THE ROLE OF ADVERBIALS IN THE INTERPRETATION OF GRAMMATICAL ASPECT BY LEARNERS OF SPANISH AS A SECOND LANGAUGE

by

JENNIFER LYNN BAKER

(Under the Direction of Margaret Quesada)

ABSTRACT

Adverbials are lexical resources which often duplicate the temporal/aspectual information contained within verb morphology. Research has shown that learners comprehend the temporal chronology of L2 input more accurately and quickly when adverbials are present in addition to verb morphology. This study assesses whether the presence of adverbials affects the interpretation of aspect (imperfect/preterit) by learners as well as by native-speakers. Sixty-two intermediate and advanced English-speaking learners of Spanish and ten native-speakers of Spanish read ten cloze passages, five with temporal adverbials and five without, and then chose either perfective or imperfective verb morphology for 26 verbs in the passages with adverbials and 26 in those without. Employing computer software to judge responses and reaction time, results indicated that the presence of adverbials was very significant for participants' expected responses, but did not decrease their response time. Further, natives' interpretation of adverbials and morphology is compared to that of learners.

INDEX WORDS: Second Language Acquisition, aspect, adverbial, response time, reaction time, Spanish, preterit, imperfect

THE ROLE OF ADVERBIALS IN THE INTERPRETATION OF GRAMMATICAL ASPECT BY LEARNERS OF SPANISH AS A SECOND LANGAUGE

by

JENNIFER LYNN BAKER

B.A., Spanish, The University of Georgia, 2006

B.A., History, The University of Georgia, 2006

A Thesis Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

MASTER OF ARTS

ATHENS, GEORGIA

2009

THE ROLE OF ADVERBIALS IN THE INTERPRETATION OF GRAMMATICAL ASPECT BY LEARNERS OF SPANISH AS A SECOND LANGAUGE

by

JENNIFER LYNN BAKER

Major Professor:	Margaret Quesada
Committee:	Sarah Blackwell Diana Ranson

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
May 2009

DEDICATION

This thesis is dedicated to my family who supported me through the long days and late nights of my graduate studies and this thesis. In particular, I dedicate this work to my father, Walter, for helping relax and reminding me that sleeping is not really optional; to my mother, Deborah, for listening to my ramblings until everything made sense; and to my husband, Jaim, for inspiring me to work harder, offering his help and advice, and for studying with me all those long nights at SLC. I love and appreciate you for helping me complete this thesis among the many other goals you've helped me achieve.

ACKNOWLEDGEMENTS

I would like to acknowledge and thank the individuals who helped me complete the research for this work: Professors Gary Baker and Sarah Blackwell and Dr. María Mizzi. I also would like to thank my fellow teaching assistants and instructors who assisted in the completion of this project: Ary Malaver, Rosa Chávez, Omar Gil, Hilda Mata, Gloria and Ken Martin, Mariela and Carlos Arzabe, Jairo Arcila, Raúl Vázquez, and Tomás Montilla. Finally, I thank Professors Sarah Blackwell and Diana Ranson for their assistance and advice in the development of this study and, in particular, Professor Margaret Quesada (and her family) for offering her ideas as well as her guidance and hard work in assisting me in the process of preparing this thesis.

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

1.1 Statement of the Problem

The acquisition of aspect has been studied and debated for several decades by both researchers of first language acquisition (FLA) and those of second language acquisition (SLA). The study of the acquisition of aspect by second language learners (SLLs) is of particular interest because it allows researchers to study not only how and why learners acquire aspect, but also how and why they do *not* do so, which can reveal underlying linguistic predispositions of both the first and second languages. English-speaking learners of Spanish are an ideal group to study in this area because of the notable differences in the use and marking of aspect between the two languages, especially in the past tenses.

The two past aspectual markers – the preterit and imperfect – are a notoriously difficult concept for English-speakers learning a language such as Spanish because of the differences in aspectual marking between the two languages; English does not have two past tense morphemes to distinguish perfective and imperfective aspect while Spanish does. In general, learning Spanish verb forms is a complicated task for English-speaking learners and the addition of past aspectual differences makes it all the more difficult. Often English-speaking learners – either independently or guided by their instructor – attempt to equate the lexical forms of English aspectual markers to either the preterit or imperfect verb morphology in Spanish. For example, English *I swam* is commonly

thought to correspond with Spanish *Yo nadé* [perfective], while English *I was swimming, I used to swim* and *I would swim*, are often equated to the Spanish *Yo nadaba* [imperfective]. Yet, Frantzen (1995) notes that such explanations are not always reliable; *used to* can be interpreted as perfective as well as imperfective and *would* also signals the English conditional tense. Further complicating the issue, the simple past tense of English does not always convey perfective aspect; for example, *I swam when I was a kid* [imperfective], as compared to *I swam yesterday* [perfective]. Regarding this issue, Bull (1965:170) says of the English simple past: "it is completely ambivalent, and speakers of English, as a result, are not trained to observe aspectual differences." While textbooks and instructors offer grammar rules to students of Spanish – such as, "the imperfect is used with verbs of emotion and mental activity," or "the imperfect is used for two simultaneous actions" (Frantzen 1995) – these rules are not always reliable and cannot consistently predict, nor explain, native-speakers' use of aspectual morphology.

This study examines to what extent adverbials function to help guide the interpretation and selection of Spanish perfective and imperfective aspect (preterit and imperfect) by learners and native speakers of Spanish. On a large scale, this study offers concrete data to other researchers investigating how and when intermediate-to-advanced learners acquire an L2 aspectual system and the effects of morphology and lexical items in that acquisitional period. In addition, this study encourages instructors of Spanish to acknowledge the role of adverbials in learners' acquisition of Spanish imperfect and preterit, but serves as a reminder, too, that often the rules for imperfect and preterit usage do not reflect the entirety of native-like use.

1.2 Justification

Temporal (*yesterday, last night*) and frequency adverbials (*always, frequently*) are a lexical resource which often duplicate the temporal and aspectual information contained within a verb's morphology. It has been shown in a variety of studies (Musumeci 1989; Lee et al. 1997; Boatwright 1999) that learners can comprehend the temporal chronology of L2 input more accurately and quickly when adverbials are present in addition to verb morphology. Musumeci (1989) and Lee et al. (1997) both showed that beginning and intermediate learners of Spanish and other Romance Languages rely on adverbials rather than verb morphology to interpret tense. In both studies, students who heard passages that included both verb morphology and temporal adverbials were able to recall the events of the passage better than those students who had heard passages that included verb morphology alone. Boatwright (1999) further demonstrated this point, but also pointed out that the presence of adverbials not only increased students' accurate interpretation of tense but also enabled them to do so more quickly. Students listened to a sentence and then pressed one of three buttons (future, present, or past) to indicate their interpretation of when the action took place. Students who heard adverbials in addition to verb morphology alone responded more accurately as well as more quickly. Additionally, the field of Processing Instruction has fostered much research about language learners' tendency to attend to lexical items rather than morphemes (VanPatten 2004).

Thus, it seems clear that beginning learners depend on adverbials before verb morphology to indicate tense, yet advanced learners continue to use adverbials to convey tense, although in a more advanced way, in addition to verb morphology. Bardovi-Harlig (1992) shows that for English-learners from a variety of L1 backgrounds, the use of

adverbials in written production (87 journal entries) decreased over a period of six months. However, proficient learners continued to use adverbials in addition to verb morphology to mark chronological events in non-natural order (*I went to the store this afternoon, but before that, in the morning, I went to work)* was noted. Lubbers Quesada (2006) studies the use of adverbials in the speech of 30 intermediate and advanced learners of Spanish where the number of adverbials per verb remained nearly the same across three proficiency groups, indicating that advanced learners of Spanish, who are quite capable of using verb morphology, continue to use adverbials in speech. Advanced learners are more likely, however, to use adverbial clauses and phrases instead of simple adverbs, contrary to the tendencies of less proficient learners.

Adverbials are a resource which aid all levels of language learners in several languages to more accurately and/or quickly interpret or assign verb tense. The present study proposes to determine whether adverbials are a resource which aid learners of Spanish, specifically intermediate and advanced students, in interpreting verb aspect more accurately and more quickly. This goal is similar to the previous studies mentioned above, but the special circumstances of the acquisition of aspect – as opposed to tense – will be discussed further in Chapter 2.

1.3 Questions to be Studied

1. Are students able to identify the expected preterit and imperfect morphology in sentences with and without temporal adverbials in 10 cloze passages?

2. Does the presence of temporal adverbials in the passage affect the selection of preterit and imperfect morphology by both native speakers and learners?

3. Is there a difference in the rate of selection of expected forms between intermediate and advanced learners' responses as compared to native speakers' responses?

4. Does the presence of temporal adverbials affect participants' time of response?

1.4 Hypotheses

I. The presence of temporal adverbials in the passages will affect the selection of aspectual morphology by all participants and will increase the expected selection of preterit and imperfect by learners.

II. The presence of temporal adverbials in the passages will increase the rate of expected selection of preterit and imperfect among intermediate learners, whereas the absence will decrease this rate , more so than among the advanced learners and native speakers.

1.5 Methodology

In order to determine the effects of adverbials on learners' interpretation of verbal aspect, the present study asked 62 English-speaking learners of Spanish to read 10 contextualized cloze passages and to select preterit or imperfect for 52 verbs; 26 with adverbials present and 26 without adverbials. Learners' responses were judged according to accuracy and reaction time, employing the computer software program E-Prime, to determine whether and how the adverbials assisted the participants in interpreting the correct verbal form in the cloze passages.

1.6 Structure of the Present Work

This thesis will study the effects of adverbials on the interpretation of preterit and imperfect verb morphology by learners and by native speakers of Spanish. Previous research about aspect, the acquisition of aspect, adverbials, and the role of adverbials in

the acquisition of tense will be reviewed in Chapter 2. Details about the methodology of the present study – including procedures, instruments, participants, and analysis procedures – will be summarized in Chapter 3. Chapter 4 is dedicated to revealing the general results of the study as well as to examining the results in detail in separate sub-sections: the effect of adverbials on the selection of morphology for native speakers, intermediate learners, and advanced learners; the effect of adverbials on the response time of all participants; and the effect of adverbials on the selection of imperfect/preterit morphology, including analysis of cases of discrepancy and variation among native speakers in the selection of morphology.

CHAPTER 2

PREVIOUS RESEARCH

2.1 Summary and Purpose

The present study analyzes the role of adverbials in the interpretation of aspect by learners of Spanish and, additionally, comments on the role of adverbials for native speakers. However, in order for this thesis to be relevant, the topics of aspect, the acquisition of aspect, adverbials, and the role adverbials must first be discussed and clarified.

2.2 Aspect

The concepts of tense and aspect are frequently misunderstood even by advanced students and, at times, by language instructors. In the classroom, the preterit and imperfect are often referred to as two past tenses in order to simplify the concept for beginners in language study. However, this tendency to treat the preterit and imperfect as two different past tenses can continue into higher learning, despite the fact that the two "tenses" refer instead to the aspect of any past action. While tense, "relates the time of the situation referred to some other time, usually to the moment of speaking" (Comrie 1976:2), aspect indicates not only when the event occurred, but also how the action developed over several years or in an instant; whether the action ceased, came into being, or existed continuously as a state.

In addition, aspect can be used by a speaker to indicate a specific point of view or perception of the development of action (Klein 1994:16). This means that both the imperfect and preterit can be used interchangeably, with the same verb, to describe different perspectives on a singular situation without contradiction but rather with a different perspective on the event: *Juan leyó el libro anoche. Yo sé porque Juan leía el libro cuando yo lo vi* (Comrie 1976:3). In both of the sentences Juan was reading that night, yet the first sentence emphasizes that Juan completed the action of reading the book, i.e. he finished the book, while the second sentence focuses on the continuous action of Juan's reading the book when I saw him.

Aspect is present in a past-tense verb for two reasons: it is either an integral part of the inherent semantic meaning of the verb, or it used by the speakers in order to communicate their perspective of how the action occurred. The inherent aspect of verbs is commonly known as *lexical aspect*, *situation aspect* (Smith 1997) or *Aktionsart*, a German term which means "type of action" (Binnick 2006:244). The inherent aspect of a verb is determined by certain semantic characteristics such as its telicity, durativity, and dynamicity (Comrie 1976) and it is this inherent lexical aspect of the verb which tends to guide the morphological marking of the past-tense. There are four possible categories of lexical aspect, first studied and defined by Vendler (1957, 1967): states, activities, achievements, and accomplishments. The category a verb pertains to is determined by its inherent duration and telicity.

Table 1: Examples of Vendler's Categorizations (1957, 1967)

Category	*Example*	**Characteristics**
State	*El era de Argentina.*	**atelic** **more durative**
Activity	*Juan corría hasta que llegó a su casa.*	↓
Achievement	*María alcanzó su meta de ser maestra.*	↓
Accomplishment	*El vaso se rompió*	**telic** **less durative**

However, verbs do not always fit simply into these categories because other linguistic elements can change the semantic aspect. Verb morphology can affect a verb that is inherently durative, such as *saber*. With imperfect morphology, *sabía* coincides with its durative, stative semantics; on the other hand, with preterit morphology, *supe* is interpreted as a telic verb or change of state. In addition, other segments of the sentence can influence the interpretation of verbal aspect (known as *compositional aspect*) (Beedham 2005:24). Adverbials are a common modifier which can help to affect aspectual interpretation. For example, in *Juan lo sabía* the verb *saber* indicates a continuing state while in *De pronto, Juan lo supo*, the addition of the adverbial *de pronto* indicates that *saber* was a realized event or change of state. Therefore, adverbials are an important communicative device, not just for learners but for native-speakers as well. Slabakova and Montrul (2005) discussed the "aspectual coercion" which adverbials can enforce and studied the pragmatic effects of adverbials - as well as *se*, subject, and animacy – on Spanish-learners' selection of verb morphology. Adverbials, along with subject, were the only two influential factors in whether learners chose preterit or imperfect morphology.

Although generally verbs are inflected with the past-tense morphology which agrees with their inherent lexical aspect or the compositional aspect of the sentence (the Lexical Aspect Hypothesis), this is not always the case. Speakers can disregard the

lexical semantics of the verb or situation and instead choose to use the aspectual morphology which best communicates their perspective or focus of the action. This usage for communicative purposes is known as *viewpoint* (Comrie 1976:4) or *grammatical aspect* (Weist 2002). For example, although both *Yo estaba feliz* and *Yo estuve feliz* are options, the version speakers will choose depends upon the perspective they wish to convey. If the continuity of the happiness is the focus, *estaba* will be used; if the end of the state is the focus, *estuve* will be used. In this way, "it is quite possible for the same speaker to refer to the same situation once with a perfective form, then with an imperfective form, without in any way being self contradictory" (Comrie 1976:4). This ability to foreground or background information via aspectual morphology is detailed in Lunn (1985).

2.3 Previous Studies on the Acquisition of Aspect

An understanding of the theories regarding the acquisition of aspect in an L2 is important to the present study. First, we must determine whether it is possible for L2 learners to acquire native-like competency of an L2 aspectual system because, if this is not possible, the presence or absence of adverbials is irrelevant to the acquisition of such a system. Second, it is important to review common hypotheses about how L1 and L2 learners acquire aspect to have a basis of comparison to the present study.

An important question for researchers is whether the acquisition of aspect is the same in L2 as it is in L1. Clearly, all L1 learners acquire the aspectual morphology of their language, but can this be said of L2 learners? A variety of studies have found that the acquisition of a new aspectual system by L2 learners is possible. For example, in Montrul

and Slabakova (2003) showed that advanced speakers of Spanish as a second language could attain native-like use of preterit/imperfect aspect use. Out of 64 native English-speakers, 20 linguistically naïve native Spanish-speakers identified the recordings of 17 near-native L2 learners as "native speakers of Spanish." In addition, of those 17 speakers, 12 performed as well as native Spanish speakers in two tasks dealing with tense and aspect; a morphology recognition test and a sentence correction judgment task. Additionally, six superior speakers out of 23 and three advanced speakers out of 24 also performed as native speakers on these two tasks. Although early researchers such as Coppieters (1987) and others maintained that there is a critical period after which an L2 learner can no longer acquire native-like dominance of the L2, it is no longer assumed today that this is necessarily true for all adult learners (Marinova-Todd, Marshall, & Snow 2000).

It remains a debate whether the acquisition of aspect in L1 is the same as its acquisition in L2, but several theories from various schools of thought seem to indicate that the two processes are similar. A commonly attested theory regarding the acquisition of aspect in L1 is the Primacy of Aspect Hypothesis – also called the Aspect before Tense Hypothesis or the Defective Tense Hypothesis – (Bloom, Lifter, & Hafitz 1980; Olsen & Weinberg 1999; Weist et al. 1984), which holds that children learning an L1 employ lexical aspect before they employ grammatical aspect, that is, aspect guides tense structure (Slabakova 2001:105). According to this theory, children learning an L1 develop their understanding of the aspectual system by first marking aspect only according to the inherent lexical aspect of the verb (lexical/situation aspect). This usage of aspect according to the lexical aspect of the verb guides the formation of the child's

tense system and eventually the child can use the morphological tense markers independent of the inherent lexical aspect of the verb to indicate his or her own perspective of events (grammatical/viewpoint aspect). This connection between L1 child speech and inherent lexical aspect was shown in Olsen and Weinberg (1999), who studied the speech of children and adult native-speakers of English in a previous corpus and found that, unlike native-English-speaking adults, child English-speakers used *–ed* with telic verbs (achievements or accomplishments) while they used *–ing* with atelic, durative verbs (activities and states). Not only did these results confirm those of an earlier, similar study of four English-speaking children by Bloom, Lifter, and Hafitz (1980), but it also revealed that L1 English learners are guided in their acquisition of aspect by a combination of the characteristics of the order of acquisition of aspect by L2 learners of English and L2 learners of Spanish.

Regarding the acquisition of aspect in L2, the Primacy of Aspect Hypothesis is paralleled by the Aspect Hypothesis (Andersen 1991; Robison 1995; Bardovi-Harlig & Reynolds 1995), which refers to the acquisition of aspect by L2 learners according to lexical aspect with grammatical aspect appearing later. Essentially, the Aspect Hypothesis (AH) holds that learners' usage of aspectual morphology and markers is guided solely by the inherent semantics of the verb (more or less telic) until they reach a sufficient level of proficiency where they can choose the morphology regardless of the verb's inherent lexical aspect.

The AH was initially named and defined by Andersen (1991) in a study of his English-speaking daughters' acquisition of the Spanish aspectual system without explicit instruction while living in a Spanish-speaking country: however this hypothesis has been

shown to be true in explicitly instructed learners as well (Robison 1995; Bardovi-Harlig & Reynolds 1995). Andersen identified a developmental sequence in which aspect morphology emerged which coincided with the inherent lexical aspect of the verbs. Only after developing a fully aspectual system in L2 are learners able to use aspectual markers to reflect grammatical aspect, independent of the semantics of the verb. This means that L2 learners first use imperfect morphology with states, then activities, followed by accomplishments and achievements and preterit morphology first with achievements and accomplishments, then activities and finally with states. Andersen further divided these two opposite tendencies into eight specific stages.

Table 2: Order of Acquisition of Tense/Aspect according to the AH (Andersen 1991)

	State		Activity		Accomplishment			Achievement			
Acquisition of Imperfect Morphology	→	→	→	→	→	→	→				
Dynamicity	-		+		+			+			
Telicity	-		-		+			+			
Non-durative	-		-		-			+			
	←	←	←	←	←	←	←				**Acquisition of Preterit morphology**

Table 3: The Developmental Stages of Verb Morphology (Andersen 1991)

Stage 1 Use of present morphology (or non-inflected forms) for tense/aspect reference
Stage 2 Perfective morphology emerges in achievements
Stage 3 Imperfective morphology emerges in states
Stage 4 Perfective morphology spreads to achievement predicates, and imperfective spreads to activities
Stage 5 Imperfective morphology spreads to accomplishments
Stage 6 Perfective morphology spreads to activities
Stage 7 Imperfective morphology spreads to achievements
Stage 8 Perfective morphology spreads to states

The tenets of the AH have been shown in other studies of Spanish-learners as well as in learners of other languages. Bardovi-Harlig and Reynolds (1995), for example, revealed similar findings. In a cloze passage test completed by 182 adult learners of

English across six proficiency levels, participants were prompted to use the simple past (-*ed, -en*) with telic verbs while activities prompted the use of progressive morphology (-*ing*) and state verbs the simple present tense (-*s*). They concluded that "lexical aspectual class influences the learners' use of verbal morphology" (117) until learners reach a higher proficiency level; more proficient learners were able to correctly use past tense with states and activities. Similarly, Robison (1995), reported in Bardovi-Harlig (1998), interviewed 26 Puerto Rican learners of English and found that lexical aspect was a determining factor in the tense inflection used by the participants. In Hasbún (1995) a similar pattern was found in 80 English-speaking learners of Spanish at four levels of proficiency. In a written task where students recalled the events of a short film, participants marked achievements with preterit morphology in 51% of cases, followed by accomplishments 38%, activities 29%, and states 19% whereas imperfect morphology was used by the participants with states in 32% of cases, followed by activities 6%, accomplishments 3%, and achievements 2%. Additionally, Comajoan (2005) studied the speech of three beginner level English-speakers learning French, Spanish, and Catalan in two sessions, once with a narrative retelling task and once with a conversation task. Summarizing the results of both tasks, the perfective morphology was used more often with achievements (21/80 [26%] and 13/83 [16%] tokens respectively) than with states (5/80 [6%] and 5/83 [6%]) while imperfect morphology was most often used with states (20/80 [25%] and 17/83 [20%]) more than with achievements (2/80 [3%] and 4/83 [5%]).

Although the Aspect Hypothesis is a commonly accepted and studied theory in the field of SLA there are competing theories regarding how an L2 aspectual system is acquired. The Discourse Hypothesis maintains that learners employ aspect depending on

the narrative structure to distinguish foreground information from background information (Bardovi-Harlig 1994; Liskin-Gasparro 2000). For example, in both Liskin-Gasparro (2000) and Salaberry (2003) English-speaking learners of Spanish used preterit more often when retelling a movie scene, but used imperfect when retelling a personal narrative. In-depth discussion of this hypothesis is beyond the scope of this study since it includes facets aside from the lexical influence of the verb, which is directly relevant to the present study of the influence of adverbials on the choice of aspect morphology.

The Tense Hypothesis (Salaberry 1999, 2000, 2003, 2005) – also known as the Tense before Aspect Hypothesis or the Default Tense Hypothesis – does not fully contradict AH, but theorizes an additional stage within its framework. The Tense Hypothesis (TH) proposes that tutored L2 learners first pass through an early stage in which lexical aspect plays no role in tense marking before they begin using morphology according to lexical aspect, after which they continue on to mark grammatical aspect independent of the lexical aspect. Essentially, the TH suggests that there is a preliminary use of preterit as a "default tense" Salaberry (2005) before the evidence for AH is observed in learners. Two main factors in the TH are beginners' use of preterit morphology to mark states even after being introduced to imperfect morphology and the differences observed between natural-setting learners and classroom learners of an L2. Beginner classroom learners cannot acquire aspect naturally, according to AH, because they do not receive enough input to do so and notes the common classroom use of the preterit and its similarity to the English simple past as reasons for the preliminary stage theorized in TH (Salaberry 2000:173).

Studies offering evidence of TH include Hasbún (1995) – discussed earlier – in which learners used preterit morphology with states in 19% of cases; the first year learners in the study used preterit with *ser* and *tener*, both verbs of state, while second year learners showed an even usage of preterit with all four types of verbs (Salaberry 2000:155). Additionally, Salaberry (1999) found that in a comparison of 16 English-speaking college-level students of Spanish as an L2 across 4 proficiency levels that less proficient students tended to use preterit as a default past tense marker to retell events from a film clip. Salaberry points out that the students did so regardless of the inherent lexical class of the verb and despite being taught the imperfect as an aspectual option two weeks prior to the study. In contrast, more proficient students seemed to apply aspectual verb morphology according to the Aspect Hypothesis. In a similar study by Salaberry (2003), 105 English-speaking college-level students of Spanish as an L2 across 3 proficiency levels were asked to recount the events of a movie clip and narrate a personal story. A statistical analysis of the resulting data revealed that the lexical aspectual class was not a significant factor in selection of preterit or imperfect, but L2 proficiency was significant. Preterit was preferred by less proficient students with state, atelic, and telic verbs while retelling the movie events, while imperfect was their preference for state, atelic, and telic verbs while recounting a personal narrative. Salaberry noted that both these tendencies reflected the use of a default tense marker, but one which changes according to the narrative context.

2.4 The Acquisition of Aspect as Related to the Present Study

The previous hypotheses regarding the acquisition of aspect are relevant to the present study because, if the presence or absence of adverbials is to play a role in the participants' ability to recognize and select verb morphology, it must be clear that learners are able to acquire an L2 aspectual system with or without adverbials. While the present study focuses on learners' interpretation of aspect, Gasser (1995) explains that comprehension is related to production because both activities utilize a shared phonological representation. Learners may recognize and comprehend a lexical or morphological form while not yet having become accustomed to articulating the form in order to achieve production, yet the mental representation of the form does not change during this time. The acquisition of aspect is similar in both child and adult learners whether or not they receive explicit, guided instruction in the language. For these reasons the Lexical Aspect Hypothesis is commonly accepted based upon the studies which demonstrate its accuracy and the similarities it shares with the also commonly accepted Primacy of Aspect Hypothesis regarding L1 learners. Even the hypotheses which view the acquisition of aspect from a slightly different perspective do not debate the influence of the inherent lexical aspect of verbs during learners' acquisition of aspectual markers and aspectual morphology.

While the studies cited above focus predominantly on the grammatical forms produced by the participants in order to draw conclusions about their acquisition of the L2 tense and aspectual systems, there are other resources available to learners outside the realm of the lexical semantics of the verb which can be used during, and perhaps after, the acquisition of the L2 aspectual system. Research regarding SLA is often

accomplished by analyzing the verb morphology produced by learners in oral, written, or judgment tasks. These "form-oriented" studies (Bardovi-Harlig 2000:12), which employ cloze passages, interviews, and recall tests, are predominant in the field, however, some researchers have begun to approach the problem of acquisition from a "meaning-oriented" perspective instead of a form-oriented one (Bardovi-Harlig 2000:12). Meaning-oriented studies of the acquisition of aspect (and tense) focus on the use of all linguistic resources by L2 learners to show temporality and aspect, not simply grammatical inflections. The use of adverbials, because they are a lexical and pragmatic resource, is an example of students' ability to use means outside of grammar to convey their knowledge of aspect in L2 while their acquisition of the L2 system is still in development. The present study pertains to both groups as it combines a form-oriented technique with the use of cloze passages in order to obtain and analyze the effects of meaning-oriented data, that is, adverbials.

2.5 Adverbials

Comrie (1985) discussed the importance of adverbials in general for establishing a reference point during speech. Indeed, adverbials are an important resource for everyday speech in any language, and they are also an integral factor in the tense, grammatical aspect, and inherent lexical aspect of verbs. The term adverbial is used to refer to all adverbs, whether they appear as a singular word, phrase, or clause, in a sentence. Adverbials form a grammatical class which has the purpose of modifying verbs; that is, they specify the action of verbs (Whitley 2002). Actions can be specified in several ways and, as such, there are many types of adverbials which classify an action by

purpose, reason, manner, place, extent, means, time, and frequency (Whitley 2002; Cinque 1999). The present study focuses on temporal adverbials because of their relationship to tense and aspect. Binnick (1991) divides temporal adverbials into three types: frame adverbials, adverbials of number and frequency, and durative adverbials. Frame adverbials (*la semana pasada*) refer to moments or intervals of time within which the described action took place while adverbials of number and frequency tell how many times, per unit of time, something occurred (*diez veces; cada mañana*). Durative adverbials specify the length of time an event took place (*por una hora*).

Adverbials are often used to reinforce the expression of tense (Ricoeur et al. 1990) and a similar linking between adverbials and aspect is noted in Gonzalez (1998). In an analysis of Spanish aspect Gonzalez (1998:160-61) explains that imperfectively-inflected verbs denote events or states that occur at an open interval of time (imperfective) and cannot be used with an adverbial indicative of a closed interval (perfective) and vice versa. Thus, *Nadaba por cinco horas cuando me dio un calambre* is read as a generic or habitual action in contrast to the perfective reading of *En una ocasión nadé por cinco horas.* Because of the similarities between the semantics of durative/frequency adverbials and imperfect morphology as well as between frame adverbials and preterit morphology, adverbials have been cited as a resource for L2 learners attempting to interpret or assign aspectual morphology in Spanish (Ozete 1988; Westfall & Foerster 1996). However, both Binnick (1991) and Gonzalez (1998) – citing Gili Gaya (1961) – assert that regardless of the duration of an event, if it occurred before the time of speech then the duration may be interpreted as an interval of time, thus permitting the use of a frame adverbial instead of a durative or frequency adverbial. For

example, in *Susana comía/comió plátanos por una semana* the period of one week allows either morphology, but *Susana *comía/comió plátanos en una hora* allows for only the preterit form.

Temporal adverbials are often associated with either perfective or imperfective aspect and, thus, often support the selection of aspectual morphology. However, while frame adverbials can be safely associated with perfective aspect, adverbials of duration and frequency, although often associable with imperfective morphology, can also be interpreted as frame adverbials by a speaker and, thus, require perfective morphology. Ultimately, the morphology selected by the speaker is the primary method of conveying aspect while adverbials play a secondary role. However, this is not necessarily true for L2 learners who continue to rely on lexical cues, such as adverbials, to guide their selection of morphology. The differing levels of adverbial influence for native speakers and learners are analyzed in more detail in section 4.4 of Chapter 4 in the present work.

2.6 Previous Studies on the Influence of Adverbials in the Acquisition of Aspect

Spanish language textbooks and instructors often explicitly integrate adverbials into the introduction of the preterit/imperfect contrast as well as into classroom exercises to help students interpret the intended meaning more accurately (Ozete 1988). While adverbials are not always accurate predictors of native-speakers' use of aspectual morphology, they are an important and common resource for English-speakers learning the Spanish aspectual system. Linguistic researchers have shown that the use of adverbials is an important intermediary stage in the development of tense expression in an L2, preceded by the use of pragmatic means such as chronology and followed by the use of verb morphology. The present study builds upon the observations of previous

researchers who have investigated the influence of adverbials in the acquisition of tense in an L2 and will then proceed further to pose questions related to the extent of this influence, particularly with the acquisition of aspect in addition to that of tense.

Many studies that demonstrate the effect of adverbials are based on the principles of VanPatten's theory of Processing Instruction (2004) regarding adult L2 learners' heavy reliance on lexical, rather than grammatical, cues in order to communicate in L2. According to VanPatten, "learners will tend to rely on lexical items as opposed to grammatical form to get meaning when both encode the same semantic information" (2004:9). In this way more informative forms, or "big words," such as nouns and adverbials receive learners' attention before less informative forms, or "little words," such as verb and noun inflections. For example, in the sentence *Ayer Juan me llamó*, an L2 learner of Spanish is most likely to determine that Juan called in the past based on the most informative form *ayer* instead of the less informative form *-ó* from the preterit.

Demonstrating students' attention to adverbials, Musumeci (1989, cited in Rossomondo 2007 and Sagarra 2007) – completed a study of 64 students of Italian, French, and Spanish at the beginner level in which the students listened to sentences of four types, all with verbs inflected in the perfective past. The four types of sentences 1) included only verb morphology, 2) included verb morphology and a temporal adverbial, 3) included verb morphology and a gesture – a "cultural supplement" – or 4) included verb morphology, a gesture, and a temporal adverbial. The results of a multiple-choice recall test showed that adverbials were the determining factor in tense assignment because participants who heard a temporal adverbial in addition to the verb morphology (and gesture) scored higher than those who had only heard verb morphology.

Similarly, in (Lee et al. 1997), 102 beginning and intermediate learners of Spanish as an L2 were divided into two groups, one of which listened to passages with verbs inflected for tense (and, inherently, aspect) with temporal adverbials while the other listened to passages with only verb morphology. When asked to recall the events of the passages in an English multiple-choice task, intermediate students who had heard adverbials in addition to verb morphology performed slightly better while beginning students performed the same regardless of the presence of adverbials. The lack of adverbial influence for the beginning learners (with less than 60 hours of experience) was explained as an effect of their inexperience with the terms used in the study. It should be noted that the present study does not employ beginning learners and additionally the cloze passages for this study include only common verbs and adverbials, and participants were allowed to ask about unknown vocabulary in any case.

Furthermore, Boatwright (1999) also found that adverbials were a key influence in learners' interpretation of tense. Learners listened to individual sentences 1) with verb morphology and adverbials and 2) with only verb morphology. They then decided whether the action of the sentence occurred in the future, present, or past and reported their opinion by pressing one of three buttons. Results showed that the presence of a temporal adverbial in the sentence resulted not only in better accuracy from the students, but also in faster reaction times. Lee et al. (1997), Musumeci (1989), and Boatwright (1999) show the importance of temporal adverbials in learners' interpretation and understanding of the L2, but what of their importance in learners' production of the correct verb tense – does it, too, depend on adverbials? Wen (1995) showed that 14 English-speaking, college students learning Chinese often used the Chinese perfective

marker *le* in their speech in combination with time adverbials like, *zuotian* 'yesterday,' *yihou* 'after,' and *yiquian* 'formerly' – even resulting in over-usage in contexts where perfective-*le* was not used in native speech, or where it was optional. Wen concluded that the adverbials acted as semantic cues and triggered the students to use the perfective marker *le* with the verb. Additionally, Sagarra and Dussias (2001) showed that learners can process both verb morphology and adverbials at the same time, proving that, although adverbials may be more informative than verb morphology, learners can detect a relationship between the two. This study involved recording the eye movements of intermediate learners of Spanish as an L2 while they read several sentences. All sentences included a temporal adverbial which indicated the past tense, but some sentences 1) had verbs in the present tense while others had 2) verbs in the past tense. Eye movement measurements indicated that students spent significantly more time looking at the verb morphology that contradicted the past-tense adverbial, showing that the students attended to both the adverbial and verb morphology.

These studies on the influence of temporal adverbials have shown that adverbials play an important role in the accuracy and speed of interpretation of tense by intermediate learners of an L2. Additionally, the presence of temporal adverbials does not preclude learners' attending to verb morphology at the same time. However, do advanced learners, like beginners and intermediate learners, still benefit from the presence of adverbials in addition to verb morphology regarding their production and interpretation of tense? The stages of tense expression by learners of an L2 were first noted in Meisel (1987), where in the first stage there is no explicit reference to tense; in the second stage temporal adverbials are the only means of indicating tense; in the third stage verbal inflection is

used but not systematically; and in the fourth stage there is complete, systematic use of verbal inflection. Meisel considers the use of adverbials as useful only in the early stages of the acquisition process, before verb morphology is fully acquired. Contrary to Meisel's theory, many researchers are currently investigating whether adverbials maintain an important role in temporal/aspectual reference after verb morphology has been acquired. Furthermore, Meisel did not consider the role of adverbials in the acquisition of aspect, which is specifically considered in the present study.

Table 4: Stages of Tense Expression by L2 Learners (Meisel 1987)

Stage 1	No explicit reference to tense
Stage 2	Temporal adverbials are the only reference to tense
Stage 3	Verbal inflection is used, but not systematically
Stage 4	Systematic use of verbal inflection

Bardovi-Harlig (1992) investigated whether learners continued to use adverbials after having developed verb morphology. Designed as a follow-up to Meisel's work her study employed 87 written journal entries over a six month period of eight L2 learners of English with a variety of L1 backgrounds. The participants were living in the U.S. and taking an ESL class at the time. Additionally, the study included four narrative texts invented by the learners in response to a prompt given in class as well as a final interview. An analysis of the adverbial-to-verb ratio in the written narratives showed that the number of temporal adverbials diminished over time as the learners developed the ability to inflect verbs, marking tense morphologically. Overall, the 0.4 adverbial-to-verb ratio decreased in frequency to 0.18, which approximates the ratio of the native English-speaker control group which was 0.20 adverbials per verb. It was concluded that adverbials are a pragmatic resource most useful in the first stages of tense acquisition and which later lose this function (and may take on other lexical and grammatical functions)

as past-tense verb morphology is acquired, eliminating redundancy from the students' interlanguage. However, in the study only verbs inflected for past morphology (even incorrectly, i.e. *telled*) were included and instances of temporal adverbials modifying present tense verbs were not counted.

This study of written data from English-learners in complete immersion in L2 is contradicted by Lubbers Quesada (2006), who investigated the use of temporal and frequency adverbials in the oral narratives of 30 English-speaking learners of Spanish as well as their use by 10 native speakers of Spanish. None of the intermediate and advanced student participants had lived in a Spanish-speaking country. Recorded narratives by the students and native speakers were analyzed and divided into three proficiency groups – and one group of native speakers – according to the use of past verb morphology, with the most advanced student group using past morphology very much like the native speakers. Counter to the findings of Bardovi-Harlig (1992) the adverbial-to-verb ratios did not decrease as students' knowledge of verb morphology increased; it remained quite steady with a ratio of 0.31, 0.34, and 0.30 adverbials among the least, mid, and most proficient learner groups. These rates are comparable to the 0.39 adverbials-to-verb ratio of the native Spanish-speaker control group. Upon further investigation of these tendencies, it was found that the least proficient learners did not generally use past tense morphology to mark the past and in addition used the fewest adverbials while the more proficient learners marked verb morphology in addition to using adverbials. Ninety-nine percent of the uses of morphology and adverbials occurred in past contexts and one percent of the combined usage occurred in present contexts. Additionally, the most proficient learners used adverbials of frequency with verbs

inflected for imperfect aspect and temporal adverbials with verbs inflected for preterit aspect while less proficient learners did not use adverbials in conjunction with either aspect. It was concluded that as the learners' knowledge of past morphology increased, so did their use of adverbials. More proficient learners also used more adverbial phrases and clauses rather than simple adverbials, further suggesting the link between learners' increased proficiency and their continued, more complex use of adverbials.

The differences in the findings of Bardovi-Harlig (1992) and Lubbers Quesada (2006) may be due to the different contexts; the participants writing journal entries may not have had much occasion to use adverbials in their own reflective writing as participants who are speaking to another interlocutor with communicative purpose. Also, perhaps the differences between the average use of adverbials in the L2s plays a role; while the English-speaking control group used 0.20 adverbials per verb in Bardovi-Harlig the Spanish-speaking control group in Lubbers Quesada used 0.39 adverbials per verb, suggesting that Spanish speakers tend to use more adverbials. In summary, Lubbers Quesada (2006) indicates that although for beginning learners adverbials serve as lexical substitutes for verb morphology, later on the two can be used together to enhance processing and to express complex temporal relationships; furthermore, more advanced learners used more adverbial clauses and phrases instead of simple adverbials. Bardovi-Harlig (1992) offers some support for the continued use of adverbials in addition to verb morphology as well, but overall finds that beginning learners used more adverbials and that more proficient learners opted to use verb morphology in place of adverbials, eliminating the temporal redundancy.

2.7 The Relationship between Adverbials and Aspect

Adverbials are an important resource in speech and writing, providing reference points and contextual information to the actions being discussed. The presence or absence of an adverbial can even change the interpretation of the aspectual morphology, or force the selection of one morphology over the other. Because of the strong relationship between adverbials and aspectual morphology Spanish instructors and textbooks often use adverbials to assist students' learning and acquisition of the Spanish aspectual system. As a pragmatic resource, adverbials provide students with information about how and in what time frame an action occurred, thus enabling them to better interpret and use aspectual morphology.

Furthermore, VanPatten's theory of Input Processing holds that L2 learners rely first on prominent, lexical items – like adverbs – before paying attention to details like morphemes. Various studies have found evidence of this theory by confirming that learners who are exposed to both verb morphology and adverbials outperform learners who are exposed to only verb morphology. In addition, adverbials have also been shown to trigger learners to mark aspect in their speech, even when to do so is redundant.

Adverbials are a known factor in the stages of acquisition of tense. Meisel (1987) described four stages of tense acquisition in which adverbials are a lexical resource used by a learner until he or she has fully acquired the verb morphology of L2; then the use of adverbials diminishes. Studies have found evidence for and against this theory. Studies from the latter category have showed that learners do not stop attending to adverbials once they acquire verb morphology, but rather use them in a more complex and native-like manner. Related studies have shown that L2 learners can and do attend to both

adverbials and verb morphology at the same time, showing that the morphological and lexical indicators of aspect are not mutually exclusive.

2.8 Conclusion

Aspect is related to tense, yet distinct from it because it focuses on how the action of the verb took place, not simply when the action took place relative to the time of speech. Researchers have investigated the acquisition of aspect by adult L2 learners in comparison to that of child L1 learners to determine how aspect relates to universal grammar and cognitive processes. The acquisition of aspect in an L2 is clearly more challenging than it is for L1 learners yet it has been shown that native-like acquisition of an L2 aspectual system is indeed possible. There are three major theories which try to explain how aspect can be acquired by L2 learners: the Aspect Hypothesis, the Tense Hypothesis, and the Discourse Hypothesis. These three hypotheses claim that lexical aspect influences the use and acquisition of verb morphology, although the extent of its role is disputed. Additionally, the context can also exert influence on how the learner acquires and uses the various verbal morphologies available. .

These theories are based upon data obtained in generally form-focused studies which account only for native-like use of grammatical forms and do not necessarily include all the knowledge of aspect by L2 learners expressed via pragmatic means; in meaning-oriented studies all resources used by learners are taken into account. Thus, the use of adverbials, a lexical resource to convey tense and aspect, falls into this latter category as a pragmatic means for L2 learners to reveal their knowledge (or lack thereof) of the aspectual system of an L2. In several studies which analyze the role of adverbials

in the acquisition of tense, it has been shown that adverbials are more influential than verb morphology in increasing not only learners' accuracy in interpreting tense, but also allowing learners to process the input more quickly.

For beginning learners, included in only one such study, this does not prove true because of their lack of experience with adverbials and with verb forms. However, intermediate learners rely heavily on adverbials for both interpretation and production of past-tense narratives, even when this results in redundant usage. However, this influence of adverbials does not necessarily preclude learners from attending to and interpreting verb morphology. Furthermore, for advanced learners the use of adverbials does not necessarily decrease (although their use changes, becoming more complex both grammatically and pragmatically) after verb morphology has been acquired.

The challenge of acquisition of aspect in an L2 is quite clear as is the influential role of adverbials in assisting learners to correctly interpret temporal verb morphology. In the present study these facts will be combined to investigate whether the presence of temporal adverbials enables intermediate and advanced learners to correctly interpret verb aspect in addition to verb tense. Learners' responses will be judged according to accuracy and reaction time to determine whether and how the adverbials assist English-speaking intermediate and advanced learners in interpreting past-tense cloze passages in Spanish.

CHAPTER 3

METHODOLOGY

3.1 Introduction

Sixty-two intermediate and advanced students of Spanish participated in the study as well as ten native speakers of Spanish. The data were collected via computer using E-Prime, a software program which records participants' responses as well as reaction time by the millisecond (Schneider 2002). The response data were analyzed via logistic regression and the responses times were analyzed via a paired difference t-test. This chapter presents details about the participants, instruments, and collection and analysis of the data. Finally, special considerations in the analysis of the data are also noted.

3.2 Procedure

3.2.1 Participants

Seventy-two students and faculty at a large research university in the southeastern U.S. participated in this study. Of this number, 62 were undergraduate English-speaking students of Spanish while 10 were native-speakers. The English speakers, who participated voluntarily in the study, were determined to be intermediate learners and advanced learners of Spanish according to their results on a standardized test. In this study, the standardized exam employed was the vocabulary and grammar section of a High-Intermediate DELE (Diplomas de Español como Lengua Extranjera) exam, obtained from the official DELE web site. The DELE exams were graded according to

the standards of the Ministry of Education, Culture, and Sport of Spain with scores falling between 30% (low-intermediate) and 88% (advanced). The native speakers' home countries were Peru, Puerto Rico, Colombia, Spain, and the Dominican Republic, but all had resided in the United States for several years prior to participating. All held a bachelor's degree or higher except one who was a senior undergraduate student.

3.2.2 Instruments

3.2.2.1 Ten Cloze Passages

The ten cloze passages employed were designed specifically for the present study by the author. Passages 6 (without adverbials) and 7 (with adverbials) are shown here as examples. The other passages can be found in Appendices A and B.

> Passage 6: (Era/Fue) un placer recibir tu tarjeta para felicitarme por mi cumpleaños. ¿No te (decía/dije) que a mi edad ya no se celebran los cumpleaños? ¿Recuerdas la fiesta de mis quince años? Yo (estaba/estuve) tan nerviosa y tú (tenías/tuviste) la gripe. Luego, (sabíamos/supimos) que mi novio no (iba/fue) a venir. ¡Qué desastre!
>
> Passage 7: El año pasado mi hermano (visitaba/visitó) Washington, D.C. durante la semana del 4 de julio. Todas las mañanas él (visitaba/visité) diferentes sitios históricos y durante las noches se (iba/fui) de fiesta. ¡Qué mezcla de tradición y modernidad! Un día él (veía/vio) el monumento de presidente Lincoln y ese mismo día, a las once y media, (salía/salió) para la discoteca "Abe L."

Four native speakers were asked to read the passages before the study in order to determine whether each context was successful in influencing the reader to choose one, and only one, past tense. The adverbials and contexts of the cloze passages which were intended to influence speakers' selection of form were based on traditional textbook rules about the role of adverbial in the selection and use of aspect. As discussed in section 2.5 of Chapter 2, frame adverbials (*ayer*) are associated with preterit while frequency

adverbials (*cada año*) or durative adverbials (*toda la mañana*) are associated with imperfect and an effort was made to use imperfect and preterit with a range of verb types. Table 5 shows the distribution of morphology with a range of verb types.

Table 5: Distribution of Verb Types and Morphology in the Cloze Passages

	Passages with adverbials		**Passages with no adverbials**	
	Imperfect	*Preterit*	*Imperfect*	*Preterit*
State	3	1	6	2
Activity	10	2	7	3
Accomplishment	-	2	-	3
Achievement	-	8	-	5

3.2.2.2 Construction of the Cloze Passages

The passages were constructed from fill-in-the-blank exercises taken from several Spanish textbooks including *Mundo Hispano* (de Castells 1981), *Puentes* (Marinelli & Mujica 2007) and *Dos Mundos* (Terrell, Andrade, Egasse, Muñoz 2005) as well as online resources, namely *Spanish Language and Culture* (Kuczun Nelson). The sentences from these exercises were altered, when necessary, to create a logical narrative. The passages used a range of adverbials with very few (3) cases of repetition and employed themes, such as birthdays or vacations, as well as vocabulary that were familiar to the Spanish learners.

The passages were designed according to traditional textbook guidelines so that the adverbial or the context (when there were no adverbials) would elicit either preterit or imperfect. However, after five piloted revisions of the passages by native speakers, it was continually pointed out that in several cases either preterit or imperfect was possible, despite the presence of an adverbial in the context. An example of this is shown here, excerpted from passage 1:

Por tres semanas enteras (viajábamos/viajamos) por todo el continente y cada día (conocíamos/conocimos) a nuevas personas.

The role of the prescriptive rules guiding the selection of aspectual morphology will be discussed in Chapters 4 and 5. Because of these native speakers' responses in the pilot revisions, I will heretofore refer to the responses as *expected* or *unexpected* and not *correct* or *incorrect.* Specifically, the term *expected response* refers to the selection of imperfect or preterit as expected considering the influence of the adverbial (durative/frequency inducing imperfect and frame inducing preterit) or context (when no adverbial was present). Thus, the *expected forms* are not necessarily the forms most likely chosen by native speakers: however the majority of native speakers' selections and the expected forms correlated 82.7% of the time.

3.2.2.3 E-Prime Software

The advantages of computer technology have been employed in a variety of modern studies, including those of Boatwright (1999) and Sagarra and Dussias (2001). In the present study the computer software application, E-Prime (Schneider 2002), was implemented in order to prevent participants from going back and changing their previous responses; record and save all student responses; and precisely calculate the time between each response, revealing how long each student thought about each instance before choosing perfective or imperfective morphology. All students worked individually on a desktop computer while native speakers used a laptop computer.

3.3 Data Collection

3.3.1 Procedure

The data from undergraduate students were collected in 4 separate sessions in a laboratory classroom. Each participant signed a consent form and received general information about the study, including explicit instructions about how to operate the computer software program. The data from native speakers were collected via a portable computer in the speakers' offices or homes. Because knowledge of the research topic, adverbials, might have affected participant responses they were informed that the investigation centered on how English-speakers chose verbs in different social contexts. After participating in the study all participants were informed of the specific nature of the data collection in a written debriefing statement.

All participants were instructed on how to initiate the data collection software, E-Run. This was done so that each participant would be able to complete the study at his or her own pace, which was especially important considering that their reaction times were recorded. Once initiated by the participant, the computer application E-Run revealed a welcome screen, instructions screen, two practice screens (regarding the uses of *ser* and *estar*), and finally the ten contexts on ten individual screens followed by a "goodbye" screen. The student participants were permitted to ask questions about the vocabulary in the passages, though familiar words and phrases were used in attempt to reduce the need for such questions. After completing the computer-based task the undergraduate students then completed a paper version of the vocabulary and grammar section of a High-Intermediate Level D.E.L.E. examination.

3.3.2 Task

After initiating the E-Run program and reading the welcome, instruction and practice screens, each participant was asked to read ten cloze passages, five with temporal and frequency adverbials and five without temporal and frequency adverbials. The passages were presented in an alternating fashion (passage one included adverbials, passage two had no adverbials, passage three included adverbials, etc.) in order to avoid biased response times. Each individual passage included five or six instances in which the student had to select perfective or imperfective verb morphology with a total of 26 selections when adverbials were present in the passage; 13 of these instances included an adverbial suggesting a perfective interpretation (*ayer, súbitamente, el año pasado)* and 13 included an adverbial suggesting an imperfective interpretation *(cada día, en años pasados, por toda la mañana)*. Another 26 selections did not include adverbials; 13 of these instances occurred in a context suggesting a perfective interpretation and 13 occurred in a context suggesting an imperfective interpretation.

3.4 Methods of Analysis

3.4.1 Responses

The responses of both the native speakers and the learners were analyzed via two logistical regressions; the first incorporated the responses of all the participants and the second only the responses of the learners. The logistical regression algorithm fits a logistic curve to the datasets according to several variables. The algorithm can then be used to estimate the probability of an event based upon several variables (Rietveld & van

Hout 2005; Chen personal communication); comparing this probability to the actual data aids in calculating the significance of a certain variable.

In this study, the probability, *p*, of an expected verb selection from a native speaker or learner is predicted via the logistic regression algorithm: $log(p/1-p) = \beta_0 + \beta_{1*} x_1 + \beta_{2*} x_2 + \beta_{3*} x_{3...} \beta_k x_k$, where β_0 is a reference to which the other variables are compared; $\beta_{1...} \beta_k$ are the regression coefficients; and $x_{k...} x_k$ are the data from the study. The variables for this logistic regression were: non-native or native speaker, the learners' score on the standardized exam, presence or absence of an adverbial in expected responses. The presence or absence of an adverbial was accounted for in the regression by four types of expected responses in the data: 1) adverbial present, preterit expected; 2) adverbial present, imperfect expected; 3) adverbial absent, preterit expected; and 4) adverbial absent, imperfect expected. These four types of contexts are presented in Table 6. The types were not presented in any particular order in the passages.

Table 6: Four Contexts Compared in the Participants' Responses

Preterit expected	Adverbial present	**Type 1**
Imperfect expected	Adverbial present	**Type 2**
Preterit expected	Adverbial absent	**Type 3**
Imperfect expected	Adverbial absent	**Type 4**

The learners were not divided into intermediate and advanced groups for either of the two logistic regressions, but they were divided into two groups for additional analyses of the effects of the four types on participant selections. In these analyses the learners were divided into intermediate and advanced based on their score on the standardized test; those who scored below the mean (56%) were placed in the intermediate group and

those who scored above the mean were placed in the advanced group. There were 32 participants in the intermediate group and 30 in the advanced.

3.4.2 Response Time

The response times for both groups were combined and analyzed in a paired difference t-test. The paired difference t-test is used to determine how a group of subjects performs in two different test conditions and whether there is a significant difference between the first and second test conditions (Rietveld & van Hout 2005). In this case, the first test condition was *adverbials present* and the second test condition was *adverbials absent*. For each participant, the difference between his or her average response time under the condition *adverbials present* was subtracted from his or her average response time under the condition *adverbials absent.* By using the difference between the two times for each individual, the variation between individuals' reading speed was eliminated. The difference was used to calculate the mean (x) and standard deviation (s) in the response times of the entire group (n). These values were then inserted into the t-test formula ($t = x - \Delta/s/\sqrt{n}$) and the results were compared to the results from the standard critical value (.05) to determine significance.

3.5 Considerations in the Analysis

3.5.1 Responses

Out of the 52 instances where the participants had to choose either preterit or imperfect there were nine cases, with and without adverbials, where a significant percentage of native speakers (between 40% and 100%) did not choose the expected

form. For example, in the first context the selection of imperfect was expected in the sentence: *Por tres semanas enteras (viajamos/viajábamos) por todo el continente y cada día (conocimos/conocíamos) a personas que siempre (fueron/eran) simpáticas.* However, some native speakers chose preterit; 90% chose *viajamos*, 60% *conocimos*, and 80% chose *fueron*. The role of adverbials in contrast to lexical aspect and grammatical aspect in determining native speakers' selections will be discussed in detail in Chapter 5. Because of this discrepancy in some of the native speakers' selections, the analysis of the data will show the relationship between the selection of the expected forms and the presence or absence of an adverbial. Using the expected forms as the standard in the analysis will allow for observations on how the presence or absence of an adverbial affects native speakers' decisions and how these decisions differ from traditional textbook rules. Native speakers did not always unanimously select the expected forms, thus it is anticipated that most learners will choose the expected form even in cases where native speakers do not, revealing the importance of the adverbial for L2 learners in acquiring the Spanish aspectual morphology system.

3.5.2 Response Time

The overall average response time for each selection was 7.22 seconds, yet a small percentage of the participants took up to 27 seconds to select a response. Because these exceptional cases could potentially affect the accuracy of the response time data, all response times were truncated at 15 seconds. This cutoff point allows for the inclusion of longer-than-average response times but avoids distorting the figures.

Also, the participants' response time data for the last passage was lost due to my own programming error in the E-Prime Software. Because the data for response times were averaged according to presence or absence of adverbial, the unfortunate loss of this data does not heavily affect the results. Chapter 4 presents the results and discussion of this research.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

The results show that the presence or absence of an adverbial is a factor in the selection of aspectual morphology by both native speakers and learners. Additionally, the presence of an adverbial increased the probability of all participants' selection of the expected forms (Figure 1). Further analysis shows that advanced and intermediate students performed at about the same level, with advanced students choosing the expected morphology slightly more often than the intermediate students, particularly in the case of type four sentences (no adverbial, imperfect morphology expected). In general, participants were least likely to choose the expected morphology for the type four sentences. In this chapter, I discuss the general results of the study as well as the role of adverbials in participant responses by proficiency level and the effect of the adverbial in the selection of both preterit and imperfect morphology to determine the restrictions of the adverbials' influence. Native speakers' selections of unexpected forms are also discussed and compared to the learners' responses to determine what differences, if any, are attributable to the presence of adverbials.

4.2 General Results

4.2.1 Participant Responses

As seen in Figure 1, the percentage of expected responses, overall, was quite similar among the three participant groups when an adverbial was present in the context with rates of 86.18%, 88.85%, and 88.08% within each level, respectively. However, when there was no adverbial present, intermediate learners selected the expected form least often (63.82%) as did advanced learners, though not as much (75%). Native speakers, when no adverbial was present, selected the expected form at the highest rate (83.85%).

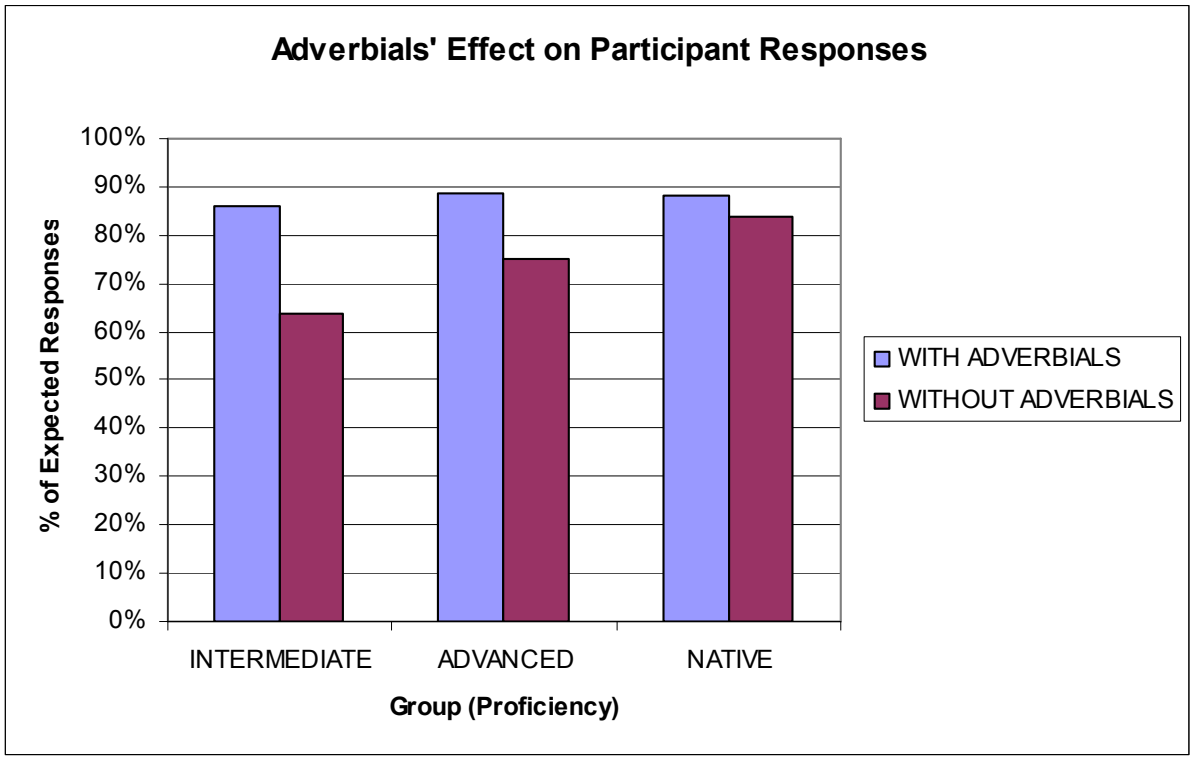


Figure 1: Adverbials' Effect on Participant Responses

4.2.2 The Role of Adverbials in Responses

Of the 3,744 responses from 62 learners and 10 native speakers there was a clear connection between the presence of an adverbial and the participants' selection of the

expected form. The relationship was proven significant in the statistical analysis, which will be discussed further in section 4.6 of this chapter. The average rate of expected responses in contexts with an adverbial, among all participants, was 87.7% while the rate without adverbials was 74.22%. The adverbials' effect for learners alone was even greater with an expected response rate of 87.51% with adverbials and 69.41% without adverbials. The interaction between the presence of an adverbial and the selection of preterit or imperfect will be discussed in section 4.4 of this Chapter.

4.2.3 Response Time

The presence of an adverbial in the context increased response time (RT) by an average of 1.2 seconds – as compared to the average RT without an adverbial – among all participants. Figure 2A shows the average RT per selection in each of the three groups. All three had similar RTs (ranging from 6.1 to 6.6) when there were no adverbials in the contexts, however the average RT varied when adverbials were present. With adverbials, intermediate learners took the longest time (8.5 seconds) to consider the choice of preterit or imperfect. Advanced learners took less time than the intermediate learners (7.2 seconds), but still more than native speakers (6.6 seconds per selection). The presence of an adverbial, it seems, encouraged all three groups to consider their selection of the verb form for a longer period of time, but the length of this extra time depended on learner proficiency.

The observations from Figure 2A are again supported in an alternative analysis of the same data. Because Figure 2A uses the raw RT data from all participants, individual differences in reading speed have not been taken into account. Alternatively, an analysis

using the difference between the two datasets (the average RT without adverbials subtracted from the average RT with adverbials) for each individual participant clearly reflects the role of the adverbial in the RT, but eliminates personal variations in reading speed. These calculations are reflected in Figure 2B. The presence of an adverbial resulted in intermediate learners having to consider their morphology choice for two seconds longer (on average). For advanced learners the RT difference was nearly half (1.2) that of the intermediate group with adverbials present. Finally, native speakers' selection took only 0.5 seconds longer in contexts with an adverbial present than in context with no adverbial.

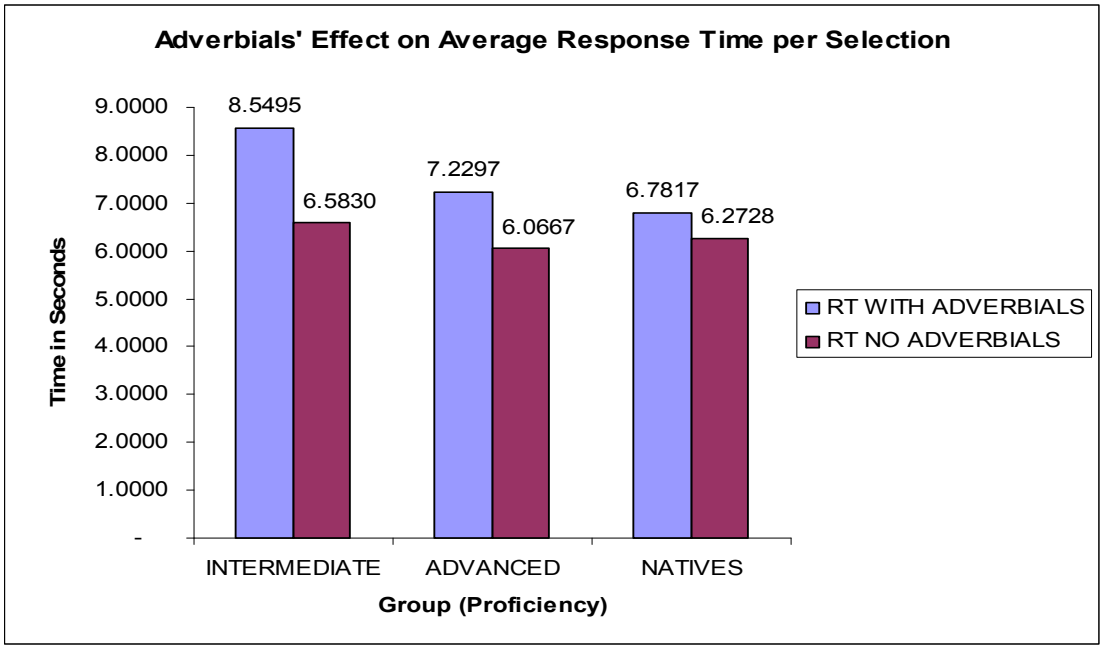


Figure 2A: Adverbials' Effect on Average Response Time per Selection

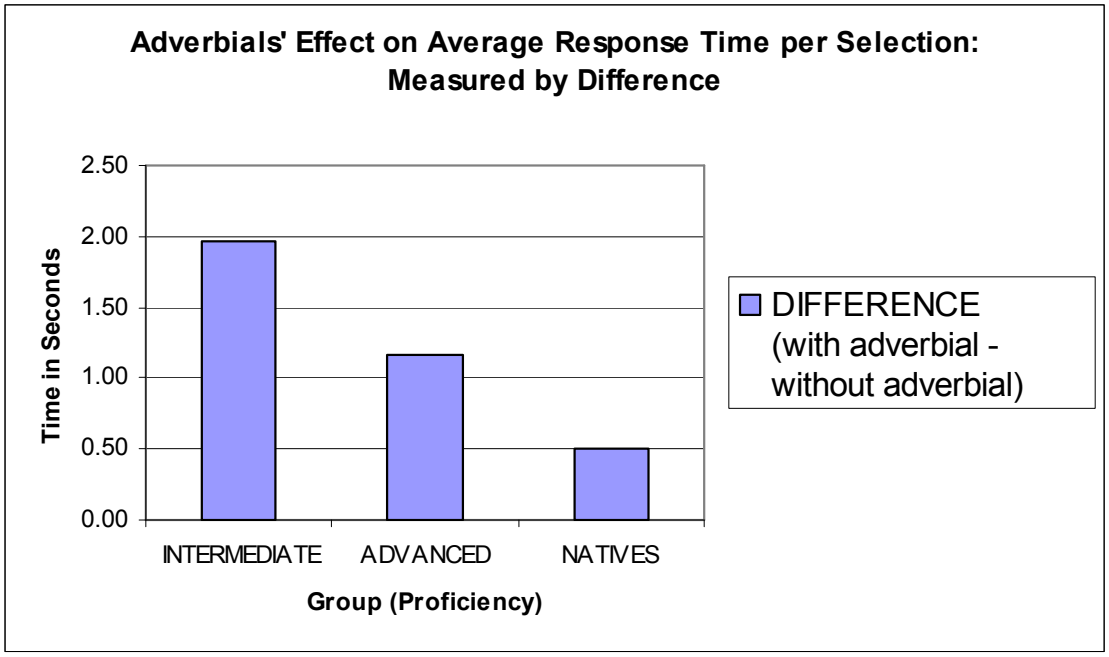


Figure 2B: Adverbials' Effect on Average Response Time per Selection: Measured by Difference

There were eight participants whose RT did, in fact, decrease when adverbials were present contrary to the general tendency; one in the intermediate group, four in the advanced, and four of the ten native speakers. The only group for which these participants' RT would be a factor to consider is the native speaker group which consisted of 10 participants. Thus, 40% of the natives speakers' RTs were decreased by the presence of an adverbial while for 60% the presence of an adverbial increased their RT by an average of 0.5 seconds. As such, the adverbials' role in aiding native speakers to choose verb morphology faster is not supported by these data; however, for learners the presence of an adverbial undoubtedly slows the selection of verb morphology, contrary to what was expected. This is likely attributable to the length of the passages; while those without adverbials had an average character count of 261, those with adverbials had 294. This contrasts with Boatwright's (1999) use of isolated sentences of approximately equal lengths.

4.2.4 Effects of the Task

As mentioned in Chapter 3, five of the ten passages read by the participants had adverbials however the passages were presented in alternating order to avoid participant bias. Viewing the responses in the order in which the participants completed the task reveals the influence of the adverbial even further. Figure 3 visually represents the adverbials' ability to increase the average number of expected responses among all participants. The up-and-down pattern is consistent with the alternating order in which the passages were presented.

Participants' rate of selecting the expected response increased throughout the task – confirmed by a linear regression – at the same time that their average response time in selecting verb morphology decreased, as shown in Table 7. This may indicate that with more exposure to situations with and without adverbials over a period of time the participants became more sensitive to the effects of the adverbial.

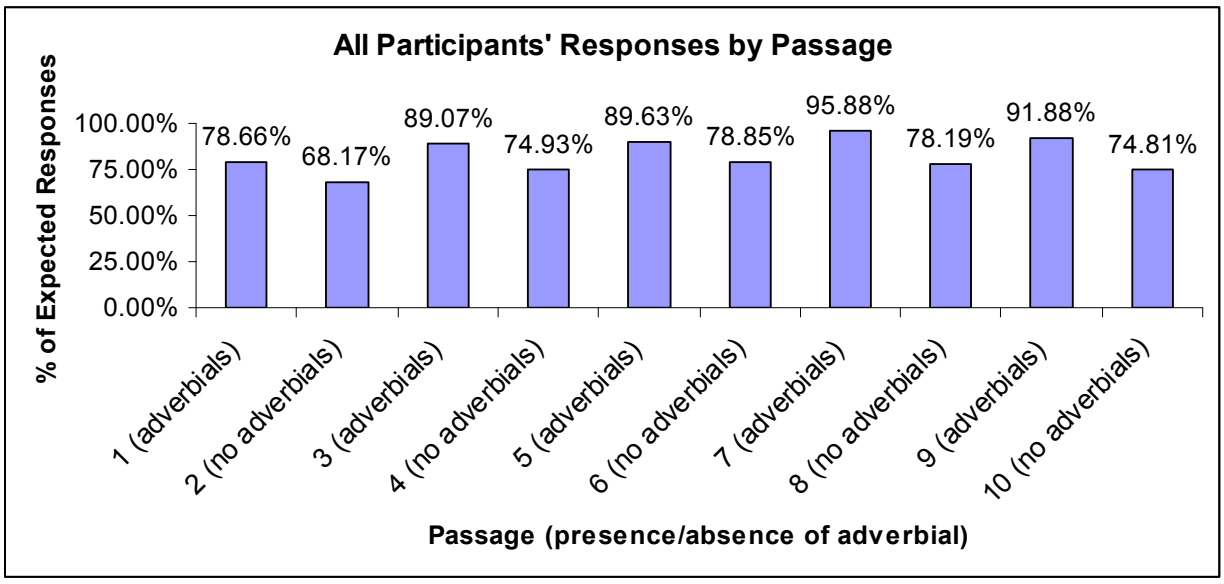


Figure 3: All Participants' Responses by Passage

Table 7: All Participants' Reaction Time by Passage

Passage:	1	2	3	4	5	6	7	8	9	10
Average RT per selection	7.0188	7.3185	8.8052	7.0464	8.7153	4.9801	6.3735	5.8849	6.6887	-

4.3 Effects of Adverbials by Proficiency Level

The average rate of expected response among learners was 87.51% with adverbials present while the average rate without adverbials was 69.41%. A logistic regression test of only learners' responses found that there was no significant correlation between learner proficiency (D.E.L.E. score) and selection of the expected forms. However, dividing the learners into two groups of 32 intermediate and 30 advanced learners shows that though the difference was marginal, advanced students did perform slightly better than intermediate students in the selection of the expected forms. This was particularly true when the adverbial was absent. Table 8 shows the average rate of expected responses with and without adverbials for each of the three proficiency levels; participants with more proficiency answered with the expected responses more often. The influence of the adverbial in increasing the rate of expected response was most influential for advanced learners. Figure 4 shows that while the average response time decreased throughout the task for both groups of learners, it remained consistent for native speakers. This may indicate that the exposure to adverbials as well as practice with deciding between the two verbal aspects increases learners' speed in selecting morphology while for native speakers, exposure and practice makes no difference.

In the following sub-sections the responses and response times of the three proficiency groups will be discussed in further detail.

Table 8: Average Rate of Expected Responses from Participants (by proficiency group)

Adverbials	**Intermediate**	**Advanced**	**Native speaker**
present	86.18%	88.85%	88.08%
absent	63.82%	75.00%	83.85%

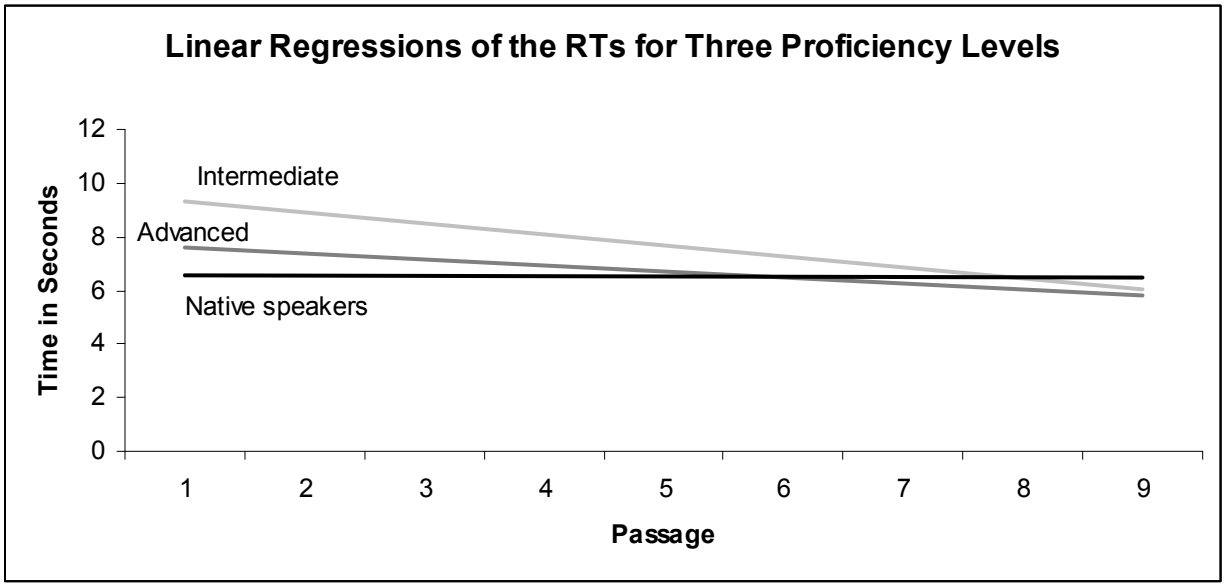


Figure 4: Linear Regressions of the RTs for Three Proficiency Levels

4.3.1 Intermediate Learners

Intermediate learners selected roughly the same number of expected answers, on average, as participants in the advanced and native speaker groups when an adverbial was present; the average rate of selecting the expected response was 87.7% among all participants and was 86.18% for intermediate learners. However, this rate decreased notably when there was no adverbial present; while all participants selected the expected forms 74.22% of the time with no adverbials intermediate learners only did so 63.82% of the time.

The difference between intermediate learners' responses in each passage is notable. As with the general results of all participants (see Figure 3), a linear regression

shows a slight increase in the average rate of expected responses from the beginning to the end of the task by intermediate learners. These learners, as represented in Figure 5, were least able to select the expected forms when no adverbials were present in the passage and, specifically, passages 2 and 6 showed the most variation. Difficulty with these two passages is reflected in the responses of advanced learners as well and will be addressed further in section 4.4 of this chapter. The average RT for intermediate learners was 7.67 seconds overall and averaged at 8.55 with adverbials and 6.58 without adverbials in seconds per selection. As in the general results, the average response time decreased throughout the task (seen Table 9 and Figure 6).

In summary, for intermediate learners the presence of an adverbial was a significant factor in their selection of the expected forms. Viewing the response data by passage shows the wavering high-and-low levels of expected responses, induced by the presence of absence of adverbials, throughout the task. Additionally, intermediate learners' average response time decreased nearly two seconds from the start to the end of the task, perhaps indicating that their abilities were enhanced by continuous exposure to contexts where they had to decide between preterit and imperfect. However, as their average rate of expected responses did not increase during the task, it cannot be claimed that their overall performance improved during the task.

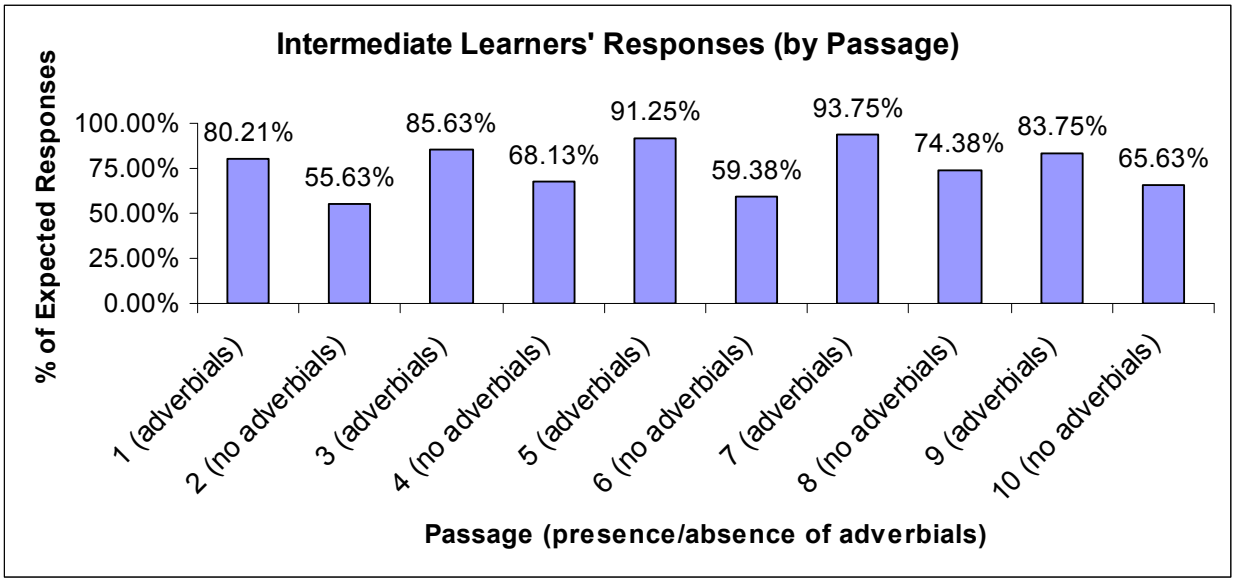


Figure 5: Intermediate Learners' Responses by Passage

Table 9: Intermediate Learners' Reaction Time by Passage

Passage:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Average RT per selection	8.4903	8.4921	10.1196	7.1589	10.5039	4.9119	7.0117	5.7689	6.6219	-

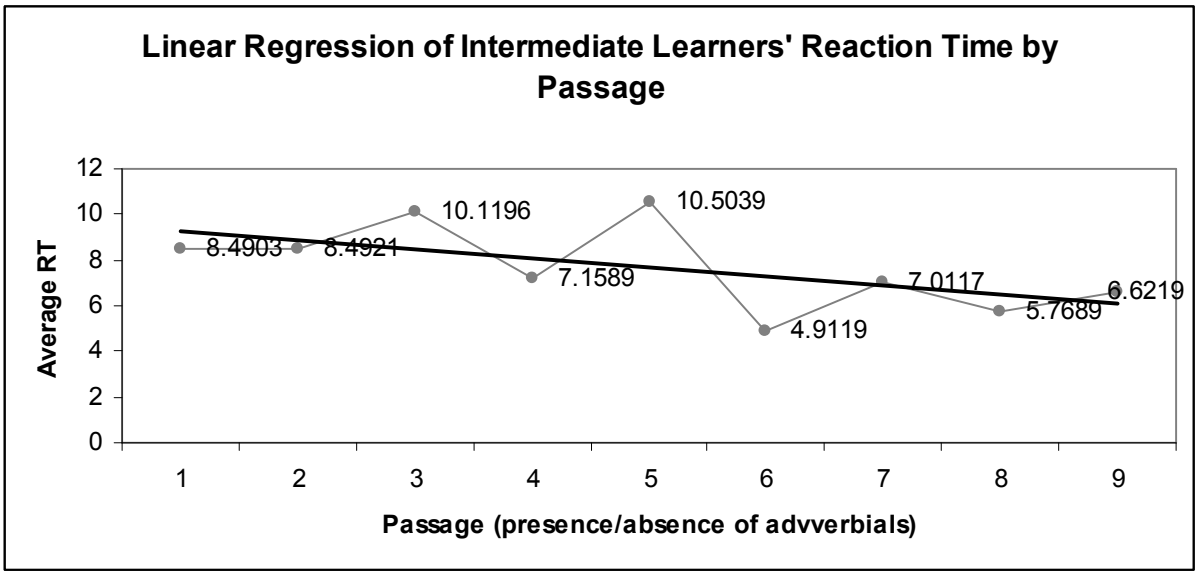


Figure 6: Linear Regression of Intermediate Learners' Reaction Time by Passage

4.3.2 Advanced Learners

Advanced learners were more consistent in their selection of the expected forms whether an adverbial was present or not. Additionally, their response time was more consistent throughout the task. However, this group was still affected by the presence of an adverbial while selecting the forms; the average expected response rate was 88.85% with adverbials. This rate is higher than the overall average (87.7%) as well as slightly higher than the average for native speakers (88.08%). This shows that the presence of an adverbial is also a factor for advanced learners, although less so than for the intermediate learners. However, the presence of an adverbial is slightly stronger in inducing the selection of morphology for advanced learners than it is for native speakers. While for intermediate learners the presence of an adverbial increased their expected response rate about 22 percentage points, for advanced learners this increase was only approximately 14 percentage points. This further demonstrates that the presence of an adverbial is less influential for advanced learners. Advanced learners were able to select the expected form without the aid of adverbials 75% of the time, on average. This performance is not nearly as high as their response rate with adverbials present, but it is a 9-point improvement from the results of intermediate learners in the same contexts. This shows that advanced learners are better able to select the expected forms when no adverbial is present more often than intermediate learners.

Figure 7 shows advanced learners' rate of selecting the expected forms in each passage. The higher rate of consistency in passages with adverbials as compared to passages without adverbials is clear, particularly when compared to the results of intermediate learners (see Figure 5). Contrary to the results of intermediate participants,

however, there is no improvement from the rate of expected response from the beginning of the task to the end of the task according to a linear regression of the data. However, as with the results of intermediate learners' response times, advanced learners' RTs (Table 10) decreased, though less dramatically, from the beginning to the end of the task. Figure 8 shows the linear regression of this data.

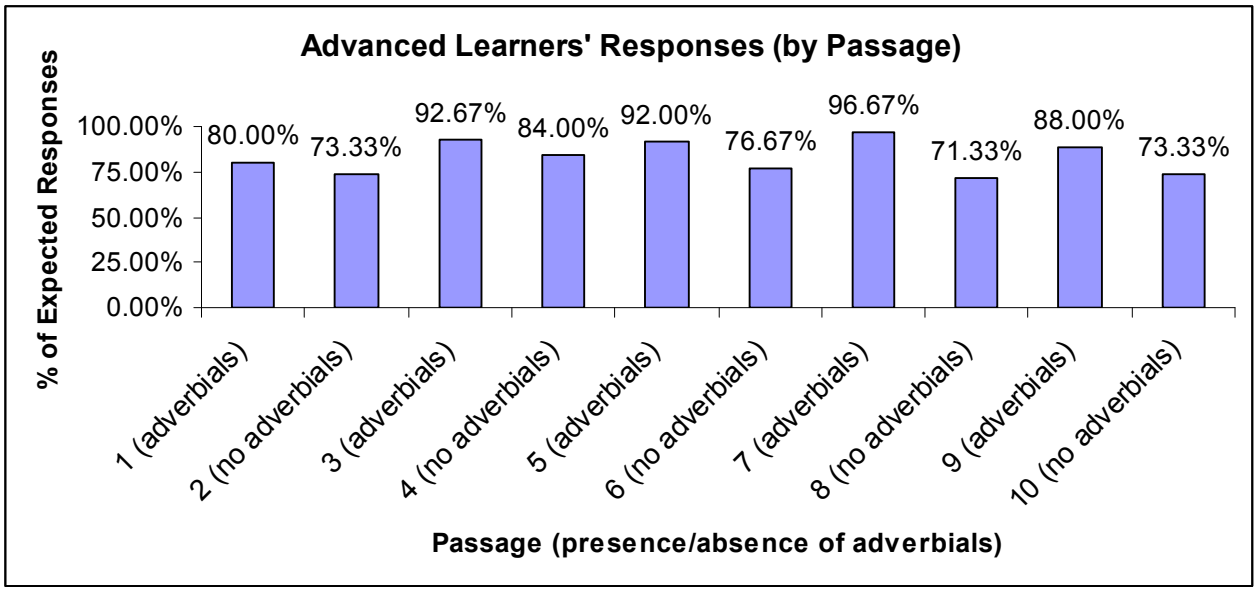


Figure 7: Advanced Learners' Responses by Passage

Table 10: Advanced Learners' Reaction Time by Passage

Passage:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Average RT per selection	6.8282	7.1751	8.3233	6.6323	8.8775	4.7246	5.6325	5.7348	6.4870	-

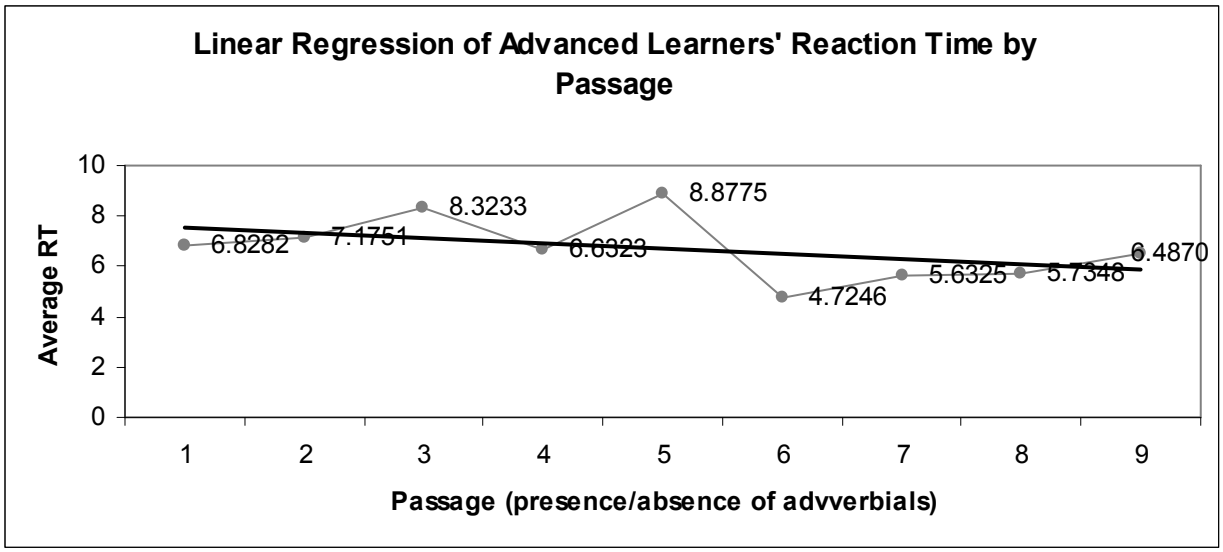


Figure 8: Linear Regression of Advanced Learners' Reaction Time by Passage

In summary, advanced learners performed as expected more than intermediate learners both when adverbials were present and when they were not present. However advanced learners still benefited from the presence of adverbial, which increased their expected response rate nearly 14 percentage points. While intermediate learner's rate of expected responses increased throughout the task, advanced learners' responses were consistent from beginning to end. Regarding the average response time, however, advanced learners' RT decreased throughout the task (Figure 8) though not as dramatically as the decrease in the RT of the intermediate learners (Figure 6).

4.3.3 Native Speakers

Native speakers were the most consistent in the selection of the expected morphology both with and without adverbials, however there several cases where native speakers were the group least likely to agree with the expected morphology. The discrepancy between expected morphology and native speakers' responses is discussed in

detail in section 4.5 of this chapter, but in general it seems that this difference in responses between native speakers and learners – where learners chose the expected morphology more often than natives – further attests to the importance of the adverbial for learners. Still, overall, the adverbial is a factor in the selection of morphology for native speakers as well; without adverbials native speakers chose the expected response 83.85% of the time, but with adverbials they did so 88.08% of the time. Figure 9 visually represents this higher rate of expected responses with adverbials as compared to the lower rate of expected responses without adverbials. Clearly, native speakers' responses are not more or less accurate because of adverbials, but their presence seems to influence the selection of one form over another while the absence of adverbials allows greater variability in speakers' responses. The average RT varied slightly for native speakers (Table 11), but a linear regression of the average response times, seen in Figure 10, showed absolutely no change in RT throughout the task.

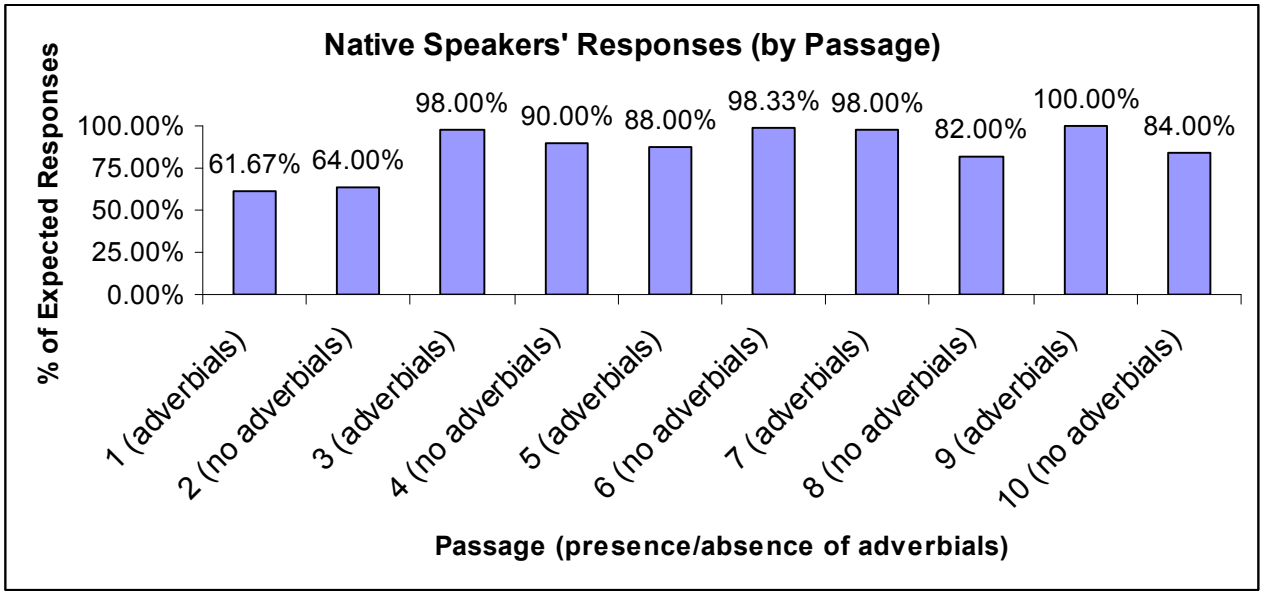


Figure 9: Native Speakers' Reponses by Passage

Table 11: Native Speakers' Reaction Time by Passage

Passage:	1	2	3	4	5	6	7	8	9	10
Average RT per selection	5.7378	6.2882	7.9726	7.3481	6.7644	5.3038	6.4763	6.1509	6.9572	-

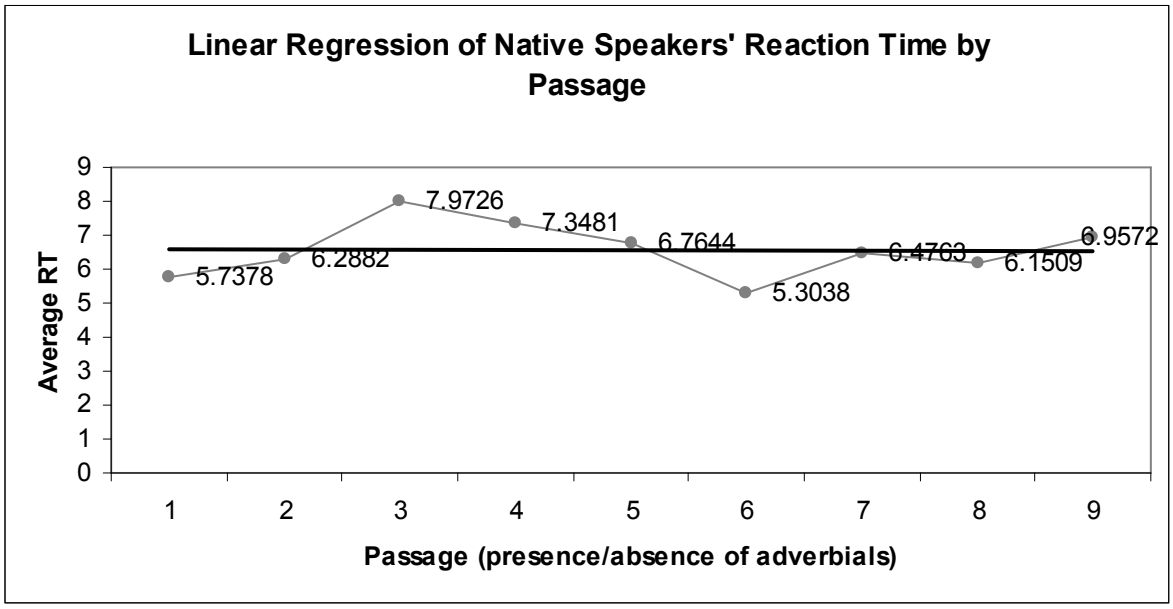


Figure 10: Linear Regression of Native Speakers' Reaction Time by Passage

In summary, native speakers responded as expected most often, except in passages 1 and 2 for reasons which will be discussed later in this chapter. The presence of an adverbial increased native speakers' selection of the expected forms by approximately 5 percentage points, which is a far smaller margin than the difference in the learner groups but still indicative of the adverbials' influence on the selection of morphology.

4.4 Effects of Adverbials with Preterit and Imperfect Morphology

The significance of the adverbial in aiding all participants to select the expected forms has been thoroughly discussed, but is the effect of the adverbial different when the expected form is preterit or imperfect? The goal of this section is to determine whether

there are limitations to the proven influence of the adverbial and to explore the interaction between adverbials and participants' selections of preterit and imperfect. General results are presented and then followed by sub-sections offering observations by each proficiency level.

As defined in Chapter 3 (Table 6) the four types of adverbial contexts in the passages were: 1) adverbial present, preterit expected; 2) adverbial present, imperfect expected; 3) adverbial absent, preterit expected; and 4) adverbial absent, imperfect expected. A logistic regression found that types 1, 2, and 3 were significant factors in the participants' selection of the expected form, but not in type 4 contexts. This indicates that participant responses for type 4 sentences were more likely to be random. This is confirmed in Figure 11 in which the number of expected responses to type 4 contexts is quite lower than their responses to types 1, 2, and 3. The number of expected responses is highest among natives speakers when the expected response is preterit (types 1 and 3); this is true for learners as well, but learners' selection of the expected response was higher than that of native speakers when imperfect was expected and an adverbial was present (type 2). In other words, learners respond to the adverbials indicating imperfect morphology more often than native speakers do. This is confirmed upon examination of type 4 contexts, where imperfect was expected but no adverbial was present. In these cases learners had the most difficulty determining the expected form.

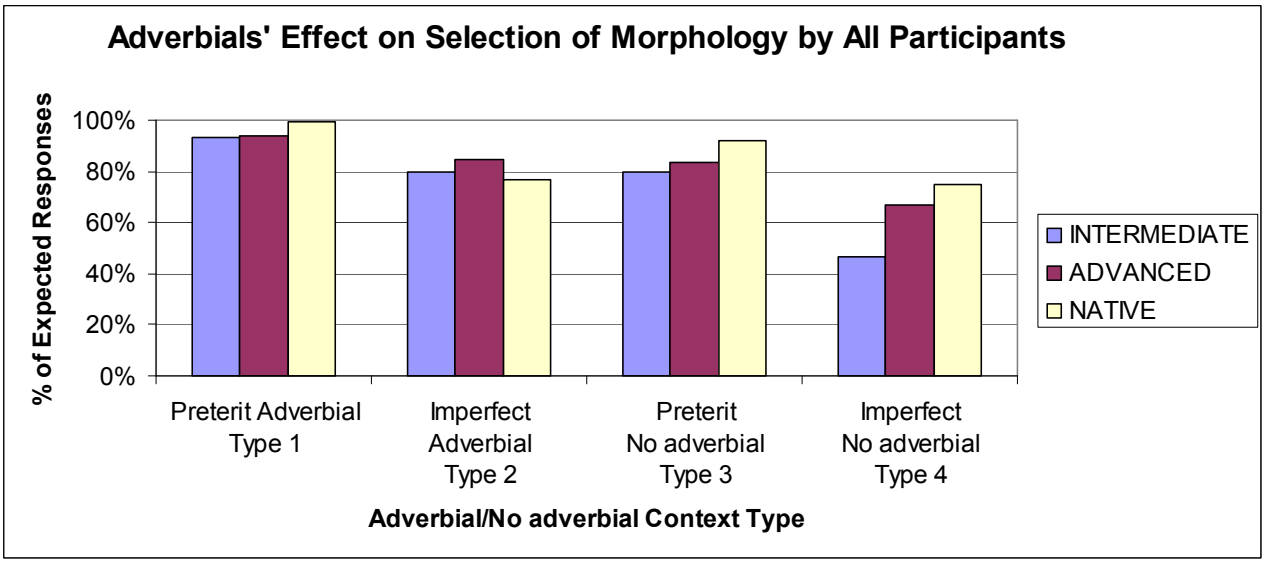


Figure 11: Adverbials' Effect on Selection of Morphology by All Participants

The data upon which Figure 11 is based are presented in Table 12. Viewing the average rate of expected responses based on the presence/absence of adverbials as well as whether the expected response was preterit or imperfect reveals more detail about the influence of adverbials. Type 1 contexts, where preterit was expected and an adverbial was present, were quite easily identifiable for all three groups; all three rates of expected response were between 93 (for intermediate learners) and 99 percent (for native speakers). Type 3 contexts however, where preterit was expected but no adverbials were present, saw a decrease in expected responses for all three groups with rates between 79.46% (intermediate) and 92.14% (native). In Type 2 contexts, where imperfect was expected with an adverbial present, native speakers only associated the durative/frequency adverbial with the imperfect 76.92% of the time. However, advanced learners associated these same types of adverbials with the imperfect 84.87% of the time. This is directly related to the assertions of Binnick (1991) and Gonzalez (1998), discussed in Chapter 2, section 2.5, that durative/frequency adverbials can be interpreted

as frame adverbials. Native speakers seem to interpret some imperfective-inducing adverbials in this way while the majority of learners do not. This difference in interpretation by the two groups will be discussed further later in this chapter.

Type 4 contexts, where imperfect morphology was expected but no adverbials were present, were the least likely to be associated with the expected form by all participants, particularly by intermediate learners who selected the expected response only 46.88% of the time. These results confirm the influence of the adverbial for learners and the strong correlation between imperfect and imperfect-inducing adverbials. This can be compared to contexts where preterit was expected and selected at a relatively high rate with and without preterit-inducing adverbials.

Table 12: Number of Expected Responses by Proficiency Level and by Type

Context	**Intermediate**	**Advanced**	**Native speakers**
Type 1: *Preterit, Adverbial*	93.51%	94.10%	99.23%
Type 2: *Imperfect, Adverbial*	79.81%	84.87%	76.92%
Type 3: *Preterit, No adverbial*	79.46%	83.57%	92.14%
Type 4: *Imperfect, No adverbial*	46.88%	66.67%	75.00%

4.4.1 Intermediate Learners

The responses of intermediate learners are presented in Table 13. Intermediate learners most often chose the expected forms for Type 1 contexts – expected preterit with adverbials. The expected response rates for both Types 2 and 3 were at about 79%, indicating a similar rate of expected response by intermediate learners in preterit was

expected without an adverbial and when imperfect was expected with an adverbial. It seems that intermediate learners are associating preterit morphology with nearly 20% of cases where a frequency or durative adverbial was expected to trigger the imperfect morphology. This mirrors the same tendency in native speakers, but it is not as high for intermediate learners, indicating that durative/frequency adverbials affect intermediate learners more strongly than they do native speakers. This is suggested again in the rate of expected response for Type 4 contexts; with no adverbial to emphasize the imperfective aspect the rate of intermediate learners selecting an expected imperfect dropped to 46.88%.

Table 13: Number of Expected Responses by Intermediate Learners by Type

Context	**Expected Responses**
Type 1: *Preterit, Adverbial*	93.51%
Type 2: *Imperfect, Adverbial*	79.81%
Type 3: *Preterit, No adverbial*	79.46%
Type 4: *Imperfect, No adverbial*	46.88%

4.4.2 Advanced Learners

The responses of advanced learners are presented in Table 14. Advanced learners selected expected forms more often then intermediate learners in all four types of contexts. Like intermediate learners, advanced learners were best able to determine the expected forms for Type 1 contexts – with adverbials indicating preterit. The expected response rate for Type 2 contexts – imperfect expected with adverbials present - was 84.87% while for Type 4 contexts where imperfect was expected but no adverbials were present was 66.67%. Advanced learners, then, associated frequency and durative

adverbials with imperfect more often than either intermediate learners or native speakers. Advanced learners' rate of choosing expected preterit without adverbials in Type 3 contexts was higher than that of intermediate learners at 83.57%, but still not as high as when preterit was emphasized with adverbials (Type 1).

Table 14: Number of Expected Responses by Advanced Learners by Type

Context	**Expected Responses**
Type 1: *Preterit, Adverbial*	94.10%
Type 2: *Imperfect, Adverbial*	84.87%
Type 3: *Preterit, No adverbial*	83.57%
Type 4: *Imperfect, No adverbial*	66.67%

For learners, then, the adverbial plays a role in enhancing the selection of the expected form for both preterit and imperfect, but this effect is much more important for selecting imperfect rather than preterit since Type 3 – preterit expected with no adverbials – were rated as expected more often than Type 4 contexts - imperfect was expected, with no adverbials. Additionally, the proficiency of learners is a factor in the selection of imperfect or preterit with and without adverbials. As shown in Figure 12, less proficient learners were the least likely to select the expected imperfect when no adverbials were present, followed by a nearly even rate of in selecting expected preterit without an adverbial and imperfect with adverbial. Finally, the intermediate learners' highest expected response rate occurred with expected preterit with an adverbial. More proficient learners performed as expected in all four types of contexts, but most notably in selected expected imperfect with an adverbial.

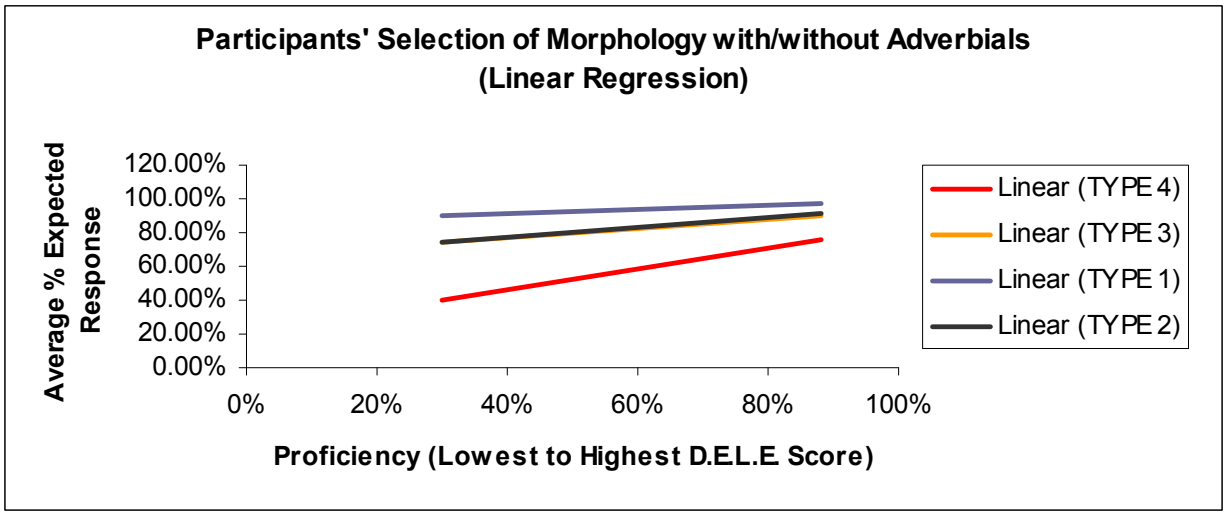


Figure 12: Participants' Selection of Morphology with/without Adverbials

The fact that the advanced learners are performing better than their less-proficient peers in selected expected imperfect with an adverbial present might indicate that the learners are consistently being instructed to associate durative and frequency adverbials with imperfect and, logically, are improving upon this ability as they become more proficient. However, as is discussed in the next section, this association does not always hold true for native speakers.

4.4.3 Native Speakers

The expected responses of native speakers are presented in Table 15. Native speakers selected expected forms more often than either of the learner groups in the expected preterit contexts, but less so in expected imperfect contexts. In these contexts when imperfect was expected and indicated with a frequency or durative adverbial, native speakers were not as likely to select the imperfect as often as either group of learners. However, this does not mean that the adverbials indicating imperfective morphology did

not have any effect on native speaker selections; the rate of selection of expected imperfect was slightly higher (almost 2 percentage points) when adverbials were present (Type 2) than when they were absent (Type 4). Yet, results indicate that even with an adverbial present for reinforcement, native speakers do not necessarily view durative or frequent events as imperfective. Native speakers do not interpret these events as imperfective as often as do learners of Spanish. Regarding preterit morphology, as with the learners, the presence of adverbials increased native speakers' selection of the expected morphology. There was only one person who marked an expected preterit, emphasized with an adverbial (Type 1) as imperfect. This occurred in passage 7: *... y ese mismo día, a las once y media, (salía/salió) para la discoteca "Abe L.*

Table 15: Number of Expected Responses by Native Speakers by Type

Context	**Expected Responses**
Type 1: *Preterit, Adverbial*	99.23%
Type 2: *Imperfect, Adverbial*	76.92%
Type 3: *Preterit, No adverbial*	92.14%
Type 4: *Imperfect, No adverbial*	75.00%

As is true for the learner groups, the adverbial plays a role in enhancing the selection of the both expected preterit and imperfect by native speakers, but the effect is less for selecting imperfect. The presence of a durative/frequency adverbial is not a determining factor in native speakers' selection of morphology; the rate of expected response for expected imperfect contexts was nearly the same with and without adverbials present (76.92% and 75% respectively). Because this result is so surprising,

the next section will discuss in further detail the selection of preterit when imperfect was expected in the responses of both native speakers and learners.

4.5 Discrepancy and Variation in Participants' Selections

Because unexpected forms are selected by native speakers in nine cases, there exists a possibility that learners' selections of unexpected forms in those cases may indicate a willful rupture from the expected response in a native-like way. This section examines the nine cases of native speaker discrepancy and variation, in which 50% or more of native speakers did not select the expected form, and compares the responses from learners in these cases. Finally, there were several cases in which 50% or more of learners selected the unexpected morphology whereas native speakers did not. These cases will also be analyzed as well to see what is prompting learners, but not native speakers, to select the unexpected forms. This section aims to determine if learners are choosing morphology in a native-like way despite, or of because of, adverbials.

4.5.1 Native Speakers

Table 16 shows all cases in which at least one native speaker chose the unexpected forms. If 50% or more of native speakers chose the unexpected morphology the percentage appears in bold. Of the 52 instances where native speakers had to select one form over another there were nine cases where 50% or more of the native speakers deviated from the expected response (in bold). Five of these cases occurred when no adverbial was present and four when a frequency adverbial was present, three of which occurred in the same passage, in the same sentence. In eight of the nine cases, native

speakers selected preterit when imperfect was expected. Again, this shows the lack of a distinct coordination between imperfect and durative/frequency adverbials

Table 16: Unexpected Responses by Native Speakers

Passage	***Verb 1***	***Verb 2***	***Verb 3***	***Verb 4***	***Verb 5***	***Verb 6***
1 (adverbials)	-	-	**90.00%**	**60.00%**	**80.00%**	-
2 (no adverbials)	-	10.00%	**100.00%**	**70.00%**	-	
3 (adverbials)	10.00%	-	-	-	-	
4 (no adverbials)	-	**50.00%**	-	-	-	
5 (adverbials)	-	**60.00%**	-	-	-	
6 (no adverbials)	-	-	-	10.00%	-	-
7 (adverbials)	-	-	-	-	10.00%	
8 (no adverbials)	**60.00%**	-	10.00%	10.00%	10.00%	
9 (adverbials)	-	-	-	-	-	
10 (no adverbials)	-	-	-	**80.00%**	-	

These nine cases of variation are presented here, in context, with the expected forms marked in italics.

> **Passage 1, verbs 3, 4 and 5:**
> Por tres semanas enteras (*viajábamos*/viajamos) por todo el continente y cada día (*conocíamos*/conocimos) a nuevas personas que siempre (*eran*/fueron) generosas.
>
> **Passage 5, verb 2:**
> Toda la mañana yo me (*sentía*/sentí) triste porque…

Passages 1 and 5 are the only two which contained adverbials. In both cases, several native speakers interpreted the durative and frequency adverbials as frame adverbials encompassing a specific segment of time thus creating a perfective aspect instead of an imperfective one.

Passage 2, verbs 3 and 4:
Mi amigo es artista, así que él (*examinaba*/examinó) la pintura con interés pero yo, como escritor, (*leía*/leí) una novela.

In passage 2 the two activities, *examinar* and *leer*, were expected to be interpreted as simultaneous actions despite the lack of the adverbial *mientras*. However, native speakers often interpreted the actions as having occurred simultaneously, but also as having been completed so that perfective aspect was needed rather than imperfective aspect (Guitart 1978). *Examinar* was marked as perfective 100% of the time while *leer* was marked as perfective only 70% of the time, possibly reflecting native speakers' inherent knowledge of lexical aspect; examining a painting takes less time than reading a book.

Passages 4, 8 and 10 did not contain adverbials either and although preterit morphology was expected in two and imperfect morphology in the other, they were all marked with the unexpected morphology by native speakers at times because of grammatical (viewpoint) aspect, discussed in section 2.2 of Chapter 2.

Passage 4, verb 2:
Escondiéndonos, listos para sorprenderle, nosotros (*anticipábamos*/anticipamos) su llamada a la puerta.

In passage 4, five of ten native speakers interpreted the activity *anticipar su llamada* as an accomplishment with an inherent end; although Julia never did knock eventually the speakers stopped waiting.

Passage 8, verb 1:
Mi hermano y yo (*íbamos*/fuimos) muy contentos a la playa para volar nuestro papalote.

In passage 8 six native speakers interpreted the activity *ir a la playa* as an accomplishment because later in the same passage the brothers returned home after flying

the kite at the beach. Four speakers interpreted *ir a la playa* as an activity in progress, as part of the background of the story (Lunn 1985).

> **Passage 10, verb 4:**
> …que me (comí) un plato entero de espaguetis. ¡(Estaba/*Estuvo*) riquísimo!

The selection of the expected preterit in verb 4 of passage 10 depended in part on the assignment of preterit in verb 3, but no native speaker selected *comía* for verb 3. Therefore, the reason for selecting the imperfect for the state *estar* is possibly due to lexical aspect – states are often marked in imperfect – but is more likely due to grammatical aspect since native speakers, clearly, did not always obey lexical aspect in selecting the responses in other passages. Eight speakers interpreted the state *estar* as ongoing during the speaker's dining while two interpreted the verb as an accomplishment since the dinner had concluded (indicated by the terminative *me comí*).

4.5.2 Advanced Learners

Advanced learners' responses are presented in Table 17. Cases where native speakers selected the unexpected forms over 50% of the time are marked in bold (as in Table 16). Cases where native speakers did not select unexpected forms, but over 50% of advanced learners did, are underlined. There was much more variation, overall, in the number of expected and unexpected responses by advanced learners than native speakers. In the nine cases where native speakers tended to choose the unexpected forms advanced learners did not always do so; in fact, only four of the advanced learners consistently selected unexpected morphology as the native speakers had done.

Table 17: Unexpected Responses by Advanced Learners

Passage	*Verb 1*	*Verb 2*	*Verb 3*	*Verb 4*	*Verb 5*	*Verb 6*
1 (adverbials)	-	13.33%	**40.00%**	**43.33%**	**16.67%**	6.67%
2 (no adverbials)	10.00%	-	**60.00%**	**60.00%**	3.33%	
3 (adverbials)	3.33%	6.67%	23.33%	3.33%	-	
4 (no adverbials)	10.00%	**40.00%**	10.00%	-	20.00%	
5 (adverbials)	-	**16.67%**	3.33%	20.00%	-	
6 (no adverbials)	23.33%	10.00%	20.00%	43.33%	26.67%	16.67%
7 (adverbials)	3.33%	3.33%	6.67%	3.33%	-	
8 (no adverbials)	**53.33%**	20.00%	60.00%	3.33%	6.67%	
9 (adverbials)	10.00%	13.33%	6.67%	13.33%	16.67%	
10 (no adverbials)	3.33%	36.67%	6.67%	**56.67%**	30.00%	

Advanced learners' responses are examined here using the same method as for native speakers' responses in these cases of discrepancy.

> **Passage 1, verbs 3, 4 and 5:**
> Por tres semanas enteras (*viajábamos*/viajamos) por todo el continente y cada día (*conocíamos*/conocimos) a nuevas personas que siempre (*eran*/fueron) generosas.
>
> **Passage 5, verb 2:**
> Toda la mañana yo me (*sentía*/sentí) triste porque…

While native speakers chose preterit for verbs 3, 4 and 5 in passage 1 – which included adverbials indicating imperfect – advanced learners did so much less frequently, especially in the case of verb 5 which included the adverbial *siempre.* The presence of the adverbials *por tres semanas enteras* and *cada día* is about twice as likely to trigger the selection of imperfect by advanced learners than by native speakers. With *siempre* learners were four times as likely to select the imperfect than native speakers. Similarly, the adverbial *toda la mañana* in passage 5 encouraged most advanced learners to select

the imperfect while 60% of native speakers chose preterit. Again, the durative adverbial influences learners to choose the imperfect more than it influences native speakers.

Only in the passages without adverbials did advanced learners assign unexpected forms as did the native speakers.

> **Passage 2, verbs 3 and 4:**
> Mi amigo es artista, así que él (*examinaba*/examinó) la pintura con interés pero yo, como escritor, (*leía*/leí) una novela.

In passage 2 the two activities, *examinar* and *leer* – which were marked in the preterit by native speakers – were also marked in the preterit by advanced learners about 60% of the time. Yet this contrasts to the 100% preterit marking of *examinar* by native speakers. The lack of the adverbial *mientras* was likely a factor in the learners' interpretation of the two simultaneous actions as perfective.

> **Passage 4, verb 2:**
> Escondiéndonos, listos para sorprenderle, nosotros (*anticipábamos*/anticipamos) su llamada a la puerta.

In passage 4 half of native speakers had interpreted the activity *anticipar su llamada* as perfective; 40% of advanced learners interpreted *anticipar* in this way as well.

> **Passage 8, verb 1:**
> Mi hermano y yo (*íbamos*/fuimos) muy contentos a la playa para volar nuestro papalote. … El día (era/*fue*) largo, pero divertido.
>
> **Passage 10, verb 4:**
> …que me (comí) un plato entero de espaguetis. ¡(Estaba/*Estuvo*) riquísimo!

In passage 8 the activity *ir a la playa* was interpreted as an accomplishment by 60% of native speakers and nearly the same percentage of advanced learners agreed. However, in the same passage, advanced learners chose imperfect morphology unexpectedly in a phrase where only one native speaker had done so: *El día (era/fue) largo, pero divertido*.

Sixty percent of advanced learners selected *era.* The learners' tendency to obey lexical aspect in this case is similar to the the state *estar riquísimo* in passage 10. In both cases there is vacillation regarding whether to mark a state as imperfect or to obey the grammatical aspect of the situation occurring within the passage. In passage 10, 80% of native speakers had selected imperfect for the state *estar riquísimo*, despite its appearance after the accomplishment *me comí* and a little over half of advanced learners did the same.

In summary, when advanced learners chose the unexpected forms it was not usually done in a native-like way. Examination of advanced learners' responses in the nine cases where native speakers disagreed with the expected forms shows that when an adverbial was present advanced learners were more likely to select the expected form in contrast to native speakers' responses. When no adverbial was present, learners were almost as likely to choose the unexpected forms as native speakers, but not as often and not in all cases. It is unknown whether the cases in which advanced learners agreed with native speakers were voluntary or coincidental, especially considering that only four of the 30 advanced learners consistently chose the the same forms as the majority of native speakers in each of the nine cases of discrepancy.

4.5.3 Intermediate Learners

Intermediate learners' responses are presented in Table 18. Cases where native speakers selected the unexpected forms over 50% of the time are marked in bold (as in tables 16 and 17). Cases where native speakers did not select unexpected forms, but over 50% of intermediate learners did, are underlined. The high amount of variation in many

of the responses diminishes the likelihood that intermediate learners' voluntarily agreed with native speakers in the nine cases of variation under examination. Generally, intermediate learners responded in a similar fashion as did advanced learners in the nine cases where native speakers chose the unexpected forms; when adverbials were present intermediate learners were more likely to select the expected forms but when adverbials were not present they did select the unexpected forms at times. Due to the high amount of variation in the responses of intermediate learners, it is doubtful that the learners' unexpected responses were due to native-like use.

Table 18: Unexpected Responses by Intermediate Learners

Passage	***Verb 1***	***Verb 2***	***Verb 3***	***Verb 4***	***Verb 5***	***Verb 6***
1 (adverbials)	-	21.88%	**31.25%**	**34.38%**	**28.13%**	3.13%
2 (no adverbials)	25.00%	28.13%	**84.38%**	**81.25%**	3.13%	
3 (adverbials)	6.25%	25.00%	25.00%	15.63%	-	
4 (no adverbials)	21.88%	**56.25%**	9.38%	9.38%	62.50%	
5 (adverbials)	-	**18.75%**	-	18.75%	6.25%	
6 (no adverbials)	40.63%	18.75%	34.38%	56.25%	31.25%	62.50%
7 (adverbials)	3.13%	12.50%	12.50%	-	3.13%	
8 (no adverbials)	**34.38%**	31.25%	50.00%	9.38%	3.13%	
9 (adverbials)	12.50%	6.25%	9.38%	40.63%	12.50%	
10 (no adverbials)	6.25%	53.13%	3.13%	**56.25%**	53.13%	

Intermediate learners' responses in these nine cases are briefly detailed in the following section.

> **Passage 1, verbs 3, 4 and 5:**
> Por tres semanas enteras (*viajábamos*/viajamos) por todo el continente y cada día (*conocíamos*/conocimos) a nuevas personas que siempre (*eran*/fueron) generosas.
>
> **Passage 5, verb 2:**

Toda la mañana yo me (*sentía*/sentí) triste porque…

Intermediate learners were more likely to respond to the frequency adverbials *por tres semanas*, *cada día*, and *siempre* than advanced learners. These adverbials prompted them to choose the imperfective much more often than did native speakers.

Passage 2, verbs 3 and 4:
Mi amigo es artista, así que él (*examinaba*/examinó) la pintura con interés pero yo, como escritor, (*leía*/leí) una novela.

Native speakers unanimously selected preterit for *examinar* and most selected preterit for *leer.* This was somewhat true for advanced learners, who did so 60% of the time, but even more so for intermediate learners, who did so more than 80% of the time. This high percentage is likely due to the lack of the adverbial *mientras*, which encouraged a possible perfective reading for learners. It may also be due in part to confusion on the part of some learners in interpreting the simultaneity of the two activities and instead viewing them as successive actions.

Passage 4, verb 2:
Escondiéndonos, listos para sorprenderle, nosotros (*anticipábamos*/anticipamos) su llamada a la puerta.

While 50% of native speakers and 40% of advanced learners interpreted *anticipar* as an accomplishment, approximately 56% of intermediate learners interpreted it in this way as well.

Passage 8, verb 1:
Mi hermano y yo (*íbamos*/fuimos) muy contentos a la playa para volar nuestro papalote. … El día (era/*fue*) largo, pero divertido.

Passage 10, verb 4:
…que me (comí) un plato entero de espaguetis. ¡(Estaba/*Estuvo*) riquísimo!

In passage 8 the activity *ir a la playa* was interpreted as an accomplishment by 60% of native speakers and nearly the same percentage of advanced learners agreed. However, only about 35% of intermediate learners interpreted the activity in this way. Also, in the case of *El día (era/fue) largo, pero divertido,* 50% of intermediate learners chose the unexpected imperfect as did about the same number of advanced learners, contrary to what native speakers did. Again, this tendency to obey lexical aspect is seen in *estar riquísimo* from passage 10. Intermediate learners associated this state verb with the unexpected imperfect as well.

4.5.4 Summary

The data from the nine cases of discrepancy show that native speakers are not restricted in their use morphology by other factors such as lexical aspect and adverbials. Learners, on the other hand, depend on lexical aspect and adverbials to guide their selection of morphology. Thus, learners interpret frequency and durative adverbials as requiring imperfect whereas this is not true for native speakers; a frequency or durative adverbial is often associated with imperfect, but not necessarily. For example, in *todas las noches se (iba/fue)* de fiesta most native speakers chose imperfect, but in *cada día (conocíamos/conocimos) a nuevas personas* most native speakers selected preterit. However, learners tended to select imperfect in both cases, indicating learners' reliance on the imperfect-inducing adverbials to guide the morphology and native speakers' ability to interpret perfectivity with adverbials of frequency or duration depending on their own viewpoint. This differs from the most common and traditional textbook suggestions for students learning imperfect/preterit.

Additionally, learners were also more influenced by lexical aspect than native speakers, even when it was not appropriate for the context. For example, in *(era/fue) un día largo, pero divertido*, no native speaker selected the imperfect morphology yet over half of learners selected the imperfect demonstrating not only the weight that lexical aspect carries with learners, but also native speakers' ability to assign morphology despite lexical aspect.

4.6 Statistical Significance of the Data

4.6.1 Response Time

The paired t-test of the differences in response time with adverbials and without adverbials shows that response time was a significant variable, but that the presence of an adverbial increased the time it took for participants to make a selection rather than decreased it. On average, the difference between participants' response time with adverbials present was 1.2 seconds longer than their response time without adverbials.

4.6.2 Responses

A logistic regression of all participants' responses was used to determine whether their selections of verb forms were random or guided in some way by the contexts. In the results of the regression (Table 19), the learners' responses for type four contexts served as the reference, or default. As explained in section 3.4.1 of Chapter 3, each variable played a role in the overall algorithm used in the regression so that with the addition or elimination of each variable allowed a calculation of the significance of each value. These values were the participants' group (native or learner), the context type (1-4), or

both. The relationship between the probability of a participant selecting an expected answer was compared to the results of a Chi-Square test (last column) to determine whether the relationship was caused by chance or by the participants' volition. The smaller the result of this comparison, the less likely that the participants' selections were simply coincidental.

Overall, the participants' responses were not random and the presence of the adverbial was significant. For learners, their selection of the expected morphology was intentional, and significant (.0001), for types 1, 2, and 3. This means that the presence of an adverbial was a significant factor in the selection of preterit and imperfect. The lack of significance for type 4 contexts (.725) indicates that without an adverbial present it was very difficult for learners to choose the expected imperfect; their responses were, statistically speaking, more random. Results were similar for native speakers; while their responses for types 1, 2, and 3 were not statistically random (were significant), their responses for type 4 were not.

Table 19: Results of the Logistic Regression of Adverbials' Significance

Mathematical Coefficient and Type		**Variable**	**Probability that the relationship is random**
B_0	Type 4	Learners' responses to Type 4	0.725
B_2	Type 1	Learner responses	<.0001
B_3	Type 2		<.0001
B_4	Type 3		<.0001
B_5	Type 1	Native responses	0.034
B_6	Type 2		0.014
B_7	Type 3		0.032
	Type 4	Native Speakers' responses to Type 4	0.147

The lack of significance for type 4 contexts – those in which imperfect was expected but no adverbial was present – is due to two factors: learners' reliance on adverbials to select morphology and native speakers' primary reliance on morphology to indicate aspect rather than adverbials. As discussed in section 4.5.4 of this chapter, learners face difficulty in assigning morphology without adverbials, which accounts for the lack of predictability in their responses. Native speakers do not face the same difficulty, but because their use of morphology predominates over lexical aspect and adverbials they can use perfective morphology in contexts where imperfective was expected. Examples of this were examined in section 4.5.1

CHAPTER 5

CONCLUSIONS

5.1 Summary of Findings on the Effect of Adverbials

The presence of adverbials resulted in significantly higher rates of selection of the expected forms among all three groups. With adverbials all three proficiency groups performed similarly. However, without adverbials, intermediate learners were least likely to select the expected forms, followed by advanced learners, and native speakers who were most likely to select the expected forms. This suggests adverbials' importance for learners' interpretation of aspect in particular which was again confirmed when advanced learners' rate of expected response exceeded that of native speakers when adverbials were present with expected imperfect, indicating that learners were more likely to associate durative/frequency adverbials with imperfect than native speakers. Adverbials' influence for learners was again visible in the nine cases of high discrepancy among native speakers; learners did not agree with native speakers' selection of the unexpected preterit when an adverbial was present, although some did agree when no adverbial was present. This indicates that the presence of an adverbial influences learners more than native speakers.

Learners may rely upon adverbials in this way because of L1 influence. English, because it lacks clear aspectual markers, employs adverbials to communicate aspect effectively. For example, *I swam everyday when I was a kid* has an imperfective interpretation while *I swam last week* has a perfective interpretation. However, the

responses of native Spanish speakers indicate that while adverbials often agree with aspectual morphology in Spanish, it is the imperfect or preterit morphology which fundamentally communicates aspect. This is not to say that adverbials are not important or useful; there was a slight increase in native speakers' expected responses with adverbials present and durative/frequency adverbials were associated with imperfect 75% of the time by native speakers. The results of the study indicate, rather, that frequency and durative adverbials are open to interpretation, communicating either a perfective or imperfective reading and, thus, not the primary means of marking aspect.

The communicative weight of adverbials and morphology is different in English and in Spanish and, additionally, may vary in other languages. This is relevant to Bardovi-Harlig's (1992) study of English-learners whose use of adverbials decreased as the learners acquired verbal morphology. This decrease may reflect learners' tendency to parallel the manner in which aspect is communicated (via adverbials or morphology) in their L1 (Arabic, Japanese, and Korean). This may also be relevant to Wen's (1995) study of English-speaking learners of Chinese who used perfective adverbials with a perfective marker more often than typical of native speech.

Regarding response time, while that of learners' decreased throughout the course of the task, native speakers' response times did not change. This may be due to the general decrease in the number of characters per passage throughout the task, as shown in Figure 13. Ultimately, the reason for a decrease in learners' RT as the task progressed while native speakers remained unaffected is not conclusive from the data available.

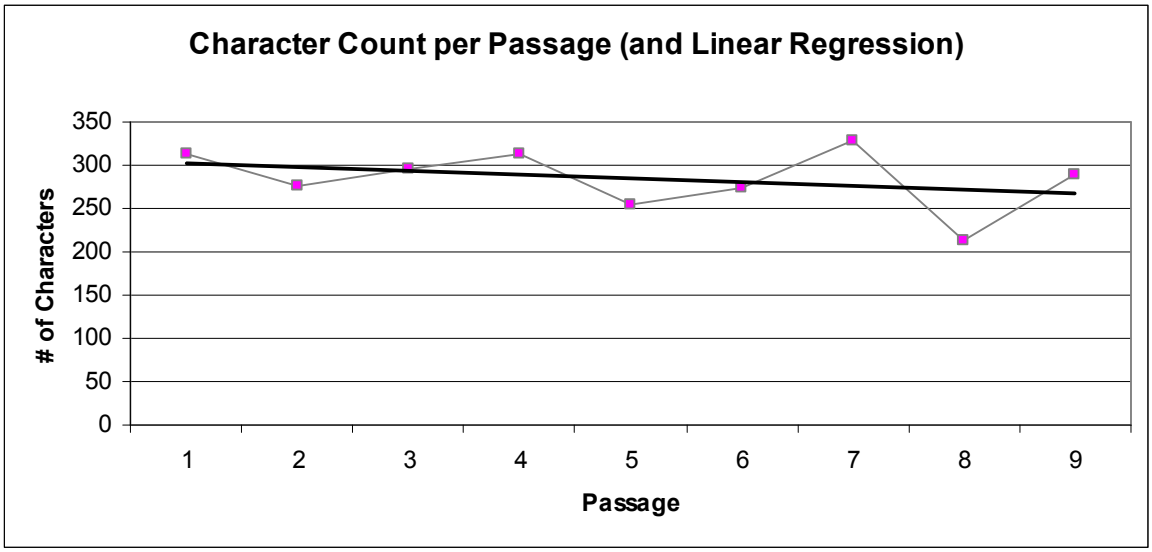


Figure 13: Character Count per Passage

5.2 Research Questions and Hypotheses

> *Question 1. Are students able to identify the expected preterit and imperfect morphology in sentences with and without temporal adverbials in 10 cloze passages?*

Learners were able to identify the expected forms without adverbials in 69.41% of instances, but with adverbials this rate rose to 87.51%. Therefore, while it was possible for some learners to identify the expected forms in sentences without adverbials it was far more likely for them to do so in sentences with adverbials.

> *Question 2. Does the presence of temporal adverbials in the passage affect the selection of aspectual morphology by both native speakers and learners?*

The presence of temporal adverbials was a significant factor in the selection of verb forms by both native speakers and learners, though more notably so for learners. While the presence of an adverbial in the sentence increased the likelihood of native speakers' selection of the expected form from 83.85% to 88.08%, the difference for

learners was much greater; from 69.41% to 87.51%, particularly for intermediate learners whose rate of expected response was 63.82% without adverbials, but rose to 86.18% with adverbials.

Question 3: Is there a difference in accuracy between intermediate and advanced learners as compared to native speakers' responses?

When adverbials were present, intermediate and advanced learners' responses were similar to those of native speakers. However, when adverbials were not present, intermediate learners' responses deviated from the expected responses much more than those of advanced learners. As compared to native speakers' responses, in the nine cases where at least half of native speakers selected the unexpected forms only four out of 62 learners consistently agreed in each of these nine cases.

Question 4: Does the presence of temporal adverbials affect participants' time of response?

The response time was adversely affected by the presence of adverbials; when adverbials were present the response time increased by an average of 1.2 seconds per selection. This may be related to the length of the passages; those without adverbials had an average count of 261 characters per passage while those with adverbials had an average count of 296.4 characters per passage. Also, the coercive effect of adverbials in certain situations, such as state verbs appearing with temporal adverbials prompting preterit morphology, may also account for the longer response times when adverbials were present.

Hypothesis I. The presence of temporal adverbials in the passages will affect the selection of aspectual morphology by all participants and will increase the expected selection of preterit and imperfect by learners.

This hypothesis is confirmed. The presence of an adverbial in the passage did affect the selection of aspectual morphology by all participants and it increased the rate of expected selections of preterit and especially imperfect by learners.

> *Hypothesis II. The presence of temporal adverbials in the passages will increase the rate of expected selection of preterit and imperfect among intermediate learners, whereas the absence will decrease this rate, more so than among the advanced learners and native speakers.*

This hypothesis is confirmed. The presence of adverbials in the passages did slightly increase the rate of expected response by advanced learners as compared to intermediate learners, but the margin between the two rates was not significant. When the adverbials were not present, however, advanced learners' expected response rate dropped only 14 percentage points while that of intermediate learners' dropped 22 percentage points. Thus, while advanced and intermediate learners' performed similarly when adverbials were present, the relative increase in expected responses for each group was considerable, with intermediate learners being most affected by the presence of the adverbial.

5.3 Significance of Findings

The results of this study show that for English-speaking learners of Spanish adverbials – and to an extent lexical aspect – are more influential in the selection of aspectual morphology than they are for native speakers. This has implications for future studies in SLA because it indicates that the acquisition of an L2 aspectual system can be influenced by L1. This must be accounted for in SLA research. Specifically regarding the significance of the findings for SLA of Spanish, this study has shown that learners –

perhaps influenced by textbooks or common teaching practices – are more likely to associate durative and frequency adverbials with the imperfect than are native speakers. This has classroom implications and also attests to the communicative weight of aspectual morphology in Spanish. The effects of the adverbials are secondary to the morphology for native speakers of Spanish.

Additionally, this study might support the Tense Hypothesis in that learners were more likely to assign preterit to both contexts where preterit and imperfect were expected when no adverbial was present.

5.4 Avenues for Future Research

This study focused on the role of adverbials in the interpretation of aspect by learners as well as native speakers of Spanish; however, a study involving larger numbers of native speakers is suggested. Similarly, an analysis of the relationship of adverbials and aspectual morphology in a corpus of native speaker production might reveal further details on this subject. Future researchers may also wish to study learners' use of adverbials and morphology in production and in different types of tasks. Also, because the length of the passages may have affected the response times of participants, it is suggested that future work be done to determine whether, as Boatwright (1999) found, adverbials decrease participants' response times. While Boatwright (1999) employed isolated sentences of approximately equal length, the continued use of passages is suggested for the study of adverbials' influence on the interpretation of aspect as they allow participants to develop a perspective of the events in context. However, the use of sentences of nearly equal length (in characters) within each passage is recommended.

REFERENCES

Andersen, Roger. (1991). Development sequences: The emergence of aspect marking in second language acquisition. In T. Huebner and C. Ferguson, (Eds.), *Crosscurrents in Second Language Acquisition and Linguistic Theory* (pp. 305-323), Amsterdam: John Benjamins.

Bardovi-Harlig, K. (1992). "The use of adverbs and natural order in the development of temporal expression." IRAL: International Review of Applied Linguistics in Language Teaching, 30(4), 299-320. In Bardovi-Harlig, Kathleen. (2000). *Language Learning: Tense and Aspect in Second Language Acquisition: Form, Meaning, and Use, 50.* University of Michigan: Blackwell.

Bardovi-Harlig, Kathleen. (1998). "Narrative Structure and Lexical Aspect." *Studies in Second Language Acquisition*, 20, 471-508.

Bardovi-Harlig, K. and Reynolds, D.W. (1995). "The role of lexical aspect in the acquisition of tense and aspect." *TESOL Quarterly*, 29, 107-131.

Beedham, Christopher. (2005). *Language and Meaning: The Structural Creation of Reality*. Amsterdam/Philadelphia: John Benjamins.

Binnick, Robert. (1991). *Time and the verb: a guide to tense and aspect*. New York: Oxford University Press, 1991.

Binnick, Robert. (2006). "Aspect and Aspectuality." In Bas Aarts & April M. S. McMahon (Eds.), *The Handbook of English Linguistics* (pp. 244-268), Oxford: Blackwell.

Bloom, L., Lifer, K. y Hafitz, J. (1980). "Semantics of verbs and the development of verb inflection in child language." *Language*, 56, 386-412.

Boatwright, C. (1999). *On-line processing of time reference: Meaning before morphology.* Paper presented at the Second Language Research Forum, Minneapolis, MN. Cited in Bardovi-Harlig (2000). *Language Learning: Tense and Aspect in Second Language Acquisition: Form, Meaning, and Use, 50.* University of Michigan: Blackwell.

Bull, William. (1965). *Spanish for teachers: applied linguistics.* New York: Ronald Press

Chen, Jien. Personal communication. 3 April 2009.

Cinque, Guglielmo. (1999). *Adverbs and functional heads: a cross-linguistic perspective.* New York: Oxford University Press.

Comajoan, Llorenç. (2005). "The Early L2 Acquisition of Past Morphology: Perfective Morphology as an Aspectual Marker or Default Tense Marker?" In Eddington, David (Ed.), *Selected Proceedings of the 6th Conference on the Acquisition of Spanish and Portuguese as First and Second Languages*, (pp. 31-43). Somerville, MA: Cascadilla Proceedings Project. <http://www.lingref.com/cpp/casp/6/paper1123.pdf>

Comrie, Bernard. (1976). *Aspect: An Introduction to the Study of Verbal Aspect and Related Problems*. Cambridge: Cambridge University Press.

Comrie, Bernard. (1985). *Tense*. Cambridge: Cambridge University Press.

Coppieters, R. (1987). "Competence differences between native and near-native speakers." *Language*, 6, 544-573.

D.E.L.E. (Diplomas de Español como Lengua Extranjera/Diplomas of Spanish as a Foreign Language), administered by the Ministry of Education, Culture, and Sport of Spain (2006). Retrieved March 9, 2009, from DELE Official Site: http://www.dele.org/

de Castells, Matilde Olivella. (1981). *Mundo Hispano: Lengua y Cultura.* Hoboken, NJ: J. Wiley.

Frantzen, Diana. (1995). "Preterite/Imperfect Half-Truths: Problems with Spanish Textbook Rules for Usage." *Hispania*, 78(1), 145-158.

Gasser, Michael. (1995). "Relating comprehension and production in the acquisition of morphology." In C. Koster & F. Wijnen (Eds.), *Proceedings of the Groningen Assembly on Language Acquisition, 1995* (pp. 197-206). Groningen, Netherlands: Centre for Language and Cognition.

Gonzalez, Edelmiro Salas. (1998). "Spanish Aspect and the Nature of Linguistic Time." *Hispania* 81(1), 155-165.

Guitart, Jorge. (1978). "Aspects of Spanish Aspect: A new look at the preterit/imperfect distinction." In Margarita Suñer (Ed.), *Contemporary studies in Romance linguistics,* (pp. 132-68). Washington, D.C.: Georgetown University Press.

Han, Z. H, & Peverly, S. T. (2007). "Input processing: A study of ab initio learners with multilingual backgrounds." *International Journal of Multiculturalism* 4, 17-37.

Hasbún, L., 1995. "The role of lexical aspect in the acquisition of the tense/aspect system in L2 Spanish". Unpublished PhD dissertation, Indiana University. Cited in Comajoan, Llorenç. (2005). The Early L2 Acquisition of Past Morphology: Perfective Morphology as an Aspectual Marker or Default Tense Marker? In Eddington, David (Ed.), *Selected Proceedings of the 6th Conference on the Acquisition of Spanish and Portuguese as First and Second Languages*, (pp. 31-43). Somerville, MA: Cascadilla Proceedings Project. <http://www.lingref.com/cpp/casp/6/paper1123.pdf>

Klein, Wolfgang. (1994). *Time in Language.* London: Routledge.

Kuczun Nelson, B. (2007). *Spanish Language and Culture*. <http://www.colby.edu/~bknelson/SLC/index.php> Retrieved February 19, 2009.

Lee, J.F., Cadierno, T., Glass, W. y VanPatten, W. (1997). "The effects of lexical and grammatical cues on processing past temporal reference in second language input." *Applied Language Learning*, 8(1), 3-14. <http://www.dliflc.edu/Academics/academic_materials/all/ALLissues/all8_1.pdf>

Lee, J.F. (1999). "On levels of processing and levels of comprehension." In J. Gutiérrez-Rexach & F. Martínez-Gil (Eds.), *Advances in Hispanic linguistics* (pp. 42–59), Somerville, MA: Cascadilla Press.

Liskin-Gasparro, Judith. (2000). "The Use of Tense-Aspect Morphology in Spanish Oral Narratives: Exploring the Perceptions of Advanced Learners." *Hispania*, 83(4), 830-844.

Lubbers-Quesada, Margaret. (1999). "The Acquisition of Aspectual Distinction in Spanish: A Look at Learners in an Immersion Program." Unpublished manuscript.

Lubbers Quesada, Margaret. (2006). "L2 Acquisition of Temporal Reference in Spanish and the Interaction of Adverbs, Morphology and Clause Structure." In Nuria Sagarra and Almeida Jacqueline Toribio (Eds.), *Selected Proceedings of the 9th Hispanic Linguistics Symposium* (pp. 157-168), Somerville, MA: Cascadilla Proceedings Project. <http://www.lingref.com, document #1375>.

Lunn, Patricia. (1985). "The aspectual lens." *Hispanic Linguistics*, 2, 49-61.

Marinelli, P. and L.M. Laughlin. (2007). *Puentes: Spanish for Intensive and High-Beginner Courses.* (4th ed.). Heinle & Heinle.

Marinova-Todd, Stefka H., D. Bradford Marshall and Catherine E. Snow. (2000). "Three Misconceptions about Age and L2 Learning." *TESOL Quarterly*, 34(1), 9-34.

Meisel, J.M. (1987). "Reference to past events and actions in the development of natural langauge acquisition." In C.W.Pfaff (Ed.), *First and second language acquisition processes* (pp. 206-224). Cambridge, MA: Newbury House.

Montrul, S. and R. Slabakova. (2003). "Competence Similarities between Native and Near-Native Speakers: An Investigation of the Preterite/Imperfect Contrast in Spanish." *Studies in Second Language Acquisition*, 25, 351-398.

Musumeci, D. (1989). "The ability of second language learners to assign tense at the sentence level: A crosslinguistic study". Unpublished doctoral dissertation, University of Illinois at Urbana-Champaign. Cited in Rossomondo, A. (2007). "The role of lexical temporal indicators and text interaction format in the incidental acquisition of the Spanish future tense." *Studies in Second Language Acquisition*, 29(1), 39-66. <http://ciillibrary.org:8000/ciil/Fulltext/Studies_in_second_language_%20acquisition/Vol_29_1_2007/Article_2.pdf>

Olsen, M. B. and A. Weinberg. (1999). "Innateness and the acquisition of grammatical aspect via lexical aspect" In Annabel Greenhill, Heather Littlefield & Cheryl Tano (Eds.), *Proceedings of the Twenty-third Annual Boston University Conference on Language Development* (pp. 529-540), Somerville, MA: Cascadilla Press.

Ozete, Oscar. (1988). "Focusing on the Preterite and Imperfect." *Hispania*, 71(3), 687-691.

Ricoeur, Paul, Kathleen Blamey, Kathleen McLaughlin, David Pellauer. (1990). *Time and narrative.* (2nd ed.) Chicago: Chicago University Press

Rietveld, Toni and Roeland van Hout. (2005). *Statistics in Language Research: Analysis of Variance.* Berlin: Mouton de Gruyter.

Robison, Richard. (1990). "The Primacy of Aspect: Aspectual Marking in English Interlanguage." *Studies in Second Language Acquisition*, 12, 315-330.

Robison, Richard. (1995). "The Aspect Hypothesis Revisited: A Cross-Sectional Study of Tense and Aspect Marking in Interlanguage." *Applied Linguistics*, 16(3), 344-370.

Rossomondo, A. (2007). "The role of lexical temporal indicators and text interaction format in the incidental acquisition of the Spanish future tense." *Studies in Second Language Acquisition*, 29(1), 39-66. <http://ciillibrary.org:8000/ciil/Fulltext/Studies_in_second_language_%20acquisition/Vol_29_1_2007/Article_2.pdf>

Sagarra, Nuria and Poala E. Dussias. (2001). "Attention allocation to morphological cues during L2 sentence processing: Evidence from eye-movement." Paper presented at the 5th Hispanic Linguistics Symposium, University of Illinois at Urbana-Champaign, Illinois. Cited in Cited in Sagarra, N. (2007).

Sagarra, N. (2007). "Working memory and processing of redundant L2 morphosyntactic dues." In Z. Han, Zhaohong Han, Eun Sung Park (Eds.), *Understanding Second Language Process* (pp. 133-147), Clevedon, UK: Multilingual Matters

Salaberry, Rafael. (1999). "The development of past tense verbal morphology in classroom L2 Spanish." *Applied Linguistics*, 20, 151-178.

Salaberry, Rafael. (2002). Tense and aspect in the selection of Spanish past tense verbal morphology. In Rafael Salabery and Yasuhiro Shirai (Eds.), *The L2 Acquisition of Tense-Aspect Morphology* (pp. 397-415). Amsterdam/Philadelphia: John Benjamins.

Salaberry, Rafael. (2003). "Tense Aspect in Verbal morphology." *Hispania*, 83(3), 559-573.

Salaberry, Rafael. (2005). El desarrollo de la morfología del tiempo pasado en español como L2: Un estudio piloto. In Margaret Lubbers-Quesada and Ricardo Maldonado (Eds.), *Dimensiones del Aspecto en Español* (pp. 125-148), México City: Universidad Nacional Autónoma de México and Universidad Autónoma de Querétaro.

Schneider, W. (2002). E-Prime [software application]. Pittsburgh : Psychology software Tools, Inc. <http://www.pstnet.com/products/e-prime/>

Slabakova, R. (2001). *Language Acquisition & Language Disorders* (Vol. 26). Amsterdam/Philadelphia: John Benjamins.

Slabakova, R. and S. Montrul, (2005). L2 Acquisition at the Grammar-Discourse Interface: Aspectual Shifts in L2 Spanish. In Liceras, J., H. Zobl and H. Goodluck (Eds.), The Role of Features in Second Language Acquisition. Mahwah, New Jersey: Lawrence Erlbaum Associates.<http://www.uiowa.edu/~linguist/faculty/slabakova/personal/LEAvolumepaper.pdf>

Smith, C. S. (1997). *The Parameter of Aspect* (2nd ed.). Netherlands: Kluwer Academic Publishers.

Terrell, T., M. Andrade, J. Egasse, and E. M. Muñoz. (2005). *Dos Mundos: Comunicación y Comunidad.* (6th ed.). McGraw-Hill.

VanPatten, W. (2004). *Processing Instruction: Theory, Research, and Commentary.* Mahwah, London: Lawrence Erlbaum Associates.

Vendler, Z. (1957). Verbs and times. *The Philosophical Review*, 66, 143-160. Reprinted in a revised version in Vendler, Z. (1967). *Linguistics and Philosophy* (pp. 97-121), Ithaca, NY: Cornell University Press.

Weist, R.M. (2002). "The first language acquisition of tense and aspect: A review" In Rafael Salabery and Yasuhiro Shirai (Eds.), *The L2 Acquisition of Tense-Aspect Morphology* (pp. 21-78), Amsterdam/Philadelphia: John Benjamins Publishing Company.

Weist, R.M., H. Wysocka, K. Wikowska-Stadnik, E. Buczowska, E. Konieczna. (1984). "The defective tense hypothesis: on the emergence of tense & aspect in child Polish." *Journal of Child Language*, 11(2), 347-374.

Wen, X. (1995). "Second language acquisition of the Chinese particle *le*." *International Journal of Applied Linguistics*, 5, 45-62. Cited in Duff, Patricia A. and Duanduan Li. (2002). The acquisition and use of perfective aspect in Mandarin. In Rafael Salabery and Yasuhiro Shirai (Eds.), *The L2 Acquisition of Tense-Aspect Morphology* (pp. 417-453). Amsterdam/Philadelphia: John Benjamins.

Westfall, Ruth and Sharon Foerster. (1996). "Beyond Aspect: New Strategies for Teaching the Preterite and the Imperfect." *Hispania*, 79(3), 550-560.

Whiteley, Stanley. (2002). *A Course in Spanish Linguistics: Spanish/English Contrasts.* Washington D.C.: Georgetown University Press.

APPENDIX A: CLOZE PASSAGES WITH ADVERBIALS

PASSAGE 1
El mes pasado yo (me graduaba/me gradué) de la universidad. Hace una semana que mi amigo y yo (regresábamos/regresamos) de nuestras vacaciones en Europa. Por tres semanas enteras (viajábamos/viajamos) por todo el continente y cada día (conocíamos/conocimos) a nuevas personas que siempre (eran/fueron) generosas. Un día un hombre nos (daba/dio) dinero por el autobús.
[3 imperfect (activity, activity, state); 3 preterit (accomplishment, accomplishment, achievement)]
- 314 characters total

PASSAGE 3
En años pasados cuando yo (necesitaba/necesité) ayuda, con frecuencia (llamaba/ llamé) a mi mejor amigo. Pero hace dos días que nosotros (teníamos/tuvimos) una discusión acalorada y ahora no sé qué hacer. De niño nosotros (éramos/ fuimos) inseparables, pero el año pasado se (casaba/casó) con una mujer que no me gusta así que ahora no le hablo mucho.
[3 imperfect (activity, activity, state); 2 preterit (state, achievement)]
- 295 characters total

PASSAGE 5
Ayer yo (iba/fui) a la parada de autobuses. Toda la mañana yo me (sentía/sentí) triste porque el día anterior yo (recibía/recibí) una F en un examen. Mi madre siempre me (decía/dijo) que para sacar buenas notas no se debe pensar en los hombres. De repente un joven guapo (llegaba/llegó). ¡Perdóname, mamá!
[2 imperfect (state, activity); 3 preterit (achievement, achievement, achievement)]
- 255 characters total

PASSAGE 7
El año pasado mi hermano (visitaba/visitó) Washington, D.C. durante la semana del 4 de julio. Todas las mañanas él (visitaba/visitó) diferentes sitios históricos y durante las noches se (iba/fui) de fiesta. ¡Qué mezcla fascinante de tradición y modernidad! Un día él (veía/vio) el monumento de presidente Lincoln y ese mismo día, a las once y media, (salía/salió) para la discoteca "Abe L."
[2 imperfect (activity, activity); 3 preterit (activity, activity, achievement)]
- 329 characters total

PASSAGE 9
De niño, mi familia y yo siempre (íbamos/fuimos) a las montañas durante el invierno. Cada día mi hermano y yo nos (divertíamos/divertimos) en el bosque pero una tarde nosotros nos (perdíamos/perdimos). Mientras (buscábamos/buscamos) las luces de nuestra cabaña súbitamente (escuchábamos/escuchamos) los gritos de mi madre. ¡Qué alivio!
[3 imperfect (activity, activity, activity); 2 preterit (achievement, achievement)]
- 289 characters total

AVERAGE CHARACTER COUNT PER PASSAGE: 296.4

APPENDIX B: CLOZE PASSAGES WITHOUT ADVERBIALS

PASSAGE 2
Mis mejores amigos y yo (entrábamos/entramos) a la sala de espera del médico. En una de las paredes (había/hubo) una pintura de un jardín bonito. Mi amigo es artista, así que él (examinaba/examinó) la pintura con interés pero yo, como escritor, (leía/leí) una novela. La enfermera, no el médico, nos (llamaba/llamó) a la oficina.
[3 imperfect (state, activity, activity); 2 preterit (achievement, activity)]
- 276 characters total

PASSAGE 4
A Julia no le gustan sorpresas pero le (preparábamos/preparamos) una fiesta sorpresa para su cumpleaños. Escondiéndonos, listos para sorprenderle, nosotros (anticipábamos/anticipamos) su llamada a la puerta. Sin embargo nunca (ocurría/ocurrió). Nosotros (íbamos/fuimos) a la ventana para echar un vistazo y allí (esperaba/esperó) Julia, mirándonos y riéndose.
[2 imperfect (activity, activity); 3 preterit (activity, accomplishment, activity)]
- 314 characters total

PASSAGE 6
(Era/Fue) un placer recibir tu tarjeta para felicitarme por mi cumpleaños. ¿No te (decía/dije) que a mi edad ya no se celebran los cumpleaños? ¿Recuerdas la fiesta de mis quince años? Yo (estaba/estuve) tan nerviosa y tú (tenías/tuviste) la gripe. Luego, (sabíamos/supimos) que mi novio no (iba/fue) a venir. ¡Qué desastre!
[3 imperfect (state, state, activity); 3 preterit (state, achievement, achievement)]
- 273 characters total

PASSAGE 8
Mi hermano y yo (íbamos/fuimos) muy contentos a la playa para volar nuestro papalote. El papalote (era/fue) azul con una cola muy larga. El día (era/fue) largo, pero divertido. (Volvíamos/Volvimos) a casa y (poníamos/pusimos) el papalote en el garaje.
[2 imperfect (activity, state); 3 preterit (state, accomplishment, achievement)]
- 213 characters total

PASSAGE 10
Celebrando el fin del semestre en un restaurante, mi novia, Anita, (pedía/pidió) un bistec. Yo (estaba/estuve) muy hambriento así que me (comía/comí) un plato entero de espaguetis. ¡(Estaba/Estuvo) riquísimo! ¡Nosotros no (esperábamos/esperamos) comida tan buena!
[3 imperfect (state, state, activity); 2 preterit (achievement, accomplishment)]
- 229 characters total

AVERAGE CHARACTER COUNT PER PASSAGE: 261

APPENDIX C: DATA COLLECTION: INSTRUCTIONS

Instructions

Overview:

1. Jennifer will introduce herself and the project.
   NOTE: You will not need to log-in nor log-out for this study.
2. You must sign the Consent Form and give Jennifer one copy (the other is yours).
3. You will do a short activity on the computer (aprox. 10 minutes).
4. You will complete a questionnaire on paper (aprox. 10 minutes).
5. You will give your questionnaire to Jennifer and she will give you a debriefing statement.

Detailed Instructions: Computer activity

1. Double click on the E-Run program to open it.

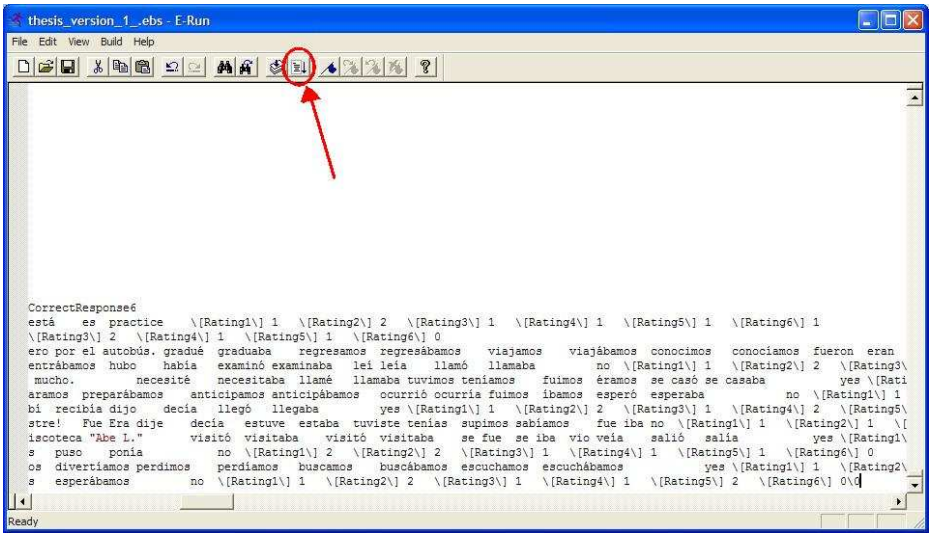
You will find it on the Desktop and it looks like this:

2. Now you have a window open. You need to click "Run".

The Run button looks like this:

It is the 12th button from the left.

The Run button is highlighted in red in this photo of the window:



3. A window appears and asks for the Subject Number. Your Subject Number is _____.

Please type it in this box.

4. A window appears and asks for the Session Number. Your Session Number is _____.

Please type it in this box.

5. This confirmation box appears. If your Subject and Session Number are correct, click "Yes."

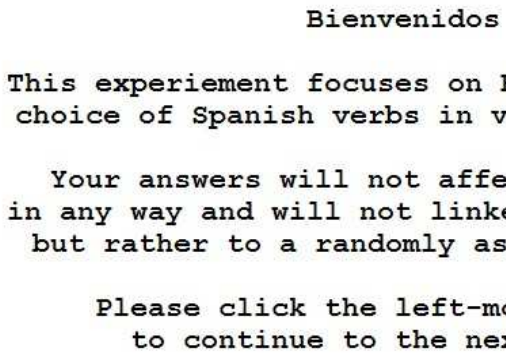
6. You will see a *Welcome* screen, followed by an *Instructions* screen, then followed by a practice run with the computer program and finally the study itself. Please read these screens carefully and do your best. If you have any questions about vocabulary or the software, please let me know.

7. Please DO NOT LOG OUT of the computer. If you do so, your data will be lost. Remember, you are *not* logged in with your personal ID, so your privacy is *not* at risk.

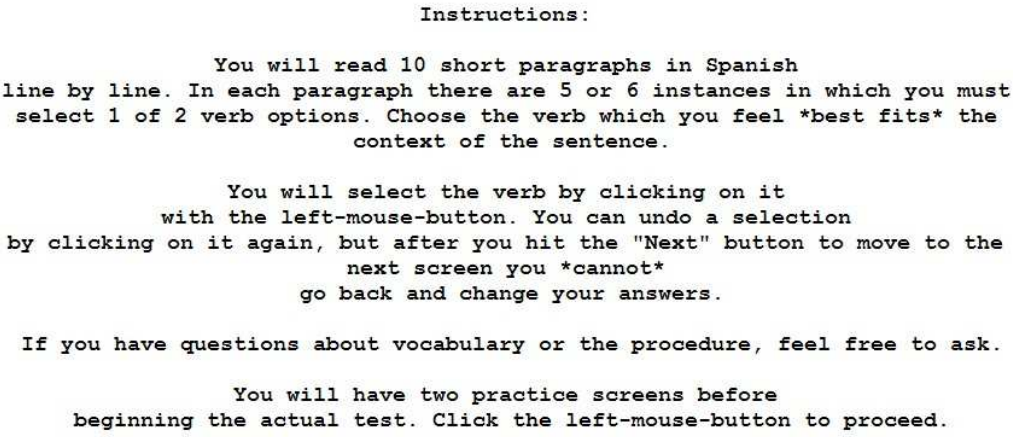
8. Please raise your hand and I will give you the paper questionnaire - it is also in Spanish. When you have completed it, you may hand it to me and then you may leave.

Thank you!

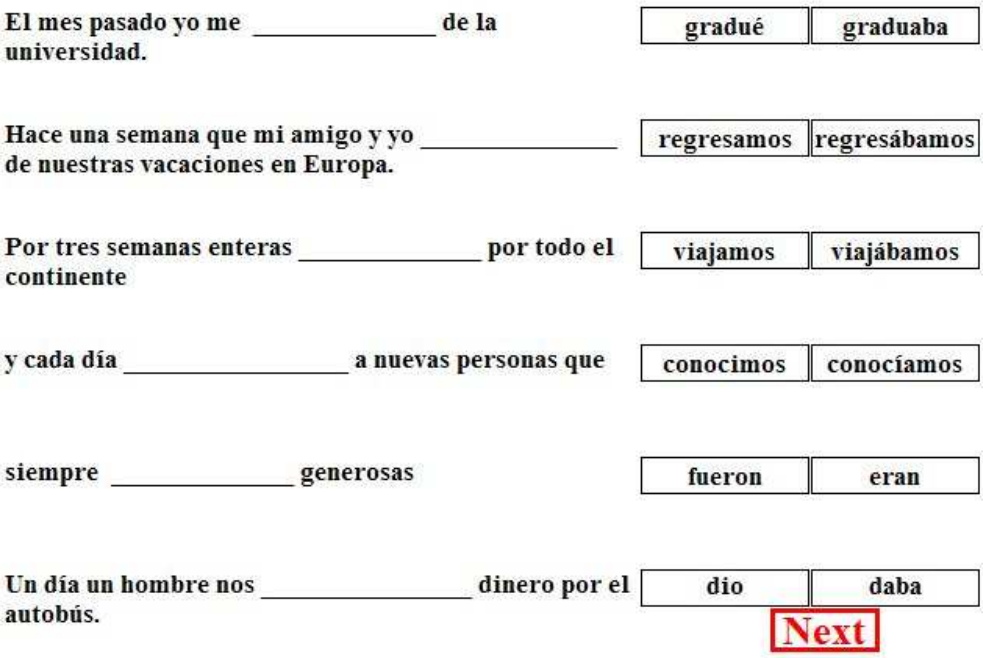
APPENDIX D: SCREENSHOTS OF E-PRIME



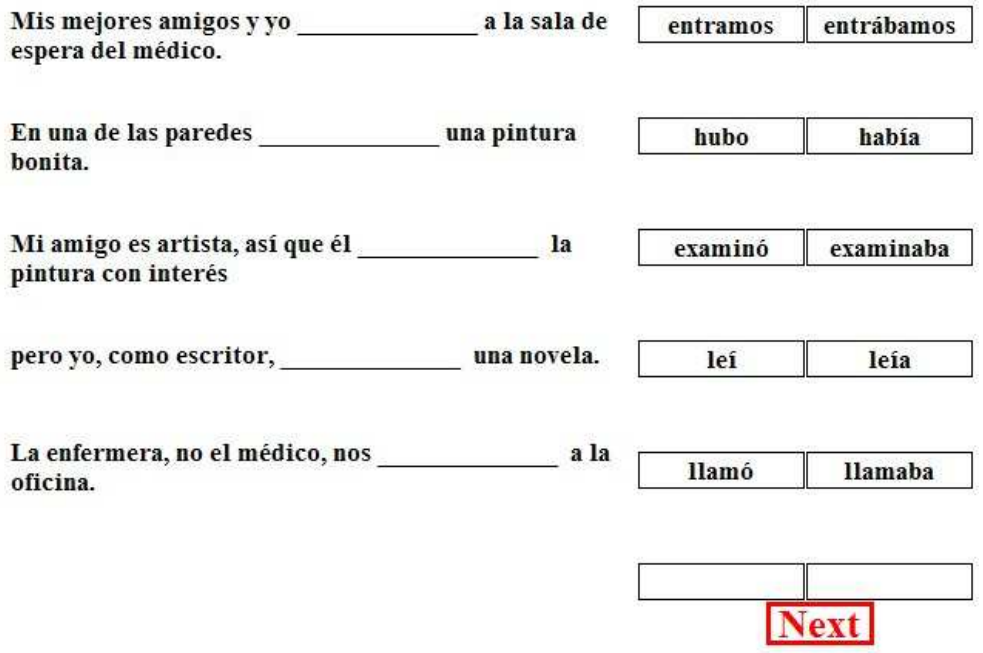
Screen 1: Introduction



Screen 2: Instructions

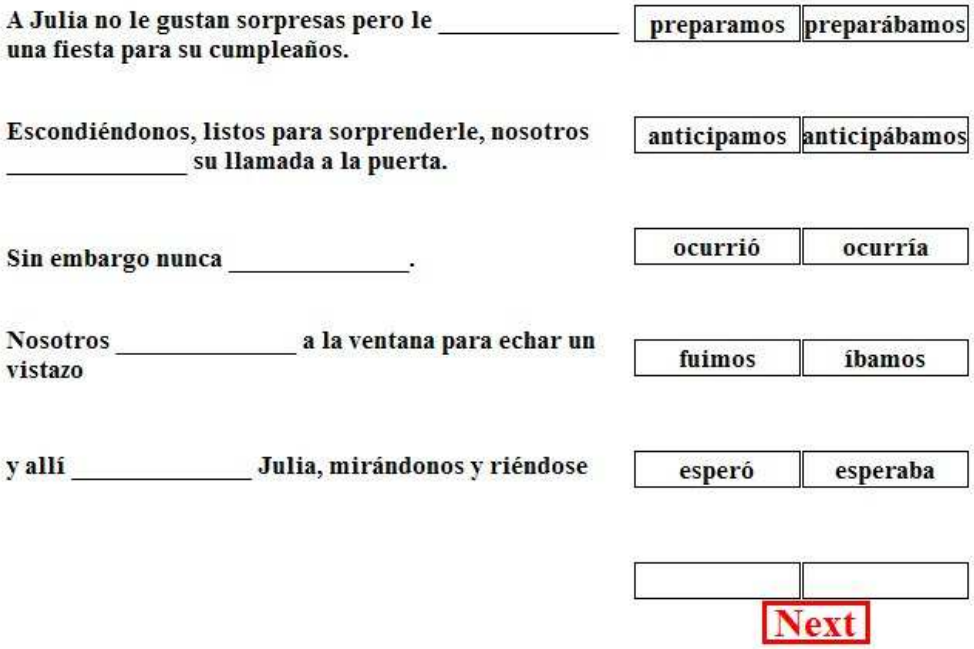


Screen 3: Passage 1 (adverbials present)

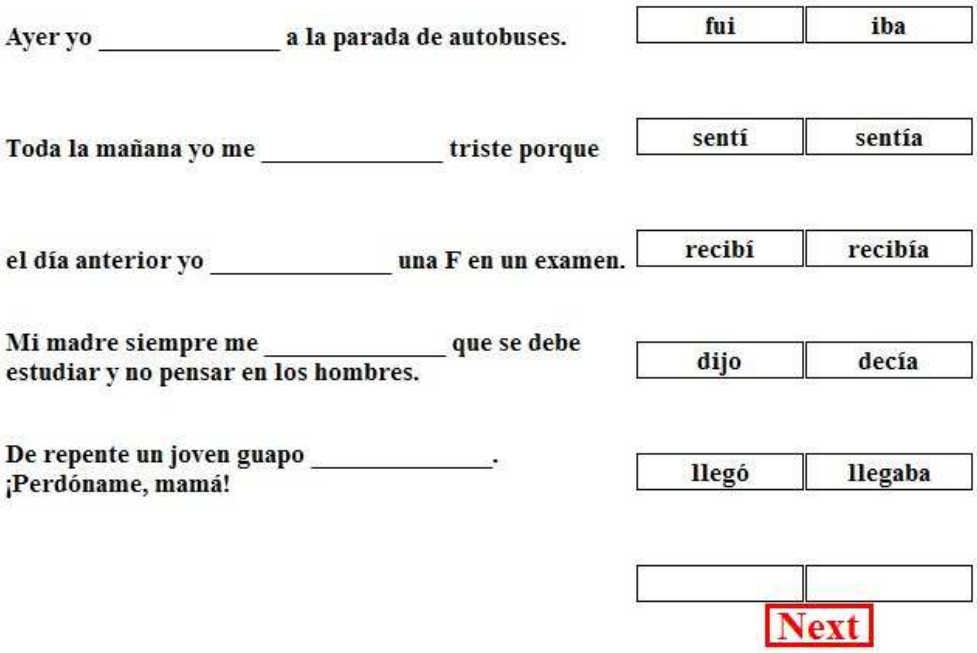


Screen 4: Passage 2 (adverbials absent)

Screen 5: Passage 3 (adverbials present)

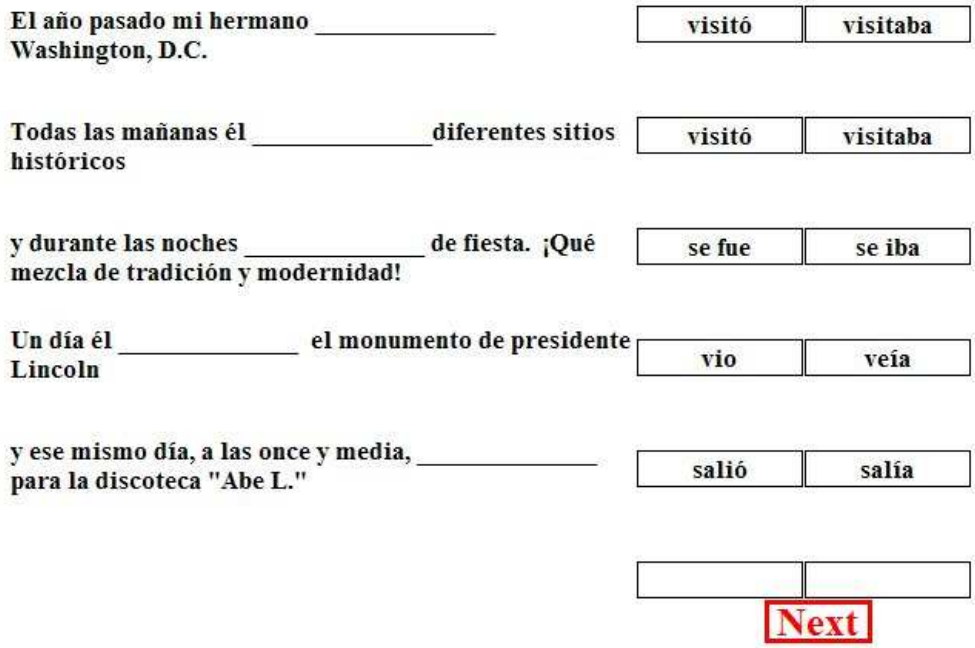


Screen 6: Passage 4 (adverbials absent)

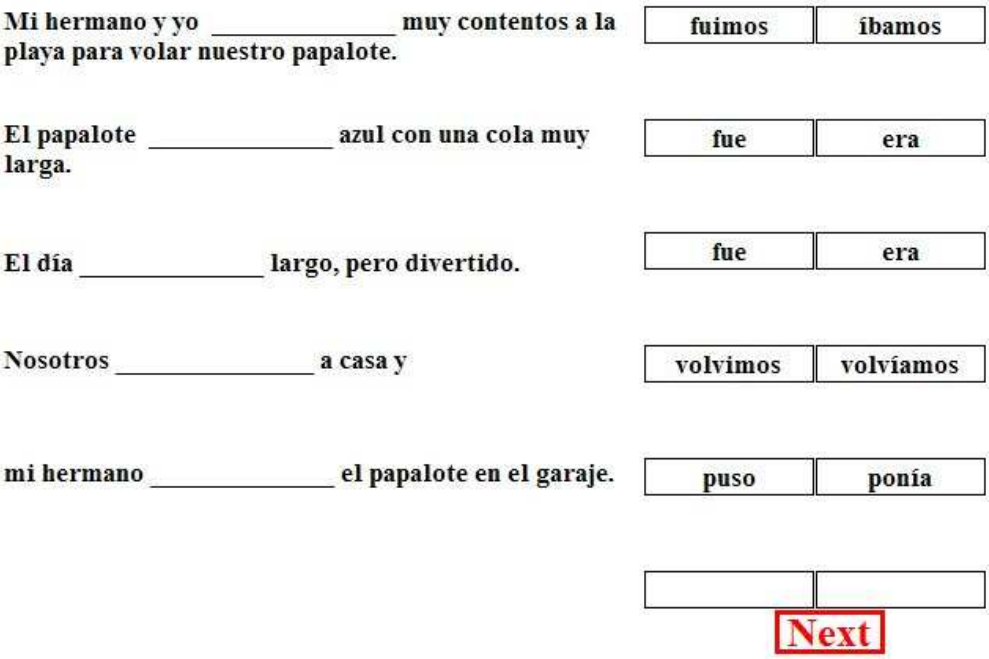


Screen 7: Passage 5 (adverbials present)

Screen 8: Passage 6 (adverbials absent)

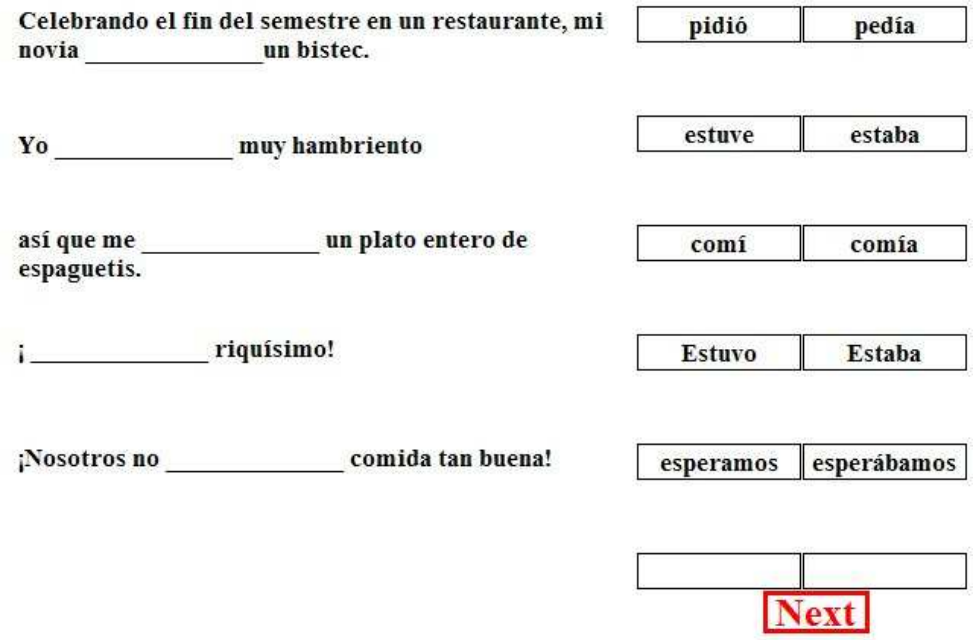


Screen 9: Passage 7 (adverbials present)

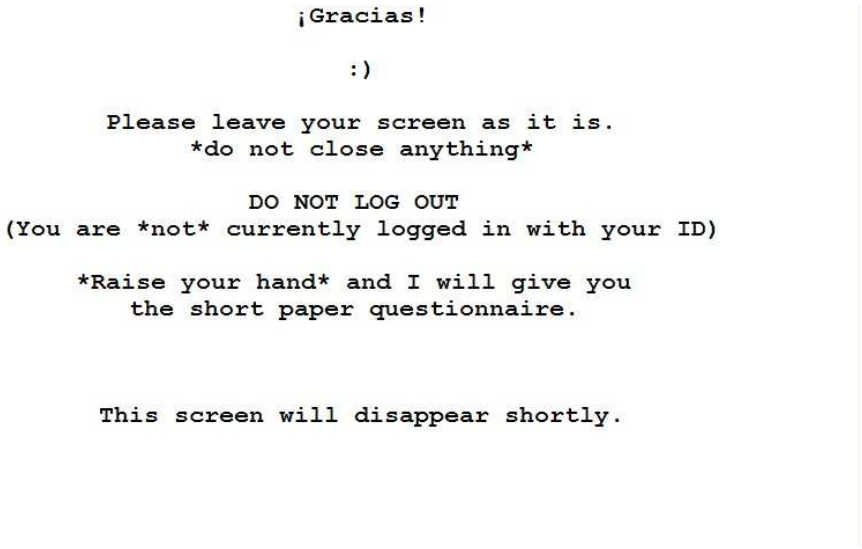


Screen 10: Passage 8 (adverbials absent)

Screen 11: Passage 9 (adverbials present)



Screen 12: Passage 10 (adverbials absent)



Screen 13: End