

Meidal, J. Noticing and Grammatical Aspect in ESL (2008)

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This study explores grammar-cued processing patterns of 20 ELL university students while they are reading short narratives. The stories are designed to test whether aspect impacts causal inferencing and mental representations when situations are presented with textual highlighting. The verbal protocol method was used to capture noticing through short-term memory data, and a series of final written questions captured intake through long-term memory data. This capstone details the empirical efforts set forth to analyze short-term memory and long-term memory effects. We found that subjects noticed the difference between the aspectual forms on several linguistic levels. However, noticing did not seem to aid in converting aspectual input into intake.

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NOTICING AND GRAMMATICAL ASPECT IN ESL

by

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A capstone submitted in partial fulfillment of the requirements  
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## TABLE OF CONTENTS

List of Tables.....	v
List of Figures.....	vi
Chapter One: Introduction.....	1
Chapter Two: Literature Review.....	10
Communicative Language Teaching vs. Form-Focused Instruction.....	10
SLA and Noticing.....	16
Tense and Aspect.....	20
Reading Comprehension.....	25
Chapter Three: Methods.....	32
Verbal Protocol Method.....	32
Participants and Setting.....	33
Materials.....	35
Data Analysis.....	38

Chapter Four: Data Analysis.....	41
Short-term Memory.....	42
Long-term Memory.....	50
Chapter Five: Conclusion.....	60
Future Research.....	61
Shortcomings.....	64
References.....	66
Appendix A: Sixteen Short Narratives.....	72
Appendix B: Final Five Questions.....	80
Appendix C: Demographic Questions.....	81

## LIST OF TABLES

Table 1: Scary Trip to the Grandparents.....	28
Table 2: Scary Trip to the Grandparents.....	29
Table 3: Risks of Running Late.....	36
Table 4: Disappointing End of Day at the Office.....	42

## LIST OF FIGURES

Figure 1: Representation of Causal Network Structure for <i>Scary Trip to the Grandparents</i> .....	29
Figure 2: Verbal Protocol Data, Antecedent 1.....	44
Figure 3: Verbal Protocol Data, After Antecedent 1 but Before the Consequent.....	45
Figure 4: Verbal Protocol Data, At the Consequent.....	47
Figure 5: Final Written Question Data.....	51
Figure 6: Final Written Questions, Responses per Condition.....	52
Figure 7: Final Five Questions, Lexical Analysis.....	54

Figure 8: Final Five Questions, Morphological Analysis.....	56
Figure 9: Final Five Questions, Semantic Analysis.....	57
Figure 10: Final Five Questions, Pragmatic Analysis.....	58

## CHAPTER ONE: INTRODUCTION

Dewey (1938) “observes that [humans] tend to think in terms of ‘either ors’, but that in the realm of practice, one will realize that compromise is inevitable” (Nassaji, 1999, p. 386).

Ultimately, I believe this to be true. Even though there are two sides to every story—nature vs. nurture, evolution vs. creationism, form-focused instruction vs. communicative language teaching—a moment of compromise strikes each field. Which theory is right? My desire to obtain answers to questions such as this, specifically in

regards to form-focused instruction (FFI) and communicative language teaching (CLT), is what brought me to “noticing and grammatical aspect in ESL”. I wanted to explore whether or not noticing was in fact an effective compromise between the two approaches—specifically for teaching grammatical aspect.

The purpose of this study is to determine whether or not English language learners (ELLs) will notice grammatical aspectual forms and meanings in simple stories without explicitly being taught those forms. The aspectual forms (FFI) will be highlighted through color and font discrimination and presented contextually in short narratives (a form of CLT). The idea of empirically testing this combinatorial approach was extremely exciting for me, as I believe it is needed in the field of ESL. I also feel our research is vital because of the complex nature imperfective and perfective aspectual forms provide for ELL students (Andersen & Shirai, 1996). I believe strategies of highlighting could be a possible solution to establishing aspectual awareness in order to transfer input into intake.

Schmidt (1990) claims that noticing is *imperative* for converting input into intake, and that it is an essential piece for mastering a language. Other scholars feel similarly (Bardovi-Harlig, 2001; Bardovi-Harlig & Reynolds, 1995; Egi, 2004; Leow, 2001; Lopez-Ortega & Salaberry, 1998). Schmidt also argues that there is a strong need for more research in the field of noticing and SLA. He feels that the field as a whole has “undervalued” consciousness in second language teaching, simply because the research has not been done on *what* learners notice and *how*: “[I]ike behaviorists who assumed that their subjects left their mental facilities outside the laboratory door, we have assumed learner ignorance more often than we have attempted to investigate learner awareness” (Schmidt, 1990, p. 150). This gap in the current research is another reason I feel the present study is important.

As mentioned above, noticing is a combinatorial approach of form-focused instruction (FFI) and communicative language teaching (CLT). FFI is the argument that language learning occurs through a series of controlled rule-based practices (Lightbown & Spada, 1999, 2006; Nassaji, 1999). Teaching specific objectives becomes the primary focus where the instructor unravels language points explicitly. Some educators criticize this approach as “teaching to the test”, or as being unnatural (Lightbown & Spada, 1999). For example, if an instructor was teaching a lesson on *modals* and chose to use a FFI approach, s/he would explicitly teach the rules of modals without most likely contextualizing the language. Therefore, sometimes an unfortunate result of FFI is that the approach puts more emphasis on input rather than intake, which means that the importance lies more on what the student is learning versus acquiring.

Krashen’s (1982) Monitor Model is a five hypotheses approach to Second Language Acquisition (SLA). One of his well-known theories, *acquisition-learning hypothesis*, distinguishes learning from acquisition. It states that learning cannot be acquired. Acquisition occurs *unconsciously*. We attend only to the comprehensible elements we are exposed to in the target language. Krashen therefore believes that in order to acquire any non-native language, the process must happen naturally. Learning, then, occurs *consciously*: what one learns provides the sculpting tools for molding what has already been acquired unconsciously (Krashen, 1982). Many theorists disagree with Krashen, believing that language learning occurs through a combination of extraneous variables and methodologies—ones that transpire consciously *and* unconsciously

(Bardovi-Harlig, 2001; Bardovi-Harlig & Reynolds, 1995; Schmidt, 1990). Nevertheless, Krashen's hypotheses have grown quite popular in the SLA field. A major outcome of this popularity was the development of communicative language teaching (Lightbown & Spada, 1999, 2006).

Communicative language teaching (CLT) assesses and teaches language in its natural context (Basturkmen, Ellis, & Loewen, 2001; Lightbown & Spada, 1999, 2006; Parrish, 2004; Xiao-xia, 2006). It is not centered on language rules and rote memorization, but rather on meaning-based practices that are provided in communicative environments. The communicative learner *acquires* language creatively, spontaneously (Lightbown & Spada, 1999), and unconsciously (Krashen, 1982). For example, a CLT approach for teaching modals would involve simulating a context where modals are used, such as at a dinner party (e.g., polite requests: *Could you* please pass the salt, etc.), and then expect that students would learn modals naturally, without explicitly teaching them the rules.

My personal language learning experience demonstrates that both approaches are necessary. While living in Japan for a year, I found that a sole reliance on semantics or pragmatics was not enough for creating meaning. I needed both principles. For instance, *suimasen* and *gomenasai* technically mean "I am sorry" (Takahashi, 1998), but they can also mean "excuse me" (*suimasen* and *gomenasai*) and "thank you" (*suimasen*) given certain contexts. I also learned that the phrase *ohayo gozaimasu* (good morning) is truncated in everyday speech: native speakers only say *ohayo*. Similarly I discovered that

the “u” sound in phrases such as *Jonna desu* (My name is Jonna) is not pronounced. Not all of my language learning was done communicatively, however. I eventually sought out explicit instruction for Japanese grammar and other pragmatic nuances I felt I was missing by relying solely on a communicative-based framework.

My tutor taught me that Japanese is SOV (subject-object-verb), and that the morpheme *-ka* indicates a question when placed at the end of a verb—*toire wa doko desuka?* (Where is the toilet?). I also learned that Japanese count and non-count nouns are vast in their complexities, to the extent that I never fully learned them. The list goes on. These language learning experiences taught me that learners need *both* approaches (FFI and CLT) to fully understand and learn a language. As stated by Baars (1988):

Learning begins with the realization that something is to be learned, [it then] progresses through a series of stages that establish a context for understanding new material, and [thus] concludes with the new material fading out of consciousness as it becomes itself a part of the unconscious context that shapes the interpretation of future events. (p. 138)

My own personal linguistic discoveries, consciously and unconsciously, are what ultimately led me to “noticing in ESL”.

I became introduced to the noticing hypothesis in 2005. Andreas Schramm, my Introduction to Linguistics professor at Hamline University, asked me to be his Research Assistant for a project concerning “noticing and aspect.” At the time I was not aware of what noticing and aspect were, but the project intrigued me. Schramm’s objective was to

further previous research conducted on native speakers of English regarding memory activation—a phenomenon similar to noticing—but using non-native speakers (NNS). We were to give NNS short narrative texts while drawing their attention to specific grammatical forms. The project aligned perfectly with my own pedagogical interests. I therefore decided to explore the topic further and write my Masters thesis on noticing and grammatical aspect in ESL.

Aspect is somewhat of a recluse in grammar books. A main reason is because it is a semantic domain expressed morpho-syntactically. Therefore meaning is therefore denoted morphologically. However, morphemes in English are not always straightforward: contextual relevance is often needed to establish meaning. Take for example the isolated sentence: “Peter lived in Germany”. From one perspective this statement could mean that the act of ‘living’ is final, as the morpheme –ed indicates this finalization. Yet another perspective could also be that the act of ‘living’ is a *fact* rather than a completed action: Peter lived in Germany...*down the street from his brother, Joel*. The action has therefore *not* ended, and more context is needed for establishing meaning (Smith, 1986). Smith explains that if someone were to translate “Peter lived in Germany” into French this ambiguity would not take place: the statement would indeed mark finality. The above example thus illustrates how the English language does not always assume this obvious distinction.

Another reason aspect is a recluse in grammar books is because people often confuse it for tense. This is because both grammatical forms express *time* (Blyth, 1997):

---

**TIME**

/	\
<b>Tense</b>	<b>Aspect</b>
past, present, future	perfective, imperfective, perfect

---

Tense relates the *time of a situation being talked about* (the sentence itself: I ran in the rain) to an *external event* (when the sentence is uttered: today, tomorrow, two weeks ago, etc.) (Comrie, 1976). It is therefore *situation-external* (outside the sentence itself).

Aspect, however, does *not* relate the time of a situation to any other point in time; it views time *internally*. In other words, aspect views time *inside* the sentence and is not concerned with when the sentence was uttered (Comrie, 1976). Both grammatical forms (tense and aspect) affect how a listener understands or interprets what is being said, however. They also affect how a reader comprehends a text.

Readers interpret and understand texts because of an array of variables—cultural relevance, personal values, prior knowledge (Malik, 1990); fluency and efficiency in processing the language (Birdsong, 2006); linguistic background, etc. All of these factors help create mental representations from which the reader draws meaning. For instance, content lexical items are very powerful for NNS, as they tend to hold more meaning (Bardovi-Harlig, 2000). Take the words *jumped* and *jumping* versus *elephant* and *dog*. Elephant and dog elicit more vibrant and concrete images for ELL students than do the

morphemes –ed and –ing in *jumped* and *jumping*. This is because the image of “jump” stays the same in both examples; only the time of the action changes (Bardovi-Harlig, 2000). This is not to say that grammatical markers are not powerful: “[they still] must be attended to in order for the interlanguage system to improve” (Schramm, 2002). It is simply that grammatical markers are more subtle and can therefore cause ELL students more difficulty. This is why educators should spend a good deal of time teaching aspect. A contextual way to do so is through narratives.

Aspect plays a special role in narrative development, as it assists in creating “discourse sequencing” (Hopper, 1982). Discourse sequencing is founded on backgrounded and foregrounded event lines that force readers to make inferences about the text. In regards to aspect, the perfective form foregrounds events by creating linear mental representations that are used to establish the chronology of events within a narrative (Blyth, 1997): it helps advance the plot (Hopper, 1982). The imperfective form creates non-linear mental representations because it is not “temporally ordered” (Blyth, 1997). It therefore results in backgrounded event lines that force a reader to make assumptions (Hopper, 1982). The perfective and imperfective aspectual forms not only affect pragmatic representations, but they also aid in the processing of semantic information. For example:

- (1) Pat ate the apple.
- (2) Pat was eating the apple.

Both sentences provide an image of “Pat eating an apple”; but due to grammatical aspect, the information is processed differently: sentence (1) denotes a completed action, whereas sentence (2) denotes an outcome left unknown.

As for our methods, verbal protocols were used to collect our data. Subjects were instructed to “think-aloud” as they read each story while their responses were recorded. This method allows for a closer interpretation of what occurs during the reading process in short-term memory (STM). The verbal protocol method is an effective way to measure:

- (1) The information readers attend to.
- (2) What information they are grasping.
- (3) At what point(s) during the story they are making inferences (Egi, 2004; Ericsson & Simon, 1980).

Verbal protocols are also useful for measuring a learner’s noticing capabilities (Egi, 2004), which lies at the heart of this study: will ELL students notice the aspectual forms and therefore process them for meaning? I hypothesize that they will.

I will now provide more detail about chapter one in the literature review. I will explain form-focused instruction (FFI) and communicative language teaching (CLT) in more depth, discuss what noticing is and why it is useful for language learning, provide a detailed account of aspect, and illustrate how aspect affects reading comprehension. In chapter three I will describe the verbal protocol method and how it was used to collect STM data. I will also discuss how long-term memory (LTM) data was collected, and how

both STM and LTM results will help determine whether or not subjects noticed and processed aspect for meaning. The results of the verbal protocols and written statements will be discussed and analyzed in chapter four. The present study is seeking to discover a significant difference between the frequency of backward references made to the critical sentence and the aspectual situation provided. We predict that if subjects are processing aspect accurately, more backward references will be made in imperfective situations. Implications for future research will be discussed in chapter five.

## CHAPTER TWO: LITERATURE REVIEW

In this chapter I will explain the history of form-focused instruction (FFI) and communicative language teaching (CLT), as well as demonstrate why the blending of approaches is important for language learning. Our research seeks to analyze this methodological combination by directly drawing our readers' attention to aspectual forms via color and font discrimination (FFI) in the context of short narratives (CLT). We want to explore whether or not the highlighting aids in the processing of aspect, in hope of discovering that triggering noticing is an effective method for teaching aspect. I will also discuss what noticing is and why it is useful and important for learning languages. I will then provide a detailed account of aspect and how it affects reading comprehension.

### Communicative Language Teaching vs. Form-Focused Instruction

For most of the twentieth century, FFI dominated second-language pedagogy (Ellis, no date; Xiao-xia, 2006). As in most cases when any practice, ideology, or belief-system saturates a field, professionals tend to "opt out" or explore other options. Hence, the birth of CLT sprung from the over-saturation of the belief and use of FFI (Lightbown & Spada, 1999, 2006; Parrish, 2004; Xiao-xia, 2006). It is now, and within the last decade or so, that educators have started to feel that something was missing in language pedagogy, i.e., there were beliefs that attention to grammar and form had been eradicated

with the introduction and influence of CLT (Nassaji, 2000; Xiao-xia, 2006). The SLA field is now opting towards a middle and blended approach (Xiao-xia, 2006), which is the method our research explores. In order to fully grasp the nature of this pedagogical evolution it is important to understand why FFI became necessary, why CLT evolved from it, and why the blending of approaches is important today.

Behaviorism (Skinner, 1957) is the birth parent to FFI. It is a belief that theorizes all people learn their behaviors, mannerisms, and ways of accomplishing life-tasks through a stimulus-and-response approach. Based on behaviorism, the explanation for language learning is that humans mimic, repeat, and memorize language. One place where behaviorism made a specific contribution to language instruction was through the development of the Audiolingual Method (ALM).

ALM was developed in the 1950's as a way for teaching foreign languages rapidly to military personnel. It proved quite effective with its heavy reliance on drills, aural-oral procedures, and memorized dialogues (Parrish, 2004; Xiao-xia, 2006). However, because of its sole focus on grammar and the insistence that language acquisition happens in a linear fashion, i.e., phoneme to morpheme to word to phrase to sentence to text (Xiao-xia, 2006), ALM fell short when it mainstreamed into the public school and university systems: it did not produce competent foreign language users (Parrish, 2004). A main reason is because languages are not predictable, despite the grammatical formulas and dialogical sequences learners memorize. This same outcome

happened with FFI when it was used exclusively. However, it must be noted this approach is still widely practiced today.

The FFI approach is similar in nature to ALM. It maintains that all language learning occurs through a series of controlled and rule-based practices (Basturkmen, Ellis, & Loewen, 2001; Ellis, no date; Lightbown & Spada, 1999, 2006; Nassaji, 1999). As all language learners know, however, languages are not predictable. In reaction to many anti-ALM/FFI sentiments, Chomsky developed the Universal Grammar (UG) hypothesis, which continued the evolution of language pedagogy and theory (Parrish, 2004).

Chomsky argues that language is innate to all humans and that it is not behavioral. The UG hypothesis states that *all* humans are preprogrammed for language development—just as we innately learn to crawl and walk, so is our innate ability for language (Lightbown & Spada, 1999, 2006). UG therefore prohibits the learning of ungrammatical structures in children. For example, a native English speaking three-year old would never say, “I broccoli eated” or “Store mommy went”. S/he *might* say, “I eated broccoli” or “Mommy went store”, but s/he would never say the former (Lightbown & Spada, 1999, 2006). This is because English syntax is SVO (subject-verb-object), and native speakers inherently know this due to UG.

Krashen (1982) took this linguistic evolution a step further in the 1970s by introducing the Monitor Model. The Monitor Model is based on five hypotheses for second language acquisition: *acquisition-learning*, *monitor*, *natural order*, *input*, and

*affective filter* (Lightbown & Spada, 1999, 2006). The *acquisition-learning hypothesis* states that people “acquire” language as they are exposed to comprehensible input (i.e., no attention to the language is required) and “learn” language through conscious attention. The *monitor hypothesis* states that the learned language serves as a “monitor” for the acquired language, making adjustments and changes where necessary. The *natural order hypothesis* is founded on the belief that second language acquisition develops in predictable ways, much like first language acquisition. The *input hypothesis* maintains that language acquisition manifests when language is understandable and contains  $i + 1$  (the ‘i’ reflects the acquired language and the ‘1’ reflects the language that is *one step* above the ‘i’). This theory therefore suggests that language exposure needs to be comprehensible and challenging in order for acquisition to fully take place. Finally, the *affective-filter hypothesis* suggests that psychological barriers could prevent a person from learning Spanish. For instance, if a learner is depressed, anxious, bored, etc. while learning a language, s/he might therefore *filter out* the input and make language acquisition impossible (Lightbown & Spada, 1999, 2006). Even though Krashen’s theories have influenced the SLA field, a major critique is that his theories have never been empirically tested. Nevertheless, Krashen’s hypotheses came at a time when second language teaching was moving away from form-focused instruction to approaches that emphasized communication and meaning-making. Thus, the Monitor Model was a major contributor to the induction of CLT (Lightbown & Spada, 1999, 2006).

Communicative language teaching (CLT) is student-centered and meaning-focused (Basturkmen, Ellis, & Loewen, 2001; Parrish, 2004; Lightbown & Spada, 1999, 2006; Xiao-xia, 2006). It is:

- (1) Observable
- (2) Meaning-centered in discourse
- (3) Incidental
- (4) Transitory
- (5) Focuses on a variety of linguistic forms within one lesson (Long, 1991, as cited in Basturkmen et al., 2001, p. 412).

CLT is also heavily reliant on student-student participation and interaction, as the vehicle for the lesson *is* the students. Therefore the main goal of CLT lesson plans is practical and functional language development (Basturkmen, et al., 2001). Take for example the act of “ordering at a restaurant.” This activity is highly communicative in concept but specific grammatical functions (e.g., modals) exist to support this pragmatic modality—*I would like to order a hamburger; Could you please bring me some salt.* In a CLT classroom, modals would not be taught explicitly, because practitioners feel that language learning happens naturally.

On an intuitive level, the problem with CLT is not enigmatic. As several theorists state (Hedge, 2000; Long, 1988; Skehan, 1996, 1998; Taron & Yule, 1989; Willis, 1996), a sole and strict focus on fluency can suffocate the need for linguistic accuracy and potentially stunt the learner’s interlanguage system. A strict CLT approach also does not

ensure that learners *notice* or *pay attention* to the language they are producing—a strategy proven quite effective for language learners (Bardovi-Harlig & Reynolds, 1995; Ellis, no date; Egi, 2004; Leow, 2001; Lopez-Ortega & Salaberry, 1998; Schmidt, 1990). Therefore it seems that some educators have overstated the importance of speech fluency at the cost of formal accuracy and pragmatic appropriateness (Xiao-xia, 2006). This is how the blending of the two approaches (CLT and FFI) was born.

Recent literature suggests that FFI and CLT need not be mutually exclusive (Ellis, no date; Nassaji, 1999, 2000). In fact, most teachers value the practice of blending these approaches because it elicits, enhances, and combines the grammatical and sociolinguistic aspects of language (Genesee, 1987; Lightbown, 1992; Long, 1991; Nassaji, 1999; Swain, 1985). Many empirical studies have suggested these same notions as well.

Harley and Swain (1984) and Swain (1995) discovered that even though their French immersion students were being exposed to “meaningful language”, they still struggled with certain grammatical points. Therefore, more FFI was introduced (Nassaji, 1999, 2000). Similarly, another study demonstrated the significance of using both meaning-focused and form-focused approaches in language classrooms by examining a variety of FFI and CLT classroom activities and learner outcomes (Allen, Swain, Harley, & Cummins, 1990). Correlational analyses showed that *both* meaning-focused and form-focused approaches were useful for language learning (Allen, et al., 1990; de Graaff, 1997; DeKeyser, 1994, 1995; Robinson, 1996).

The general conclusion, then, is in support of the combination of implicit and explicit practices by providing context and form-focused instruction simultaneously. The stories we created for our research target this blend of approaches: we direct our readers' attention to grammatical aspect through the use of color and font-discrimination (a form of FFI), while also providing a framework for the grammar pragmatically (CLT), i.e., the stories themselves. Basturkmen et al. (2001) believe that if you operate under the theological umbrella of "attention to form" in a meaning-centered activity, you will create a method that is constructive and practical for ELL students. We believe that our approach of triggering noticing in a pragmatic context is one such vehicle.

Also, most SLA research on tense and lexical-acquisition has been conducted on uninstructed learners (Andersen, 1991, as cited in Bardovi-Harlig & Reynolds, 1995). We feel that by juxtaposing this prior research with noticing, our approach will be significant: "learners [need to] notice a difference between the input and their own production in order to revise their interlanguage rules" (Schmidt, 1990, 1992, as stated in Bardovi-Harlig & Reynolds, 1995, p. 122). Therefore, once the learner *notices* the correct input form(s), expected gains of proper usage will be made (Bardovi-Harlig & Reynolds, 1995). This is why we feel our research on noticing in ESL will benefit the ESL field.

#### SLA and Noticing

Most second language acquisition (SLA) theories suggest that some form of noticing or awareness is critical for second language (L2) learning (Bardovi-Harlig & Reynolds, 1995; Egi, 2004; Ellis, no date; Leow, 2001; Lopez-Ortega & Salaberry, 1998;

Schmidt, 1990). The reasons vary, but most noticing supporters argue that the approach helps convert input into intake (Bardovi-Harlig & Reynolds, 1995; Lopez-Ortega & Salaberry, 1998; Schmidt, 1990). It is therefore essential for learners to notice the differences between input and the language they actually produce; in doing so, their interlanguage rules can be adjusted (Bardovi-Harlig & Reynolds, 1995).

Schmidt (1990) claims that subliminal unconscious learning is impossible: “intake is what learners consciously notice” (p. 149). Noticing can be applied to any form of teaching, Schmidt argues, and can be included in a wide range of SLA theoretical camps. He believes that it is highly implausible for “incidental learning” to occur with adult L2 speakers of English. Instead, the connection between attention and awareness is necessary for linking the individual differences in language learning to instructional formalities. By doing so, a language learner will find the target language more salient and manageable. Explicit instruction and conscious attention to language is therefore crucial and necessary for accurate L2 productions (Bardovi-Harlig, 1995; Lopez-Ortega & Salaberry, 1998; Schmidt, 1990). Schmidt (1990) and others (Bowers, 1984; Baars, 1986) have consequently developed a detailed and layered account of what constitutes conscious and unconscious attention.

Schmidt’s (1990) model explores three different kinds of consciousness: *consciousness as awareness*, *consciousness as intention*, and *consciousness as knowledge*. *Consciousness as awareness* has three degrees of awareness:

- (1) Perception

- (2) Noticing
- (3) Understanding

*Perception* assumes that language learners cognitively arrange “external events” (input) if they choose to (Baars, 1986, as stated in Schmidt, 1990). *Noticing*, in contrast, is more direct and specific. Schmidt uses Bowers’ (1984) example of reading to highlight this difference between perception and noticing:

We are normally aware of (notice) the content of what we are reading, rather than the syntactic peculiarities of the writer’s style, the style of type in which the text is set, music playing on the radio in the next room, or background noise outside a window. However, we still perceive these competing stimuli and may pay attention to them if we choose. (Schmidt, 1990, p. 132)

Finally, *understanding* is the pragmatic degree of consciousness as awareness: it addresses meaning-making—how the learner creates meaning from the language they have perceived and noticed. A learner’s understanding is also reflective of prior experiences.

The second term in Schmidt’s model is *consciousness as intention*. This term can be viewed as *passive awareness* and/or *active intent*. In other words, the issue is what does the learner *choose* to pay attention to. Schmidt asserts that this distinction is important because the two terms are not mutually exclusive: we are often aware of things we do not intend to notice. For example, conscious and unconscious linguistic processing occur everyday. People learn linguistic input while driving, listening to the radio,

watching TV, taking a walk, etc. without ever fully attending to the input. However, when *consciousness* or *noticing* occur simultaneously with passive awareness, Schmidt feels that the input can join with other cognitive features that make language learning much more powerful and accessible. This point is especially important to our research question: can we turn passive aspectual awareness into active intent?

The third term in Schmidt's model is *consciousness as knowledge*. This term distinguishes attention by *implicit* and *explicit* knowledge. Implicit knowledge is the rules and principles known inherently to a language user. Explicit knowledge, in contrast, is the language rules that are learned specifically. Schmidt (1990) and others (Gregg, 1984; Odlin, 1986) argue that implicit knowledge is more complex when dealing with L2. They assert that if a learner has the meta-language (and meta-cognition) to analyze their L2 learning on abstract terms, that learner has implicit L2 knowledge. This is because second language learners will never fully understand the rules and pragmatics of their L2 unless it was learned simultaneously with their first language (L1), as in the case of true bilinguals. The difference between implicit and explicit knowledge, then, becomes less specific in SLA: not every learner possesses 'implicit' ability even when taught linguistic rules explicitly. Either this is because they are not literate in their L1 (and therefore probably lack formal education), or they *are* literate in their L1 but still do not possess the meta-language to discuss linguistic rules and principles. In any case it is important for educators to be aware and patient with their ELL students, as even those who are highly educated may still struggle with *consciousness as knowledge*.

A study conducted by Bardovi-Harlig and Reynolds (2001) explores noticing in the classroom. 16 ELL students were exposed to noticing through production exercise techniques. The study explored the acquisition of the present perfect in hopes of investigating the larger scope of tense-aspect instruction and used extended observation as a tool for collecting data. The results showed that all 16 ELL students improved their use of the present perfect; however, the *range* of use was vast as well as the *rate* of acquisition (Bardovi-Harlig & Reynolds, 2001). This raises the question, *why do certain students use aspect more than others?* There are a variety of reasons (e.g., affect, motivation, socio-economics, age, etc.) that can be attributed to such range of use. The largest unknown factor, however, is instruction (Blyth, 1997). Our research hopes to address this problem with noticing.

#### Tense and Aspect

It is important to recognize that both tense and aspect express time and temporality. They just do so in subtly different ways. Tense is most commonly thought of in terms of *past*, *present*, and *future*. Specifically, it relates the *time of a situation being talked about* (i.e., the sentence itself: “I walked to the store”) to an *external event* (i.e., the “speech time”) (Comrie, 1976; Klein, 1994). Aspect, however, does not relate the time of a situation to any external point in time. It is *situation-internal*: it looks at the “internal temporal constituency of the one situation” (Comrie 1976, p. 5). In other words, aspect views time of a situation in relation to the situation times being talked about; not *when* the sentence was uttered (Klein, 1994).

To express the differences more concretely, reference the sentences below:

- (1) Pat ate the apple.
- (2) Pat was eating the apple.

Both sentences mark the grammatical expression “past tense”—sentence (1) by the irregular past tense conjugation of ‘to eat’ (ate), and sentence (2) by the past tense conjugation of the copula *be* (was). When these sentences are analyzed in the tense domain, it can be understood that the act of eating in both cases occurred sometime *before* the time of utterance. Of course, without contextual evidence it is difficult to determine when the act of eating actually occurred. (Time adverbials such as, *at two o’clock*, help locate this situation in time). Nevertheless, the past sense of time is assumed and understood (Schramm, 1998). When the above sentences are analyzed in the aspect domain, two new accounts of inherent temporal constituency of ‘eating the apple’ emerge. The first sentence, *Pat ate the apple*, presents the action in its entirety. The action is bounded (complete). Verb forms expressing this meaning are known as the *perfective* aspect, which is also morphologically known as the Simple Past. The second sentence, *Pat was eating the apple*, expresses a different temporal constituency: the action of ‘eating’ is unbounded (incomplete), as only part of eating the apple is asserted. Verb forms expressing this meaning are known as the *imperfective aspect*, which is also known as Past Progressive (Bardovi-Harlig, 2000; Blyth, 1997; Celce-Murcia & Larsen-Freeman, 1999; Hopper, 1982; Klein, 1994; Masterman, 1962; Schramm, 1998; Smith, 1986). For the purposes of this research, only perfective and imperfective aspects are

considered, as those forms are more commonly used when writing narratives (Schramm, 1998).

The domain of aspect itself is also interesting pedagogically due to its complex nature and comprehensive reliance on sentence level and pragmatic processing. Because of these reasons, teaching aspect, and likewise learning aspect, are very challenging. Blyth (1997) provides a preterit and imperfect teaching example from one of his French classes that addresses this instructional problem: *Le roi a régné pendant soixante ans* (The king reigned for sixty years) and *A huit heures, j'étais dans mon bureau* (At eight o'clock, I was in my office). Blyth contends that often times students find themselves confused with the first sentence—“[W]hy [was] an event that continued for sixty years...encoded in the preterit?” (p. 54). Similarly, the second sentence poses a problem for his students as well—How can the *imperfect*, a grammar point that is *supposed* to not have “any reference to an exact moment of time”, suggest just the opposite with the adverbial phrase, “at eight o'clock” (p. 54).

This same confusion holds true for Spanish, English, and a variety of other languages. This is because grammar rules are loose and inconsistent with what real language demonstrates (Blyth, 1997). Hence, certain languages do not use the same aspectual form (if at all) as other languages to describe the same feeling, action, or state (Smith, 1986). For example, in English we would say, “Peter was *washing* the dishes”, but in German people would say, “Peter was *about to* wash the dishes.” German does not require grammatical morphemes and does not make them explicit by default; however,

the German language *can* make the distinction if needed (Schramm, personal communication). Temporal meaning is therefore expressed in other ways—tones, lexicon, etc. (Comrie, 1976; Klein, 1994; Schramm, 1998; Smith, 1986). Therefore, it is extremely useful for educators to have a working knowledge of their students' L1s, so they can better instruct, diagnose, predict, and anticipate future problems.

Aspect consists of two elements: *situation type* and *viewpoint* (Comrie, 1976; Smith, 1997). Situation type is expressed largely through lexical morphemes (verbs, arguments, and adverbials) and is therefore referred to as *lexical aspect*. Viewpoint functions much like “the lens of a camera, making objects visible to the receiver” (Smith, 1991, p. 91). It is expressed through grammatical morphemes, such as affixes (–ed or –ing) or free morphemes like *was*. Thus it is commonly called *morphological aspect*, which is the interest of this study (Smith, 1991).

Most speakers choose a situation type based on their own experiences and knowledge in order to convey their situation and viewpoint in a context that is best suited for the speaker and listener (Smith, 1986). It must be noted that even though situation types and viewpoints are used in conjunction with each other, viewpoints *must be* analyzed independently (Schramm, 1998). For instance:

- (1) Pat ate the apple.
- (2) Pat was eating the apple.

Both sentences have the same situation type (eat the apple) but their viewpoints are different. Sentence (1) is written in the perfective, establishing a viewpoint that is

finalized and an outcome that is understood. Sentence (2) is written in the imperfective, establishing a viewpoint that is incomplete and an outcome that is not necessarily understood to have been reached.

One can distinguish Situation Types into four classes—*States*, *Activities*, *Accomplishments*, and *Achievements* (Ryle, 1949; Vendler, 1957). They are distinguished by three main properties—*dynamic*, *durative*, and *telic* (Bardovi-Harlig & Reynolds, 1995). The situation types of interest in this study are Accomplishments.

Accomplishments have a goal and an endpoint, but they assert the process phase as well as the end point. This is done through adverbs of duration: “She was running the race *for two hours*” (Schramm, personal communication). Our research seeks to analyze the processing of such endpoints through inferencing. For example:

- (1) Shelley passed the pickup.
- (2) Shelley was passing the pickup.

Both sentences create a different inferencing-platform. The end point for Sentence (1) is understood, whereas the end point for sentence (2) is *not* necessarily understood.

Therefore different textual interpretations result. These differences are crucial for checking whether a reader notices and understands the aspectual forms in the short narratives (Schramm, 2002). Conventionally, narratives indicate aspectual choice to a degree of causality between situations (Schramm, 1998). This is how aspect affects reading comprehension.

Reading comprehension can be seen as a problem-solving task as it forces a reader to determine the degree of causality between related textual events. One factor influencing causal inferencing is aspect: it generates causal links of different strength between narrative events, which in turn are integrated into mental representations (Boogaart, 1993, 1995; Schramm, 1996; Smith, 1986). If we can measure whether readers process aspect for comprehension, then we believe this will aid in determining whether readers notice the aspectual forms and process them accurately. I will discuss the nature of aspect, causality, and their effect on reading comprehension in the next section.

### Reading Comprehension

Reading comprehension is limited by the human information processing system. A reader's short-term memory (STM) is limited by the amount of information it can store. Metaphorically this means that STM becomes a "bottleneck" during processing, with many different contenders for this limited attention (Schramm, 1998; Schramm, 2002). If an antecedent is *not* followed by a consequent, then the information that is unbounded is stored in long-term memory (LTM). If an antecedent is followed by a consequent, then the information is also stored in LTM. Our research is interested in the effect aspect has on causal inferencing in both STM and LTM.

The most important factor concerning causal relationships between situations and events is how causally dependent the textual situations are. Depending on A) the number of causal connections readers make and B) whether the reader is on a causal path toward connecting a text's opening to its final outcome, it is believed that events will be

remembered better (Fletcher, 1981; Fletcher & Bloom, 1988; Fletcher, Hummel, & Marsolek, 1990; Trabasso & van den Broek, 1985; van den Broek, 1988). The criteria for determining when and how a causal relationship occurs is based on philosophical and legal theories (van den Broek, 1990).

The philosophical and legal theories express causal relativity in four ways:

- (1) *Temporal priority* – a cause can never come after a consequence.
- (2) *Operativity* – “a cause is active when [a] consequence occurs.” (p. 424)
- (3) *Necessity of the circumstances* – if the cause never happens, then the consequence would not exist.
- (4) *Sufficiency in the circumstances* – if the cause occurs, then so will the consequence. (van den Broek, 1990)

If all four principles are met, then it is likely that a subject will judge causal relationships as high (Trabasso, van den Broek, & Suh, 1989; van den Broek, 1990). However, the loss of temporal priority affects the strength of causal relationships more than the loss of sufficiency or necessity (van den Broek, 1990, p. 427). Based on these four principles, van den Broek (1990) established the Causal Inference Maker (CIM).

CIM allows one to better understand the conceptual and procedural constraints occurring throughout the inferential process. CIM predicts:

- (1) Under what conditions the initiation of the inferences begin.
- (2) What types of inferences will be made.

- (3) What content-related constraints on the inferences will be (van den Broek, 1990, p. 424).

There are two types of inferences in CIM: backward and forward. Backward inferences connect main or “focal” events to past events; forward inferences generate assumptions and expectations about the text (van den Broek, 1990). In order for both types of inferences to transpire, the following constraints must be met: all four criteria (temporal priority, operativity, necessity, and sufficiency) must occur, and all of the causal information must be active in STM. For example, in the present research all of the narratives include a final question at the end of each story that prompts backward inferencing. (See Table 1 below.)

We predict that when the final question is presented in imperfective situations (*was passing*) readers will more likely refer back to ‘the pickup’ and ‘the deer’. In perfective situations, we hypothesize that *if* the reader notices and processes the perfective form accurately (**PASSED**), ‘the pickup’ will be de-emphasized and fewer backward inferences to it will be made.

Table 1

*Scary Trip to the Grandparents*

- 
- (1) Shelly was visiting her grandparents in Northern Minnesota.
  - (2) It was a beautiful drive, the narrow two-lane road lined with trees, the leaves beginning to turn.
  - (3) The road was empty except for this slow poke in front of her.
  - (4) Impatiently, she *was passing* / **PASSED** the pickup.
  - (5) Unexpectedly, a deer came charging out of the woods, forcing her to turn the steering wheel to the right.
  - (6) Within split seconds, several thoughts raced through her head.
  - (7) The car belonged to the company her dad works for.
  - (8) Would she get in trouble for taking it without asking?
  - (9) Would he punish her by not letting her use his car again?
  - (10) She felt a strong bump.

*Final Question:* Why did Shelley feel a strong bump?

---

Discourse sequencing is founded on backgrounded and foregrounded event lines. Perfective aspect is bounded. This means perfective aspect creates linear mental representations because it is used to establish chronological events within a narrative (A > B > C). It is also seen as more of the “spinal cord” for plot development (Blyth, 1997) due to its establishing on foregrounded event lines, as it helps advance the plot along (Hopper, 1982). Conversely, the imperfective aspect creates non-linear mental representations because it is *not* “temporally ordered” (Blyth, 1997). It therefore relies more on backgrounded event lines (A > B and/or C) that force the reader to make assumptions (Hopper, 1982).

The narratives in this study were written in order to test two constraints:

- (1) The correlation between a situation's boundedness and the likelihood that the situation will remain in focus to be used for causal inferencing.
- (2) The correlation between a situation's boundedness and the likelihood that the situation will be incorporated into the mental representation of a text.

(Schramm, 1998, p. 70)

Contrary to conventional discourse sequencing, the narratives here were designed to test whether aspect impacts causal inferencing and mental representations *more* when unbounded imperfective situations are presented than bounded situations (Schramm, 1998). Table 2 and Figure 1 illustrate this point graphically:

Table 2

*Scary Trip to the Grandparents*

- 
- (1) Shelley was visiting her grandparents in Northern Minnesota.
  - (2) It was a beautiful drive,
  - (3) the narrow two-lane road lined with trees,
  - (4) the leaves beginning to turn.
  - (5) The road was empty except for this slow poke in front of her.
  - (6) Impatiently, she *was passing* / **PASSED** the pickup.
  - (7) Unexpectedly, a deer came charging out of the woods
  - (8) forcing her to turn the steering wheel to the right.
  - (9) She felt a strong bump.
- 

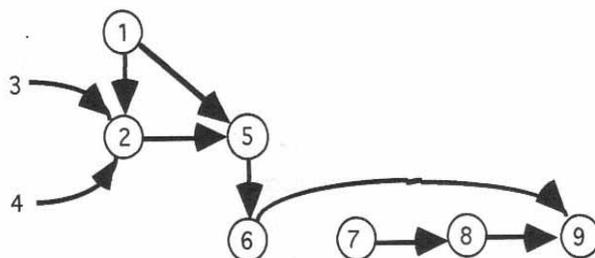


Figure 1: Representation of Causal Network Structure for “Scary Trip to the Grandparents” (Schramm, 1998, p. 10)

Causality is the strongest factor impacting a story’s coherence and how well it is remembered (Taylor & Tversky, 1997). Events that are on the causal chain and are connected through multiple causal links with other events become more central in the causal network. The above network of causal relationships demonstrates that when the number of causal relationships increase, so does “memorability” and regarded importance of situations (Schramm, 1998). However, a causal network only characterizes an estimation of a reader’s mental representation: s/he may infer *some* of the relationships provided or none at all. This is because the human information processing system has limitations.

It is inarguable that the human mind is complex and unpredictable. Even though we know aspect converts temporally and causally related textual events into mental representations, we do not know, nor can we fully predict, what those mental representations will be (Schramm, 1998). We believe, however, that by investigating *how* non-native readers process information for comprehension, we will also uncover whether these readers can *notice* and *process* aspect accurately. We support the noticing hypothesis, as it complies with our belief that combining implicit and explicit practices (CLT and FFI) should be combined. We also believe that we have devised a method for capturing data to support the noticing hypothesis. We maintain that once a learner can notice the correct input (textually or otherwise) expected gains of proper usage will be

made (Bardovi-Harlig & Reynolds, 1995). This is the ultimate goal of our research—to have ELL students understand, process, and produce aspect accurately.

The next chapter will discuss the methods and materials used to collect our STM and LTM data. It will also describe the setting and participants in more detail.

## CHAPTER THREE: METHODS

In this chapter I will discuss the verbal protocol method and why we chose it for our data collection process. I will then provide a detailed account of our participant population, setting, and materials. I will also explain the data points analyzed and how they provide insight about our research question: *will noticing aid in the processing of aspectual form for meaning?*

### Verbal Protocol Method

The verbal protocol method was chosen because it is a solid and valid determinant for measuring a learner's noticing capabilities (Egi, 2004). There are two ways for gathering data for verbal protocols: *concurrently* and *retrospectively*. Concurrent verbal protocols require participants to verbalize their thoughts *during* a task, whereas retrospective verbal protocols require participants to verbalize their thoughts *after* a task (Egi, 2004; Ericsson & Simon, 1980). We used verbal protocols for concurrent data gathering to ensure the accuracy and validity of the data collected. Egi (2004) and Schmidt (1990) suggest that researchers request their subjects to attend to available and immediate information, allowing for a firmer snapshot of short-term memory. This is why we chose the concurrent verbal protocol procedure.

Our research tested the effect aspect has on causal inferencing in both short-term memory (STM) and long-term memory (LTM). The verbal protocol method accesses

STM, allowing insights into whether subjects *noticed* aspect. The final written question at the end of each story accesses LTM which allowed us to test whether noticed aspectual input becomes intake. Our subjects were asked to verbalize their thoughts during the entire reading process while being recorded. The participants wrote their responses to the final question in order to gather concrete LTM data.

The verbal protocol instructions were given prior to performing the reading task—not during—so minimal prompting was supplied. By doing so, true and natural STM insight can occur. We also gave our participants two practice situations. The first required a “think aloud” recall of the number of windows in their apartments or houses (e.g., “When you walk in my door, there are two windows to the left and one straight ahead”). This allowed subjects to familiarize themselves with the “think aloud” process. The second situation involved “thinking aloud” while reading a demo story formatted exactly like the 16 stories to be read in the experiment. This allowed subjects to become accustomed to the experimental format. The sentences were parsed out page-by-page, and the final question had to be written. This also gave us an opportunity to offer feedback and make adjustments before collecting the data.

#### Participants and Setting

Twenty English Language Learner (ELL) students (8 males, 12 females) at a large research university in the Upper Midwest participated in this study. Three subjects were excluded from our total population because they turned out to be bilingual. All participants were high-proficiency non-native speakers of English, as they all took the TOEFL test for university admittance (a score of at least 500 must be met). Participants

were recruited from General Psychology classes by offering 3 Research Experience Program (REP) points or \$15. The Research Experience Program provides extra credit to students who are enrolled in a variety of Psychology courses. Through the REP, students learn more about the field of psychology by actively participating in research.

The research was conducted in a room with one table and two chairs, one chair for the subject and the researcher. The materials consisted of 16 paper packet stories. Participants wrote their answers with pencils. A tape recorder and microphone were used to record verbal protocols. The entire data collection process took about one to two hours. Time was determinant on the length of the subjects' comments: some said a lot, while others uttered only a sentence.

When participants arrived, they immediately signed the consent form and filled out a series of demographic questions. The demographic questions are included in Appendix C (p. 82). Participants had 12 different first languages (Kazakh/Russian, Korean, French, Cambodian/Khmer, Chinese, Gujarati, Indonesian, Lebanese, Pashto, Portuguese, Somali, and Spanish), and they started learning English anywhere from three-years old to fifteen-years old; thus, some participants had a lot of formal English instruction, whereas others did not. Their length of time spent in an English speaking country varied as well, ranging from five months to 10 years.

After the demographic information was supplied, subjects were given the explanation about the verbal protocol procedure. They were then given the two situations to practice performing verbal protocols. After the research was collected, our subjects were debriefed and questions were answered.

The purpose of this study was to determine whether noticing would aid in the processing of grammatical aspectual forms for meaning in simple stories without explicitly being taught those forms. The highlighting of the aspectual forms (through color and font discrimination), while presenting them contextually (the short stories), combines two teaching methodologies—form-focused instruction (FFI) and communicative language teaching (CLT). The idea of empirically testing this combination was extremely exciting for me, as I believe a combinatorial approach is needed in the ESL field. I also feel our research is vital because of how complex aspect is for ELL students. I believe this hybrid method of triggering noticing might be one possible solution for teaching aspect more effectively.

#### Materials

Sixteen short narratives were used for collecting data. (See Appendix A for all 16 short narratives, p. 73). Each story was presented in one of two versions—one in the perfective aspect and one in the imperfective aspect. The stories were designed based on the notion that readers infer causal relationships and make backward and forward inferences due to the temporal contiguities and contexts of those relationships (van den Broek, 1990). As stated previously, aspect affects causal relationships and assists in the creation of discourse sequencing (Blyth, 1997; Hopper, 1982). Take for instance the story in Table 3:

Table 3

*Risks of Running Late*

(1) It was late when Pat got up.	Setting
(2) She did not have time for breakfast so she grabbed a shiny piece of fruit from the fruit bowl.	Setting
(3) Pat rushed out the door.	Initiating Event
(4) On her way downstairs, she <i>was eating</i> the apple.	Antecedent 1
(5) Near the exit, the janitor was mopping the floor.	Antecedent 2
(6) This reminded her that it was the day of the office cleanup.	Filler
(7) She would have to go through her papers and get things off the floor	Filler
(8) Pat liked organizing her work place since the next all of her documents were back where they belonged.	Filler
(9) Next thing she knew, Pat was cringing in pain.	Consequent
(10) Why was Pat cringing in pain?	Final Question

The more temporally related the antecedents and consequents are, the stronger the causal inference will be (van den Broek, 1990). Aspect plays a role in this inferencing. For example, sentence (4) is imperfective (unbounded). Therefore we predict that when the consequent is presented at sentence (9), a backward inference to ‘eating the apple’ will more likely be made. Participants may also infer that the wet floor (5) is responsible for the pain if sentence (4) is presented in the imperfective. Thus we hypothesize that an either/or scenario could occur—either ‘eating the apple’, ‘slipping on the floor’, or some other unknown or unpredicted possibility as the reason for Pat’s pain. If sentence (4) is

presented in the perfective however, ‘eating the apple’ is made less likely a cause for the pain because it is bounded and finished.

We highlighted these aspectual forms as a means to draw readers’ attention to them. The perfective variable was capitalized and made red:

- (1) Pat **ATE** the apple.
- (2) Mozart **COMPOSED** the sonata.

The imperfective variable was italicized and made blue:

- (1) Pat *was eating* the apple.
- (2) Mozart *was composing* the sonata.

I felt that by using two different kinds of distinguishing markers (color and font) we could better direct our readers’ attention to the aspectual forms. This feature was not used in the previous study with native speakers (Schramm, 1998) or non-native speakers (Schramm, 2002).

Participants saw half of the stories in the perfective and half of the stories in the imperfective. Half of the participants were given a packet containing stories 1-8 in the perfective and stories 9-16 in the imperfective; the other half read stories 1-8 in the imperfective and stories 9-16 in the perfective. Each story packet was also randomized prior to distribution, as to keep the aspectual exposure even and consistent.

In addition to the stories, I developed a final set of five questions that subjects wrote their responses to. This was a new addition to the original set of materials. I wanted to delve deeper into LTM; thus I wrote the questions to target the lexical, morphological, semantic, and pragmatic properties at play during the reading processes:

- (1) Did you notice the colored words? (lexical)
- (2) Did you notice any patterns in the colored words? (lexical)
- (3) Did you notice any patterns in the endings of the colored-words?  
(morphological)
- (4) Did you think that some of the actions in the colored sentences were more open-ended? Which color? (semantic)
- (5) Did you find that some of the questions at the end of the stories were harder to answer? Which color was harder for you? (pragmatic)

I wanted to know, specifically, what the readers noticed about the colored words (if anything), and whether or not their verbal remarks (STM/noticing) differed from what they recalled in writing (LTM/intake).

It is also important to note that initially these stories were created and tested on native speakers of English. After attempting my first pilot with non-native speakers, I determined that certain words and phrases used in the stories would not be appropriate and could possibly truncate the reading process, as I am not interested in my participants' decoding skills; I want them to focus on developing contextual meaning. Consequently, I edited and revised stories 2-15. Instances like "quilt" and "mow" were changed to *blanket* and *cut*.

#### Data Analysis

This study is a within-subjects design. All t-tests are one-tailed and paired and test the significant difference between the imperfective and perfective variables on all data points. The data was analyzed by listening to the recorded verbal protocols for the types

of inferences participants made between cause (antecedent) and effect (consequent). We established a series of STM data collection points in order to achieve this goal:

- (1) *At antecedent 1*: Do subjects comment about (notice) the highlighted words? Do they comment about aspect?
- (2) *After antecedent 1 but before the consequent*: Do subjects refer back to highlighted words or aspect?
- (3) *At the consequent*: Do subjects refer back to aspect specifically? Do they comment on the highlighted words?

We feel these data collection points will address whether subjects are *noticing in general* (i.e., referring to color or font), *noticing aspect* (i.e., commenting about aspect or using the aspectual form specifically when “thinking aloud”), and/or *processing aspect properly* (i.e., referring back to the critical sentence more often in imperfective situations at the consequent). We also predict that subjects might make backward references to the critical sentence in perfective situations as well because A) we are highlighting *both* aspectual forms, which could aid in the creation of backward references in either aspectual situation, and B) subjects may not process the perfective form properly.

Also, the final question at the end of each story queries the information provided during the verbal protocols (STM), as it allows us to examine if the information is in LTM (i.e., has become intake).

The next chapter will provide a detailed account of the STM and LTM data collected. The STM data collection points were analyzed at three places during the verbal protocols: *at antecedent 1*, *after antecedent 1 but before the consequent*, and *at the*

*consequent*. The LTM data collection points were analyzed in two ways: the subjects' written responses to the final questions at the end of all 16 stories, and the subjects' written responses to the final five questions targeting lexical, morphological, semantic, and pragmatic processes. Implications for future research will be discussed briefly and further highlighted in chapter five.

## CHAPTER FOUR: DATA ANALYSIS

I have proposed thus far that by explicitly highlighting aspectual forms (form-focused instruction) while contextualizing the forms in short narratives (communicative language teaching), noticing will occur and aid in the deeper understanding and processing of aspect for non-native speakers (NNS) of English. Given how complex and challenging aspect is for NNS, and how challenging aspect is for instructors to teach (Blyth, 1997; Schramm, 1998), we developed this study around the belief that noticing might help instructors and learners alike.

The literature reviewed in chapter two states that noticing is one possible technique for converting input into intake (Bardovi-Harlig & Reynolds, 1995; Basturkman et al., 2001; Egi, 2004; Ellis, no date; Leow, 2001; Lopez-Ortega & Salaberry, 1998; Nassaji, 1999, 2000; Schmidt, 1990). In order to document such effects, we specifically looked for the transfer of aspectual processing from short-term memory (STM) into long-term memory (LTM). This chapter analyzes and interprets STM and LTM results. Our verbal protocol data captures STM data, and both sets of final written questions capture LTM data.

During the analysis we gathered data for evidence of noticing in a variety of places. To explicate what was counted as “positive evidence” in more detail, I will reference the story, *Disappointing End of Day at the Office*, shown in Table 4.

Table 4

*Disappointing End of Day at the Office*

(1) In the morning, Gary's manager told him that the business proposal should be finished that evening and put on his desk.	Setting
(2) This project was Gary's top priority and would take up a good portion of the day.	Initiating Event
(3) Gary found all the necessary information and <i>was writing</i> / <b>WROTE</b> the proposal	Antecedent 1
(4) In the afternoon, Gary started feeling sick, but he stayed at work.	Antecedent 2
(5) Awhile later, one of his co-workers stopped by to ask him a question about semiconductors.	Filler
(6) Semiconductors was Gary's specialization, and he did not mind answering questions about them.	Filler
(7) In fact, the company was thinking about giving him a raise because of this superior knowledge in that area	Filler
(8) Right before quitting time there was a birthday party, but Gary couldn't go.	Consequent
(9) Why could Gary not go to the party?	Final Question (written)

## Short-term Memory

The data was collected at three points during the verbal protocols:

- (1) At antecedent 1.
- (2) After antecedent 1 but before the consequent.
- (3) At the consequent.

At Antecedent 1

Our intent in designing this data collection point was to capture immediate and available information on aspect and highlighting. This is the major reason we chose

verbal protocols to collect our data, as the method measures a learner's noticing capabilities (Egi, 2004). We believed that gathering information at this point in the story would provide STM information about what readers were noticing.

For aspect, the data consisted of comments on aspect. For highlighting, the data consisted of comments on color or font. Analyzing subjects' comments about highlighting was straightforward: positive evidence of noticing was assigned any time a comment was made about color and/or font. For example, if a subject said, "Why is that blue?" or "Is there something special about the red and blue letters?" this was counted. Coding the second point (comments on aspect) was not as clear, as there was a certain level of interpretation required: we did not want a simple restatement of the perfective aspect; we wanted more information that the subject was processing and understanding the aspectual form. A positive example of this would be if a subject said, "He *starts writing* the proposal...and *he finishes it* I guess." The comment "and he finishes it I guess" implies that the subject understood the perfective meaning of 'wrote'. By contrast, in the perfective situation of the aforementioned story, a comment was not counted when a subject said, "Yeah, Gary *wrote* the proposal".

The means for *noticing highlighted forms* and *commenting on aspect* are provided in Figure 2. The overall percentages provide a general account of whether and how often subjects commented on color, font, and/or aspect. The perfective and imperfective percentages provide the means by subject per condition in order to demonstrate any differences between the conditions.

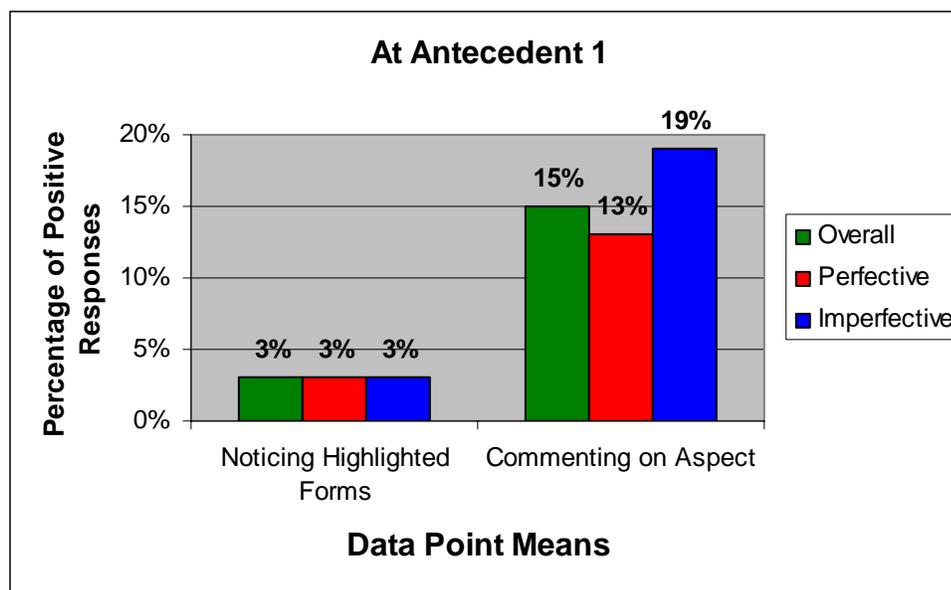


Figure 2: Verbal Protocol Data, Antecedent 1

All of the means for the *noticing of highlighted forms* are .3. These percentages are quite low in comparison to what we hypothesized: we speculated that subjects would mention color and/or font at the critical sentence because it was set apart from the other text. However, these statistics show us that highlighting did not reach a level of awareness to be mentioned during the verbal protocols.

The overall mean for *commenting on aspect* is .15. The imperfective mean is .19 and the perfective mean is .15. These statistics suggest that aspect was more relevant to what our subjects *thought* we wanted them to comment about.

These results tell us that neither highlighting variable (red/capitalization or blue/italicization) seemed to affect readers' awareness about aspectual processing at this point in the story, which was a goal of our research question. It does *not* mean, however,

that subjects were not noticing (as will later be discussed in the LTM data section), but that neither highlighting variable seemed to create more awareness over the other.

#### After Antecedent 1 but Before the Consequent

This data point was designed to collect the backward inferences made to the critical sentence (antecedent 1) *after* it was presented but before the consequent. We wanted to track noticing of the highlighted forms and aspectual processing throughout the story. Subjects often made several references back to the critical sentence, but we only counted it once. If a subject made *any* reference back to the critical sentence it was counted. For example, “His coworker asks him about the *proposal* or something.” The mentioning of ‘proposal’, or any other comment relating to the critical sentence, was deemed positive. A comment was not counted when backward references were not made.

The means for *referencing back to the critical sentence* are provided in Figure 3:

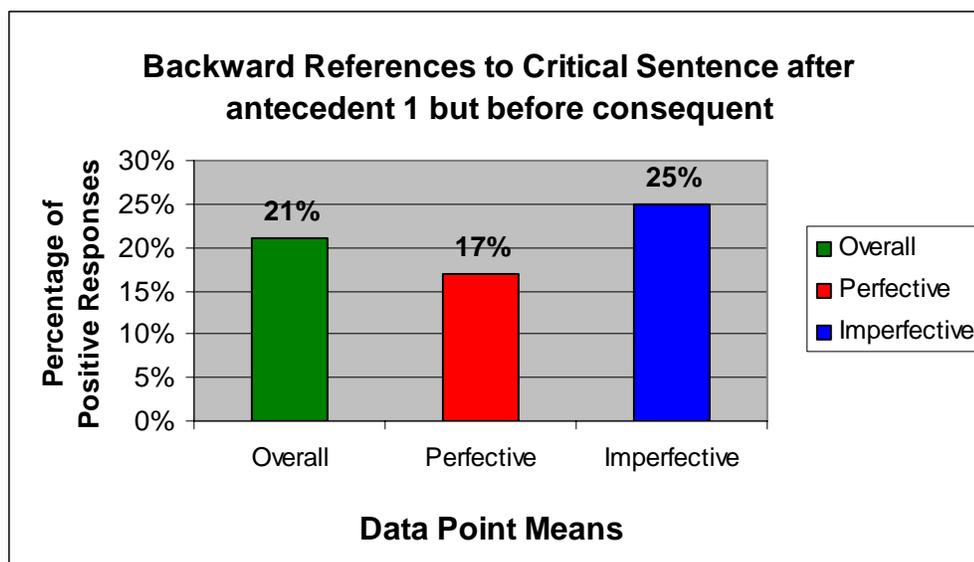


Figure 3: Verbal Protocol Data, After Antecedent 1 but Before the Consequent

The overall mean (.21) tells us that subjects noticed the critical sentence and aspect and made backward references to it, but only on a small level. As discussed in chapter three, we predicted that if subjects noticed aspect and understood its meaning, more references to the critical sentence would be made in imperfective situations. The above means reflect that hypothesis (.25 = imperfective, .17 = perfective), but the difference (.8) is small. However there *is* a statistically significant difference between the backward references made to the critical sentence in imperfective and perfective situations,  $t(19) = 2.42$  ( $p = .02$ ). Therefore the type of condition did affect the backward reference made.

A previous study conducted by Schramm (2002) analyzed how much attention NNS paid to the meanings of aspectual forms while reading. The data was collected through word stem completion tasks, and the aspectual forms were not highlighted (as they are in the current study). The results indicated that NNS do not notice aspect and process it for meaning. The results proved statistically insignificant. Yet in the present study, we *do* see some noticing effects. At Antecedent 1 the highlighting does not reach awareness levels but clearly meanings of aspect were noticed, as demonstrated in the above statistics (*after antecedent 1 but before the consequent*). This suggests that noticing could be a positive factor for creating aspectual awareness.

#### At the Consequent

This data point was designed to analyze the *backward references made to aspect* and the *mentioning of highlighted forms* when the consequent was provided. As stated previously, we predicted that subjects would make more backwards references to the critical sentence in imperfective situations; however, we anticipated that some backward

references in perfective situations would occur as well due to A) the highlighting, or B) lack of aspectual understanding. A comment was counted when *any* backward reference was made, regardless of aspectual situation. For example, the comment, “Maybe he didn't finish his *proposal*”, was deemed positive evidence because of the reference made to the proposal. A comment was not counted when backward references to the critical sentence were not made.

The means for *backward references to aspect* and the *mentioning of highlighted forms* are provided in Figure 4:

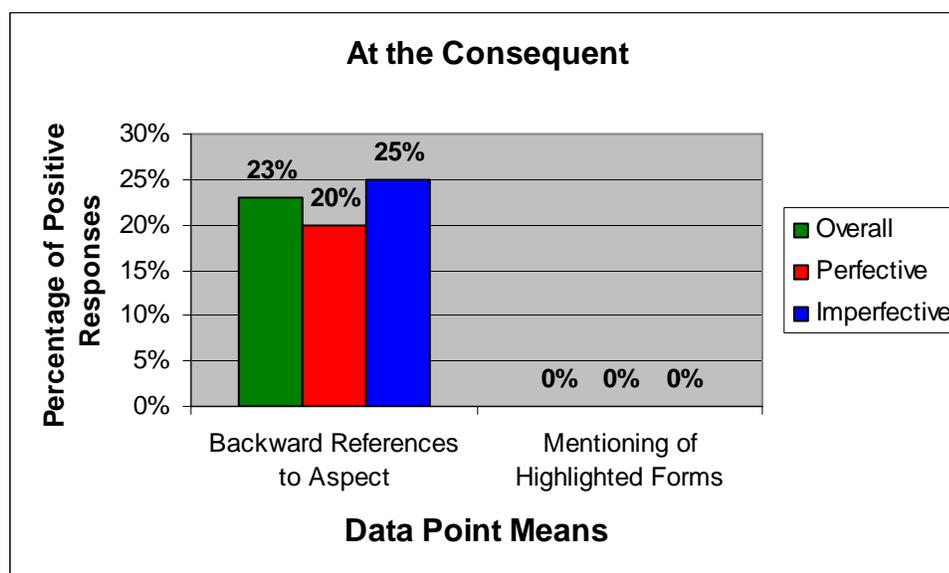


Figure 4: Verbal Protocol Data, At the Consequent

At the consequent, no subjects mentioned color or font, which is not surprising. I expected readers to comment on color or font *at antecedent 1*, as this is when the variables are presented. I did not expect readers to sustain the variables in STM long enough to comment on it at this point in the story. However, I still wanted to test the likelihood of such comments, because I thought maybe subjects would comment on the

highlighted forms if they could not remember what the aspectual form was. For example, instead of saying, “Gary couldn’t go to the party because he *was still finishing* his proposal”, I thought perhaps subjects would say, “Maybe that *blue sentence* was the reason Gary couldn’t go to the party”, if processing the aspectual form had been lost during the reading process. It is apparent on all three data points however (*at antecedent 1, after antecedent 1 but before the consequent, at the consequent*) that highlighting did not seem to play a significant role in the processing of stories during STM.

The means for *backward references to aspect* were similar on all three accounts (overall = .23, perfective = .20, imperfective = .25). This shows us that subjects did make backward references to the critical sentence some of the time, but that they did so in *both* perfective and imperfective situations. There is no significant difference between imperfective and perfective situations and making backward references to aspect,  $t(19) = .98$  ( $p = .17$ ). Furthermore, the difference between the two aspects was not processed. Because the imperfective is unbounded, we predicted that more backward references to the first antecedent (critical sentence) would be made. The statistics show otherwise. This implies that subjects either A) did not process the aspectual forms properly, or B) they did not understand the story.

In conclusion, these STM results indicate that an awareness of aspect may have been increased by highlighting, but only on a small scale. Highlighting the forms held a prominent role in our subjects’ processing for meaning only for a limited amount of time (*after antecedent 1 but before the consequent*). Once our readers were given the

consequent, it seems as though not enough awareness was retained to trigger the inferencing of antecedent 1. This tells us that possibly:

- (A) Highlighting affected our readers' mental representations for a limited amount of time.
- (B) Readers noticed the highlighting but chose not to comment on it.

More research needs to be conducted in order to fully understand the nature of aspectual processing in STM and LTM. Perhaps more explicit instructions on *what* to pay attention to would aid in processing the forms for meaning. This is a potential implication for future research and will be discussed in chapter five.

#### Long-term Memory

Data for LTM was collected in two ways:

- (1) The final written questions at the end of each story.
- (2) The five final written questions given at the end of all 16 stories.

I hypothesized that the final written questions would possibly differ from the verbal protocol comments due to the longer processing time allowed when writing. For example, in the aforementioned story, *Disappointing End of Day at the Office*, I predicted that during the verbal protocols, some subjects might not refer back to antecedent 1 ('the writing of the proposal') or antecedent 2 ('feeling sick') as a reason for the consequent; yet when writing their answer to the final question (*Why could Gary not go to the party?*), I predicted that subjects possibly would. This is because the final questions require the reader to probe deeper into their working memory to determine a cause for the

consequent. Because they were not able to look back throughout the story, they had to rely on their LTM to support their answer.

I also was interested in the lexical, morphological, semantic, and pragmatic properties at play during the reading process. This is why I developed the final five questions our subjects had to answer at the end of all 16 stories. One of the reasons is because “researchers have never asked learners to provide semantic information on what they notice while learning languages” (Schmidt, 1990, p. 139-140). I therefore wanted a deeper explanation as to what readers were noticing while reading. The final five questions are included in Appendix B (p. 81).

#### Final Written Questions

Two sub-points were analyzed for LTM information:

- (1) Referring back to the critical sentence.
- (2) Referring back to aspect specifically.

Because we were interested in the effects noticing had on transferring input into intake, I was especially interested in the LTM responses. A written response was counted positive when backward references to antecedent 1 were made, regardless of aspectual situation. For instance, “Gary was still working on his *project* that his boss needed by the end of the day.” The reference to ‘project’ indicates a backward inference to the ‘writing of the proposal’. A response was not counted when no such references were made. The second point (*referring back to aspect specifically*) was counted positive if a subject wrote anything specific about *either* aspectual form (e.g., *was writing* or **WROTE**), regardless of aspectual situation. An example of this is, “To add finishing touches to the proposal

which he already *wrote*.” This is positive evidence of the backward reference to aspect specifically.

The means for *referring back to the critical sentence* and *referring back to aspect specifically* are provided in Figure 5:

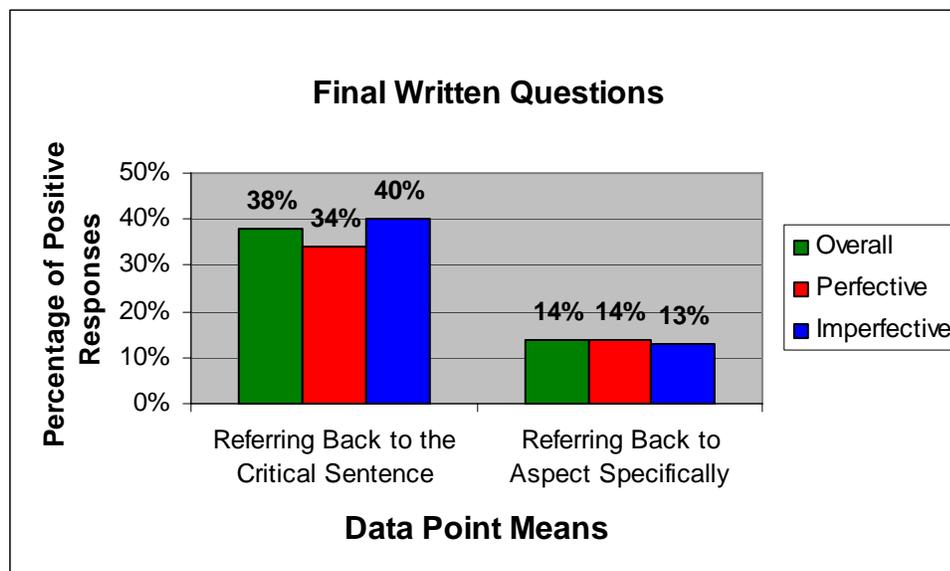


Figure 5: Final Written Question Data

Overall subjects referred back to the critical sentence (antecedent 1) 38% of the time, which reflects positively on the method of highlighting. However, the difference between the two aspects is marginally significant,  $t(19) = 1.38$  ( $p = .09$ ). Thus there is a marginal significant difference between aspectual situation and reference to the critical sentence.

The mean results for *referring back to aspect specifically* are similar on all three data points (overall = .14, perfective = .14, imperfective = .13). This tells us that in general subjects did not refer back to the aspectual form specifically, which was my prediction: I did not expect that subjects would be able to recall the aspectual forms explicitly. The difference between these data collection points is not significant,  $t(19) =$

.26 ( $p = .40$ ). Our hope was that subjects would notice the aspectual forms (because of the highlighting) and convert the input into intake. This conversion was tracked based on the notion that more references would be made in imperfective situations. The results show this was not the case.

Figure 6 reflects what subjects wrote as the reason for the consequent (e.g., *Disappointing End of Day at the Office*: antecedent 1 = ‘the writing of the proposal’, antecedent 2 = ‘feeling sick’, and other = any written statement besides antecedent 1 and 2). The results are displayed per condition:

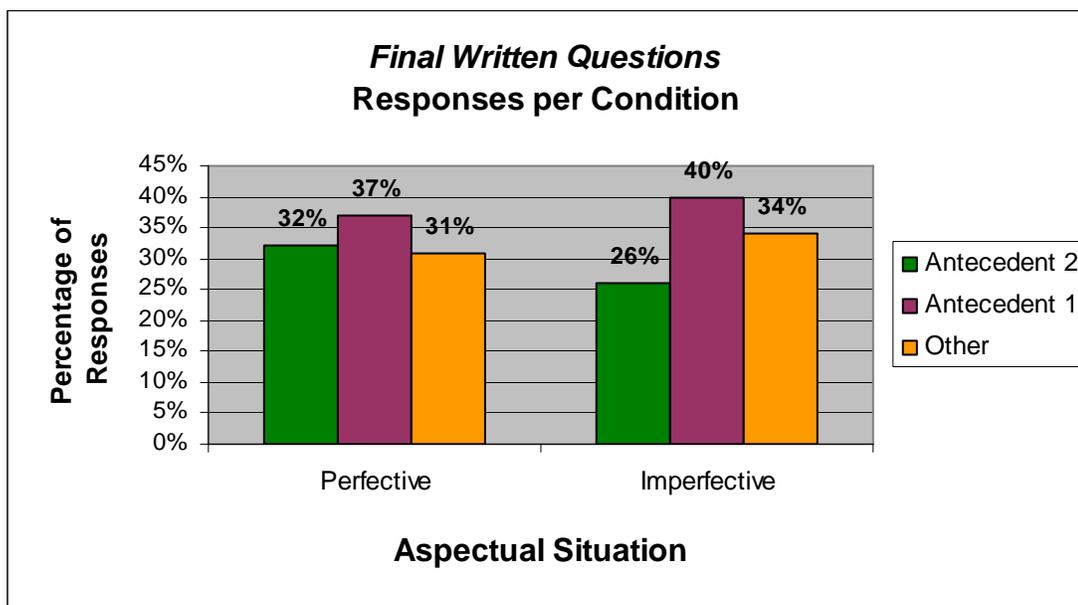


Figure 6: Final Written Questions, Responses per Condition

These results indicate that both aspectual situations prompted backward references to antecedent 1 (e.g., ‘the writing of the proposal’): .37 perfective and .40 imperfective. We predicted that less references to antecedent 1 would be made in perfective situations.

These results reflect that prediction, but the difference between the percentages is only .3.

We expected more backward references to antecedent 2 (e.g., 'feeling sick') in perfective conditions, as the perfective antecedent 1 is bounded (e.g., Gary **WROTE** the proposal). These means reflect our hypothesis. The difference between the two variables (antecedent 1 and antecedent 2) per condition is approaching significance,  $t(19) = 1.16$  ( $p = .13$ ). Thus there could be a significant difference between the condition of the story and the backward reference made (antecedent 1 or 2).

### Final Five Questions

The final five questions were written to target lexical, morphological, semantic, and pragmatic properties at play during the reading process. The questions were given after the subject had read all 16 stories and were used to delve deeper into LTM. The data collected was based on the following points:

- (1) The noticing of colored words. (This addresses the lexical level.)
- (2) The noticing of patterns in the colored words. (This addresses the lexical level.)
- (3) The noticing of patterns in the endings of colored words. (This addresses the morphological level.)
- (4) The noticing of what colored sentences were more open-ended. (This addresses the semantic level.)
- (5) The noticing of what final questions were harder to answer – red or blue. (This addresses the pragmatic level.)

The first data point elicited a 100% response rate: 20 subjects reported that they noticed the colored words. These results are interesting, as during the verbal protocols

only .03 commented on color. This raises the question, *Why did subjects choose not to comment on color if they noticed it?* I believe it is because color itself was not important to the pragmatic processing of the story, hence the result of limited comments. Perhaps had we given more specific directions about what they should pay attention to more attentional resources would have been put towards aspect, and therefore more processing of aspect would have taken place. Implications for future research could include adding a pre-test to activate aspectual awareness, or explicit instructions stating to pay attention to the highlighted forms.

The second data point (lexical analysis) elicited several sub-points by our subjects. The question was designed to gather information on the lexical level about what readers noticed while reading. The results are provided in Figure 7:

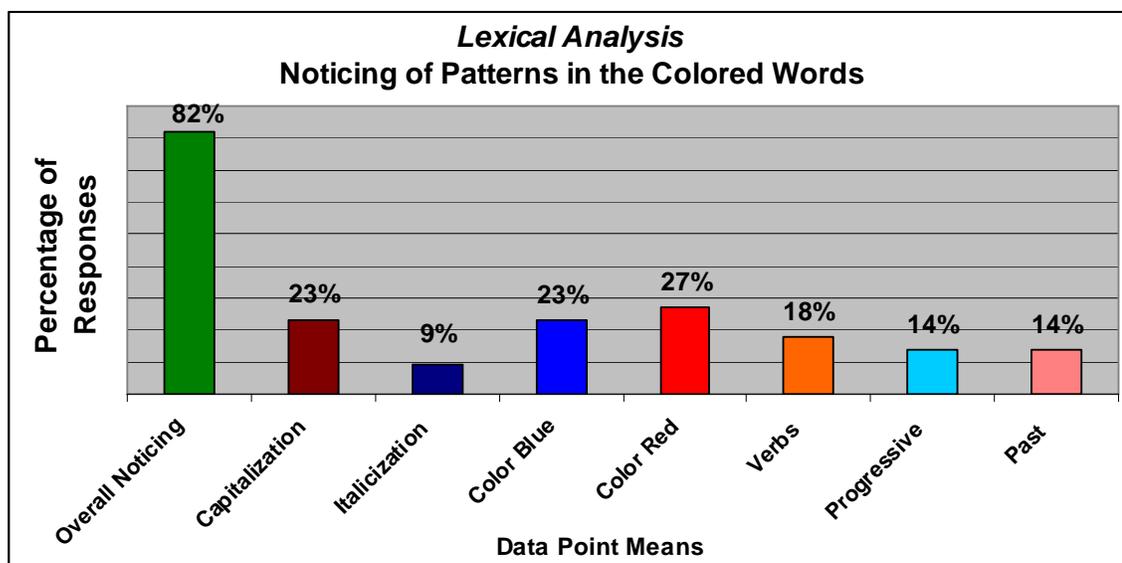


Figure 7: Final Five Questions, Lexical Analysis

The overall mean (.82) reflects the positive evidence that subjects *did* notice patterns on the word level. The seven other sub-points reflect what specifically (e.g., capitalization, italicization, the color blue, etc.) our subjects noticed about the words.

. Capitalization and italicization. This tells us that subjects noticed the capitalized words (.23) more than the italicized words (.09). Perhaps this is because capitalization is more dramatic to a reader's eye, which raises some interesting possibilities for future research on noticing. One could simply choose capitalization for the noticing variable and test such effects.

Colors red and blue. There is not a large disparity between the noticing of one color over another (which is surprising given the font discrimination results, as the capitalized words were also red). Subjects reported noticing both colors red (.27) and blue (.23) almost equally. These results coincide with my aforementioned suggestions for future research: to eliminate the color variable, since it seemed to play a minimal role in creating awareness, and focus solely on capitalization.

Words were verbs, progressive, and past. Even though all three of these means are low (.18 = words were verbs, .14 = words were progressive, .14 = words were past) the results are still interesting. The fact that a few readers *did* become aware of the highlighted patterns is impressive, leading ultimately to the intention of our study: we wanted readers to become keenly aware of the highlighted distinctions, so that they could establish aspectual awareness and transfer input into intake. In the future, perhaps a larger sample would provide more remarkable results. Nevertheless these means demonstrate

that noticing did affect certain readers, as they were able to connect the highlighting to particular tense-aspect forms and meaning; they just did so on a small level.

The third data point (morphological analysis) elicited two sub-points from our subjects. The question was designed to gather information on the morphological level to determine whether readers noticed the –ed and –ing endings. The results are presented in Figure 8:

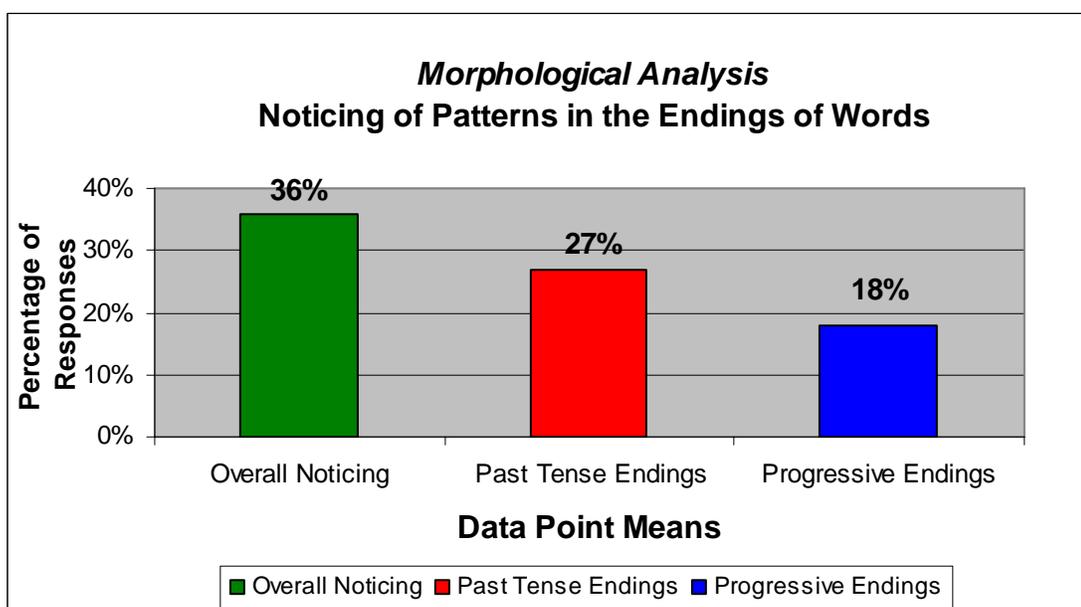


Figure 8: Final Five Questions, Morphological Analysis

These results show that .36 of subjects noticed the morphological differences in the variables and were potentially able to process their meanings. Subjects noticed that the endings were past tense more often than the progressive endings, which possibly demonstrates that the capitalization (or color) might have played a more significant role in noticing than converting that awareness into meaning. I suggest this because our data clearly reflects that our subjects noticed the highlighted forms (100% noticed color), but

that highlighting was only marginally significant in transferring input into intake. This is based on the results generated from the final written question data, *referring back to the critical sentence*,  $t(19) = 1.38$  ( $p = .09$ ).

The fourth data point (semantic analysis) elicited three sub-points from our subjects. The question was designed to gather information on the semantic level in regards to which highlighted form readers thought were more open-ended. The results are presented in Figure 9:

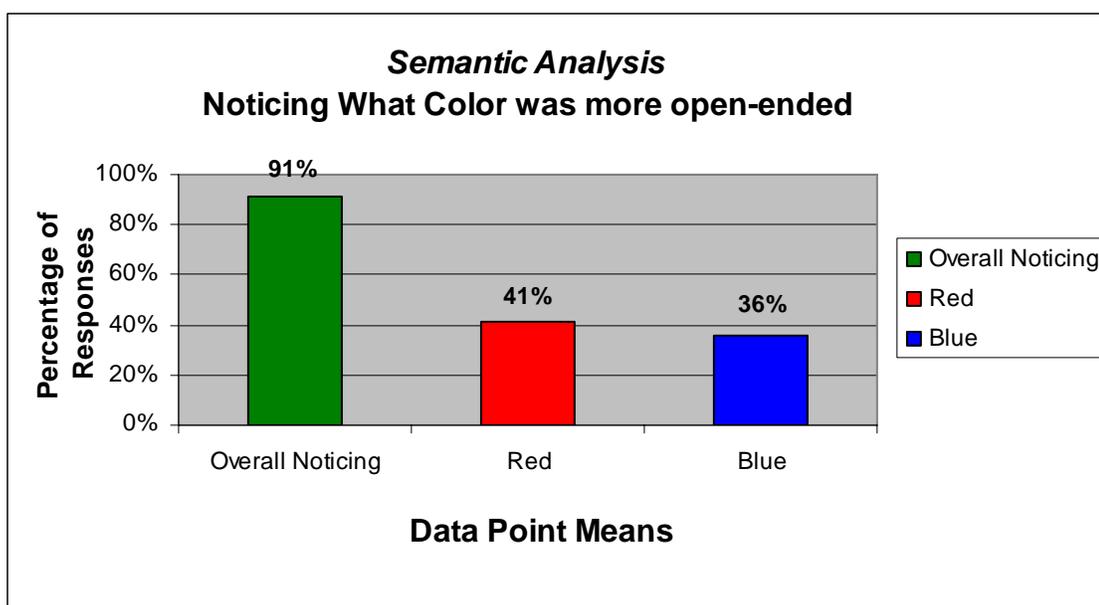


Figure 9: Final Five Questions, Semantic Analysis

These means demonstrate that a high percentage (.91) of subjects felt that one of the colors was open-ended. However, the fact that .41 wrote that the red words were more open-ended proves that A) the red color (paired with capitalization) for the perfective appears to have had more of an impact on LTM than the imperfective variable (blue and italicization), or B) subjects did not seem to process or understand the aspectual forms.

The fifth data point (pragmatic analysis) elicited three sub-points from our subjects. The question was designed to gather information on the pragmatic level regarding the degree of difficulty in answering the final question at the end of each story. The results are provided in Figure 10:

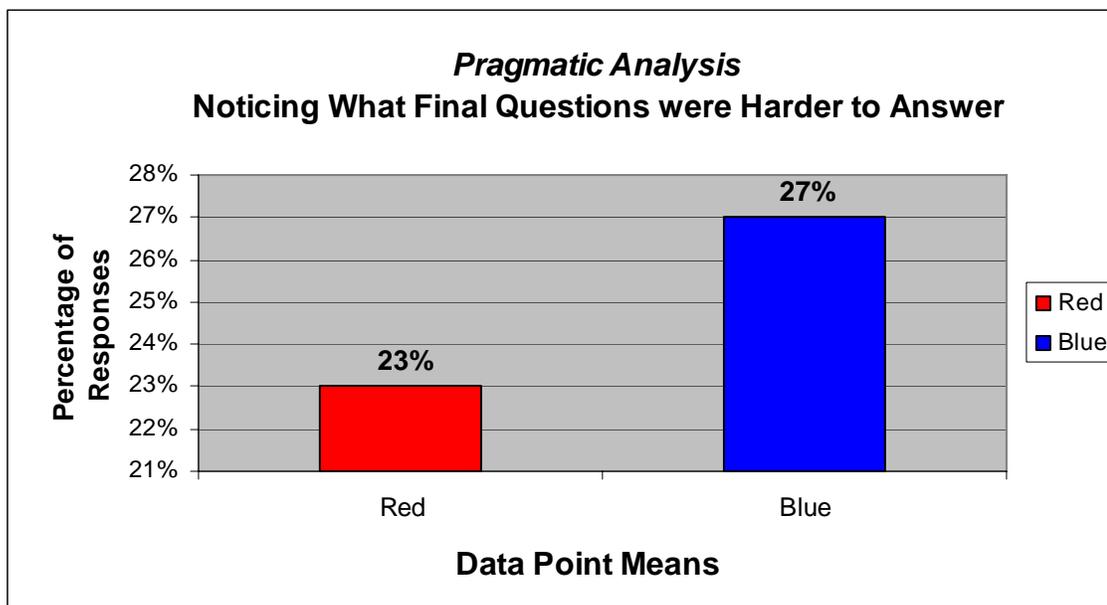


Figure 10: Final Five Questions, Pragmatic Analysis

More subjects (.27) felt that the blue situations (imperfective) were harder to answer. These results reflect our prediction: we hypothesized that because the imperfective is unbounded, the final question would prove more challenging. It is also important to note that the difference between the two points is small (.04) and not significant,  $t(19) = .30$  ( $p = .39$ ). Given the prior results on capitalization, I feel that these statistics could represent “guessing” on the fifth question, rather than actual form-comprehension. Perhaps some subjects were unsure about the color pragmatics, so they arbitrarily chose which color they “felt” was harder to answer.

It is also important to note that although most of our data points proved statistically insignificant, the data collected *after antecedent 1 but before the consequent* in STM did yield significant results. I believe this reflects positively on our research question, as subjects *were* noticing aspect and referring back to it more often in imperfective situations; the input simply did not stay active long enough to transfer into LTM. Therefore, perhaps more probing during that sequence could be implemented in order to push meaning further along into LTM. Suggestions such as this will be explored further in the final chapter.

In conclusion, our data reflects that subjects did notice the highlighted aspectual forms, but that noticing did not appear to be effective for processing aspect for meaning, which was the research goal. However, because subjects noticed the capitalized words more often (and color was more or less irrelevant), this suggests that future research could eliminate color as a variable and focus solely on capitalization. As I have mentioned above, implications such as this will be discussed in the next chapter.

## CHAPTER FIVE: CONCLUSION

The purpose of this study was to determine whether or not ELL students would notice grammatical aspectual forms and meanings in simple stories without explicitly being taught those forms. We were able to determine that when asked, 100% of subjects noticed the highlighting of aspectual forms. Chapter four explains that information on several levels of *what* readers noticed (lexical, morphological, semantic, and pragmatic) were provided by our subjects. This is encouraging evidence for proving our research question significant in the future, as we *were* able to collect evidence that some readers noticed the aforementioned linguistic differences tied to aspect. Yet in general, our study on noticing did not seem to prove effective in getting participants to notice the aspectual differences and in the transferring of input into intake, as noticing supporters suggest it might (Bardovi-Harlig & Reynolds, 1995; Lopez-Ortega & Salaberry, 1998; Schmidt, 1990). *Both* situations (perfective and imperfective) elicited backward inferences to the critical sentence at the consequent (STM) and in the final written questions (LTM). We predicted that if accurate aspectual processing occurred, more backward inferences would be made in imperfective situations than perfective ones. Our results showed otherwise: we were only able to positively affect ‘noticing’, the second degree of awareness (1. perception 2. noticing 3. understanding) in the *consciousness as awareness* model (Schmidt, 1990). Reaching ‘understanding’ was our ultimate goal, because research

suggests that students struggle to process aspect appropriately without ‘help’ (Blyth, 1997).

### Future Research

Based on the conclusions of this study, I have listed below several possible implications for future research:

- (1) Include prompting and/or probing during the stage of reading, *after antecedent 1 but before consequent*.
- (2) Provide more explicit instructions before the study begins about what subjects should pay attention to.
- (3) Administer a pre and post test.
- (4) Capitalize the aspectual forms and eliminate color.
- (5) Use the visual-world paradigm method for gathering research.

### Prompting or Probing

Because the data collected *at antecedent 1 but before the consequent* proved statistically significant (more readers referred back to the critical sentence in imperfective situations), I suggest that more prompting or probing could be added during this point in the reading process. An example of probing would be if a reader refers back to the critical sentence but does *not* mention aspect, the researcher could then probe further about what the reader recalls about the highlighted form, if anything at all. If a reader mentions aspect specifically, then maybe the researcher could prompt the reader to explain more about the semantics of that aspectual form. These suggestions aim at locating and

activating aspectual awareness in STM. I believe that by doing so, a greater likelihood of input transfer could possibly occur.

#### More Explicit Instructions

It was determined in this study that even though subjects seemed to notice the aspectual forms, once the consequent was introduced, aspectual processing did not continue. This could be due to the limited nature of STM and its tendency to constitute a “bottleneck” during processing (Fletcher, 1981, 1986). To that end, in the future I would incorporate more explicit instructions before the study begins on *what* readers should pay attention to. This addition would possibly assist noticing by activating alertness and awareness of aspect beforehand. This suggestion slightly contradicts my prior belief that a balanced method of FFI and CLT is substantial enough to teach aspect effectively. After performing this experiment however, I know that more FFI is needed for teaching aspect, as highlighting exclusively did not seem to aid in transferring input into intake. Had we drawn out the aspectual differences ahead of time however, perhaps learners would have noticed more and processed aspect for meaning. Again, this suggestion is more FFI in principle, but I feel it is necessary.

#### Administer a Pre and Post Test

A third implication for future research could be to include a pre and post test. By doing so, this would determine a subject’s prior aspectual knowledge, as well as his or her gained awareness or knowledge throughout the study. A main goal of this research was to determine whether highlighting could trigger the noticing of aspect. By administering a pre and post test, this effectiveness would be measured more concretely.

### Capitalization

A fourth implication could be to eliminate color and focus solely on capitalizing the highlighted forms. Color had minimal impact in this study, but capitalization was noted on a higher frequency: .23 of subjects noticed capitalization versus .9 of subjects who noticed italicization. Overall during the verbal protocols, only .03 of subjects commented on the highlighted forms (color or font). This again raises the issue of providing more explicit instructions on what is to be noticed. In the future, perhaps researchers could explicitly tell their subjects to pay attention to the capitalized forms.

### Visual-World Paradigm

The visual-world paradigm, originally pioneered by Cooper (1974) and further developed by Tanenhaus, Spivey-Knowlton, Eberhard, and Sedivy (1995), analyzes language processing by tracking eye movements to objects that are displayed visually while subjects listen to spoken utterances (Dahan & Tanenhaus, 2005). In the case of the present study, subjects would listen to all 16 short narratives read to them through headphones, and then at the STM data collection points (*at antecedent 1, after antecedent 1 but before the consequent, at the consequent*) subjects' eye movements toward visual images would be tracked, e.g., pick-up (antecedent 1), deer (antecedent 2), and other extraneous variables. This method would allow researchers to capture fast “saccadic eye movements” that are “real-time” measurements of linguistic processes (Dahan & Tanenhaus, 2005, p. 453).

### Shortcomings

I have questions on the appropriateness of verbal protocols for gathering comprehension data from NNS: I am not convinced it is the best method for capturing true data due to the slower rate it takes NNS to process form for meaning. Our mean results indicate that a higher percentage of backward references were made in imperfective and perfective situations during the final written questions (imperfective = .40, perfective = .34) versus *at the consequent* (imperfective = .25, perfective = .20). Therefore perhaps more writing could be introduced in the future. This goes against the nature of verbal protocols, but I feel this factor could possibly stimulate awareness and capture true comprehension.

In conclusion, I am not convinced that noticing is the appropriate method for learning aspect: I believe a different approach is needed. Aspect is a complex form (Andersen & Shirai, 1996) that needs more explicit attention and instruction. A practitioner should still contextualize aspect while teaching it (e.g., introducing authentic materials where aspect is used) but the form(s) should then be discussed explicitly. I argue that more focus on form (FFI) is needed before a hybrid approach to noticing (FFI and CLT) will be a successful method for aspect. As this study demonstrated, contextualizing a form and highlighting it does not necessarily mean that the semantics will become clear to the learner. A student must actively participate with linguistic forms in order to effectively process their meanings. As most instructors know, not all students are that acute. *Some* of our subjects were. Some noticed the highlighted forms immediately and continued to discuss them and draw inferences upon them. But as our

statistics illustrate, this type of noticing was not the norm, and most readers did not attach meaning to the forms.

I still believe in a blended approach of FFI and CLT for language teaching, as the current literature also favors (Genesee, 1987; Lightbown, 1992 and Long, 1991 as stated in Basturkmen, et al., 2001; Nassaji, 1999; Swain, 1985 as stated in Basturkmen, et al., 2001). I have learned throughout this process that not every linguistic form should be taught uniformly. Just because noticing proves effective for some language points (e.g., the study performed on the present perfect by Bardovi-Harlig & Reynolds, 2001) does not mean the method will transfer to other complex linguistic forms.

I also have realized how important practical application is for me as a researcher. Even if this study had proven statistically significant, I still would have needed to verify its merit in the classroom. This is yet another implication for future research—the empirical exploration of aspect-instruction in the classroom. Because of this notion I am interested in furthering my empirical pursuits on teaching and learning strategies on aspect instruction and other linguistic domains. I also would like to combine noticing with other mediums besides reading (such as pronunciation, listening, etc.) and investigate this hybrid method on other language points (e.g., final consonant pronunciation, minimal pairs, vocabulary development, or pragmatic cues). There is much to explore in noticing. I look forward to continuing my efforts toward discovering a blended approach for effective classroom instruction.

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## APPENDIX A: SIXTEEN SHORT NARRATIVES

*Risks of Running Late*

It was late when Pat got up.  
 She did not have time for breakfast so she grabbed a shiny piece of fruit from the fruit bowl.  
 Pat rushed out the door.  
 On her way downstairs, she *was eating* / **ATE** the apple.  
 Near the exit, the janitor was mopping the floor.  
 This reminded her that it was the day of the office cleanup.  
 She would have to go through her papers and get things off the floor.  
 Pat liked organizing her work place since the next day all of her documents were back where they belonged.  
 Next thing she knew, Pat was cringing in pain.

Why was Pat cringing in pain?

*Car Troubles!*

Jean-Louis was driving along the Cote d'Azur in his native San Tropez, when he noticed a leak in the cooling system of his vehicle.  
 He was barely able to drive back to his house.  
 He drove into the garage and immediately went to work.  
 He *was replacing* / **REPLACED** the hose to the radiator.  
 While Jean-Louis was getting a snack, his girlfriend Joelle jumped in the car wondering if he had finally put in a new battery.  
 But she couldn't find the key.  
 She searched all of her purse.  
 She checked her pockets—still without luck.  
 Then she remembered the key that was hidden in the garage.  
 She got the key and climbed back into the car.  
 When she turned the key, the car would not start.

Why didn't the car start?

*Work Day with Noisy Problems*

Rebecca and Tanya decided to get some work done around their apartment.  
 In the morning they painted Tanya's room.  
 In the afternoon they waxed the floors.  
 Now it was evening.  
 Rebecca was tired, sat down, and started reading through her old magazines.  
 Tanya still wanted to put up her favorite picture.  
 She marked the wall and *was hammering* / **HAMMERED** in the nail.  
 Rebecca, while getting one of her magazines, bumped into a big stack of books, which came crashing down.  
 Tanya sighed in relief.  
 It was a good thing that she had moved her collection of old special dolls.  
 She was an art collector and really liked those dolls.  
 Some of them came from faraway places and were dressed in ethnic clothes.  
 A neighbor called to complain about the noise.

Why was there so much noise that a neighbor called?

### *Computer Troubles*

Sam had just come back from vacation, and things had really become backed up during his absence.  
 So he worked on the computer program and had to decide whether there was enough time to run it right away.  
 After all, trying out new code often crashed the system, and it took forever to start up the computer again.  
 Sam made his decision and *was testing* / **TESTED** the program.  
 Exhausted, he played a self-designed computer game hoping that nobody had messed with it during his absence.  
 He really needed a short break from his work, and he enjoyed playing on the computer tremendously.  
 He sat back to get comfortable in his chair.  
 He sipped coffee from his favorite cup.  
 Then the screen froze.

Why caused the screen to freeze?

### *What Can Happen When Putting Together a Swing*

Janet was putting together a swing in the front yard.

To see the final size of the structure, she took all the pieces and loosely put them together.

Janet asked Mike, her 12-year-old, to start with the yard work while she was working on the swing.

Mike wasn't too excited because he wanted to play baseball with his friends.

He *was cutting* / **CUT** the grass.

When Janet returned from the hardware store where she had picked up a missing tool, she saw a dog frantically charging across all the neighbors' properties.

Janet slowed down and turned on her left blinker.

Traffic was heavier than usual.

She had to wait awhile to make her turn.

When Janet glanced over to the swing it had been knocked down.

Why did the swing get knocked down?

#### *Alarming Event During Emergency Operation*

It was an emergency operation.

Dr. Greene and Dr. Ross needed to prepare the patient as quickly as possible.

Therefore Dr. Greene *was applying* / **APPLIED** a new and somewhat risky procedure.

Dr. Ross, well aware of a recent patient's death under similar circumstances, carefully gave an injection for the operation.

The nurse came into the operating room.

She needed to get ready for the operation.

She cleaned the instruments and placed them within the doctors' reach.

All of a sudden, the patient got much worse.

Why did the patient get worse?

#### *Dangerous Repair Jobs*

Mother had noticed that a step on the stairs leading down to the basement needed to be repaired.

She told Dad.

So, on Saturday before doing several other repair jobs, Dad worked on the stairs. He *was replacing* / **REPLACED** the board. The children had their blocks scattered all over the top of the stairs when the phone rang. Mom answered it, but it was for Dad. Mom and Dad have a small business, for which they needed to be available on Saturdays, too. Several years ago, they started selling homemade blankets that Mom and her friends make. Dad was doing the advertising and accounting. Racing up the stairs, Dad stumbled and started falling.

Why did Dad stumble?

### *Disappointing End of Day at the Office*

In the morning, Gary's manager told him that the business proposal should be finished that evening and put on his desk. This project was Gary's top priority and would take up a good portion of the day. Gary found all the necessary information and *was writing* / **WROTE** the proposal. In the afternoon, Gary started feeling sick, but he stayed at work. Awhile later, one of his co-workers stopped by to ask him a question about semiconductors. Semiconductors was Gary's specialization, and he did not mind answering questions about them. In fact, the company was thinking about giving him a raise because of this superior knowledge in that area. Right before quitting time there was a birthday party, but Gary couldn't go.

Why could Gary not go to the party?

### *Scary Trip to the Grandparents*

Shelley was visiting her grandparents in Northern Minnesota. It was a beautiful drive, the narrow two-lane road lined with trees, the leaves beginning to turn. The road was empty except for this slow poke in front of her. Impatiently, she *was passing* / **PASSED** the pickup.

Unexpectedly, a deer came charging out of the woods, forcing her to turn the steering wheel to the right.

Within split seconds, several thoughts raced through her head.

The car belonged to the company her dad works for.

Would she get in trouble for taking it without asking?

Would he punish her by not letting her use his car again?

She felt a strong bump.

Why did Shelley feel a strong bump?

### *Unexpected Water*

It was definitely time for baths.

The children had played outside in the rain and were all muddy and cold.

Mr. Duncan went upstairs to the bathroom.

He *was filling* / **PASSED** the tub with warm water.

Back downstairs while waiting for his kids, the heavy rainfall reminded him to have the hole in the roof fixed.

Meanwhile his daughter was taking her time.

First she did not like the carrots, and then she needed more to drink.

Mr. Duncan got up and got her some apple juice from the refrigerator.

Right then, Mrs. Duncan came running into the kitchen to tell him that there was water dripping from the ceiling.

Why was there water dripping from the ceiling?

### *Bad Housework*

Rob and Alisha had a nice system going.

Each day they split up what duties they had to do.

Today, Alisha took care of the living room, and Rob was cleaning the kitchen.

Rob *was washing* / **WASHED** the dishes.

Alisha watered the plants and started arranging the flowers in one of their special vases.

She felt bad because it had been a terrible day for her.

She overslept, missed her bus, and was reprimanded by her boss.

In her rush she forgot her purse.  
And on top of everything her lunch date did not show.  
Suddenly there was a shattering noise.

What was the cause of the shattering noise?

### *Embarrassing Christmas Day Celebration*

Jodie was at the annual Christmas celebration.  
She had really dressed up for the occasion.  
She was enjoying herself but needed to slip around the corner because her clothes felt uncomfortable.  
She *was adjusting* / **ADJUSTED** her pantyhose.  
She also noticed that there was a huge mustard stain right on her special skirt.  
Jodie was very upset.  
It was one of her favorite skirts.  
It was made out of pink satin and looked very good on her.  
She had gotten it as a present from her sister after finishing college.  
When her boss came around the corner, Jodie was so embarrassed.

Why was Jodie embarrassed?

### *Sunday Paper with Pain*

Walter fetched the Sunday paper from the porch and sat down on the floor to look through it.  
Before he even touched the rest of the paper, he looked through the coupon section.  
Walter decided which coupons he could use.  
He grabbed a scissors from the table and *was cutting out* / **CUT OUT** all of the coupons with it.  
While slowly leaning against the shelves to support his back, Walter lost his balance.  
Immediately, he started worrying about the coupons.

They might get wrinkled and ripped.  
 Then he wouldn't be able to use them, which he couldn't afford.  
 His job as clerk just did not pay enough.  
 He felt a strong pain.

What caused the pain when Walter lost his balance?

### *Unclear Future*

Carl and Miriam had been dating for several years.  
 He recently had asked her to move in with him, and she had promised to let him know by today.  
 It was almost noon, and he had been checking his e-mail account all morning to see if she had said yes.  
 But Miriam had been very busy in the morning and did not have time to write him her positive answer.  
 She finally *was sending* / **SENT** the message.  
 Then, their financial agent called to tell her that he had just spoken with Carl and he said that their investments in the stock market weren't doing so well.  
 During the call, Miriam's eyes wandered across the room.  
 She saw the dishes on the table, and her eyes rested on a picture of her favorite Dali painting she put up many years ago.  
 The rest of the room was hard to make out because the curtains were drawn.  
 Meanwhile, Carl was feeling extremely depressed.

Why was Carl feeling so depressed?

### *Borrowed Too Much Money*

In the year 1790, Mozart had borrowed too much money and was heavily in debt.  
 Fortunately, one morning a rich customer asked him to write a short piece of music for a large amount of money.  
 But there was one condition: Mozart had to finish it by evening of the same day.  
 The work proved very difficult because of Mozart's bad health.  
 Mozart *was composing* / **COMPOSED** the sonata.  
 To clear his mind, he went out with several of his friends and treated them to beer and wine.  
 It was cold and snowy on that day in Vienna.

Winter had finally begun.

The snow was coming down in big, heavy flakes.

People were clearing the sidewalks.

When he returned home late that night, Mozart's wife started crying because there was not enough money to buy food for the family.

Why wasn't there enough money for food?

### *Smelly Food Preparation*

The kids would be home from school soon.

Since they were usually very hungry, it was time to prepare dinner.

Sandy cleaned all the vegetables she needed for the dish she wanted to prepare.

She put all the ingredients into a pot and *was cooking* / **COOKED** the meal.

While getting some parsley from her garden to decorate the dish, Sandy stopped to chat with Phyllis, who was grilling hamburgers.

Phyllis always knew the latest neighborhood news.

Another neighbor's daughter was seriously ill and had been told not to have children.

Since things were not going well in that daughter's marriage, she had gotten pregnant anyway.

Now everybody was rather interested in the mother's reaction.

After a few minutes, the two friends noticed the smell of something burning.

Why was there the smell of something burning?

## APPENDIX B: FINAL FIVE QUESTIONS

1. Did you notice the colored words?
  
2. Did you notice any patterns in the colored words?
  
3. Did you notice any patterns in the endings of the colored words?
  
4. Did you think that some of the actions in the colored sentences were more open-ended?  
Which color?
  
5. Did you find that some of the questions at the end of the stories were harder to answer?  
Which color was harder for you?

APPENDIX C: DEMOGRAPHIC QUESTIONS

What is your native language?

How old were you when you started learning English?

How many years of formal English instruction have you had?

How long have you lived in the United States or another English-speaking country?

Please rate how well you understand your Psychology lectures on a scale from 1 to 10.

1 = you barely understand them at all.

10 = you understand them as well in English as you would in your native language.