, it is acceptable to move on and wait for clarification while, with sentence-level incomprehension, they either "Read it again" or "Think about other sentences" (See

for metacognitive monitoring were strategies focused on local processing, or "in the moment" comprehension rather than on any larger themes and connections throughout the text.

Given the absence of comparable precedent studies, it is difficult to assess the implications of these figures. Because the 16.7% seems somewhat low for a frequency of metacognitive processing, it would be necessary to conduct additional miscue readings in French, and perhaps also in participants' L1, to increase reliability of this statistic. Moreover, there are no known standards by which this study can assess whether this 16.7% is in fact low or high for second year university language students. With further development and research, it is possible that this data can become more instructive.

More illuminating, however, is participants' use of reading strategies, which reveals several important patterns in their metacognitive processing, as well as in their overall reading comprehension on the task. First, selected strategies were more likely to indicate metacognition than other reading strategies. An indication of metacognition (planning, monitoring, or evaluation) was noted anytime that the reader was believed to be directing or controlling reading comprehension through intentional measures. According to the MCMS data (Appendix F), the strategies that were most often associated with metacognitive processing were 'decoding,' which was used in 35.44% of miscues indicating metacognition, 'context clues' (13.33%), and 'elaboration' (13.33%). The reading strategies least often associated with metacognitive processing were 'prediction' and 'skipping words,' both present in only 2.11% of cases illustrating metacognitive control. This information is

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Appendix E). Knowing that these strategies exist could be considered metacognitive planning, but because the knowledge was not indicated during the miscue reading, it is not included in these statistics.

significant because it reveals the channels by which readers most often plan, monitor, and evaluate their reading and reading comprehension.

It is likely that ‘decoding’ accounted for such a large part of metacognitive processing because, not only was it used so frequently overall, but because the act of decoding – breaking down a word or phrase into smaller, more meaningful parts – requires active monitoring from the reader, a form of metacognition. A reader does not engage the ‘decoding’ strategy unless s/he is monitoring comprehension and is thus able to recognize when a word or phrase demands this extended focus. Consider the example of ‘decoding’ in Figure 2 below. Here a reader repeats a phrase and then ends the sentence with rising intonation, as if asking a question. The repetition would indicate an attempt to monitor comprehension and focus attention on individual words to decode or extract the meaning. Similar uses of ‘decoding’ were used by other participants throughout the study (See Appendix D).

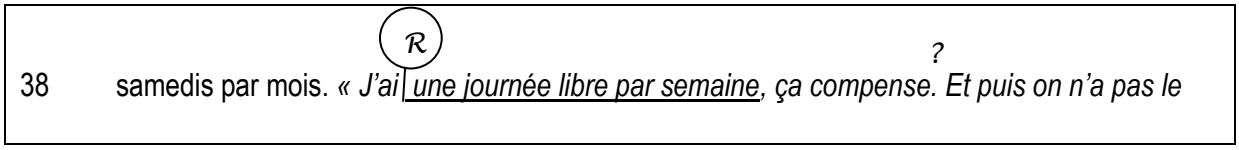

Figure 2 *Example of ‘decoding’ strategy illustrates metacognitive monitoring*

Use of ‘context clues’ and ‘elaboration,’ like ‘decoding,’ sometimes indicated explicit metacognitive control and awareness in their use. ‘Context clues’ was most often metacognitive in nature when a participant stopped reading aloud and returned to review the sentence or paragraph, using known words and structures to inform understanding of those that were unknown. Figure 3 illustrates how ‘elaboration’ signaled active metacognition from the reader. In this example, the reader inserts a comment on the reading mid-sentence. In this

case the comment seems to indicate an interest to identify and summarize meaning of the phrase "*Pour produire plus et moins cher*[.]" As it often happens, this example also indicates simultaneous use of metacognitive strategies – 'elaboration,' 'self-questioning,' and 'summarizing' in this case.

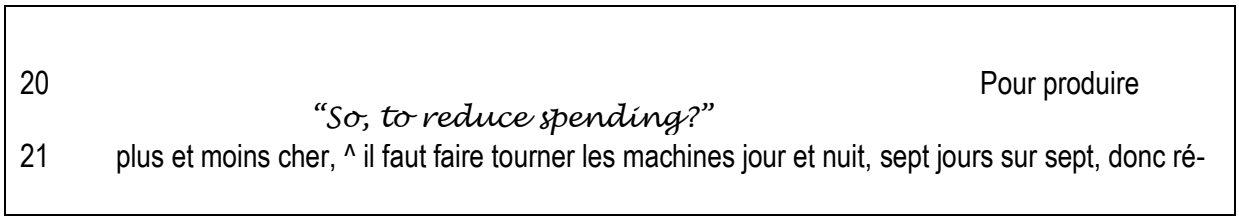

Figure 3 *Example of 'elaboration' strategy illustrates metacognitive monitoring.*

Participants' use of 'self-questioning' and 'summarizing' most often sought to clarify understanding or to connect ideas within the text or to prior knowledge, as we see in Figure 4. This example shows a reader who asks a rhetorical question as a way of summarizing her understanding of the sentence. In Figure 5, when the reader pauses at the end the text and then returns to re-read selected portions, it implies use of 'summarizing' (as well as decoding and context clues) as means for monitoring and evaluating reading comprehension.

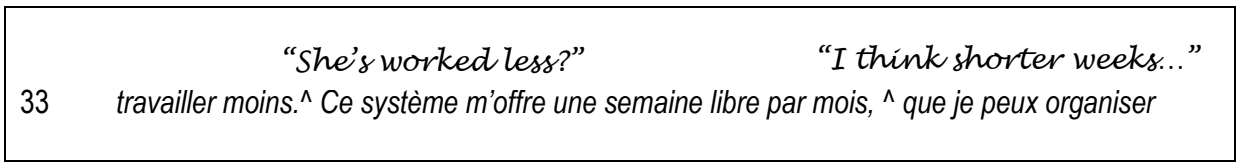

Figure 4 *Example of 'self-questioning' strategy illustrates metacognitive monitoring*

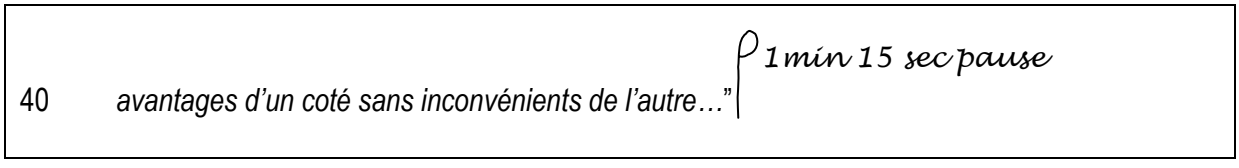

Figure 5 *Example of 'summarizing' strategy illustrates metacognitive monitoring and evaluation*

The strategies of ‘self-questioning’ and ‘summarizing’ were 5 to 6 times more likely to indicate active metacognitive awareness than ‘skipping words’ or ‘prediction,’ which, conversely, were rarely used with the indication of reader intent or control. Though readers’ lexical omissions and predictions did not impede their reading comprehension, there was not an indication of these strategies being used to aid comprehension; in other words, ‘skipping words’ and ‘prediction’ offered little to no evidence of metacognitive processing. Thus, the MCMS data reveals which strategies account for students’ metacognitive processing and by consequence, which do not, offering a new perspective on how readers use strategies in L2 reading tasks.

The second important pattern to emerge from the MCMS data is how often readers use the strategies the do, which is of particular significance when it is compared to the strategies’ indications of metacognition data that is described above. Table 3 below reveals a general discrepancy between the strategies that showed the greatest indication of metacognition and the strategies that were most often used by study participants.

Table 3

Reading strategies compared by metacognitive indication and overall use

Reading Strategy	Rank as Indicator of Metacognition	Rank in Overall Use
Decoding	1	1
Context Clues	2	4
Elaboration	2	5
Summarize	3	7
Self-Questioning	4	9
Inference/Cognate	5	2
Previewing	6	3
Prediction	7	6
Skip Words	7	8

We see here (primarily with the strategies of 'Elaboration' through 'Previewing') that, for example, a strategy like 'elaboration' was often associated with metacognitive processing (tied for 2nd) but was only the fifth most-used strategy among participants. The largest discrepancy of this nature exists with the 'self-questioning' strategy, wherein we see that it was the least-employed reading strategy (9th overall), yet it was associated with 10.18% of the strategies leading to metacognition, and ranked 4th as an indicator of metacognition (see Appendix F). Furthermore, although it made up only 10.18% of metacognitive strategies, 'self-questioning' was linked to metacognitive monitoring in 24 out of 27 uses. In other words, though used the least, the 'self-questioning' strategy offered one of the most consistent connections to metacognitive awareness and monitoring. Similarly, the 'summarize' strategy ranked only 7th in overall use, but 3rd in association with metacognitive processing, with 27 out of 35 uses linked to metacognitive monitoring.

Alternatively, though 'inference/cognate' is the second most often employed reading strategy, it would seem that it is used with greater automaticity and less metacognitive awareness, which may not be entirely unpredictable. As discussed, 'inference' was primarily used as secondary means of establishing word meaning (secondary to 'decoding'). In using 'inference/cognate,' a reader may do so without control or metacognition. Rather, the implanting of word meaning from L1 into L2 may actually be L1 interference, whereby L2 is viewed through an L1 lens, to the detriment of L2 reading comprehension. In cases of 'inference/cognate' however, the reader is fortunate that this interference happens to support reading comprehension: it provides meaning via L1 – L2 orthographic similarity. Yet, again, this does not always indicate active metacognition because it takes place without the reader's intent or control. This may help to explain why the metacognitive indication of the

'inference/cognate' strategy could be notably low, despite a frequent use as a reading strategy. These discrepancies between metacognitive indicators and overall use are of interest because they help to describe how readers use the strategies that they do. To better understand this relationship, however, it is important to consider the third pattern to emerge from the study: the impact of readers' strategies on reading comprehension.

Participants' reading comprehension level was measured using the Common European Framework of Reference for Languages (CEFR), a reference tool for the assessment of language proficiency in listening, reading, spoken interaction, spoken production, and writing (See Appendix G). Based on the miscue reading and retelling, each participant was rated on a scale of 1-6, level 1 correlating to the A1 language level (novice) and level 6 correlating to the C2 language level (native speaker). Results show that participants' reading comprehension scores were distributed relatively evenly over levels 2, 3, and 4, and the average reading level for the 22 study participants was 2.95, equating to a beginning intermediate level of language proficiency. Each participant's reading comprehension score (a whole number) was then compared with the reader's frequency of metacognitive strategy use (a percentage). When this comparison was made for all study participants in the study, the results revealed a modest positive correlation between the criteria ($r(22) = .663$ $p < 0.01$). As seen in Figure 6, readers' comprehension scores increased as the frequency of miscues with metacognitive indicators increased.

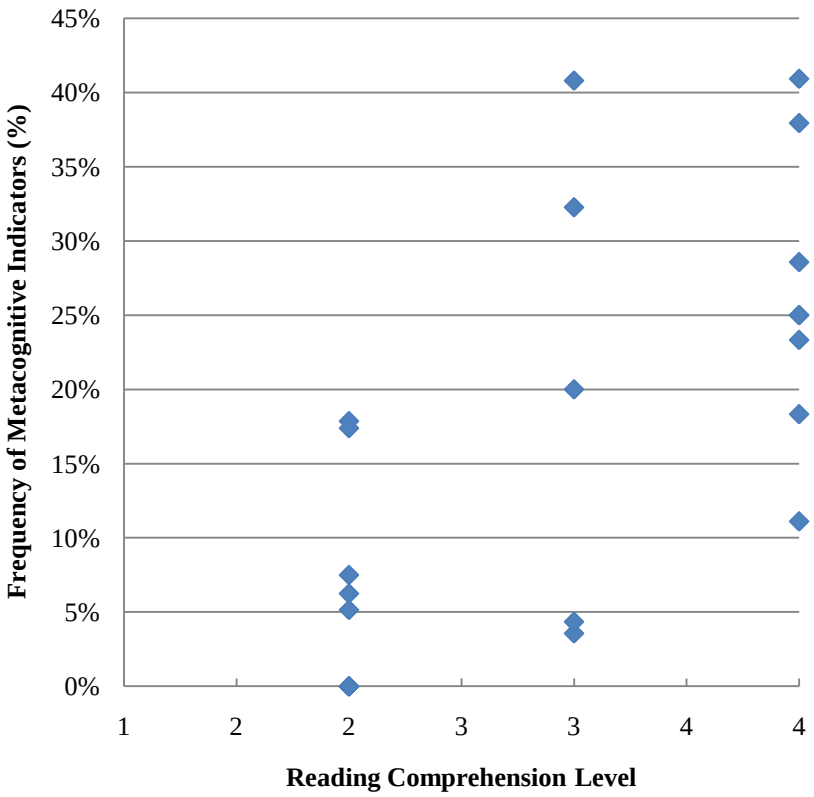

Figure 6 *Relationship of metacognitive miscues to reading comprehension level*

This correlation suggests that readers whose miscues are more often metacognitive in nature are generally more effective readers overall; they take more meaning from the text than do readers with lower frequency of metacognitive miscues. As a whole, level 2 readers' metacognitive miscues were concentrated on the lower end of the spectrum while level 3 readers' metacognitive miscues were dispersed throughout the range of percentages, and level 4 readers' metacognitive miscues were concentrated slightly higher on the spectrum. Again, the data shows that this is a general trend and the correlation is moderate; two level 2 participants' miscues showed more metacognition than a level 4 reader, for example.[5] For the

[5] To build on these findings, additional research might attempt to address why a reader with greater relative use of metacognitive strategies has a lower reading level than a reader with lower relative use of metacognitive strategies. It may be that the reader with higher reading comprehension level possesses a ready knowledge of the vocabulary or linguistic structures needed to manage the reading task and therefore invokes fewer directive

study's immediate purposes the trend is notable because it supports the existing belief that good readers are active, metacognitively aware readers: they think about their thinking and consistently monitor their strategies and comprehension (Grabe, 2009, p. 53). This trend is illustrated, too, by considering the 'self-questioning' and 'summarizing' reading strategies discussed previously. As mentioned, these strategies revealed a high coincidence with metacognitive strategy use: 24 out of 27 uses of 'self-questioning' were models of metacognitive monitoring and 27 out of 35 uses of 'summarizing' were connected to metacognitive monitoring. It is interesting to note that most of these cases fell among four readers in the study. These four readers had an average reading level of 3.75 and an average of 26.86% of their miscues were metacognitive in nature, mimicking the trend revealed in Figure 6, that the presence of metacognitive miscues is associated with higher reading comprehension scores. This data is also notable because it supports the conclusion about metacognitive or metalinguistic readers in both a qualitative and quantitative manner or, in short, it comprehensively describes which strategies the readers use and how they use them. *Hypothesis: students' foreign language reading strategies can indicate how metacognitive functioning contributes to overall reading comprehension.*

This study's data suggests that students' L2 reading strategies may indeed reveal how metacognitive processing contributes to a student's overall reading comprehension in that language. The MCMS, or another form of an adapted miscue analysis, may be used to identify and characterize the reading strategies of an L2 reader. These strategies can then be analyzed to determine if and how the reader engages with the text on an active level, with

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reading strategies, or at least does so in a more fluid, internal manner that goes undetected in the miscue analysis. The reader with a lower reading comprehension score may signal high use of metacognitive strategies, but these strategies may be insufficient or used ineffectively, resulting in lower overall comprehension of the text. This idea is of course related to Alderson's (1984) 'threshold hypothesis.'

awareness and control of his/her reading, reading strategies, and comprehension of the text. This more informed, nuanced understanding of the L2 reader offers a distinctly more advantageous position from which to instruct and guide the reader to improve his/her reading comprehension and ultimately, his/her foreign language proficiency.

Though the study has revealed strengths of the MCMS and its applications, there are also several limitations to the study that should be considered here as well. First, study data is highly dependent upon the researcher's interpretations of participants' reading. The behaviors of the readers could be interpreted in different ways, depending on the perspective and analysis of the interpreter. One potential limitation of this study is the absence of inter-rater reliability. Though rubrics and standards were used by the researcher during interviews and data analysis to support continuity of analysis, the susceptibility of the data to interpretation and subjectivity could significantly alter the statistics and conclusions cited here. Incorporation of inter-raters and an increase in the sample size would improve the reliability of these data.

Second, it is conceivable that the difficulty of reading aloud in L2 for second-year language students may alter the indication of metacognition for reading comprehension. Though participants were reminded of the study's focus on reading comprehension rather than oral production prior to reading, many study participants noted the difficulty of comprehending the text while reading aloud. The simultaneous tasks of producing L2 pronunciation and comprehending L2 vocabulary and structures may have interfered with the students' capacities to process and engage with the text in an active manner, thereby decreasing the indication of metacognition. Reading a text aloud is a necessary component to the miscue analysis and it still offers relevant insight into readers' choices for text

management. Conclusions based on this study's data should consider, however, the possibility that a reader's oral reading may detract from reading comprehension and metacognitive processing.

Conclusion

This study has suggested a methodology and a theoretical framework for measuring metacognition on L2 reading tasks. It is believed that foreign language teaching and learning can become more effective and efficient with a more precise understanding of what readers do on L2 reading tasks, and why they do it. The initial results of this study offer several considerations for foreign language reading pedagogy and research:

1) The discrepancy between reading strategies' frequency of use and their indication of metacognition is intriguing. If research has established a positive correlation between metacognitive/metalinguistic awareness and reading comprehension, why don't students use more often the strategies that indicate metacognitive awareness? If it is accepted that L2 students who are more actively engaged with a text comprehend more from the text, it would follow that use of the strategies most often connected with this kind of metacognitive engagement would be encouraged in L2 instruction. Based on the reading performances of study participants, some students' L2 reading comprehension could benefit from either a modification of how strategies are used, and/or a modification of which strategies are used.
2) Grabe (2009) suggests that metacognition or metalinguistic awareness ought to be considered as a sphere of related skills and thought processes, rather than the defined categories of metacognitive 'planning,' 'monitoring,' and 'evaluation,' for example (p. 223-224). It may helpful, however, if L2 reading research can examine the

specific ways in which readers direct their metacognitive functioning and these three contexts offer one approach to doing so, even if used temporarily and in a theoretical manner. This study suggests that most of participants' metacognition focused on the 'monitoring' of reading comprehension that takes place in the act of reading, while metacognitive 'planning' and 'evaluation' were less-frequent occurrences (See Appendix F). It seems possible that considering the efficacy of this disproportionate distribution of metacognitive strategies may reveal ways in which L2 reading can be improved. Might a more balanced attention to planning, monitoring, and evaluating tasks illicit better reading comprehension? It is possible to think that this may be the case but regardless of the answer(s) to this question, the related investigation and discussion would almost certainly clarify our understanding of how L2 readers can engage effectively with a foreign language text.

Foreign language reading is a complex web of constantly-shifting skills, relationships, and connections. What readers do – and when, how, and why they do what they do – is undoubtedly individualistic and highly dependent upon context, linguistic level, prior knowledge, and a myriad of potential factors, but the tools and data in this study may offer one means by which foreign language students, instructors, and researchers can come to a better understanding of the reading task and the dynamic processes that it involves.

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Appendix A

Miscue Coding for Metacognitive Strategies (MCMS) Template

				Reading Problem			Reading strategies									Metacognitive strategy used?		
STUDY ID #	Line #	Miscue Category	Miscue Code	word meaning	linguistic structure	pronunciation	decoding	context clues	skip word(s)	previewing	Inference/cognate	prediction	elaboration	self-questioning	summarize	Plan	Monitor	Evaluate

Legend

Study ID #	The number given to each participant, in order of participation
Line #	The line in the text where a miscue is indicated.
Miscue Category	Description of the miscue made: Substitution (H/S/M); Omission; Pause; Repetition (Single, Multiple); Insertion ; Self-Correction; Transposition
Miscue Code	Used for Substitutions to indicate whether the substituted word is syntactically-acceptable, semantically-acceptable, and if there is a meaning change.
Reading Problem	Type of reading problem indicated by the miscue.
Reading Strategies	The strategy or strategies used to manage the reading problem.
Metacognitive Strategy Used?	Where applicable, the type of metacognition that is indicated in the management of the miscue.

Appendix B

Demographic & Metacognitive Awareness Questionnaire (and Scoring Guide)

PURPOSE: The purpose of this questionnaire is to gather information on study participants' linguistic backgrounds and ideas about reading in a foreign language. Please respond to the following questions as honestly as possible. If you should have any questions, please do not hesitate to ask.

I. DEMOGRAPHIC INFORMATION (7 questions)
Put one checkmark ☑ beside the most appropriate response for each item, unless noted otherwise.

<table>
<tr>
<td>Gender</td>
<td>○ female
○ male</td>
<td>Age _____ years</td>
<td>Language of Study</td>
<td>○ French
○ Italian</td>
</tr>
<tr>
<td>Academic Year</td>
<td>○ freshman
○ sophomore
○ junior
○ senior
○ 5th year
○ graduate
○ other (non-degree, etc.)</td>
<td>Native language(s) (language you grew up speaking).

Please check as many as apply.</td>
<td>○ Arabic
○ Chinese/Mandarin
○ English
○ French
○ German
○ Hebrew
○ Hindi
○ Hmong
○ Italian
○ Japanese</td>
<td>○ Korean
○ Native American
please specify: _____
○ Portuguese
○ Russian
○ Spanish
○ Swahili
○ Tagalog
○ Other(s): _____
_____</td>
</tr>
<tr>
<td>Academic Institution</td>
<td>○ IU-South Bend
○ Notre Dame</td>
<td>Academic exposure to language of study, prior to this semester.</td>
<td><u>College:</u>
(check one)
○ no college courses
○ 1-2 semesters
○ 3 semesters
○ 4+ semesters</td>
<td><u>High School:</u>
(check one)
○ no high school courses
○ 0-1 year
○ 2 years
○ 3+ years</td>
<td><u>Middle School:</u>
(check one)
○ none
○ some</td>
</tr>
</table>

II. PERCEPTIONS OF READING (10 questions)
There's more than one way to cope when you run into difficulties in your reading. Which ways are best? Under each question here, put a checkmark ☑ beside all the responses you think are effective.

1. What do you do if you encounter a word and you don't know what it means?

☐ Use the words around it to figure it out.
☐ Use an outside source, such as a dictionary or expert.
☐ Temporarily ignore it and wait for clarification.
☐ Sound it out.

2. What do you do if you don't know what an entire sentence means?

☐ Read it again.
☐ Sound out all the difficult words.
☐ Think about the other sentences in the paragraph.
☐ Disregard it completely.

3. **If you are reading science or social studies material, what would you do to remember the important information you've read?**

   ☐ Skip parts you don't understand.
   ☐ Ask yourself questions about the important ideas.
   ☐ Realized you need to remember one point rather than another.
   ☐ Relate it to something you already know.

4. **Before you start to read, what kind of plans do you make to help you read better?**

   ☐ No specific plan is needed; just start reading toward completion of the assignment.
   ☐ Think about what you know about the subject.
   ☐ Think about why you are reading.
   ☐ Make sure the entire reading can be finished in as short a period of time as possible.

5. **Why would you go back and read an entire passage over again?**

   ☐ You didn't understand it.
   ☐ To clarify a specific or supporting idea.
   ☐ It seemed important to remember.
   ☐ To underline or summarize for study.

6. **Knowing that you don't understand a particular sentence while reading involves understanding that**

   ☐ the reader may not have developed adequate links or associations for new words or concepts introduced in the sentence.
   ☐ the writer may not have conveyed the ideas clearly.
   ☐ two sentences may purposely contradict each other.
   ☐ finding meaning for the sentence needlessly slows down the reader.

7. **As you read a textbook, which of these do you do?**

   ☐ Adjust your pace depending on the difficulty of the material.
   ☐ Generally, read at a constant, steady pace.
   ☐ Skip the parts you don't understand.
   ☐ Continually make predictions about what you are reading.

8. **While you read, which of these are important?**

   ☐ Know when you know and when you don't know key ideas.
   ☐ Know what it is that you know in relation to what is being read.
   ☐ Know that confusing text is common and usually can be ignored.
   ☐ Know that different strategies can be used to aid understanding.

9. **When you come across a part of the text that is confusing, what do you do?**

   ☐ Keep on reading until the text is clarified.
   ☐ Read ahead and then look back if the text is still unclear.
   ☐ Skip those sections completely; they are usually not important.
   ☐ Check to see if the ideas expressed are consistent with one another.

10. **Which sentences are the most important in the chapter?**

    ☐ Almost all of the sentences are important; otherwise, they wouldn't be there.
    ☐ The sentences that contain the important details or facts.
    ☐ The sentences that are directly related to the main idea.
    ☐ The ones that contain the most details.

This is the end of the questionnaire. Thank you for your time and participation!

Questionnaire Scoring Guide (not distributed to study participants)

Part I: Responses that indicate metacognitive reading awareness:

1) a, b, c
2) a, c
3) b, c, d
4) b, c
5) a, c, d
6) a, b, c
7) a, d
8) a, b, d
9) a, b, d,
10) b, c

Appendix C

University Cooperation Request

The following transcript outlines the manner in which cooperation from IUSB and Notre Dame foreign language instructors will be solicited. This dialogue will take place via telephone unless the person cannot be reached, in which case, this text will be used via email.

Hello, my name is Brynn Leavitt and I am a graduate student of secondary education at IU-South Bend. I am contacting you with the hopes that you may be interested in assisting me with a current research project related to foreign language reading. I am conducting this study towards the completion of my master's degree.

The goal of the study is to identify the metacognitive strategies that intermediate language students use on foreign language reading tasks. I would like to meet individually with 6-10 second-year French or Italian language students from your department to conduct an interview of the student's foreign language reading strategies. These students must be at least 18 years of age and be enrolled as either part-time or full-time students at your institution. The interview will take approximately 40-45 minutes and will consist of first, reading a provided text aloud (in either French or Italian), sharing his/her thoughts about the selected reading, and then completing a brief questionnaire of background information and metacognitive awareness.

I would like to ask you if you would be willing to allow me to visit one or more of your second year French and Italian classes to make a 5-minute request for student participation. All interviews with participants who volunteer would of course be conducted outside of class time, on a day and time that is convenient and arranged for by the students. Do you have any questions about the study or the requirements of study participants?

I appreciate your time and thank you for your consideration.

Sincerely,

Brynn Leavitt

INDIANA UNIVERSITY SOUTH BEND
STUDY INFORMATION SHEET
Foreign Language Reading & Metacognition

You are invited to participate in this study on foreign language reading. The purpose of this study is to identify the types and uses of metacognitive strategies that students use on foreign language reading tasks.

INFORMATION
If you agree to participate you will meet the study proctor at the university library; the study is conducted in a quiet study room of the library. You will be asked to read a French text aloud. After reading the text, the proctor will ask you a short series of questions about your interpretations and reactions to the passage. Finally you will be asked to complete a brief questionnaire with demographic information and your beliefs about reading in a foreign language. Total time for this interview will be 40-45 minutes and an audio recorder will be used. You must be at least 18 years old to participate.

BENEFITS
While there are no direct benefits to you, the results of this study may offer language instructors and students a better understanding of foreign language reading tasks and processes.

RISK
We do not anticipate any risks associated with this research.

CONFIDENTIALITY
This interview and all data collected from the interview are confidential. Audio recordings may be transcribed and included in print publication, though neither names nor audio files will be published. All audio recording will be destroyed within three years of their recording date.

CONTACT
If you have questions at any time about the study or the procedures, you may contact me at (574) 520-4505, and bscurrie@iusb.edu or the faculty sponsor of the research Dr. Michelle Bakerson at (574) 520-4391 or mbakerso@iusb.edu.

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact the Indiana University South Bend Institutional Review Board for the Protection of Human Research Subjects, 1700 Mishawaka Ave., A247, South Bend, IN 46634, 574-520-4181, by e-mail at sbirb@iusb.edu.

PARTICIPATION
Your participation in this study is voluntary; you may refuse to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty. If you decide to withdraw after your interview has taken place, you may contact the researcher and the audio recording and any associated paperwork will be destroyed. Since the questionnaires are confidential, once they are submitted the information cannot be withdrawn from the study. By participating in this study

you are granting permission to the researcher to use collected data for aggregate data review and potential publication.

STUDY ID #: Miscue Analysis Interview Script

I. INTRODUCTION

[Distribute copy of the reading to participant.] I have a short text here that I would like you to read aloud. Have you ever read this before?

As you read, I'd like you to read as if I weren't here; do whatever you do when you normally read a French text. I won't interrupt you and when you've finished, I'll collect the text and ask you to tell me what you've read. Do you have any questions?

[Participant reads aloud.]

Thank you for reading. [Collect text]

II. UNAIDED RETELLING

Please tell me everything that you remember about what you've read; in other words, recount this text in your own words.

[Participant shares]

Great. Is there anything else you remember or would like to add?

III. AIDED RETELLING

[Ask questions to follow up on topics and events already introduced by participant. For example:]

- You mentioned…can you tell me more?
- You said that…why do you think that is?

[Additional questions, as needed:]

- Tell me more about the problem that is presented in this article.
- Who do you think this problem concerns?
- Where do the people in this article live?
- What types of solutions to the problem are offered in this text?
- Who proposed these arrangements?
- How do the choices of Christine and Marie-Jo differ?
- Do you believe the people are satisfied with their situations? How do you know?
- What would you do if faced with a similar situation? Why?

IV. CONCLUSION

This concludes the reading portion of the interview. We can now proceed to a brief written questionnaire.

Appendix D

Miscue Coding for Metacognitive Strategies (Results)

				Reading Problem			Reading strategies									Metacognitive Strategy Used?		
STUDY ID #	Line #	Miscue Category	Miscue Code	word meaning	linguistic structure	pronunciation	decoding	context clues	skip word(s)	previewing	inference/cognate	prediction	elaboration	self-questioning	summarize	Plan	Monitor	Evaluate
01	06	Repetition			x		x											
01	08	Substitution (H)	YYN			x					x							
01	08	Substitution (H)	YYN			x	x	x										
01	08	Substitution (H)	YYN			x					x							
01	10	Omission							x									
01	12	Pause								x						x		
01	13	Self-Correction						x		x		x					x	
01	15	Repetition			x		x											
01	15	Omission		x					x									
01	16	Substitution (H)	NN			x	x											
01	20	Substitution (H)	YYN			x					x							
01	21	Repetition			x		x											
01	22	Repetition			x		x											
01	28	Pause				x	x											
01	32	Substitution (H)	YYN			x					x						x	
01	33	Repetition				x												
01	34	Substitution (H)	NN		x						x							
01	35	Repetition			x		x							x			x	x
01	36	Substitution (H)	YYN			x					x						x	
01	38	Self-Correction										x					x	
01	38	Repetition-M			x		x											x
01	39	Self-Correction					x	x			x						x	
02	01	Omission																
02	03	Substitution (H)	YYN			x			x		x							
02	04	Substitution (H)	NN	x		x	x											
02	04	Substitution (H)	NN	x		x	x											
02	04	Substitution (H)	NN	x		x	x											
02	05	Repetition				x	x											
02	05	Repetition		x		x	x											
02	06	Pause			x		x										x	
02	07	Substitution (H)	NN	x		x	x											
02	12	Pause					x			x					x	x		

02	13	Substitution (H)	YYN			x			x		x						
02	13	Substitution (H)	YYN			x			x		x						
02	14	Repetition-M			x		x										
02	14	Substitution (H)	NN	x		x	x										
02	15	Substitution (H)	YYY	x	x									x			x	
02	16	Substitution (H)	YYN			x			x		x						
02	17	Substitution (H)	NN	x		x	x										
02	17	Repetition		x	x	x	x										
02	18	Insertion		x	x							x					
02	20	Substitution (H)	NN			x	x				x						
02	21	Repetition		x	x	x	x										
02	21	Repetition-M		x	x		x			x							
02	23	Insertion		x	x							x					
02	24	Pause		x		x	x			x		x					
02	24	Substitution (H)	YYN			x					x						
02	25	Substitution (H)	NN	x		x	x										
02	25	Substitution (H)	YYN			x					x						
02	25	Pause		x		x	x			x							
02	25	Substitution (H)	YYN			x					x						
02	25	Substitution (H)	YYN			x					x						
02	26	Repetition		x		x	x										
02	27	Substitution (H)	NN	x		x	x										
02	27	Substitution (H)	YYN			x					x						
02	27	Repetition-M		x			x										
02	28	Substitution (H)	YYN			x					x						
02	28	Substitution (H)	YYN			x					x						
02	28	Pause		x		x	x			x							
02	29	Pause				x				x							
02	30	Substitution (H)	YYN			x					x						
02	32	Substitution (H)	NYN			x											
02	33	Substitution (H)	YYY	x	x	x						x					
02	34	Substitution (L)	YYY	x	x							x					
02	34	Substitution (S)	YYY	x	x							x					
02	34	Omission			x				x								
02	35	Repetition		x	x		x			x							
02	35	Pause		x	x		x			x							
02	37	Substitution (H)	NN	x			x										
02	37	Pause		x	x		x			x				x			
02																	
03	03	Substitution (H)	YYN			x					x						
03	03	Substitution (H)	YYN			x					x		x				
03	04	Substitution (H)	YYN			x					x						
03	04	Substitution (H)	YYN			x	x										
03	05	Self-Correction		x							x					x	

03	07	Repetition				x	x										
03	08	Repetition		x		x	x										
03	13	Omission			x												
03	13	Substitution (L)	YYY			x	x							x			
03	14	Substitution (S)	NN			x	x										
03	15	Substitution (H)	NN	x		x	x										
03	16	Substitution (H)	YYN			x					x						x	
03	17	Substitution (H)	NN	x		x	x											
03	24	Substitution (N)	YNN	x		x	x	x										
03	25	Insertion				x	x											
03	25	Substitution (H)	YYN			x	x	x			x						x	
03	26	Substitution (H)	NN			x	x											
03	27	Substitution (H)	YYN			x					x						x	
03	28	Repetition		x		x	x				x							
03	33	Substitution (H)	YNN			x	x				x							
03	33	Substitution (H)	NN			x	x											
03	35	Omission		x	x		x											
03	36	Substitution (S)	YNN		x							x						
03	37	Substitution (H)	NN	x		x	x											
03	39	Substitution (H)	NN	x		x	x											
03	39	Substitution (H)	NN		x	x	x											
03	40	Substitution (H)	NN			x					x						x	
03	40	Substitution (H)	YYN			x					x							
03																		
04	03	Substitution (L)	YYN			x					x							
04	04	Substitution (H)	YYN			x					x							
04	04	Substitution (H)	NN			x	x				x							
04	04	Substitution (H)	NN	x		x	x											
04	04	Omission			x													
04	05	Substitution (H)	NN	x		x	x											
04	05	Substitution (H)	YYN			x	x				x						x	
04	05	Pause		x	x			x					x	x	x		x	
04	06	Pause		x	x		x	x							x		x	
04	07	Pause		x	x		x								x		x	
04	08	Substitution (H)	YYN			x					x							
04	08	Repetition			x	x	x											
04	08	Substitution (H)	YYN			x					x							
04	08	Pause		x	x		x	x							x		x	
04	09	Pause		x	x		x	x							x		x	x
04	11	Pause											x	x	x	x	x	x
04	12	Insertion		x			x				x		x		x		x	
04	13	Substitution (L)	YYN	x	x	x	x				x		x		x			
04	13	Substitution (L)	YYN			x					x							
04	13	Substitution (H)	YYN			x	x				x							

04	13	Pause		x	x		x								x		x	
04	14	Substitution (H)	YYN	x		x					x							
04	15	Pause		x			x								x		x	
04	15	Substitution (H)	YYY	x	x	x	x											
04	15	Substitution (H)	NN	x		x	x											
04	16	Substitution (L)	YYN			x					x							
04	16	Substitution (S)	NN	x		x	x											
04	16	Substitution (H)	YYN			x					x							
04	16	Substitution (H)	YYN			x					x							
04	16	Pause		x			x								x		x	
04	17	Pause		x			x	x	x						x		x	
04	18	Substitution (H)	YNN		x	x	x				x							
04	19	Pause		x			x	x	x						x		x	
04	20	Repetition-M				x	x											
04	20	Pause		x			x										x	
04	20	Substitution (H)	NN	x		x	x				x							
04	21	Insertion		x			x						x	x	x		x	
04	21	Pause		x			x										x	
04	22	Pause		x			x						x		x	x	x	
04	22	Insertion		x			x						x		x		x	
04	23	Syllabic Break		x		x	x			x								
04	23	Insertion		x			x		x				x		x		x	
04	25	Pause		x			x											
04	25	Substitution (L)	YYN			x												
04	25	Syllabic Break		x		x	x			x								
04	26	Substitution (H)	YYN			x	x				x							
04	26	Substitution (L)	YYN			x					x							
04	26	Omission		x		x												
04	26	Repetition		x		x	x											
04	27	Substitution (L)	YYN			x					x							
04	27	Substitution (H)	YYN			x					x							
04	28	Substitution (L)	YYN			x	x				x							
04	28	Substitution (H)	YYN			x	x				x							
04	28	Substitution (L)	YYN			x	x				x							
04	28	Repetition-M		x		x	x											
04	28	Omission			x				x									
04	29	Pause		x	x		x	x									x	
04	29	Insertion		x	x		x	x					x		x			
04	30	Substitution (L)	YYN			x					x							
04	30	Substitution (S)	NN	x		x	x											
04	32	Pause		x	x		x										x	
04	33	Insertion		x									x	x			x	
04	33	Substitution (H)	YYN			x					x							
04	33	Pause		x	x		x										x	

04	33	Insertion		x	x								x		x		x	
04	34	Substitution (H)	YYN			x	x				x							
04	34	Insertion													x			
04	34	Pause			x	x				x								
04	34	Insertion		x			x	x					x		x			
04	36	Pause				x	x			x								
04	36	Substitution (S)	NN	x		x	x											
04	37	Omission			x				x									
04	38	Repetition		x	x		x	x									x	
04	39	Substitution (H)	YYN			x					x							
04	39	Substitution (H)	NN	x		x	x											
04	40	Pause		x	x		x	x						x	x		x	x
05	03	Repetition			x		x											
05	04	Repetition		x	x		x											
05	05	Substitution (H)	YYN			x	x				x							
05	05	Repetition		x	x		x											
05	06	Repetition		x	x		x											
05	07	Repetition		x		x	x										x	
05	07	Repetition		x	x		x											
05	08	Repetition		x		x	x											
05	09	Pause		x	x		x	x	x								x	x
05	13	Pause				x				x								
05	15	Repetition		x			x							x				
05	16	Substitution (H)	YYN			x					x							
05	17	Substitution (H)	NN	x		x	x											
05	19	Pause		x	x		x			x							x	x
05	21	Substitution (N)	YNN		x							x						
05	23	Pause		x	x		x										x	x
05	24	Repetition			x	x	x			x								
05	24	Repetition				x	x			x								
05	25	Syllabic Break		x		x	x											
05	25	Pause				x	x			x								
05	25	Substitution (N)	YYN				x				x							
05	28	Repetition				x	x			x								
05	29	Syllabic Break		x		x	x			x								
05	30	Repetition			x		x											
05	31	Repetition		x		x	x										x	
05	32	Substitution (H)	YYN			x	x				x						x	
05	32	Repetition		x		x	x											
05	33	Repetition		x	x	x	x											
05	38	Self-Correction			x							x					x	
05	38	Self-Correction		x							x							
05	40	Syllabic Break				x	x				x							
05																		

06	03	Pause				x	x			x								
06	03	Substitution (N)	YYY			x												
06	04	Pause		x		x	x			x								
06	06	Syllabic Break		x		x	x											
06	07	Substitution (H)	NN	x		x	x											
06	08	Substitution (S)	YNN			x						x						
06	08	Substitution (H)	YYN			x					x							
06	12	Substitution (S)	NN	x		x	x											
06	13	Insertion				x				x								
06	13	Pause				x	x			x								
06	16	Substitution (S)	YNN			x	x											
06	17	Substitution (H)	NN		x													
06	20	Self-Correction		x		x					x						x	
06	21	Repetition		x			x						x					
06	25	Syllabic Break		x		x	x											
06	27	Pause				x				x								
06	28	Substitution (H)	NN	x		x	x											
06	32	Substitution (H)	YYN			x					x							
06	34	Pause			x					x		x					x	
06	36	Pause		x	x	x	x			x								
06	37	Substitution (H)	YYN			x					x						x	
06	39	Substitution (H)	NN	x		x	x											
06	39	Substitution (H)	YYN			x					x						x	
07	01	Substitution (H)	YYY	x		x	x											
07	02	Substitution (H)	YYY	x		x	x											
07	03	Substitution (N)	YYN			x					x							
07	03	Substitution (H)	NN	x		x	x											
07	03	Substitution (H)	YYN			x					x							
07	04	Substitution (H)	NN	x		x	x											
07	04	Substitution (H)	YYY	x		x	x				x	x						
07	04	Substitution (H)	YYN			x	x				x						x	
07	06	Substitution (H)	NN	x		x	x											
07	06	Substitution (H)	NN	x		x												
07	06	Substitution (H)	NN	x				x			x							
07	07	Substitution (S)	NN	x	x	x	x											
07	07	Substitution (S)	NN	x	x	x	x											
07	07	Substitution (H)	YYN			x					x							
07	08	Syllabic Break		x		x	x											
07	08	Substitution (H)	NN	x		x	x											
07	08	Substitution (H)	YYN			x	x				x							
07	09	Substitution (H)	NN	x		x	x				x							
07	12	substitution (H)	YNN	x		x	x				x							
07	12	Substitution (H)	NN	x		x	x											
07	13	Substitution (N)	YYN			x	x				x							

07	13	Substitution (S)	YYN									x				x	
07	13	Substitution (N)	YYN			x	x				x						
07	13	Substitution (H)	YYN			x	x				x						
07	13	Repetition				x										x	
07	15	Substitution (H)	NN	x		x	x										
07	15	Substitution (H)	NN	x		x	x				x						
07	15	Substitution (H)	YYY	x	x			x				x					
07	15	Substitution (S)	NN	x		x	x										
07	16	Substitution (N)	YYN			x	x				x						
07	16	Substitution (S)	NN	x		x	x										
07	16	Substitution (S)	YYY	x		x	x	x			x						
07	17	Substitution (H)	NN	x		x	x										
07	17	Pause				x	x			x							
07	17	Self-Correction		x							x					x	
07	17	Pause		x		x	x			x							
07	17	Syllabic Break		x		x	x										
07	18	Omission			x	x											
07	18	Omission			x												
07	18	Omission			x												
07	18	Substitution (H)	YNN		x			x									
07	20	Substitution (H)	NN	x		x	x										
07	20	Substitution (S)		x	x								x				
07	20	Self-Correction		x							x					x	
07	20	Substitution (S)	NN	x		x	x										
07	22	Substitution (L)	YYY	x	x		x										
07	23	Substitution (H)	NN		x												
07	23	Substitution (H)	NN	x		x	x										
07	24	Pause		x		x	x			x							
07	24	Repetition		x		x	x										
07	24	Omission			x				x								
07	24	Substitution (N)	YYN			x	x				x						
07	25	Substitution (H)	NN	x		x	x										
07	25	Substitution (S)	YYN		x							x					
07	25	Substitution (L)	NN	x	x	x											
07	25	Substitution (N)	YYN			x	x				x						
07	25	Substitution (H)	NN	x		x	x										
07	25	Substitution (H)	YYN			x	x				x						
07	25	Substitution (N)	YYN			x	x				x						
07	26	Substitution (H)	YYY	x		x	x										
07	26	Repetition		x		x	x			x							
07	26	Pause		x	x		x	x		x							
07	27	Substitution (L)	NN	x		x	x										
07	27	Substitution (S)	NN	x	x	x	x										
07	27	Substitution (N)	YYN			x	x				x						

07	27	Pause		x		x	x			x								
07	27	Substitution (H)	NN	x		x	x											
07	27	Substitution (H)	YYN			x	x				x							
07	28	Pause		x	x	x	x			x								
07	28	Substitution (N)	YYN			x	x				x							
07	28	Substitution (H)	NN	x		x	x				x							
07	30	Pause				x	x			x			x					
07	30	Substitution (S)	YYN				x	x					x					
07	30	Substitution (H)	NN	x			x				x							
07	31	Substitution (H)	YYY	x								x						
07	31	Substitution (H)	NN			x	x				x							
07	31	Syllabic Break		x			x											
07	31	Substitution (S)		x				x			x							
07	33	Substitution (H)	NN			x	x				x							
07	33	Repetition		x		x	x											
07	33	Repetition		x		x	x											
07	33	Omission			x													
07	34	Substitution (H)	YYN			x	x				x							
07	35	Substitution (N)	YYY		x							x						
07	35	Substitution (N)	YYY		x							x						
07	36	Substitution (S)	YYN				x	x					x					
07	36	Repetition		x			x											
07	37	Substitution (H)	YYN			x	x				x							
07	37	Substitution (H)	YYN			x	x				x							
07	38	Substitution (L)	NN	x		x												
07	38	Syllabic Break		x	x		x											
07	38	Repetition		x		x	x											
07	39	Substitution (H)	YYY	x	x		x					x						
07	39	Pause		x		x				x								
07	39	Substitution (H)	NN	x		x	x											
07	39	Repetition				x												
07	40	Substitution (H)	YYN			x	x				x							
07																		
08	03	Substitution (H)	NN	x		x	x							x			x	
08	03	Pause				x				x								
08	04	Pause				x	x			x								
08	04	Repetition (H)	NN	x		x	x											
08	05	Substitution (H)	YYN			x					x							
08	05	Substitution (H)	YYN			x					x							
08	05	Pause		x	x										x		x	x
08	06	Pause				x	x									x		
08	07	Omission		x		x	x		x					x			x	
08	08	Substitution (H)	YYN			x	x				x							
08	09	Substitution (H)	NN	x		x	x											

08	09	Pause		x	x									x		x	x
08	12	Substitution (H)	NN			x					x							
08	13	Omission			x				x									
08	13	Substitution (H)	YYN			x					x							
08	14	Omission			x				x									
08	14	Substitution (H)	YYN			x					x							
08	15	Omission			x				x									
08	15	Repetition		x			x										x	
08	16	Pause				x				x								
08	16	Omission				x			x				x					
08	16	Substitution (H)	NN	x		x	x											
08	16	Substitution (H)	YYN			x					x							
08	17	Substitution (H)	NN	x		x	x							x			x	
08	18	Substitution (H)	NN	x		x	x											
08	20	Repetition-M				x	x											
08	21	Substitution (H)	YYN								x							
08	21	Repetition-M		x		x	x											
08	22	Omission			x				x									
08	23	Substitution (H)	YYN			x					x							
08	23	Substitution (H)	NN			x	x											
08	24	Substitution (H)	YYN			x					x							
08	25	Self-Correction			x							x					x	
08	25	Substitution (H)	NN	x		x	x											
08	25	Substitution (H)	YYY			x	x											
08	28	Pause				x				x								
08	29	Substitution (H)	YYN			x					x							
08	29	Omission			x				x									
08	31	Omission			x				x									
08	34	Self-Correction			x			x									x	
08	36	Substitution (H)	YYN								x							
08	37	Substitution (H)	YYN			x					x							
08	39	Substitution (H)	YYN			x					x							
08	40	Substitution (H)	YYN			x					x							
08																		
09	03	Substitution (S)	YYN			x					x							
09	03	Substitution (S)	NN	x		x	x											
09	04	Inversion			x		x					x						
09	04	Substitution (H)	NN			x	x											
09	05	Substitution (H)	YYN			x	x				x						x	
09	05	Substitution (H)	NN			x					x							
09	05	Repetition			x		x											
09	07	Substitution (H)	NN	x		x	x											
09	07	Substitution (H)	YNY	x		x	x				x							
09	08	Substitution (H)	YYN			x	x				x							

09	08	Substitution (H)	YYN			x	x				x						
09	09	Repetition		x			x										
09	12	Substitution (H)	YYN	x		x	x				x						
09	13	Substitution (S)	YYN			x					x						
09	13	Substitution (H)	YYN			x	x				x					x	
09	14	Substitution (H)	NN			x	x				x						
09	15	Omission		x	x				x								
09	15	Repetition		x		x	x										
09	15	Repetition		x		x	x										
09	16	Pause		x		x	x			x							
09	16	Repetition			x	x	x			x							
09	16	Substitution (H)	NN		x							x					
09	16	Repetition		x		x	x										
09	17	Substitution (S)	NN	x	x		x										
09	17	Repetition		x		x	x										
09	18	Syllabic break		x		x	x										
09	20	Repetition				x											
09	20	Repetition		x		x											
09	21	Substitution (H)	NN			x	x										
09	21	Substitution (H)	YNY		x						x	x					
09	21	Repetition				x	x										
09	24	Repetition-M		x		x	x										
09	25	Repetition				x	x										
09	25	Repetition			x		x										
09	26	Repetition		x			x										
09	26	Substitution (S)				x											
09	27	Substitution (H)	NN	x		x	x										
09	28	Insertion		x	x							x					
09	28	Repetition		x	x		x										
09	30	Substitution (H)	NN	x		x	x				x						
09	34	Substitution (H)	NN	x	x	x	x	x			x						
09	34	Repetition		x	x		x										
09	34	Substitution (H)	YYN			x	x				x						
09	35	Repetition				x											
09	36	Repetition				x											
09	36	Substitution (H)		x		x	x				x						
09	36	Repetition		x	x		x										
09	36	Repetition		x	x		x										
09	37	Repetition		x		x	x										
09	37	Repetition-M		x		x	x										
09	38	Repetition		x	x		x										
09	38	Substitution (S)			x		x										
09	39	Pause		x		x	x			x							
09	39	Substitution (H)	NN	x		x	x				x						

09	39	Substitution (H)	NN			x	x				x							
09	40	Substitution (H)	NN			x	x				x							
10	03	Substitution (N)	YYN			x	x				x							
10	04	Repetition-M				x	x											
10	04	Substitution (H)	NN	x		x	x											
10	05	Repetition		x	x	x	x											
10	07	Repetition		x		x	x											
10	08	Repetition-M				x							x					
10	08	Repetition				x	x											
10	13	Pause				x				x								
10	13	Pause				x	x											
10	15	Syllabic Break		x		x	x											
10	15	Syllabic Break		x		x	x											
10	16	Syllabic Break				x	x			x								
10	16	Repetition			x	x	x						x					
10	16	Repetition			x	x	x	x										
10	17	Repetition		x		x	x											
10	20	Repetition		x	x	x	x	x										
10	21	Repetition-M				x	x											
10	24	Pause				x				x								
10	24	Pause				x				x								
10	24	Repetition-M			x	x	x	x										
10	24	Substitution (N)	YYN		x	x	x	x			x							
10	24	Pause			x									x			x	
10	24	Insertion			x	x							x					x
10	25	Pause				x				x								
10	25	Pause				x				x								
10	25	Substitution (N)	YYN		x	x	x	x			x							
10	30	Pause				x				x								
10	30	Substitution (H)	NN	x		x	x											
10	32	Pause			x	x				x								
10	33	Pause		x	x	x	x			x				x			x	
10	34	Repetition-M		x		x	x											
10	35	Pause			x		x			x								
10	36	Pause			x		x			x								
10	36	Pause			x		x			x								
10	36	Pause			x		x			x								
10	37	Pause			x		x			x								
10	37	Pause		x	x		x			x								
10	38	Pause		x	x		x											
10	39	Syllabic Break				x	x											
10	40	Pause		x	x		x			x								
10																		

11	03	Pause				x	x						x					
11	03	Substitution (S)	NN			x	x											
11	07	Pause		x	x	x	x			x								
11	07	Pause																
11	07	Substitution (H)	YYY	x		x	x				x							
11	08	Pause			x					x								
11	08	Pause			x					x								
11	13	Pause		x	x	x	x			x								
11	13	Substitution (H)	NN			x	x											
11	14	Pause			x		x			x								
11	15	Pause			x		x			x								
11	16	Pause			x		x			x								
11	16	Substitution (H)	YYY			x	x											
11	17	Substitution (H)	NN	x		x	x											
11	20	Repetition				x	x											
11	20	Substitution (H)	NN			x	x											
11	21	Substitution (H)	YYN		x													
11	23	Repetition				x	x											
11	24	Pause		x	x	x	x			x								
11	24	Pause		x		x	x											
11	24	Substitution (H)	NN	x		x	x											
11	24	Substitution (H)	YNN		x			x										
11	24	Substitution (H)	YNN		x			x										
11	25	Substitution (H)	YNN			x	x											
11	26	Pause		x			x											
11	27	Pause		x		x	x			x								
11	27	Pause		x		x	x			x								
11	28	Substitution (H)	YYY			x												
11	28	Pause			x		x			x								
11	30	Pause				x	x			x								
11	30	Pause		x			x											
11	31	Substitution (H)	YNN			x						x						
11	34	Substitution (H)			x			x										
11	35	Pause			x		x											
11	39	Omission			x				x									
11	40	Repetition				x	x				x							
11																		
12	03	Substitution (N)	YYN			x	x				x							
12	04	Syllabic Break		x		x	x											
12	04	Repetition		x		x	x											
12	04	Pause		x	x		x			x			x				x	
12	04	Repetition-M				x	x											
12	04	Repetition		x		x	x											
12	05	Repetition-M				x	x											

12	06	Substitution (AC)				x	x										
12	07	Repetition		x		x	x										
12	08	Repetition		x		x	x										
12	08	Substitution (H)	YYN			x	x				x						
12	09	Repetition		x		x	x										
12	13	Pause				x	x			x							
12	13	Pause		x	x		x						x			x	x
12	16	Substitution (N)	YYN			x	x				x						
12	16	Pause		x	x		x						x				x
12	16	Repetition		x		x	x										
12	17	Repetition				x	x										
12	17	Repetition-M				x	x										
12	18	Repetition-M				x	x										
12	18	Repetition			x	x	x										
12	20	Repetition-M		x		x	x										
12	20	Substitution (H)	YYN			x	x				x						
12	20	Repetition				x	x										
12	21	Substitution (AC)		x		x	x										
12	21	Repetition-M				x	x										
12	22	Repetition				x	x										
12	22	Repetition				x	x										
12	23	Repetition				x	x										
12	24	Substitution (N)	YNN	x		x	x				x						
12	25	Pause		x	x		x	x									x
12	25	Pause				x	x										
12	25	Substitution (N)	YYN			x	x				x						
12	25	Substitution (N)	YYN			x	x				x						
12	25	Substitution (N)	YYN			x	x				x						
12	26	Pause		x	x		x			x							
12	26	Repetition				x	x										
12	27	Pause				x	x										
12	27	Substitution (N)	YYN			x	x				x						
12	28	Substitution (N)	YYN			x	x				x						x
12	28	Omission		x		x											
12	28	Repetition		x		x	x										
12	30	Substitution (N)	YYN			x	x				x						
12	31	Pause		x			x	x									x
12	31	Substitution (H)	YYN	x		x		x									
12	31	Pause			x	x	x			x						x	
12	31	Pause		x	x		x	x									
12	32	Substitution (H)	YYN			x	x				x						
12	32	Pause		x	x		x	x							x		x
12	33	Pause		x	x		x	x							x		x

12	33	Pause		x	x		x	x							x			
12	34	Substitution (H)	YNN		x	x	x	x										
12	34	Pause		x	x		x	x							x		x	
12	36	Substitution (H)	YYN			x	x				x							
12	37	Syllabic Break		x		x	x											
12	37	Omission				x			x									
12	39	Repetition-M		x		x	x											
12	40	Substitution (H)	YYN			x	x				x							
12	40	Repetition-M				x	x											
12	40	Repetition		x	x	x	x											
12																		
13	03	Pause				x	x											
13	04	Pause				x	x											
13	04	Repetition				x	x											
13	04	Substitution (H)	NN	x		x	x											
13	05	Repetition				x	x											
13	06	Repetition		x		x	x											
13	07	Repetition-M		x		x	x											
13	08	Pause		x	x	x	x			x								
13	12	Pause		x		x	x			x								
13	12	Repetition		x		x	x											
13	14	Substitution (H)	NN	x		x	x											
13	14	Repetition				x	x											
13	14	Repetition		x	x	x	x	x										
13	17	Syllabic Break		x		x	x											
13	17	Omission		x		x	x											
13	20	Substitution (H)	YYY	x		x	x				x							
13	20	Repetition		x		x	x											
13	23	Substitution (H)	NN			x	x											
13	24	Syllabic Break		x		x	x											
13	24	Pause		x		x	x			x								
13	24	Substitution (AC)	YNN			x	x				x							
13	25	Pause		x		x	x			x								
13	25	Repetition		x		x	x											
13	25	Substitution (N)	YNN			x	x				x							
13	27	Substitution (H)	NN	x		x	x											
13	28	Substitution (N)	YNN			x	x				x							
13	30	Substitution (H)	YYY			x												
13	31	Pause		x		x	x			x								
13	32	Repetition				x	x											
13	34	Omission		x		x												
13	35	Repetition				x	x											
13	36	Syllabic Break		x		x	x			x								

13																		
14	03	Omission				x			x									
14	04	Repetition				x	x											
14	07	Repetition		x		x	x											
14	08	Substitution				x	x				x							
14	12	Omission							x									
14	13	Omission							x									
14	16	Omission				x			x		x							
14	17	Syllabic Break		x		x	x											
14	24	Substitution (S)	YYN	x														
14	25	Syllabic Break		x		x	x											
14	30	Repetition		x		x	x											
14	31	Repetition			x	x	x	x										
14	35	Repetition		x	x		x											
14	38	Insertion	YYN		x							x	x					
14	39	Repetition				x	x											
14																		
15	03	Substitution (N)	YYN			x	x				x							
15	04	Repetition		x			x	x					x				x	
15	07	Syllabic Break		x		x	x											
15	08	Repetition				x	x											
15	16	Repetition			x	x	x	x										
15	17	Syllabic Break		x		x	x											
15	18	Repetition				x	x											
15	31	Repetition				x	x											
15	35	Repetition		x	x	x	x											
15	39	Repetition				x	x											
15	39	Repetition			x	x	x											
15	39	Repetition			x	x	x	x										
15	40	Pause		x	x		x	x						x	x		x	x
15																		
16	03	Pause				x	x											
16	04	Substitution (H)	YYN			x	x				x							
16	04	Substitution (S)	NN	x		x	x											
16	05	Substitution (H)	YYN			x	x				x							
16	05	Pause		x			x						x				x	
16	08	Substitution (H)	YYN			x	x				x							
16	09	Substitution (H)	YYN			x	x				x							
16	09	Pause		x			x						x				x	
16	12	Repetition		x		x	x											
16	13	Pause				x	x			x								
16	16	Pause				x	x			x								
16	19	Pause		x			x						x				x	
16	20	Substitution (H)	YYN			x	x				x						x	

16	22	Substitution (H)	YNN		x	x					x						
16	22	Repetition			x	x	x										
16	23	Repetition				x	x										
16	23	Repetition				x	x										
16	23	Repetition				x	x										
16	23	Pause		x			x						x				x	
16	25	Syllabic Break		x		x	x			x								
16	25	Repetition		x		x	x											
16	28	Syllabic Break			x	x	x											
16	28	Syllabic Break		x	x		x	x						x			x	
16	29	Pause		x			x						x				x	
16	31	Substitution (H)	YYN			x	x				x							
16	32	Substitution (H)	YYN			x	x				x						x	
16	34	Pause		x			x						x					
16	35	Pause		x	x									x			x	
16	40	Pause		x			x	x					x		x	x	x	
16																		
17	04	Repetition			x	x	x			x								
17	06	Substitution (N)	NN		x							x						
17	08	Substitution (H)	NN			x	x				x							
17	08	Substitution (H)	NN			x	x				x							
17	09	Repetition		x	x		x	x										
17	09	Repetition		x	x		x	x					x		x		x	
17	13	Pause				x	x			x								
17	13	Substitution (N)	YYN			x	x				x							
17	14	Omission	YNN		x			x				x						
17	16	Repetition				x	x			x								
17	23	Repetition				x	x											
17	24	Repetition			x	x	x			x								
17	24	Pause		x		x	x			x			x	x			x	
17	24	Substitution (H)	YNN		x		x	x										
17	25	Syllabic Break		x		x	x			x								
17	25	Repetition		x		x	x											
17	25	Pause				x	x											
17	27	Pause				x	x											
17	30	Repetition				x	x			x								
17	32	Substitution (H)	YYN			x	x				x						x	
17	32	Repetition		x		x	x											
17	32	Repetition		x	x	x	x											
17	33	Repetition		x		x	x											
17	35	Repetition				x	x											
17	35	Repetition		x	x		x	x										
17	39	Repetition			x	x												
17	40	Repetition				x												

17																	
18	03	Pause				x	x			x							
18	04	Pause		x		x	x			x							
18	06	Pause		x			x	x					x				x	
18	07	Substitution (H)	NN	x		x	x							x			x	
18	08	Repetition				x	x											
18	08	Substitution (H)	YYN			x	x				x							
18	09	Pause		x	x		x	x					x		x		x	
18	14	Pause			x	x	x			x								
18	15	Repetition		x			x							x			x	
18	15	Pause		x	x		x	x					x					
18	16	Syllabic Break				x	x											
18	16	Repetition		x		x	x											
18	16	Repetition		x	x	x	x	x										
18	17	Insertion			x							x						
18	17	Syllabic Break		x		x	x											
18	19	Pause		x	x		x	x		x								
18	21	Pause			x		x	x				x		x			x	
18	24	Pause				x	x											
18	25	Substitution (H)	NN	x		x	x											
18	25	Substitution (N)	YYN		x	x	x				x							
18	27	Pause				x	x			x								
18	28	Substitution (N)	YYN		x	x	x				x							
18	31	Repetition		x		x	x				x							
18	32	Repetition				x												
18	34	Repetition			x	x	x											
18	34	Pause		x	x		x	x							x		x	
18	36	Pause		x	x		x	x									x	
18	36	Substitution (H)	NN	x		x	x											
18	39	Omission			x				x									
18	39	Repetition-M		x		x	x											
18																		
19	04	Repetition				x												
19	04	Repetition		x		x	x											
19	12	Repetition			x	x	x											
19	14	Repetition				x	x			x								
19	16	Substitution (H)	YYN			x	x				x							
19	17	Substitution (H)	NN	x		x	x				x							
19	17	Repetition		x		x	x											
19	20	Repetition			x	x	x											
19	20	Substitution (H)	YYN			x	x				x							
19	23	Syllabic Break		x		x	x			x	x							
19	24	Omission			x	x			x									
19	24	Substitution (N)	YYN	x	x	x	x	x			x		x					

19	27	Pause				x	x			x								
19	28	Pause				x	x			x								
19	28	Omission			x				x									
19	28	Substitution (N)	YYN		x	x	x	x			x		x					
19	29	Repetition		x		x	x			x								
19	30	Repetition		x			x	x										
19	32	Substitution (H)	YYN			x	x				x							
19	35	Repetition		x	x		x							x			x	
19	37	Repetition				x												
19	37	Repetition				x												
19	38	Repetition			x	x	x											
19																		
20	03	Pause				x	x											
20	06	Repetition		x	x		x	x										
20	08	Substitution (H)	YYN			x	x				x							
20	09	Pause		x	x		x	x					x				x	
20	13	Pause				x	x											
20	13	Omission				x			x									
20	15	Repetition		x			x							x			x	
20	16	Substitution (H)	YYN			x	x				x						x	
20	16	Substitution (H)	NN	x		x	x											
20	17	Substitution (S)	NN	x														
20	23	Substitution (S)	YNY		x							x						
20	25	Repetition		x		x	x											
20	27	Pause				x	x			x								
20	27	Pause		x	x		x	x									x	
20	30	Substitution (H)	NN	x		x	x				x							
20	32	Substitution (H)	YYN			x	x				x							
20	32	Repetition		x	x		x	x							x		x	
20	34	Substitution (H)	YNN	x		x	x	x									x	
20	35	Substitution (N)	YYY		x			x				x						
20	36	Substitution (H)	NN	x		x	x											
20	40	Repetition				x	x											
20																		
21	03	Pause				x				x								
21	15	Repetition				x												
21	16	Substitution (H)	YYN			x	x				x							
21	17	Repetition		x		x	x											
21	20	Repetition				x												
21	21	Repetition				x												
21	27	Repetition		x		x	x											
21	37	Repetition				x												
21	39	Repetition				x												
21																		

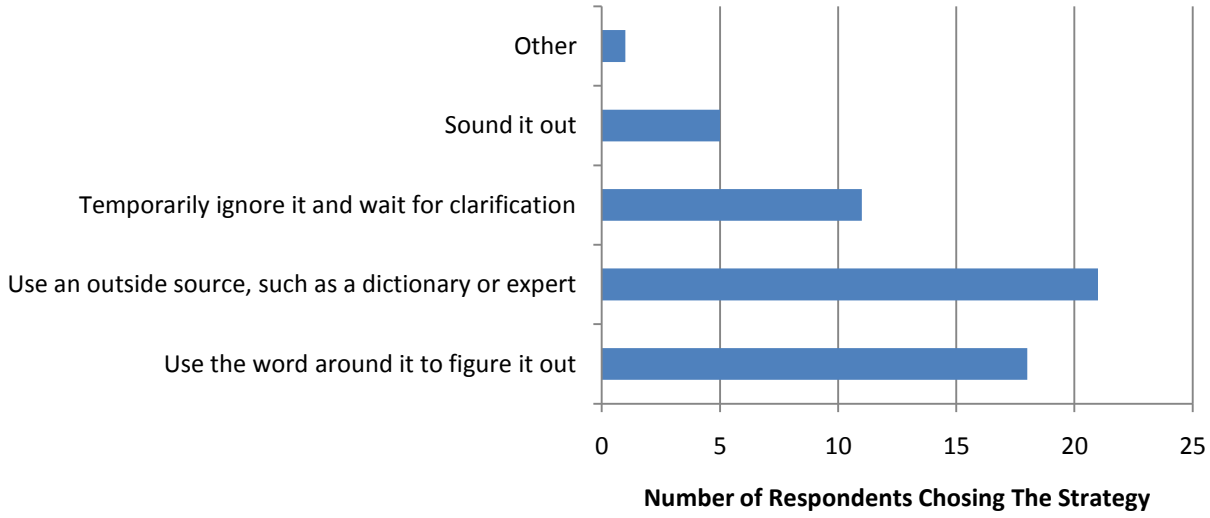
22	02	Substitution (H)	NN	x		x	x										
22	02	Pause		x			x						x				x	
22	03	Substitution (N)	YNN			x	x					x						
22	03	Substitution (S)	NN	x		x	x											
22	03	Substitution (H)	NN	x		x	x											
22	03	Repetition				x												
22	03	Omission	YNN		x				x									
22	04	Substitution (H)	YYN			x	x				x							
22	04	Substitution (H)	YYY	x	x	x	x				x							
22	05	Substitution (H)	YYN			x	x				x							
22	05	Substitution (H)	NN			x	x				x							
22	06	Substitution (H)	NN	x		x	x											
22	06	Pause		x			x						x	x			x	
22	07	Substitution (H)	NN	x		x	x											
22	07	Substitution (H)	YYN			x	x				x							
22	08	Substitution (H)	YYY			x	x				x							
22	08	Substitution (H)	YYN			x	x				x							
22	09	Pause		x			x						x				x	
22	13	Pause				x	x			x								
22	13	Pause				x	x			x								
22	13	Substitution (H)	YYN			x	x				x							
22	15	Repetition			x		x											
22	15	Inflection		x			x						x	x			x	
22	16	Pause				x	x			x								
22	16	Substitution (H)	NN	x		x	x											
22	18	Substitution (H)	YNY	x		x	x											
22	20	Substitution (H)	YYN			x	x				x							
22	21	Repetition		x		x	x											
22	21	Pause			x		x			x								
22	22	Substitution (H)	NN	x	x		x											
22	23	Substitution (H)	NN			x	x											
22	23	Pause		x			x						x			x	x	
22	24	Pause		x			x						x				x	
22	24	Insertion			x		x	x				x		x			x	
22	25	Repetition		x		x	x											
22	25	Pause		x			x						x				x	
22	25	Substitution (N)	YYY	x	x		x	x			x	x						
22	25	Insertion			x			x				x	x					
22	26	Repetition		x		x	x											
22	26	Pause		x			x						x					
22	27	Pause				x	x			x								
22	27	Substitution (S)	NN	x		x	x											
22	28	Insertion			x			x				x	x					
22	31	Substitution (H)	YYN	x		x	x				x							

22	32	Substitution (H)	YYN			x	x				x							
22	34	Substitution (N)	YYY	x	x			x				x						
22	34	Self-Correction		x				x									x	
22	34	Substitution (H)	NN	x		x												
22	36	Substitution (S)	NN	x		x	x											
22	38	Substitution (S)	YYY	x	x	x	x											
22																		

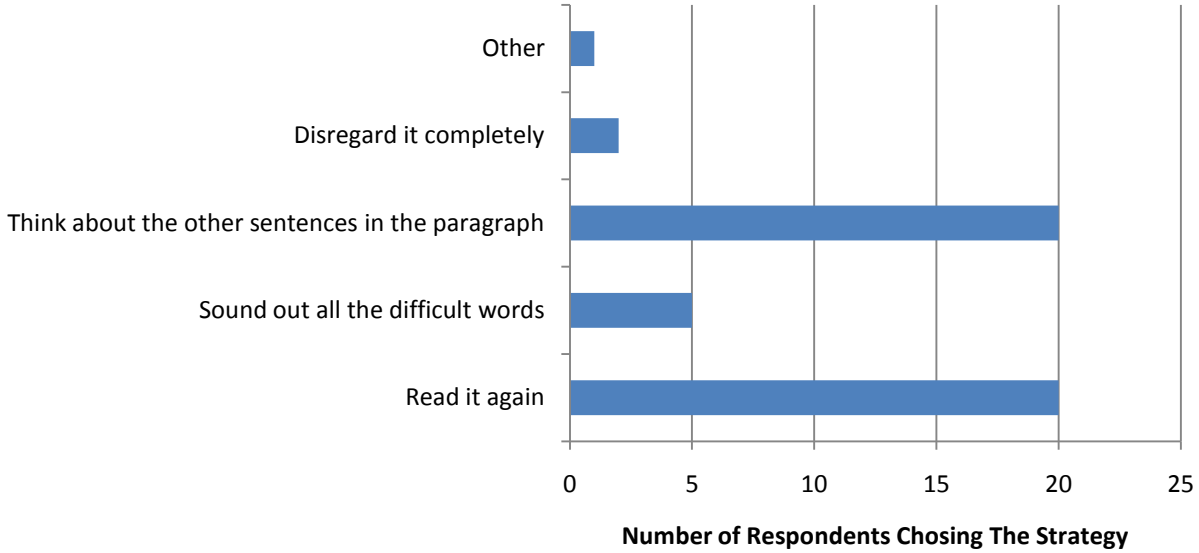
Appendix E

Demographic and Metacognitive Questionnaire Results

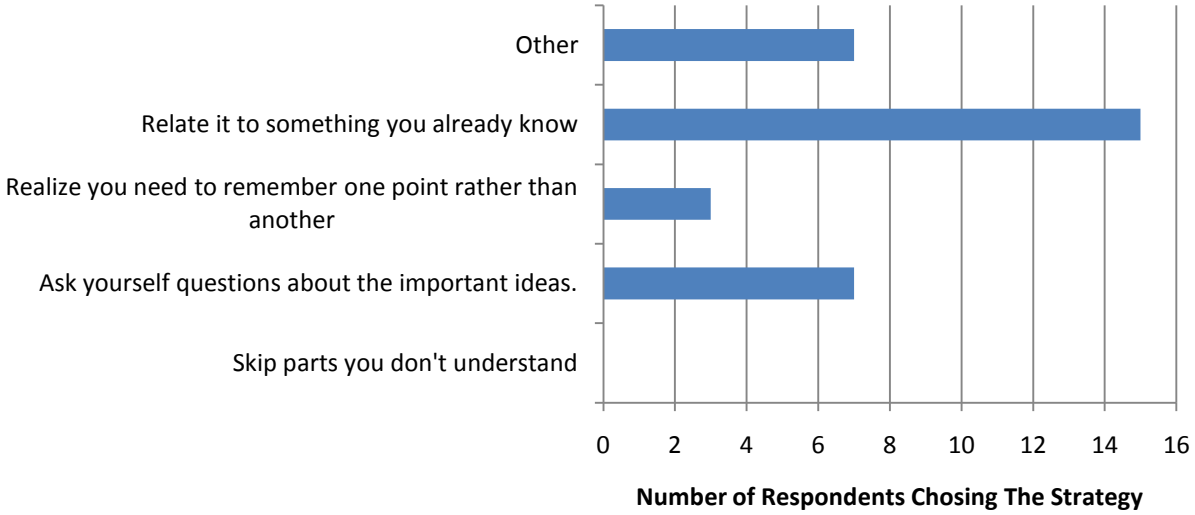
1. What do you do if you encounter a word and you don't know what it means?



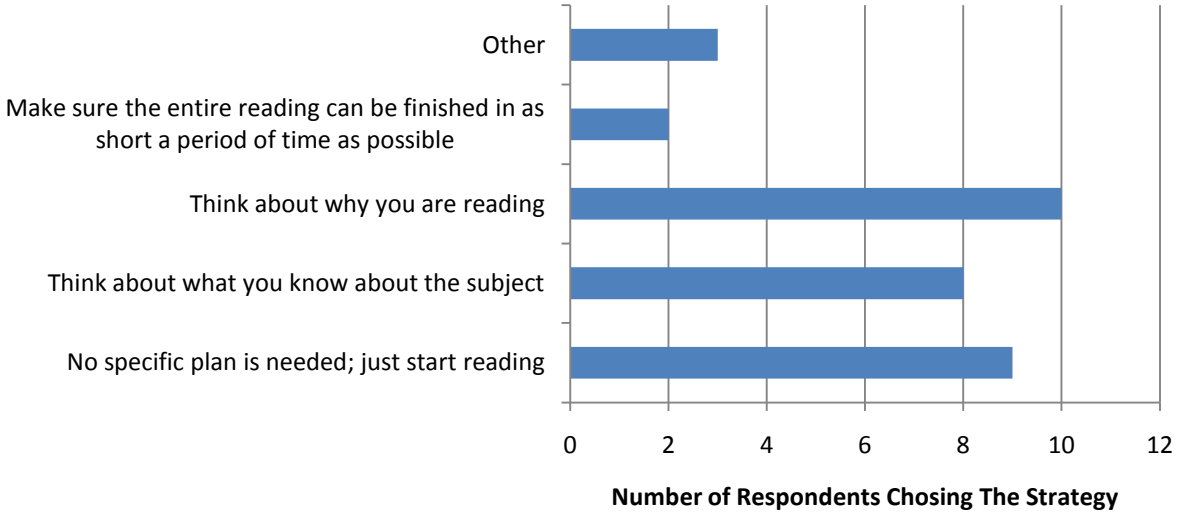
2. What do you do if you don't know what an entire sentence means?



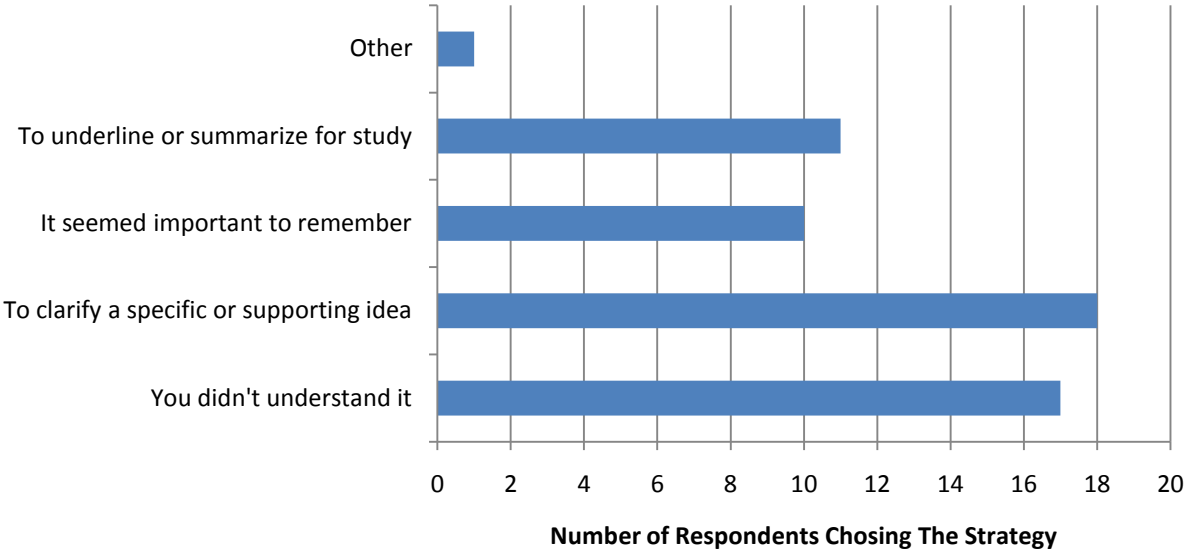
3. If you are reading science or social studies material, what would you do to remember the important information you've read?



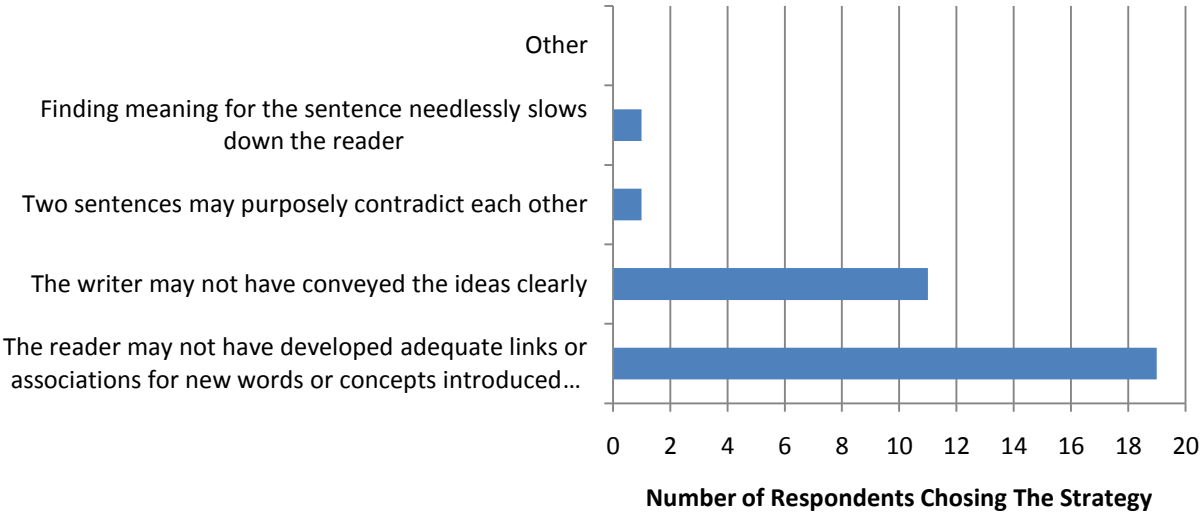
4. Before you start to read, what kind of plans do you make to help you read better?



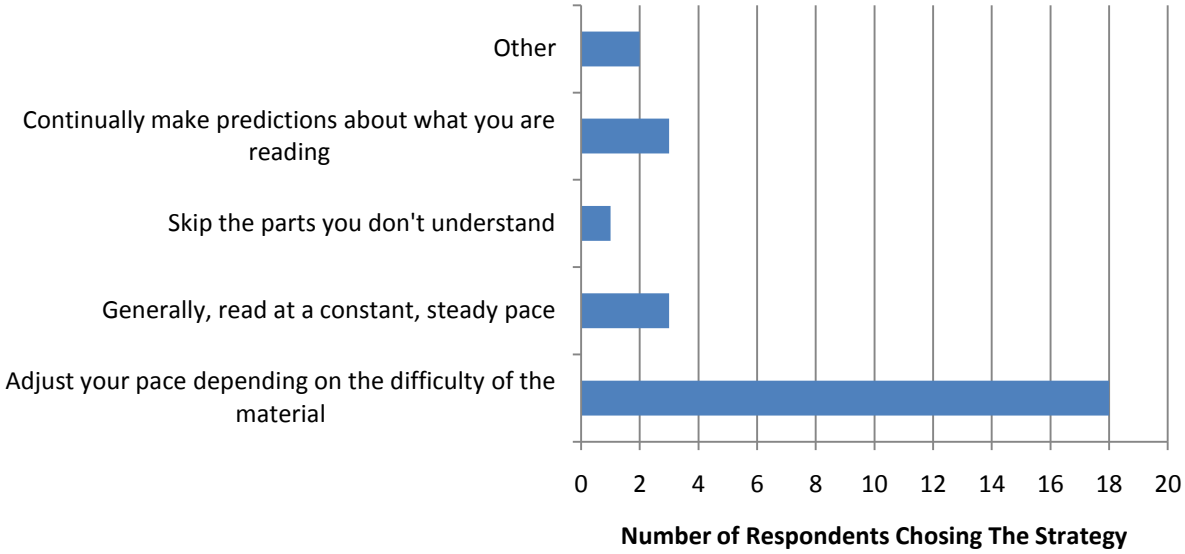
5. Why would you go back and read an entire passage over again?



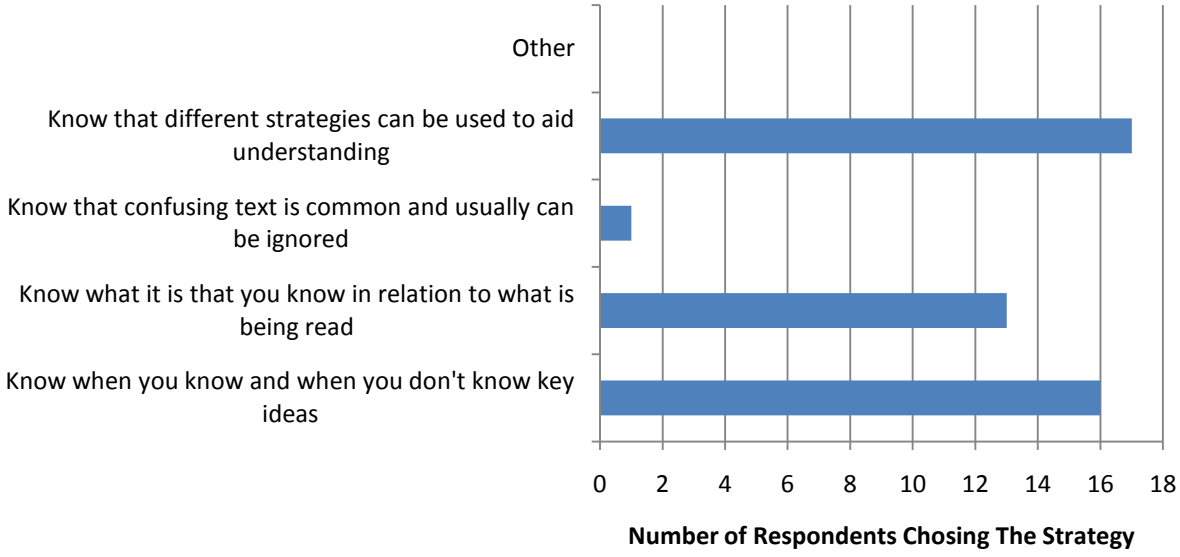
6. Knowing that you don't understand a particular sentence while reading involves understanding that:



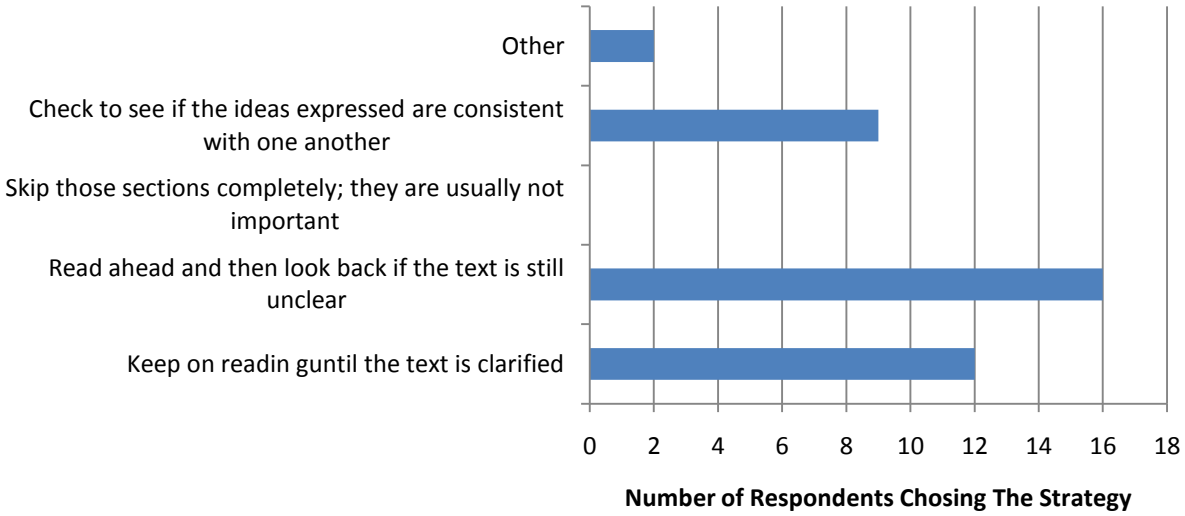
7. As you read a textbook, which of these do you do?



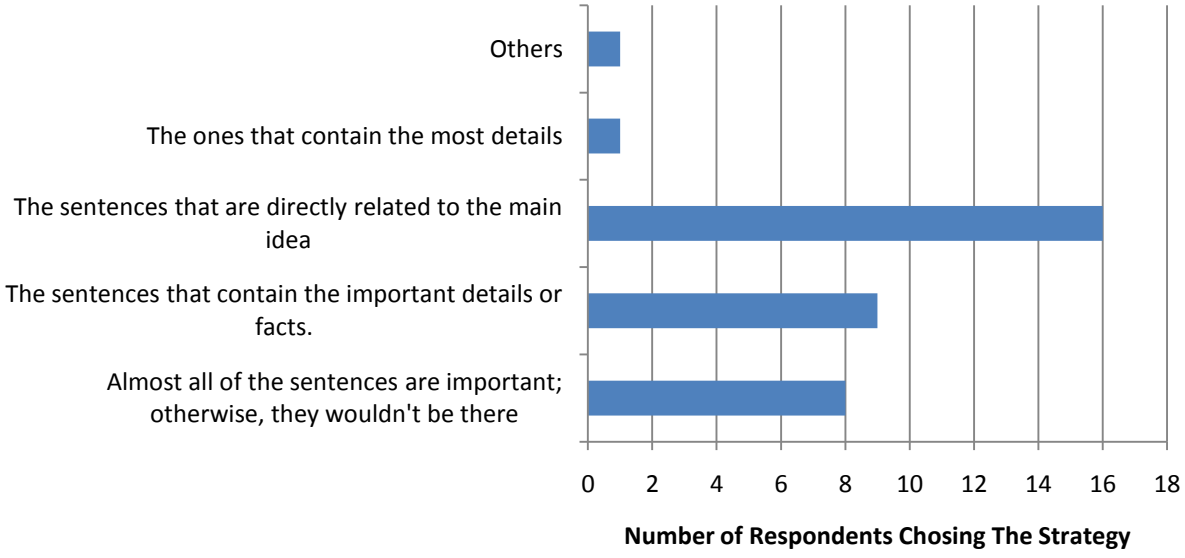
8. While you read, which of these are important?



9. When you come across a part of the text that is confusing, what do you do?



10. Which sentences are the most important in the chapter?



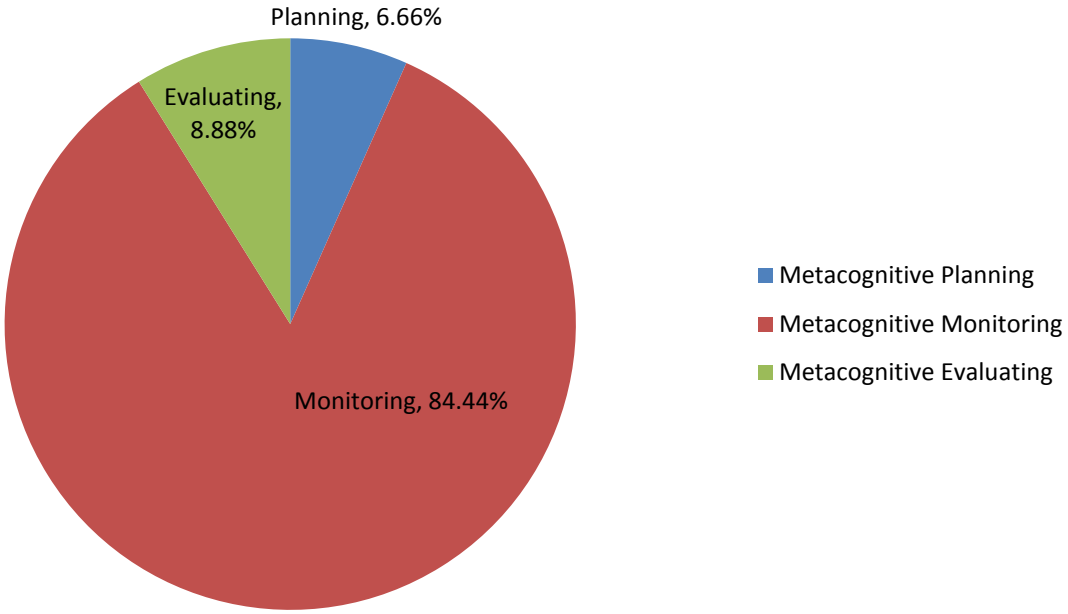
Appendix F

MCMS Data Analysis

Metacognitive use of reading strategies

	METACOGNITIVE FUNCTION			Overall Use	
	Plan	Monitor	Evaluate	Total number of uses per reading strategy	% of overall use
READING STRATEGIES					
Decoding	7	86	8	101	35.44%
Context Clues	1	33	4	38	13.33%
Skip Word(s)	0	5	1	6	2.11%
Previewing	3	5	1	9	3.16%
Inference/Cognate	0	22	0	22	7.72%
prediction	0	6	0	6	2.11%
Elaboration	5	31	2	38	13.33%
Self-Questioning	1	24	4	29	10.18%
Summarize	4	27	5	36	12.63%
Total number of reading strategies used per MC Function:	21	239	25	285	100.00%

Distribution of metacognitive strategies



Appendix G

Common European Framework of Reference for Languages (CEFR)

European language levels - Self Assessment Grid - Reading					
A1	**A2**	**B1**	**B2**	**C1**	**C2**
I can understand familiar names, words and very simple sentences, for example on notices and posters or in catalogues.	I can read very short, simple texts. I can find specific, predictable information in simple everyday material such as advertisements, prospectuses, menus and timetables and I can understand short simple personal letters.	I can understand texts that consist mainly of high frequency everyday or job-related language. I can understand the description of events, feelings and wishes in personal letters.	I can read articles and reports concerned with contemporary problems in which the writers adopt particular attitudes or viewpoints. I can understand contemporary literary prose.	I can understand long and complex factual and literary texts, appreciating distinctions of style. I can understand specialised articles and longer technical instructions, even when they do not relate to my field.	I can read with ease virtually all forms of the written language, including abstract, structurally or linguistically complex texts such as manuals, specialised articles and literary works.

Appendix H

University Research Documentation

NOTICE OF APPROVAL
EXEMPT REVIEW
DATE: January 22, 2010
TO: Brynn Leavitt
COPY: Michelle Bakerson, Education
FROM: Erika Zynda, Contracts & Grants Coodinator
Re: Protocol Entitled: How We Read (Between) the Lines
Protocol # 09108
Approval Date: January 21, 2010

NOTICE OF APPROVAL
AMENDMENT
EXEMPT REVIEW
February 4, 2010
TO: Brynn Leavitt
COPY: Michelle Bakerson, Education
FROM: Erika Zynda, Contracts & Grants Coordinator
Re: Protocol Entitled: How We Read (Between) the Lines
Protocol # 09108 Amendment #: 001
Original Approval Date: January 21, 2010
Amendment Approval Date: February 4, 2010

NOTICE OF APPROVAL
AMENDMENT
EXEMPT REVIEW
February 15, 2010
TO: Brynn Leavitt
COPY: Michelle Bakerson, Education
FROM: Erika Zynda, Contracts & Grants Coordinator
Re: Protocol Entitled: How We Read (Between) the Lines
Protocol # 09108 Amendment #: 002
Original Approval Date: January 21, 2010
Amendment Approval Date: February 15, 2010

Notre Dame Human Subjects
Institutional Review Board
PROTOCOL REVIEW

REVIEW DATE: 1-26-2010 Protocol No: 10-109

Full Committee x Expedited Review

Principal Investigator: Brynn Leavitt Department: IUSB
Michelle Bakerson

Protocol Title: How We Read (Between) the Lines

Recommendation:
- [ ] Exempt 45CFR 46.101(b)
- [x] Approved Effective until: 1-26-2011
- [ ] Deferred for additional information. See comments:
- [ ] Not approved. See comments:

COMMENTS: