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The Effect of Input-Based Instruction Type on the Acquisition of Spanish Accusative Clitcs

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THE EFFECT OF INPUT-BASED INSTRUCTION TYPE ON THE ACQUISITION OF SPANISH ACCUSATIVE CLITCS

By

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF EXAMPLES

ABSTRACT

Within instructed second language acquisition (SLA), Processing Instruction (PI) has enjoyed a rigorous research agenda for more than 15 years. Research comparing PI (with or without explicit information about a target linguistic structure) with either traditional, production-based instruction (e.g., Cadierno, 1995; VanPatten & Cadierno, 1993) or meaning-based output instruction (e.g., Farley, 2000; Morgan-Short & Bowden, 2006) has shown that PI activities are as good as, if not more effective than, other types of instruction. The effectiveness of PI has been attributed to the way in which PI seeks to alter learners' non-optimal input processing strategies via structured input (SI) activities for the creation of richer intake data (Sanz & Morgan-Short, 2004; VanPatten, 2004; Wong, 2004). However, to date no studies have compared SI with other types of input-based treatments to determine whether the effectiveness of SI is due to (a) altering learners' processing strategies, or (b) simply providing learners with meaning-bearing input. Therefore, this dissertation compares the effects of various input-based treatments (input flood, input flood + text enhancement, focused input, and structured input), along with a control group, on the interpretation and production of Spanish 3rd person accusative clitics. Participants included 290 adult learners enrolled in an intermediate Spanish course. Learners completed a pretest, a computer-based treatment, an immediate posttest, delayed posttest (3 weeks after treatment) and an extended delayed posttest (6 weeks after treatment). Assessment tasks measured both interpretation and production of accusative clitics. Results for the interpretation task revealed that although all treatment groups (except the control group) showed significant gains over time, only the SI group significantly outperformed the control group at the second delayed posttest. On the production measures, all input-based groups (except the control group) showed improvement; however, no significant differences emerged among the four input-based treatments. The findings for the production measures are not so straight forward; however all groups significantly improved or approached significance. The theoretical, methodological and pedagogical implications of these findings are discussed, along with limitations to the study and avenues for future research.

CHAPTER 1: INTRODUCTION AND BACKGROUND

Introduction

Within recent years, research investigating instructed second language acquisition (SLA) has moved from addressing whether second language (L2) instruction is effective, to how it can be beneficial (Long, 1988; Pienemann, 1989; Doughty, 2003; VanPatten, 2007). Given that all major theoretical frameworks in SLA posit a fundamental role for input (e.g., N. Ellis, 2007; Gass & Mackey, 2007; VanPatten, 2007; White, 2007), instructed SLA research has begun investigating ways in which instruction can enhance L2 learners' input processing (Doughty, 2003). Similarly, VanPatten and Leeser (2006) state, "The questions that confront us are these: Can we manipulate input in some way to maximize acquisition? Can we get learners to do particular things with input to maximize acquisition?" (p. 59). Therefore, this dissertation investigates the effects of various input-based instructional interventions on L2 Spanish learners' acquisition of Spanish accusative clitics.

Outline of the Chapter

The goal of this chapter is to provide a theoretical background for the present study and evidence the motivation behind this investigation. First, I will discuss the role of input in SLA and why input alone may not be sufficient. I will then discuss some of the processes involved in second language acquisition, ways in which input can be enhanced to facilitate acquisition, and the significance of the present study. Lastly, I will provide a definition of terms used throughout the study.

The Fundamental Role of Input in SLA

Why Input is Necessary

It has become widely accepted in SLA that input is necessary in order for acquisition to take place (Krashen, 1985; Schmidt, 1990; VanPatten, 2004, 2007; White, 1998; Wong, 2004, 2005). Gass (1997) states that "the concept of input is perhaps the single most important concept of second language acquisition" (p. 1).

Furthermore, all theoretical approaches to SLA posit a fundamental role for input in L2 acquisition (Carroll, 2007; Ellis, 2007; Gass & Mackey, 2007; Lantolf & Thorne, 2007; VanPatten, 2007; VanPatten & Williams, 2007; White, 2007). In this sense, input refers to the linguistic data that the learner hears or reads with the purpose of understanding its meaning. Simply put, without input, L2 acquisition cannot and will not, happen. Therefore, being that acquisition cannot take place without input, comprehensible input in second language acquisition is an integral element in the acquisition process. VanPatten (2003b) states that, "Every scholar today believes that comprehensible input is a critical factor in language acquisition" (p.16). This statement maintains its validity across different theories of SLA, even in theories that differ in their fundaments (i.e., Universal Grammar and Connectionism).

Theories of first language acquisition posit the role of input as necessary for reasons specific to the particular theory as well. For example, according to generative perspectives of acquisition (e.g., Universal Grammar), input is necessary, along with the innate faculty, in order to set the parameters of a language to their appropriate settings (Chomsky, 1965, 1981; Pinker, 1994). Under this theory, all languages operate on the same set of principles and the parameters set are language specific. Therefore, input is necessary in order for the innate language faculty to be able to set the parameters to the specific language. The function of input is to show learners what is possible within a language and based on that linguistic data, the parameters are set accordingly. The universal principles and language-specific parameter settings are triggered by the input of the language being acquired (Schwartz, 1998; White, 2003)

In the connectionist framework of first language acquisition and SLA, input is important for the acquisition of first or second language grammars in that it builds connections of varying strengths between language nodes (Houhton, 2005). The connectionist framework posits that learning language results from general cognitive abilities and interaction with others in the community. In this sense, language learning is like learning anything else such as mathematical problem solving (Tomasello, 2004, 2006; Shanks, 2005). A neural network of information is created depending on the strengths and weaknesses of connections between nodes brought on by the input because the brain is wired to seek regularities in the input and make associations (Houghton, 2005). The input results in the formation of a network of interconnected exemplars

and patterns of language, (rather than abstract rules as in the case of UG framework). The pathways between the nodes are then strengthened or weakened through activation and use.

According to the interactionist framework of second language acquisition (Gass, 1997, 2003; Gass & Mackey, 2007), language acquisition takes place through learners' exposure to language, production of language and feedback on their production (Long, 1996). Pressures in communication stimulate acquisition. The relationship between the mechanisms involved in both communication and acquisition, such as noticing and attention, are examined in this framework. Within this framework, input is seen as providing positive evidence of what is possible within a language. In addition to input, learners also need interaction (from which they gain negative evidence), and output (which provides opportunities to confirm or disconfirm hypotheses). Through these processes learners are provided opportunities to acquire the target language grammars (Long, 1996; Gass, 1997). In any event, input is necessary in order for language acquisition to take place.

This section only briefly touches upon these theoretical frameworks in order to demonstrate that even though they may differ radically in terms of basic assumptions (i.e., an innate language-specific knowledge source constraining acquisition), the point to be made is that they all posit a fundamental role for input. That said, input by itself may not be sufficient, and research has shown that learners do not immediately acquire language from exposure to input alone. Long (1990) expounds on the observation that input is necessary by stating that "comprehensible input is a necessary (but perhaps not sufficient) ingredient of language acquisition" (p. 649). In this sense, input alone may not be enough and therefore something else may be necessary in order for acquisition to take place. What that "something else" entails is of considerable debate.

Why Input May Not Be Sufficient

The observation that input may not be sufficient has been suggested based on the research on Canadian French immersion programs in cases in which learners are exposed to a slough of input; however, still fall short of native like performance in some areas (Swain, 1991). Swain, well known for her studies on learners participating in a French immersion program in Canada, observes that despite many hours of exposure to comprehensible input, learners have been observed to not ultimately develop native like levels with some linguistic features of language

(Swain, 1991). In order to investigate why this might be the case, a number of researchers working within cognitive or information processing approaches to SLA have examined how learners process input during comprehension to gain insights into why learners may not acquire certain linguistics features from input alone. Models investigating input processing include Autonomous Induction Theory (Carroll, 2007), the Competition Model (e.g., MacWhinney, 2005), and Input Processing (VanPattten, 1996, 2004, 2007).

The discussion that follows focuses on the two models that are most relevant for this study: Competition Model and Input Processing.

The Competition Model (Bates and MacWhinney, 1982) and the Unified Competition Model (MacWhinney, 2005) propose that form and function in language (L1 or L2) cannot be separated. MacWhinney, Bates, & Kliegel (1984) state that "the forms of natural languages are created, governed, constrained, acquired and used in the service of communicative functions" (p. 128). What this model is concerned with is speaker performance (not competence). This model suggests that speakers must somehow determine relationships among elements in a sentence and that language processing involves competition among these cues. The cues in a sentence are assigned different strengths and weights. Some of the major cues in language are word order, knowledge of lexicon, animacy criteria, and morphology (i.e., subject-verb agreement). In a sentence such as the 'The cat jumps the fence.', these cues are used to determine that *The cat* is the subject, *the fence* is the object, meaning that there is convergence among the elements of the sentence to come up with this interpretation. These elements work together in order for the processor to arrive at an interpretation. In other cases, there is competition (as opposed to convergence) among these cues in order to correctly interpret the sentence, such as in the case of 'The fence jumps the cat'. In this case, elements of the sentence compete to take the subject role because based on the cues, it leads to different interpretations. If word order cues are used, then the fence would be performing an action unlikely of that of a fence. However, using meaning and animacy cues, the cat is the most likely subject. In the Unified Competition Model (MacWhinney, 2005), there are eight different arenas as playing fields for language processing: auditory, lexical, morphosyntactic, interpretative, message formulation, expressive lexicalization, sentence planning, and articulatory planning. For SLA, the interest is in the role of how one's internal speech processing mechanisms are adjusted from one's native language to those

appropriate for the target language. For example, in English the accusative clitics always follow the verb, such as in the sentence 'Mary sees him' (Mary – SUBJECT sees – VERB him – 3rd PERSON ACC. CLITIC). This internal speech processing pattern intact from the native language poses problems for native English speakers when acquiring Spanish. This process begins with L2 cue weight settings being close to those of the L1 MacWhinney, 2005). This is observable in L1 speakers of English learning Spanish. Spanish has flexible word order and is an OVS and SVO language and the accusative clitic precedes the finite verb. When a learner, at least at beginning stages, interprets a sentence such as 'Lo ve María' (Lo – object [him] ve – VERB [sees] María – SUBJECT) the tendency is to erroneously interpret the object (lo) as the subject and perceive this sentence as 'He sees María'. It is this process of adjusting the internal speech processing mechanism to correctly interpret these types of differences across languages that is of interest to SLA.

The second theory that will be discussed here that attempts to explain how learners process input is the Input Processing Model (VanPatten, 1996, 2004, 2007). Input Processing is a cognitive framework that is "a model of how learners derive the initial data from input for creating a linguistic system, in other words, the data that are delivered to other processors and mechanisms that actually store and organize the data" (VanPatten, 2007, p. 116). During the processing of input, learners do not attend to all of the features of the input; they filter and may even alter the input they receive. For this reason, VanPatten (1996, 2004, 2007) proposes a model of Input Processing that attempts to account for how learners create intake data. VanPatten (2003b) states that "Whereas input is the language the learner is exposed to, intake is the *language that the learner actually attends to and then gets processed in working memory in some way*" (p.31).

The IP model consists of a series of principles regarding what guides learners' processing of linguistic information during comprehension. VanPatten (2007, p. 116) summarizes these principles as follows:

- Learners are driven to get meaning while comprehending.

- Comprehension for learners is initially quite effortful in terms of cognitive processing and working memory. This has consequences for what the input processing mechanisms will pay attention to.
- At the same time, learners are limited capacity processors and cannot process and store the same amount of information as native speakers can during moment-by-moment processing.
- Learners may make use of certain universals of input processing but may also make use of the L1 input processor.

VanPatten (2004) posits that just because a form is processed does not necessarily mean that it will then be internalized; it only suggests that it is then available to be potentially incorporated into the developing system. In order for data to form part of the developing system it must pass through two processes: *accommodation* and *restructuring* (VanPatten, 2004). These processes take place after the input has been processed and account for what happens to the data in the developing system. Figure 1.1 outlines the basic processes in L2 acquisition.

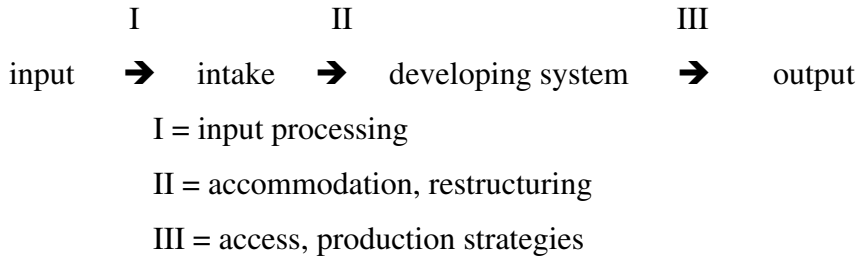


Figure 1.1. Set of Processes in L2 Acquisition (VanPatten, 2004).

The model in Figure 1.1 offers an outline of the processes involved in language acquisition and is not intended to be comprehensive. Because the present study focuses on IP, which is accounted for stage 1 of the above model, the present study focuses on this stage alone. This study is concerned with the conversion of input to intake, and I will therefore concentrate on describing the first stage in the above model known as input processing. It is important to point out that although this study focuses solely on input that is not to say that output does not

play a part in language acquisition, in fact it does and therefore merits its own area of research. In the following section I will describe the principles of the Input Processing model, and also discuss those principles relevant in the processing of the target form used in the present study. Table 1.1 lists the Principles of the Input Processing Model (VanPatten, 2007).

As discussed, CM and IP are both models that attempt to explain how learners process input. Both models pose an important role for learners' existing strategies for processing the input in the L2 (i.e., cue strengths, processing principles). This study is situated in the model of Input Processing proposed by VanPatten (1996, 2004, 2007) due to its relationship with instructed SLA and given that one instructional intervention, Processing Instruction, has developed from the IP model and has been the basis for a number of instructed SLA studies during the past 15 years. The sections that follow, therefore, examine more closely the IP principle motivating this study, the First Noun Principle, and the target form investigated: Spanish accusative clitics.

Table 1.1.

Principles of the Input Processing Model (VanPatten, 2007).

1. The Primacy of the Content Words Principle: Learners process content words in the input before anything else.
2. The Lexical Preference Principle: If grammatical forms express a meaning that can also be encoded lexically (i.e., that grammatical marker is redundant), then learners will not initially process those grammatical forms until they have lexical forms to which they can match them.
3. The Preference for Non-Redundancy Principle: Learners are more likely to process non-redundant meaningful grammatical markers before they process redundant meaningful markers.
4. The Meaning Before Non-meaning Principle: Learners are more likely to process meaningful grammatical markers before non-meaningful grammatical markers.
5. The First Noun Principle: Learners tend to process the first noun or pronoun they encounter in a sentence as the subject.
6. The L1 Transfer Principle: Learners begin acquisition with L1 parsing procedures.
7. The Event Probabilities Principle: Learners may rely on event probabilities, where possible, instead of the First Noun Principle to interpret sentences.
8. The Lexical Semantics Principle: Learners may rely on lexical semantics, where possible, instead of the First Noun Principle (or an L1 parsing procedure) to interpret sentences.
9. The Contextual Constraint Principle: Learners may rely less on the First Noun Principle (or L1 transfer) if preceding context constrains the possible interpretation of a clause or sentence.
10. The Sentence Location Principle: Learners tend to process items in sentence initial position before those in final position and those in medial position.

First Noun Principle

The tendency for learners to assign the role of subject to the first noun or noun phrase in a sentence is known as the First Noun Principle. Learners, at least in beginning stages of acquisition, tag the first noun in an NP-V-NP sequence as the subject in the sentence when it actually may not be the subject. For example: *La ve Juan*. 'Juan sees her' (Her-CL-ACC 3RD FEM SG sees-VERB Juan – SUBJECT) may be misinterpreted as 'She sees Juan.'. This is especially problematic when the object is assigned the role of subject when in fact it is the receiver of the action, not the agent. The consequences for this type of misinterpretation for language learners is that acquisition of some structures, such as passives, OVS structures, case marking, etc., may be delayed. This means that regardless of the syntactic configuration of the input, learners interpret the first noun as the subject. Ervin-Tripp (1974) observed this processing strategy with English speaking children attending a French-speaking school. They tended to misinterpret the passive sentences in French as active sentences.

VanPatten (1984) found that L2 learners of Spanish tended to misinterpret the accusative clitics in OVS sentences as the subject. Lee (1987) also found similar results with L2 learners of Spanish in that they also used an SVO strategy to interpret the sentences to which they were exposed. On possible explanation as to why native English speakers learning Spanish find difficulties interpreting OVS sentences is because they apply the strategy of the First Noun Principle. Again, learners tend to interpret the first noun in the sentence as the subject, even when it is the object (Binkowski, 1992; Glisan, 1985; Lee, 1987; LoCoco, 1987; VanPatten, 1984).

What is clear from these L2 processing studies is that left to their own devices, learners may process the input incorrectly, and therefore, need something else to aid them in correctly parsing sentences and in making the appropriate form-meaning connections. For VanPatten, the acquisition process can be helped by drawing learners' attention to problematic features

Clitics

Because the target form in this study is the accusative clitics in Spanish, I will first provide a syntactic description of the accusative clitics. I will then return the focus of my discussion to the description of the principles of input processing that most directly relate to this study; the Primacy of Meaning Principle (P1) and the First Noun Principle.

Zagona (2002) defines clitics as syntactically independent words or phrasal constituents, but which are phonologically dependent. Phonological dependence refers to clitics undergoing phonological word-formation so that it joins a stress bearing constituent. Cliticization vary among languages but Spanish and other Romance languages derive some clitics from the demonstrative *ille* in Latin and also from strong pronouns and reflexives. Table 1.2 illustrates the accusative clitics in Spanish.

Table 1.2.

Spanish Accusative Clitics.

me	1st sg.	nos	1st pl.
te	2nd sg.	os	2nd pl.
lo	3rd sg.m.	los	3rd pl.
la	3rd sg.f.	las	3rd pl.f.
se	3rd sg./pl/refl.		

Modern Spanish clitics are always placed adjacent to a verb; either (a) after imperatives, (b) infinitives and gerunds, or (c) before finite verbs. Example 1.1 provides sample uses.

Example 1.1. Modern Spanish Clitics.

(a) Mánda**lo.**
Send – I. + CL (Acc.)
"Send it."

(b) Quiso cocinar**lo**. Estaba cocinando**lo**.
Tried – pa. 3rd.sg. cook-inf.+CL (Acc.) Be(imp.3rd.sg) cook-prt.+CL(Acc.)
"(S/he) tried to cook it." "(S/he) was cooking it."

(c) **Lo** ve.
It - CL(Acc.) see-3rd.sg.
"(S/he) sees it."

Debate exists among syntactitians regarding the nature of clitic derivation, and a number of proposals exist, including movement approaches (e.g., Edmonds, 1975; Kayne, 1989), base generation approaches (e.g., Jaeggli, 1982) and clitics as functional heads (Uriagereka, 1992; Belletti, 1995). A full discussion of the merits and drawbacks of the approaches to clitic derivation are beyond the scope of this dissertation (for further discussion see Zagona, 2002). Of importance to this dissertation is that because Spanish accusative clitics precede finite verbs, they are often misinterpreted by L2 learners.

Summary

To summarize this section, although input is necessary for SLA, studies have shown that learners fail to acquire certain morphosyntactic features and that, left to their own devices, L2 learners (particularly at the beginning stages) are likely to process input incorrectly. Both the Competition Model and Input Processing provide accounts regarding why Spanish accusative clitics present a processing difficulty for L2 Spanish learners. The next section looks at ways of modifying or enhancing the input learners receive in order to make problematic morphosyntactic features more salient.

Input Enhancement

Introduction

Sharwood Smith (1993) coined the term Input Enhancement to refer to any attempt to draw learners' attention to a grammatical form while at the same time directing them to process for meaning. Research in input enhancement investigates what types of input manipulations can facilitate the making of form-meaning connections. The premise of input enhancement is to direct learners' attention to the target forms, while at the same time, keeping meaning in focus. This is accomplished in different ways by pushing learners to process for meaning by confirming comprehension of the overall meaning of the input, while at the same time, drawing learners' attention to the relevant linguistic form. Therefore, the goal is to increase the saliency of the target features in the input while boosting the likelihood that learners will notice the forms. One possible way to accomplish learners' noticing of forms is through different methods of enhancing the input. Attentional processes, therefore, are hypothesized to play a crucial role in input processing.

Role of Attention

Given that learners possess strategies with which to process and attend to input features, a crucial issue involves the role of attention. Many researchers agree that some kind of process of attention is required for input to become intake; however, disagreements occur in respect to the amount and type of attention needed for L2 acquisition (Gass & Selinker, 1994; Schmidt, 1990, 1993, 1994; Tomlin & Villa, 1994). In this section I discuss the possible roles of attention and noticing along with some of their criticisms.

Schmidt (1990) proposes the Noticing Hypothesis, according to which the conscious noticing of the mismatch between one's language production and the target form is necessary in order for SLA to occur. According to Schmidt (1995), acquisition must entail awareness and that "The noticing hypothesis claims that learning requires awareness *at the time of learning*" (p. 26). In other words, the learner must notice what they want to produce (the target form), what they are producing, and at the instance of noticing this mismatch, be aware that they are learning the target form. Schmidt (1994) claims that "noticing is the necessary and sufficient condition for the conversion of input to intake for learning" (p. 17). According to Schmidt, without

noticing, acquisition will not happen. Schmidt also states that whatever is noticed in the input will become intake for learning, whether this noticing is unintentional or deliberate; if it is noticed it will become intake. (Schmidt, 1995).

Tomlin and Villa (1994) posit a somewhat different approach to attention and claim that there are three interrelated processes of attention: alertness, orientation, and detection. Of these three processes, alertness and orientation require conscious awareness and the only process that does not require conscious awareness is detection. According to this view, the process of detection is crucial for learning. That is not to say that alertness and orientation do not have an important role, in fact, their role is to help increase the chance of detection, and in turn facilitate learning.

Robinson (1995) posits that what Schmidt defines as noticing is what is detected and then further activated. This happens as a result of the allocation of attentional resources from a central executive. Robinson posits that the task demands determine the type of further cognitive processing involved. In other words, the task demands stimulate different types of cognitive processing.

How attention and noticing have been conceptualized (and operationalized) in SLA is not without its critics. Truscott (1998) criticizes the concept of noticing used in second language acquisition research by stating that "the foundations of the hypothesis in cognitive psychology are weak" and that "the hypothesis is not based on any rational theory of language" (p.104). Truscott also points out that there are conceptual problems with the Noticing Hypothesis that make interpreting it and also testing it difficult. Truscott (1998) also claims that "the [*Noticing*] hypothesis is too vague to be of much value" (p. 116). Criticisms not withstanding, it is clear that in both fields of psychology and SLA, some kind of attention to formal features in the input is necessary for acquisition to occur. There are different ideas as to which strategy or technique should be employed to best direct learners' attention to the formal features of language; some researchers point to output (i.e., Swain) and others point to methods of enhancing the input (i.e, VanPatten).

Criticisms notwithstanding, attention is believed to play a role in language acquisition. Although there are differences in how attention is conceptualized and the degree to which is it necessary in order for acquisition to take place, learners must in some way attend to the input in

order to make the appropriate form meaning connections. One possible way to accomplish learners' noticing of forms is through different methods of enhancing the input. The types of input enhancement used in this study are discussed in the following section.

Types of Input Enhancement

In this study, four types of input enhancement techniques will be used; Structured Input (SI), Input Flood (IF), Text Enhancement (TE), and another treatment type titled Focused Input (FI) (presented in Chapter 2). The following section outlines each one of these treatment types and also includes a brief description of the results of some of the relevant research in the area (a complete review of these studies is found in Chapter 2).

Structured Input

Structured Input activities are one component of a pedagogical intervention called Processing Instruction stemming from one model of input processing (VanPatten, 1996, 2004, 2007). Processing Instruction is "the pedagogical intervention… that is derived from insights about IP" (VanPatten, 2007, p. 128). Processing Instruction traditionally consists of three parts: information about a linguistic form, information about learners' non-optimal processing strategies, and Structured Input activities. According to research, Structured Input activities are sufficient to push learners in making form-meaning connections and the information about the target structures is not necessary. In turn, this deems explicit information an unnecessary component of Processing Instruction (VanPatten & Oikkenon, 1996; Sanz & Short, 2004; VanPatten & Fernandez, 2004).

During Structured Input activities learners are pushed to make form-meaning connections by facilitating the extraction of meaning from the target form. Structured Input activities address a particular processing problem and push learners away from their non-optimal processing strategies and towards more optimal processing of the input. Pushing learners away from their incorrect processing strategies and towards more optimal processing strategies aids them in making the necessary form-meaning connections required for acquisition of a target form. For example, according to the First Noun Strategy (VanPatten, 2007), native English speaking L2 learners of Spanish tend to interpret the first noun in a sentence as the subject, even if it is the object. Unlike English, Spanish has flexible word order and OVS sentences are possible.

Therefore, a Structured Input activity that attempts to alter the non-optimal processing strategy of interpreting the first noun in a sentence as the subject can be used in order to push learners to make the form meaning connections necessary to interpret the target form correctly. In one example of a Structured Input activity, learners are presented with a sentence such as: *Lo saluda la mujer*. 'The woman greets him' (Him-OBJECT greets-VERB the woman – SUBJECT), along with two images. One of the images depicts a woman greeting a man and the other depicts a man greeting a woman. This activity involves pushing learners away from their non-optimal processing strategies and towards making the necessary form-meaning connections in order to complete the activity. Learners may also be given feedback indicating whether their response is correct or incorrect.

Structured Input activities consist of two general types: referential and affective. Referential activities require a right or wrong answer and they must rely on the target form to extract meaning from the input. Affective activities require learners to express a belief or opinion about the real world. When Structured Input activities were designed and implemented according to their guidelines, the findings tend to show consistent, significant learning gains in the interpretation and or production, of the target forms (VanPatten & Cadierno, 1993; VanPatten & Oikkenon, 1996; Sanz & Morgan-Short, 2004; Benati, 2004; Farley, 2004; Fernandez, 2004; Wong, 2004; VanPatten & Fernandez, 2004). These studies will be discussed in Chapter 2.

Although research on Structured Input has consistently yielded positive findings, much of this line of research has focused on comparing SI (or Processing Instruction) with production-based instructional treatments (e.g., "traditional instruction", "meaning-based output", etc.). As Collentine (2004) noted, the time has come to "abandon comparisons between Processing Instruction and traditional approaches to grammar instruction…" (p. 180). In other words, the research suggests that Structured Input does indeed facilitate SLA, but why? Is it because learners are exposed to comprehensible input? Is it because of the implicit negative feedback that is part of the activities? Or is it because these activities do indeed push learners away from non-optimal processing strategies?

Input Flood

Input flood consists of providing learners with lots of instances of a particular target form in oral or written form, thereby, "flooding" the input with the target form, so to say. Gass (1997) states that "something that is very frequent in the input is likely to be noticed" (p.17). Therefore, because the target forms occur frequently in the input (the input is flooded with exemplars), it is hypothesized that L2 learners will attend to them in some way. Wong (2005) states that "The basic idea here is that by flooding the input with many exemplars of the form, learners will have an increased chance to notice it" (p. 37). It is important to point out that noticing (if it is in fact noticed) the target feature does not necessarily indicate that it will be processed and become intake. Input Flood is intended for learners to focus on the meaning of the flooded input and to increase the chances that they will notice the target forms by including a heightened number of target items. During an input flood task, learners are held responsible for the meaning of the text and not asked any questions dealing specifically with the target forms embedded (flooded) in the text. Research on Input Flood has yielded mixed findings (Trahey & White, 1993; Spada & Lightbown, 1999; Williams & Evans, 1998), and these studies will be discussed in Chapter 2.

Text Enhancement

Text Enhancement refers to typographical modifications made to target forms in the input (i.e., bold, italics, underlining, font size/style, color, etc.). The goal of textual enhancement is to get learners to notice the enhanced forms. Wong (2005) states that "this is essentially the idea behind textual enhancement: to render more salient particular features of written input that learners normally may not notice and make form-meaning connections for" (p. 49). Text Enhancement can be operationalized by bolding or italicizing the target forms, increasing the font size of the target forms, and coloring the target forms a different color from the rest of a text. The motivation behind altering the text via means of Text Enhancement is to increase the likelihood that learners will notice the target forms. Like in input flood, studies investigating the effects of Text Enhancement have produced mixed results (Shook,1994; Alanen, 1995; Doughty, 1995; Jourdenais, Ota, Stauffer, Boyson, & Doughty, 1995; Robinson, 1997; White, 1998; Williams, 1999; Izumi, 2002), and these studies will be discussed in Chapter 2.

The Present Study and Its Significance

This study, therefore, seeks to address some of these issues, thereby contributing to the body of research in SLA investigating the effects of various types of input-based instruction on L2 acquisition. This study proposes to do exactly that: tease apart the variables of SI activities to determine if it is the input itself, the variable of implicit negative feedback, or the way in which the input is structured to push learners away from non optimal processing strategies. By investigating the effects of input flood, input flood with text enhancement, and isolating the implicit negative feedback component of SI, this study will shed light on whether input is enough to facilitate the necessary form-meaning connections, which will contribute to input enhancement research.

Definition of Terms

Acquisition: The processes of the internalization of a linguistic system (e.g., meanings, forms and uses of the phonology, morphology, lexicon, syntax, pragmatics, etc, of a language).
Attention: Refers to a variety of mechanisms such as alertness, orientation and detection.
Awareness: The subjective experience of any cognitive content or external stimulus.
Explicit information: An aspect of instruction that overtly informs the learner about the language and how it works.
Implicit linguistic system: The learner's linguistic system that exists outside of consciousness.
Implicit instruction: A type of teaching that does not overtly make reference about how the L2 works.
Input: The linguistic data to which learners are exposed in a communicative context.
Input processing: The stage of acquisition when learners first make form-meaning connections and parse sentences during comprehension.
Metalinguistic knowledge: Knowledge about language and how it works.
Noticing: Any registration of a form, but not necessarily with an attached meaning.
Processing Instruction: A type of focus on form that is informed by an Input Processing model; attempts to alter learners' non-optimal processing strategies.

Structured input activities: Activities that contain input manipulated to push learners away from non-optimal processing strategies.

Organization of Dissertation

Chapter two of this dissertation motivates each of the instructional treatments by critically reviewing the relevant research findings for various types of input enhancement. Chapter two ends with the research questions and hypotheses that guide the study. Chapter three presents the proposed research design and methodology. Chapter four presents the data and Chapter five includes a discussion of the results along with directions for future research.

CHAPTER 2: MOTIVATION FOR THE PRESENT STUDY

The goal of this chapter is to review the literature related to various types of Input Enhancement: Structured Input (SI), Input Flood (IF), and Text Enhancement (TE). I will discuss the findings and limitations of previous investigations in SI. Next, I will provide the motivation for an additional treatment type (Focused Input (FI)) in order to isolate a component of SI activities: implicit negative feedback. Then I will discuss the findings and limitations of previous research in IF and TE. Lastly, I will state the research questions and hypotheses that guide this study.

Processing Instruction and Structured Input

As discussed in Chapter 1, Processing Instruction is a pedagogical intervention stemming from one model of Input Processing (VanPatten, 1996, 2004, 2007) and consists of three components: information about a linguistic form, information about learners' non-optimal processing strategies and Structured Input activities. The first component, information about a linguistic form, provides information about the structure itself, how it is used, where it is located in a sentence in the target language, and virtually any other information that helps to describe the linguistic structure. The important component of this information is that it attempts to link form and meaning. For example, for object pronouns in Spanish, the explanation would include information about how pronouns encode meaning in addition to information about the structural aspect. A sample lesson would inform learners that an object of a verb is a different grammatical concept from the subject and that the object is usually a person or thing on which an action or process is performed. Learners would be provided with a few examples in English such as 'John writes letters,' and an explanation that 'John' is the subject and 'letters' is the object. Learners would then be provided with an example in Spanish, such as 'Juan mira a sus hermanos' (Juan watches his brothers), and asked to identify the subject and the object. At this point the accusative clitics would be introduced. Learners would then be reminded that accusative clitics in Spanish are placed in front of conjugated verbs and that the indicate on who or what the action is being performed.

The second component to PI is that learners are informed about a particular processing strategy that might negatively affect their processing of the linguistic form during comprehension. These strategies are based off of the Principles of Input Processing (VanPatten, 1996, 2004, 2007) and are attempted to be altered by the information provided to learners. For example, according to the First Noun Principle, learners tend to process the first noun or pronoun they encounter in a sentence as the subject. In this case, learners' processing strategy would be attempted to be altered so that they appropriately interpreted the first noun/pronoun. For example, learners may be informed with information such as: "What can get tricky in correctly understanding a sentence is that often you will see or hear a sentence in which the order is object-pronoun-verb-subject, just the opposite of what you would expect!...So be careful and don't make the mistake of interpreting the object pronoun as the subject of the sentence!" (VanPatten, 1996; p. 62).

Following these first two components of PI, the learner is presented with a series of SI items. Structured Input activities are a certain type of activity that adheres to the following guidelines (VanPatten, 2003; p. 154):

- Present one thing at a time.
- Keep meaning in focus.
- Move from sentences to connected discourse.
- Use both oral and written input.
- Have the learner do something with the input.
- Keep the learner's processing strategies in mind.

The premise behind presenting one thing at time refers to only presenting one target structure at a time, it is also important to point out that not all the forms of a given structure need to be presented at the same time. For example, the SI activity may concentrate on the third person singular and plural of Spanish '–ar' verb conjugations or accusative clitics and not on first and second person conjugations at the same time.

During the activities, meaning is also kept in focus. The activity must be meaning based and not mechanical. The learner must attend to meaning in the sentence in order for the task to

be completed and not simply supply the correct verb form, or adjective ending. This allows the learner to make the appropriate form-meaning connections.

Moving from sentences to connected discourse means that learners are first exposed to sentences first, the shorter the better, in order to give learners more processing time. If the sentences are too long, then the learner may get lost if the cognitive demands of processing meaning are too great. After exposure to short isolated (but related) sentences, the learner can then move to a short narration (connected discourse).

Incorporating both oral and written input in SI activities is based on the premise that language is spoken and to accommodate for individual variation, oral input should be used. In some cases, learners benefit from 'seeing' the language and even claim that they need to read the input in order to learn it. (VanPatten, 2003). However, using oral input for these learners may create uncomfortable and ineffective learning environments. In any event, when possible, SI activities may include both modes of input.

Learners must also do something with the input after they receive it. Learners must be active recipients of language and not be simply talked at or asked to read something without further task demands. This may include responding in a 'Yes/no' manner to the input, or in some way agreeing or disagreeing with either written or heard sentences. The learner does not respond by producing the target structure, but rather, responds to the input in some way.

The last guideline for SI activities is that they must keep learners processing strategies in mind. Learners' focus should be on the relevant grammatical items and not other elements in the sentence during processing. See Chapter 1 for a discussion on the Principles of Input Processing from which these strategies are based. SI activities must address a particular processing problem and attempt to alter their incorrect processing strategy.

Structured Input activities are created under these guidelines and can appear in various forms. I will discuss the type of SI activity relevant to this study: matching. In this type of activity, the learner indicated correspondence between an input sentence and something else: a picture, a name, an event, etc. In the case of the accusative clitics in Spanish, a possible SI item could include one sentence and two pictures. The sentence would have the accusative clitic in sentence initial position (First Noun Strategy) and the learner would be asked to match the corresponding picture with the sentence. Therefore, learners would then choose between the two pictures, which picture matches up with the sentence. For example, learners would be provided

with two pictures: one of a boy hugging a girl and the other of a girl hugging a boy. These pictures would be accompanied with the sentence, 'Lo abraza la chica.' (The girl hugs him.) and asked to match the sentence with the corresponding picture.

VanPatten and Cadierno (1993) address this particular linguistic structure in the first of a series of studies that starts off a research agenda in PI. VanPatten and Cadierno (1993) investigated the effects of various treatments on the acquisition of accusative clitics in a treatment given to second year Spanish classes at a large Mid-west university. The participants were either given Traditional Instruction (TI) or Processing Instruction (PI) (including Structured Input activities and explicit information), or were in the control group. Traditional Instruction involved providing learners with information about the target grammar form and its placement. This information included a paradigmatic chart and an explanation about what objects and subjects were. The participants then moved from mechanical form focused practice to meaningful practice to open-ended communicative practice. TI focused principally on learners' production of language.

By using a pretest/posttest/delayed posttest design, the results reveal that both the TI group and the PI group performed similarly in production measures. There was no significant difference between these groups on production measures; however, both groups performed better than the no instruction group. The PI group outperformed the Traditional Instruction group on interpretation measures. The results suggest that under these conditions, with this grammatical form, (the Spanish accusative clitics) that PI comes out on top in interpretation measures. VanPatten and Cadierno conclude that TI does not enhance how learners process input and therefore does not provide intake for the developing system. Questions were raised, however, whether the learner gains could have been attributed to the explicit information provided to the groups, because of the SI activities, or a combination of the two.

Since VanPatten and Cadierno's first study investigating Processing Instruction, several studies have followed in the last 15 years. Because the goal of PI is to alter a non-optimal processing strategy, the review of PI studies that follows is organized according to the two specific strategies that have been investigated: Lexical Preference and First Noun Strategy.

PI Research on Lexical Preference

Cadierno (1995) investigated the effects of different types of instruction on the acquisition of the past tense preterite forms in Spanish. This study sought to investigate a different processing strategy than VanPatten and Cadierno's (1993) study: lexical preference. According to the Lexical Preference Principle (VanPatten, 2007), learners will look to information encoded in the lexicon before they look to the grammatical forms, if they are redundant. Because the past tense can be encoded with temporal adverbs, early stage learners tend to rely on the adverbs for temporal distinctions and not the redundant grammatical form. Furthermore, learners reveal a significant drop in assigning temporal reference to utterances when the adverb is removed (Cadierno & Glass, 1991; Glass & Cadierno, 1990; Musumeci, 1989). Therefore, PI attempts to alter learners' non-optimal processing strategy of relying on lexical items instead of attending to the grammatical forms in the input.

Participants were assigned to one of three groups: a Processing Instruction group, a Traditional Instruction group, and a control group. In a pretest/posttest/delayed posttest design, assessment measures included both interpretation and production tasks. Traditional instruction involved presenting learners with the past tense endings and giving them practice with how to use them (translation, sentence completion, and question answer activities) while moving from mechanical to meaningful based activities. Processing Instruction involved focusing learners' attention on the past tense verb morphology when processing for tense and practicing how to assign tense to (past vs. present) and at no time produced the target form.

The findings reveal that the Processing Instruction group significantly outperformed the Traditional Instruction group and the control group on interpretation tasks. The PI group also performed as well as the TI group on production tasks, and both groups performed significantly better than the control group. This finding is of interest considering the PI group did not at any time throughout the treatment produce the target form, whereas the TI group was given opportunities to practice output. On the delayed posttests for both interpretation and production, the PI group maintained their performance. For the TI group, the effects of instruction only lasted for production measures, not interpretation. The findings suggest that participants' non-optimal processing strategies of relying on lexical items for semantic information were altered for the PI group.

Investigating a different form, in a different language, with the same processing strategy, the lexical preference strategy, Benati (2004) investigated the effects of explicit information (alone and paired with SI) on the future tense with adult learners of Italian. Participants were assigned to either an explicit information (EI) group, an SI group, or a PI group. In a pretest/posttest/delayed posttest design with both interpretation and production measures, the findings reveal that both the PI group and the SI group performed better than the EI group on the posttest and delayed posttest. The findings of Benati's study are in line with those of Cadierno (1995). However, it cannot be known for sure whether the production or the interpretation yielded higher gains, given that they were grouped together in the analysis. Benati concludes that the results of the altering of learners processing strategies prompted by SI activities are generalizable to a different form, Italian future tense in this case, with the same processing strategy (lexical preference strategy).

Farley (2004) investigated the role of explicit information on the acquisition of the Spanish subjunctive by using a PI group and a group receiving just SI. Again in this study, the processing strategy was the lexical preference strategy. The 54 participants were fourth-semester learners of Spanish enrolled in university level classes. The treatment lasted two days totaling 100 minutes with the assessment measures occurring on separate days from the treatment. Acquisition was measured by both interpretation and production measures in a pretest/posttest/delayed posttest design.

The results of the study indicate that the PI group outperformed the SI group on interpretation and production measures on both the posttest and delayed posttest. Although both groups made gains, the PI group improved more. The results of this study suggest that with some language features, namely in this case the Spanish subjunctive, explicit information may be more beneficial to learners than with other forms such as the Spanish accusative clitics (VanPatten & Oikkenon, 1996) or the future tense in Italian (Benati, 2004). With the subjunctive mood, explicit information may aid SI to speed up the acquisition process.

Farley also points out that the role of explicit information may help learners to notice the subjunctive more quickly, but SI may be the component of PI that aids learners in making form-meaning connections. Farley concludes that although the explicit information may help in some way, SI is the necessary component leading to making these form-meaning connections.

Wong (2004) also investigated whether the results of VanPatten and Cadierno's (1993) study are generalizable to a different form. Wong comments that the structure addressed in VanPatten and Cadierno (1993) may lend itself very well to SI activities, because the consequences are relatively high for misinterpretations. What this means is that if the learner does not capture the relevance of word order, then they do not capture the meaning of the sentence. In this event, as Wong puts it, they miss the 'syntactic boat', so to say (Wong, 2004). Therefore, the SI activities are useful in drawing learners' attention to, and altering the processing strategy of, word order. The question Wong asks is what about other structures that are lower in communicative value (and that address a different processing strategy).

In response, Wong (2004) performed a conceptual replication of VanPatten and Cadierno (1993) and investigated another structure, lower in communicative value, the French *de/un* distinction in French negative sentences. This structure has no semantic value itself and holds little communicative value, thereby using the Lexical Preference Principle to describe learners' behavior. Again, according to this principle, learners will tend to rely on lexical information in the sentence to get meaning rather than the grammatical structure.

Similar to VanPatten and Cadierno (1993), Wong's ninety-four participants were from first year French courses at a Midwestern university and were sectioned into four groups, Processing Instruction, Explicit Information, Structured Input, and a control group. Wong's intent was to determine the necessary component of Processing Instruction: the explicit information, the Structured Input activities, or a combination of the two. In this study Wong included a control group that received no instruction to use as a comparison group. The treatment lasted one day. Participants completed the posttest assessments, one sentence level interpretation task (10 target) and one production task (6 target), immediately after performing the treatment.

Results from the interpretation task revealed that the PI and the SI groups outperformed the Explicit Information group; however, there were no significant differences between the Processing Instruction and Structured Input groups. The results on the production task revealed that the difference was not significant between the Processing Instruction group and the Structured Input group. There were however, significant differences between the Processing Instruction group and the Explicit Information group, and between the Structured Input and the

control group. Interestingly enough, there were no differences between the Explicit Information group and the control group.

Wong concludes that the main contributing factor to gains made by the Processing Instruction and Structured Input group, in comparison with the Explicit Information and control group, is due to the presence of the Structured Input activities. Wong also indicates that if the Explicit Information had played more of a role, then the Processing Instruction group would be expected to perform better than the Structured Input group. Again in this case, SI activities seem to be the constant variable causing the change in learners' processing strategies.

There are a few reasons why these results may be misleading. The first of which, as Farley pointed out in the case of the accusative clitics, this grammatical feature is also relatively transparent. There is also a materials controversy in the design of the study in the production section of the posttest. The activity in the production section of the posttest is a mechanical drill and is not meaning based. The participants were required to insert either *de* or *un* in the blank space in a sentence, which can be done without focus on meaning. It would seem likely that the performance on this task would be higher for the Processing Instruction group than for the Structured Input group, because they received explicit instruction, but as it turns out there was no significant difference. What is interesting, however, is that although there was a significant difference between the Processing Instruction group and the Explicit Information group, the Processing Instruction and the control group, and between the Structured Input and the control group, there was not a significant difference observed between the Structured Input and the Explicit Information group. The question is then whether or not this is influenced by the task, which may be the case. If not, then we can conclude, that because there are no significant differences found between the Structured Input and the Explicit Information group, that the explicit information is enough under these conditions. Even though the Structured Input group performed slightly better, there were no significant differences found between these groups. In any event, the results for the interpretation tasks still lead us to the conclusion that in this study, Structured Input is enough and Explicit Information is not necessary on interpretation tasks. It is important to keep in mind that the participants who received Structured Input activities did not have any experience producing the target form in the treatment.

PI Research on the First Noun Strategy: Spanish OVS Word Order

Investigating the same target form (Spanish accusative clitics) as VanPatten and Cadierno (1993) along with the same processing strategy (first noun strategy) VanPatten and Sanz (1995) performed a partial replication of VanPatten and Cadierno's (1993) study in order to address the criticism that the tasks used were not communicative or discourse oriented enough. Therefore, VanPatten and Sanz (1995) investigated the effects on acquisition of the same form (Spanish accusative clitics), using a no-instruction group and a processing instruction group, and incorporating more communicative output measures; a structured question-answer interview and a video narration task. The same sentence-level task used in VanPatten and Cadierno (1993) was also used. Again, in this study, the processing instruction group did not produce the target form at any point in the treatment, although production measures were used to assess their knowledge gain.

Posttest interpretation findings indicate that the group receiving Processing Instruction demonstrated significant gains. The findings on the posttests measuring output indicate overall better performance of the Processing Instruction group over the no-instruction group. These findings suggest that instruction did in fact have an effect regardless of task type (with the exception of one task, an oral video narration task). Therefore, these findings are in line with those of VanPatten and Cadierno (1993) and show that the effect of processing instruction is not solely limited to sentence-level measures.

In the subsequent study, VanPatten and Oikkenon (1996) isolated the variable of explicit information by having three groups, again with Spanish accusative clitics. The participants were students in Spanish as a second language classes at the high school level. Group one received PI (explicit information and SI activities), group two received the Structured Input activities without explicit learner processing strategies (the explicit information component of PI) and a third group received explanation only without Structured Input activities.

On interpretation measures, the SI only group showed the greatest gains from pretest to posttest, suggesting that improvement may be due to the SI activities and not explicit information. These results suggest that the SI activities are in some way aiding learners to make form-meaning connections that explicit information may not. This study supports the results of VanPatten and Cadierno (1993), suggesting that the gains by the PI group may not have been due to the explicit information given to learners, but rather, attributable to SI activities

In the studies just reviewed, they all addressed the role of explicit information in combination with SI activities given prior to performing an activity. Attention will now be turned to a study adding to the body of PI research in a slightly different way. In a study by Sanz and Morgan-Short (2004), the researchers investigated not only whether there is a role for Explicit Information in Processing Instruction, but if there were different results depending on the placement of the Explicit Information; before and during task practice.

Sanz and Morgan-Short (2004) investigated the role of feedback in Processing Instruction with the Spanish accusative clitics on sixty-nine university level learners in Spanish as a second language classes. Feedback in this study was operationalized as explicit information prior to task practice and during task practice. By incorporating metalinguistic information at different times of the acquisition process, it was possible to determine whether it was the instructional type or if there was a relationship of time and instructional type. There were four treatment groups; group one received metalinguistic information before the treatment and also during treatment in the form of feedback ([+E, +F]), group two did not receive any metalinguistic information either before the treatment or during the treatment ([-E, -F]) (however, it is important to point out that although this group did not receive any explicit information, either before or during the treatment, they received implicit instruction during the treatment, an issue inherent in SI activities), group three received metalinguistic information before the treatment but did not receive any feedback during the treatment ([+E, -F]), group four did not receive metalinguistic information before the treatment but did receive it during the treatment in the form of feedback ([-E, +F]).

Both interpretation and productions measures were used in the assessment of learner gains in the treatment. The results of the analyses of the posttest scores showed that there was no difference between any of the groups on interpretation; thus, supporting the beneficial role of the constant variable among the groups: Structured Input activities. In the interpretation measures, the placement of explicit information did not yield a significant difference from Structured Input activities alone.

On sentence completion measures, the results were similar, no difference between groups; however, gains were made by all groups. The analysis of the video retelling measures (production) revealed that, as in the interpretation findings, there was no main effect for either Feedback or Explanation; all groups performed similarly. All of the groups made significant

gains even under different treatment conditions, therefore, Sanz and Morgan-Short conclude that the improvements must be due to the common element among the groups; Structured Input activities.

Morgan-Short and Bowden (2006) investigated the effects on acquisition of the Spanish accusative clitics of three different instructional treatments: meaningful output based instruction (MOBI) along with practice, Processing Instruction, and an exposure only group that received an input flood, which they referred to as the control group. The participants were first semester university level learners enrolled in a beginning level Spanish course. Both the MOBI and the PI groups received the same explicit grammatical information about the target form in accordance with the tenets of Processing Instruction. The grammar information included explicit information on the structure and also included information on the first noun strategy. The difference between the two groups was in the mode of practice provided; the MOBI practiced output and the PI group practiced input only. Both groups received input in the form of examples provided during the explicit grammar information and information about the first noun strategy. The MOBI group also received feedback to their incorrect responses to the practice questions that informed them what the correct answer was. This can also be viewed as input pertaining to the target structure. The exposure group received input of the target form through exposure to reading passages and comprehension questions.

The findings reveal that both PI and MOBI lead to significantly higher scores in interpretation and production on the posttest and delayed posttest compared to the pretest. Scores from posttest to delayed posttest revealed no change for the PI group and a significant loss for the MOBI. Even though the data revealed a significant decline from posttest to delayed posttest for the MOBI group, there was still significant improvement from the pretest.

One of the most interesting findings is that on the posttest interpretation task both treatment groups outperformed the exposure group; however, on the posttest production tasks, PI did not outperform the exposure group whereas the MOBI group did. Also, for both production and interpretation measures on the delayed posttest, no differences were found between any of the groups (MOBI, PI, or exposure). This indicates that none of the groups performed significantly better than the other on either mode of the delayed posttest. This finding suggests that any of these instructional treatments may be enough for learners to acquire this target form.

There are some serious implications for these findings. First, if the exposure group who received just input and some context questions dealing with the content of the input (not the form itself) performed equally as well as both treatment groups (MOBI and PI), then this finding suggests that maybe the success of PI is attributed to exposing learners to input alone. In other words, is input itself (along with test effects and/or prior knowledge) driving learners to make the necessary form-meaning connections and not the SI activities?

Morgan-Short and Bowden (2006) call for more research investigating what other types of input (and output) based instruction are effective for SLA. In their study, what they termed the control group, received exposure in a sort of input flood. Though not all of the control's materials were included in the appendices, judging from the materials included, there were four target form items in the passages. According to Morgan-Short and Bowden, this amount of target form items was "approximately" the same amount given to the PI and MOBI. Despite the complicated placement of the accusative clitics in the input (found in the second part of a complex sentence having two verbs, sometimes having a change in agent, and including two forms *los* [them-masculine, masculine/feminine] and *la* [it-feminine]), learners still performed just as well on the interpretation delayed posttest. It would be interesting to see the effects on exposing learners to equal amounts of target form items (opposed to approximate) using this same input flood type environment including passages and context questions. If some of the effects on acquisition of this exposure group are due to exposure to the input alone, then in this case, the amount of target form items need to be controlled more carefully.

We will now turn our attention to Fernandez (2008) that looks deeper into Processing Instruction to examine *when* it is during processing that learners begin to correctly process the input, with Explicit Information and without Explicit Information. Eighty-four university learners enrolled in Spanish as a second language classes at a mid-west university participated in the study.

The target forms were the subjunctive mood and the accusative clitics in Spanish. As opposed to measuring learners' gains from a pretest to a posttest, learners' behavior was tracked during the processing of Structured Input activities with and without Explicit Information. As with the other Processing Instruction studies reviewed, the Input Processing principles were kept in mind: the First Noun Principle with the direct objects and the Lexical Preference Principle with the subjunctive.

Learners' behavior was tracked and a criterion of four correct answers (three target items and one non target item) in a row were said to meet criterion for making the correct form-meaning connections. Essentially learners were considered to have interpretation control of the target form by reaching this criterion. In addition to the criterion set, the learners' behavior after the criterion was met was also analyzed in order to measure how consistently accurate the learners performed. Learner response time was also recorded for each group and form.

There are three major findings in this study: 1. There was no difference between the two treatments in the number of learners that reached criterion, regardless of structure, 2. The group that received Explicit Information started processing the subjunctive sooner than the group that did not receive explicit information, 3. There was no difference between the groups in reaching criterion with word order. Fernandez explains that the Explicit Information provided in the subjunctive may have helped this group match up verb endings and perform faster than the group that did not receive Explicit Information. Fernandez also claims that there may not have been a difference in word order accuracy because learners had to process the whole sentence in order to get meaning, thus lending both treatment types to yield similar results. The study supports the findings of the role of Explicit Information in Processing Instruction of VanPatten and Oikkenon (1996), suggesting that Explicit Information is not necessary for word order, and the findings of Farley (2004) suggesting that Explicit Information is beneficial for subjunctive but may not be necessary. However, different from Farley's study, learners (with the subjunctive) performed as well with explicit information as without, only differing in how quickly they reached criterion.

The most interesting finding of this study is that all groups reached the level of criterion, with explicit information and without explicit information, and with both the subjunctive and the accusative clitics. This indicates that the Structured Input activities (the constant variable among the different treatment groups) are working to draw learners' attention to the forms and pushing them to make form-meaning connections. The results indicate that for the subjunctive, the plus explicit information group reached criterion faster than the without explicit information group. However, the crucial question is if there is a difference in long term retention of the forms, which may be where the difference in performance, with or without explicit information, lies.

Summary and Limitations of PI/SI Research

As discussed in the previous section, research in PI and SI have investigated several target forms in various languages and have consistently revealed positive findings in support of either PI or SI. PI/SI have proven to be as beneficial as, if not more beneficial than, other treatment types in both interpretation and production tasks. Findings in various languages on multiple forms have yielded consistent findings as to the effectiveness of SI activities, such as Spanish (VanPatten & Cadierno, 1993; VanPatten & Oikkenon, 1996; Sanz & Morgan-Short, 2004; Fernandez, 2004; VanPatten & Fernandez, 2004), Italian (Benati, 2004), and French (Wong, 2004). The question this leads us to is, what is it about SI that yields such positive findings? Is it that learners are receiving comprehensible input? Or is it because this input is structured in such a way as to push learners away from non-optimal processing strategies? Or is it because this input is coupled with implicit negative feedback that is part of the SI activities? The present study seeks to shed light on these questions by isolating the feedback component of SI activities and by comparing SI with other input-based treatments.

Research on PI/SI to date contains an element of implicit negative feedback that has not previously been isolated. Implicit negative feedback comes about in certain types Structured Input activities when learners are given two pictures with one accompanying sentence and are asked to choose the picture that matches up with the sentence. If they choose the correct picture, they are given a response of 'Ok', signaling that they chose the correct match and then allowing them to continue on to the next question. At the point in which they are informed that their answer is correct, they are also implicitly being told that the other option is not the correct match. This information about the picture that does not match with the sentence is what is considered as implicit negative information/feedback.

Sanz and Morgan-Short (2004) point this out as a limitation in their study, that because all participants receive implicit feedback, they "cannot determine whether it [gains] was the practice alone, or the practice in combination with implicit feedback, that equalized the performance on all four groups" (p. 72). It is necessary then to isolate the variable of implicit negative feedback in the Structured Input activities to determine if it is a contributing factor in the Structured Input activities or if it is the exposure to the positive evidence in the input alone. For example, if learners are provided with a sentence such as Lo besa María. "María kisses him"

(Him – OBJECT kisses – VERB María – SUBJECT) along with a corresponding picture and simply asked to understand the relationship between the picture and the sentence, would this prove as effective as an SI activity? This alternative type of activity called Focused Input in this study, is described in more detail in chapter 3.

Another issue this dissertation investigates is how SI compares with other input-based instructional treatments. PI/SI research to date has compared PI/SI with either traditional instruction (involving mechanical drills leading into more meaning-based output tasks) or other instructional treatments investigating the role of explicit information. The only study to date comparing SI with another input-based instructional treatment is Morgan-Short and Bowden (2006). Even in this case, the only input-based instructional treatment other than PI in the study was what was considered the control group, who in fact received a sort of input flood. Research in the area of PI needs to investigate the effects of other input-based instructional treatments compared with PI. Comparing PI with other input-based instructional treatments will help to answer the question of whether or not the effects of PI are mainly due to the processing of input of any sort or if it is specifically the manipulated input inherent in SI activities that is effective. Therefore, the present study includes the following four treatment groups: Structured Input, Focused Input (FI) which is SI with the variable of implicit negative feedback isolated, and two other types of input enhancement techniques: Input Flood (IF), and Text Enhancement (TE). IF and TE are discussed in the following sections.

Input Flood

One method of enhancing the input is by means of flooding the input with the target forms in a technique called Input Flood (IF). Input Flood is considered a type of input enhancement that includes input saturated with instances of the form to be acquired. The basis for this flooding is that learners will be more likely to notice and process linguistic items that frequently occur in the input (Gass, 1997). Wong (2005) points out that "there is currently no recipe to dictate how many exemplars is optimal for an input flood" (p.39). However, as Gass (1997) suggests, the frequency of the target form may have an impact on noticing and therefore, the more items in the input, the better. Findings from Leow's (1998) study suggest that multiple exposures to the target forms may lead to better retention as evidenced by delayed posttest

measures. According to Leow, multiple exposures to the target forms may facilitate learners' development and internalization of the target forms.

Trahey and White (1993) investigated the effects of input flood on resetting English verb movement parameters with native French speakers. The verb movement parameter investigated in this study is the verb movement parameter of Pollock (1989). This verb movement accounts for the relationship of adverbs in respect to verbs. In French it is possible for the lexical verb to immediately precede the adverb as in the following example: *Jean Embrasse souvent Marie*. ("John kisses often Mary") (SVAO). However, in English the lexical verb cannot immediately precede the adverb as in the following ungrammatical sentence: *John kisses often Mary. In English it is possible for the adverb to precede the main verb as in "Mary rarely kisses John." (SAVO). However, in French this is not possible as illustrated in the following ungrammatical sentence: **Marie rerement embrasse Jean*. The researchers set out to determine if parameters of verb movement could be reset by positive evidence alone (via input flood). Results from this study are compared with the results from earlier studies incorporating negative evidence in the form of negative explicit information (L. White, 1991a, 1991b). An input flood alone was used as the instructional treatment and was void of explicit information of any kind. The materials focused on verb movement and adverb placement in cases where the verb placement was possible in French but not English (SVAO) and other cases in which the verb placement was possible in English but not in French (SAVO). The participants in the study were fifth-grade learners in Quebec participating in an intensive ESL program. The treatment took place one hour a day for ten days, totaling ten hours, and during the process exposed learners to hundreds of examples in the form of positive evidence.

In a pretest/posttest/delayed posttest design, participants were tested with two written interpretation tasks: a grammaticality judgment task and a sentence preference task (comparing two sentences). Production was measured by a sentence manipulation task, in which the participants were given cards with words on them and they were to make as many grammatical sentences by arranging the cards as possible. The overall findings from these assessment measures revealed that the input flood groups demonstrated that they learned that SAV was a possible word order in English, however; they did not demonstrate evidence that SVAO was not an acceptable word order in English. These results suggest that input flood may be effective for

learners to understand what is possible (i.e., SAV word order in English), however; it may not be an effective method for learners to acquire what is not possible in a language (i.e., SVA).

Williams and Evans (1998) found somewhat different results in an investigation on the acquisition of English participial adjectives with emotive verbs and the passive form. The participants were intermediate-level adult ESL learners representing various native languages enrolled in English writing classes. Participants were assigned to one of three treatment groups: input flood, input flood with explicit information and feedback, or to a control group. The treatment lasted two hours, twice a week for a period of fifteen weeks, the length of an academic semester. The in-class input, to which learners were exposed, came from papers written by former students of the same course about two movies in particular also shown in the current classes. The materials for the input flood groups included forty-five exemplars, whereas those of the control group included fifteen exemplars, therefore exposing learners to three times number of tokens in the input.

In a pretest/posttest quasi-experimental design interpretation performance was measured by grammaticality judgment tasks and production was measured by sentence completion tasks and narration tasks. The results for the participial adjectives revealed the following significant differences: Input Flood with both Explicit Information and Feedback outperformed the input flood and the control group. There was no significant difference between the input flood group and the control group. The results for the input flood with both explicit information and feedback yielded significantly higher scores than the other two groups (i.e., input flood and the control group).

The results for the passive forms in the sentence completion tasks (production measure) revealed a significant difference between input flood groups and the control group but not between the two input flood groups themselves. Both input flood groups (with and without explicit information and feedback) performed similarly and outperformed the control group. The results from this study suggest that the positive evidence in the input flood alone may be enough to facilitate acquisition of some forms but not others.

A noteworthy finding is that with the participle adjectives, the group receiving input flood with explicit information and feedback performed better than the group only receiving the input flood. Why would this be? Williams and Evans suggest that the explicit information could have prepared the learners to search and notice these forms more than in the input flood

condition alone. In other words, they were prompted to be on the look out for these forms, whereas the input flood group may not have been. However, this cannot be the only explanation because with the passive form both input flood groups (with and without explicit information and feedback) performed similarly. The findings then suggest that with some forms, explicit information may aid the acquisition process in conjunction with input flood, but for other target structures, input flood may be enough. Williams and Evans (1998) suggest that "explicit information may be more suited for more transparent forms such as the participial adjectives" (p. 152). However, with more complex forms such as the passive, input flood may meet the learners' needs in that it is not possible to explain the use of the passive tense with one straight-forward explanation. In addition to differences in the forms themselves, they also point towards learner readiness to account for the findings. They claim that the flood treatment with the passive form may have been enough to get the beginning learners to notice the forms. Additionally, learners at this level may not gain from explicit information simply because they are not ready for it.

Spada and Lightbown (1999) found similar results to Trahey and White's (1993) study with native French speakers studying a different target form in English. Their study examined the effects of input flood on the acquisition of English question formation. The participants were 144 sixth-grade students enrolled in intensive ESL classes in Quebec. The treatment exposed learners to input flooded with exemplars of question formation in English in order to determine if, according to Pienemann's Teachability Hypothesis (1988), input at one or more stages above their current stage level yielded results as measured by interpretation and production measures.

Pienemann's Teachability Hypothesis posits that in order for instruction to have a positive impact on acquisition, it must target language features that are at least one step beyond the learners' current developmental stage. One of the principal tenants of the Teachability Hypothesis is that developmental stages cannot be skipped or altered by the absence or presence of instruction of any type. All learners follow the same developmental stages, and although learners may pass through these stages at varying rates, the route of acquisition remains the same. The dependency of developmental stages is based on the premise that the development of a sequence of predictable processing procedures is necessary for language production to occur. Pienneman does not make reference to any certain pedagogy, simply that a positive impact happens if the target features are one step beyond the current developmental stage.

Prior to instruction, learners' performance level is assessed at levels two and three and consequently the input flooded with exemplars comes from levels four and five. According to Pienemann, Johnson, and Brindley (1988), learners in Stage 2 produce SVO with rising intonation (i.e. A boy through the ball?), Stage 3; Do-fronting (i.e. Do the boy is beside the bus?), Wh-fronting (i.e. What the boy is throwing?), and Other fronting (i.e. Is the boy is beside the bus?), Stage 4; Wh-with copula BE (i.e. Where is the ball?) and Yes/No questions with aux inversion (i.e. Is the boy beside the garbage can?), and in Stage 5 produce; Wh-with auxiliary second (i.e. What is the boy throwing?).

Before beginning the treatment, the instructors were told specifically to not correct learners' errors in question formation, provide them with explicit information on how to construct questions in English, or make comparisons between English question formation and French question formation. They were however, instructed to conduct class as they normally would and offer feedback without focusing on the formation of questions.

The materials packet given to the instructors included activities congruent with the goals of the study; they limited the focus on explicit error correction, offered learners chances to produce question formation via structured tasks, and included hundreds of correct exemplars in the input, thereby minimizing the incorrect structures to which they were exposed. The materials therefore emphasized exposing learners to the correct linguistic structure at a high frequency, as should an input flood. Treatment lasted one hour a day for a period of eight days (totaling eight hours) and learners were also exposed to about five hours a day of overall interaction in English where they could have been exposed to the target form on occasion.

In a pretest, posttest, and delayed posttest design, the participants' level of accuracy was measured by an Oral Production task (information gap task) and a 'Scrambled Questions task' (learners were instructed to form a question by putting the words in the correct order), to measure production. A sentence preference task was used to measure interpretation. Results indicate that even though some learners improved from pretest to posttest by accepting and producing fewer sentences from stages two and three and by accepting and producing more structures from stages four and five, they still continued to accept and produce grammatically incorrect forms from stages two and three and rejected many structures from stages four and five.

Spada and Lightbown (1999) pointed out that the learners may also need information about what is not possible (negative evidence), explicit information, or corrective feedback in

order to make higher gains. They concluded that positive evidence may help learners to acquire the forms they are exposed to; however, positive evidence alone may not be enough for them to learn what is not acceptable in a language.

These results were similar to those of Trahey and White (1993) in that learners acquired the target forms they received in the input flood; however, they did not demonstrate acquisition of what was not possible in the language. These two studies suggest that learners may need some other type of information or enhancement to the input in order to acquire the acceptable and unacceptable uses of the target structures.

Drawing conclusions based on the studies performed with input flood is no easy task. Some studies suggest that the positive evidence in the input flood is enough for acquisition to take place but at the same time may not be enough for learners to acquire what is not possible in a language (Trahey & White, 1993; Spada & Lightbown, 1999). These studies suggest that learners may need more information such as explicit grammar information or negative evidence for this to happen. Another study suggests that the results in this area of research may be form specific and that input flood facilitates acquisition of some forms but not others (Williams & Evans, 1998).

Text Enhancement

Wong (2005) defines Text Enhancement (TE) as "using typographical cues such as bolding and italics to draw the reader's attention to particular information in a text" (p.48). TE is put into practice in any number of ways, including but not exclusive to, bolding, underlining, and increasing font size. TE can also be combined with any number of instructional treatments because it involves modifying the text in a visual manner.

One of the imperative elements of TE is that the learners be required to react to the content of the input in some way. This is done through activities dealing with the text's content in some form or another. Learners are not immediately quizzed on the enhanced target form but rather on the content or meaning of the text itself. The following TE study reviewed is an investigation involving both TE and IF.

Shook (1994) investigated the effects of textual enhancement of the Spanish present perfect tense and relative pronouns (que/quien distinction). The participants were one hundred

and twenty-five university students enrolled in Spanish language classes. Participants were exposed to one of three treatment conditions; a textually enhanced group, a textually enhanced group that also received special instructions to search for rules to explain the grammatical feature textually enhanced, and a control group that just received the same story as the other groups. TE was operationalized by bolding and capitalizing the target structures within the texts. Each target structure was embedded in one of two reading passages of about two hundred words. All instructional materials included six examples of the target forms.

Participants performed a pretest and a posttest to measure both interpretation and production along with a comprehension measure to confirm that they understood the story's content. A multiple-choice test measured interpretation and a cloze test measured production. The results of the gains from pretest to posttest for both forms reveal that both groups receiving enhanced input performed significantly better than the control groups. Shook concludes that drawing learners' attention to the forms via visual enhancement can facilitate converting input to intake.

Alenan (1995) investigated the role of TE and explicit information of inflectional endings in Finnish (modified slightly for purposes of the experiment) on university level native English speaking students. Finnish uses a case system that is unlike the students' native language or languages they may have been exposed to as second languages. The materials included two stories, about 90 words in length. There were four treatment groups; group one acting as a control group and received the stories alone, group two received the stories with the target forms textually enhanced by italics, group three received extensive explicit grammar rules along with the text, and the last group received explicit grammar instruction with italicized target forms in the stories. After two treatment days, participants were given a grammaticality judgment task to measure interpretation, a statement of rule task, and a sentence completion task to measure production. The production measures revealed no significant differences between the control group and the enhanced group; however, there was a significant difference in the interpretation measure. The enhanced group and the rule plus enhanced group scored significantly higher than the control group, though they show no significant differences between the two.

Because the scores on the interpretation measure were significantly higher than the control, it suggests that the TE does in fact draw learners' attention to the target forms. Alenan states that "This effect [that learners show some evidence of acquiring some of the target forms]

was apparently due to the fact that all learners thus treated focused their attention on the learning targets at some point or another during the learning phase..." (Alenan, 1995, p.295)

In effect, this study is similar to the studies reviewed in that the data reveals attention being directed towards the target item textually enhanced; however, in this case it appears that the learners were able to focus on form and meaning. The findings suggest that the learners attended to both form and meaning making the necessary connections between the two, as evidenced by their performance. In this case the explicit information was not necessary; the groups that received TE with and without explicit information performed similarly. In this study the findings suggest that TE was enough to facilitate form-meaning connections with these forms.

Jourdenais Ota, Stauffer, Boyson, & Doughty (1995) investigated the effect of TE on ten second semester university level L2 Spanish learners' acquisition of the preterite and imperfect tenses in Spanish. The input consisted of the tale, 'Little Red Riding hood' delivered in two forms, textually enhanced and textually unenhanced to two respective groups. The verbs in the preterite tense were enhanced by bolding and underlining the entire verb and by placing the verb in a different font from the rest of the text. Verbs in the imperfect were enhanced with shadowing instead of bolding, underlining the entire word and by using a different font than the rest of the input. Participants were then given a series of pictures designed to illicit production of the preterite and imperfect and then prompted with an introduction sentence to begin to recount the story in the past tense. Participants were instructed to narrate the series of pictures in a think aloud format and were given an example of how to think aloud and told to speak their thoughts throughout the entire activity.

The think aloud data was recorded using a tape recorder and the participants were also videotaped performing the task. The recorded data was then transcribed by various researchers and later compared and revised. The results from the think aloud protocol revealed that when the decisions concerning which verb tense to use were explicit, the text enhancement group mentioned their deliberations about verb aspect more than the non-enhanced group. The principal findings in this study are an effect of the amount of exemplars produced by participants: it appears that the enhanced group simply produced more forms than the non-enhanced group. The results suggest that the input enhancement primes learners to use the past tense forms more than text without enhancement. Jourdenais, et al. (1995) posit that "input

enhancement can be an effective means of drawing learners' attention to the target features of the L2" (p. 208). Therefore, in this study learners' attention was drawn towards the enhanced target structure.

Leow (1997) investigated the learners' noticing and later accuracy of the third person singular and plural irregular "-ir" preterite verb forms in Spanish. Participants were university students enrolled in a first-level Spanish course. The target forms undergo an internal stem change in these forms. The second "e" in the verb "repetir' (to repeat), changes to an "i" in these preterite forms (i.e., repitió [he/she/it/ you (formal) repeated, repitieron [they, you (formal) repeated]). Noticing was operationalized by using a think aloud protocol during learners' completion of crossword puzzles containing the target forms. Based on participants' think aloud data they were labeled as one of two categories: meta-awareness (as evidenced by hypothesis testing and morphological rule formation) and no conceptually driven awareness (no presence of meta-awareness or conceptually driven awareness and were focusing on finishing the crossword puzzle task). Participants' performance on the posttest recognition and written production tasks revealed that participants' level of meta-awareness contributes favorably to learners' ability to recognize and, to a lesser extent, produce the target forms. These findings suggest that meta-awareness appears to correlate with the use of conceptually-driven processes, such as hypothesis testing and morphological rule formation. The absence of meta-awareness shows an absence of these conceptually-driven processes. This study suggests that different levels awareness lead to differences in processing.

J. White (1998) merged IF with TE and investigated the effects on acquisition of the third person past tense (-ed) in English on fifth and sixth grade native French speaking students in a communicatively oriented ESL curriculum in Quebec. The participants were exposed to one of three treatment conditions; IF with TE, TE plus extensive reading and listening exercises, and a group receiving IF only (without TE). Text enhancement in this study was operationalized by bolding, italicizing, and underlining the target forms which were the third person singular pronouns and the possessive determiners (PD's): his and her. The treatment involved exposing learners to ten hours of instruction over a period of two weeks and an additional 50 hours of exposure over the course of 5 months for the group that received extensive reading and listening exercises by reading and listening to stories.

The data reported came from picture description tasks that were completed individually with an administrator, recorded, transcribed, and then analyzed both quantitatively and qualitatively. The results of the picture description tasks revealed that participants in the TE plus extensive reading group and the group receiving TE and IF increased, from pretest to posttest, in the number of target forms items used. However, there were no significant differences between the groups in terms of accuracy. White concludes that the enhanced text draws their attention to the target forms but they still need some other type of instruction to increase accuracy.

In this case it seems that TE helped learners attend to the form itself and to experiment with the uses of the form. However, the results indicate no difference in accuracy performance with the target forms. TE served its purpose, to make learners notice the enhanced target form, but it seems that there were few connections made between form and meaning. J. White posits that it is possible that the nature of the task influenced these findings.

Overstreet (1998) found similar findings to those of J. White (1998) in an investigation on the effect of TE and topic familiarity on the acquisition of the distinction between the Spanish preterite and imperfect. The participants in this study were university students enrolled in a third semester Spanish course. Topic familiarity was operationalized by using the well-known fairy tale, 'Little Red Riding Hood', and an unfamiliar story titled 'Una carta a Dios' by Gregorio López. Text enhancement was operationalized by placing the imperfect tense verbs in bold, underlining them, and increasing the size of the font from twelve point to fourteen point. The verbs in the preterite were shadowed, underlined and the font was also increased to fourteen-point. Students received the input under one of these conditions and were required to react to it by answering five true/false type content questions.

Students' performance was measured by both interpretation and production measures and revealed that subjects did not make any significant gains in any of the groups. Neither the familiar topic nor textual enhancement modifications yielded significant gains from pretest to posttest. There was however a negative effect (text comprehension to form acquisition) revealing that text comprehension decreased with the presence of enhanced text. This finding suggests that the text enhancement is drawing learners' attention away from the text itself and towards the enhanced forms. In other words suggesting that the textual enhancement did in fact draw learners towards the enhanced input and away from the comprehension of the text.

This is not surprising considering the amount of research that suggests that learners focus either on meaning or on form during processing, and find it difficult to process for both at the same time (VanPatten, 1990). The goal is to push learners to attend to both form and meaning at the same time. The results of this study are similar to the findings of J. White (1998). In both cases, learners attended to the form; however, in neither study did performance increase with the presence of enhanced text. TE served to push learners to attend to the form and the findings suggest that the connection between form and meaning were not made.

Leow (2001) investigated the effect of textually enhanced and unenhanced text on first-year university students' level of noticing of the formal imperative forms in Spanish. Participants' were assigned to one of two groups, a treatment group receiving input with text enhancement and a control group receiving the same input with out text enhancement. Text enhancement was operationalized by underlining the entire verb and bolding the verb ending. Using a think aloud protocol learners were given either a text with text enhancement or without text enhancement and were asked to speak their thoughts while reading the text. Participants were then given three assessment measures: a multiple choice complete the sentence task (measuring recognition), a fill in the blank sentence completion production task, and a comprehension measure including the target forms to which learners responded in English. Noticing was operationalized by any translation of the target form during the treatment, circling of the target form, verbal reference to the target form, or any written notes about the target form.

The findings reveal no differences in reported noticing between the enhanced group and the unenhanced group. Results on the posttest reveal no significant difference between the groups on reported noticing and performance on the recognition task. Performance on the posttest production measures reveal that 76% of participants in both groups scored zero and 95% scored two or less. The findings of this study suggest that the enhanced text did not promote noticing any more than the unenhanced text. Leow, comparing this study with his 1997 study, suggests that the level of reported noticing may have to do with task demands. The task used in this study required participants to read a text which involved various processes (translation, sentence level interpretation, multiple sentence level interpretation, etc.), whereas Leow's 1997 study involved problem solving tasks dealing almost discretely with the target forms. Therefore, the findings of this study suggest that textual enhancement with the formal imperative form in Spanish, as was operationalized, did not promote noticing of the target forms.

Izumi (2002) investigated the effects on acquisition of English relative clause formation on 61 learners from various language backgrounds enrolled in two university ESL programs. Participants were placed in one of four treatment groups differing in output requirements (+-) and differing in enhanced input (+-). Acquisition was measured in terms of production by a text reconstruction task and a sentence combination task requiring participants to combine two sentences into one to illicit the use of the target form. Two tests were used to measure interpretation: a grammaticality judgment test and an interpretation test similar to that used in VanPatten and Cadierno (1993). Measures to obtain information on learner behavior in regards to noticing were also employed including a notetaking process in which participants took notes of important words during the reading of the texts. The findings reveal that all treatment groups increased noticing of target forms and all groups improved from pretests to posttests. However, learners who produced output outperformed the input only groups on various measures.

Leow (2003) investigated the effects of text enhancement on noticing and subsequent performance on first year university students of Spanish. The target forms were the present perfect in Spanish and the present subjunctive. Participants were randomly assigned to one of two treatment groups: present perfect (+ enhancement), present subjunctive (+ enhancement). Control groups receive unenhanced versions of texts with either form. Both the enhanced and unenhanced texts contained ten target form items. Noticing was operationalized by a think aloud protocol and performance was measured by using a pretest/posttest design with a recognition and comprehension task. The recognition task consisted of multiple choice complete the sentence task items and the comprehension task consisted of participants responding (in English) to events that took place in the text. The results indicate no difference in the amount of noticing between the enhanced group and the unenhanced group. The findings also reveal that there was no significant difference between the variance of each group regarding forms noticed and performance on the posttest recognition task. There was however, a significant difference between the forms noticed: the present perfect was reported as noticed more than the subjunctive. There was no significant difference reported between the two groups on the comprehension task. The findings suggest that text enhancement of neither the Spanish present subjunctive nor the Spanish present perfect promote noticing of the target form as operationalized in this study. As in Leow (2001), the lack of effect for noticing may be

attributed to the high level of task demands (as opposed to problem solving tasks as in Leow (1997).

Though the results of the studies reviewed in the domain of textual enhancement vary slightly from study to study, there seems to be consensus of some findings. Text enhancement draws learners' attention to the forms in the input, however; it may not be enough just to draw their attention to the form for it to be acquired. As Izumi (2002) points out, input enhancement, even though it may draw learners' attention to the target form, may not necessarily encourage the type of processing necessary for acquisition. Shook (1994), Alenan (1995), and Overstreet (1998) conclude that the textual enhancement in their treatments is enough to draw participants' attention towards the enhanced forms. In Overstreet (1998) attention was actually drawn away from the text as revealed by comprehension scores and directed towards the textually enhanced target form. Other studies suggest that textual enhancement may need to be paired with another type of input enhancement in order for it to be effective, as is the case in J. White (1998). She concludes that the enhanced text draws learners' attention to the target forms but because their accuracy was low, they still need some other type of instruction to increase accuracy. Jourdenais et al (1995) also indicate that text enhancement worked to promote the use of the target forms; however, the learners' accuracy scores were not significantly different from the unenhanced group. The findings from Leow (2001, 2003) suggest that text enhancement did not promote significantly more noticing (than unenhanced input) of any of the target forms used in his studies (Spanish formal imperatives, Spanish present perfect, Spanish present subjunctive).

Limitations of IF and TE Research

Research in the areas of both IF and TE is not without its limitations. As Izumi (2002) points out, noticing the target form does not necessarily indicate that the cognitive processes needed for acquisition are encouraged. In other words, just because learners notice a target form, does not necessarily indicate that they will acquire it. In the case of Input Flood, the attempt is to get learners to notice the target grammatical forms by increasing their frequency. In the case of Text Enhancement the goal is to increase noticing by visually making the target forms stand out in a different way, by changing font size, text color, and italicizing or bolding text. Both frequency and visual enhancement may encourage noticing (though not in all cases as in Leow,

2001; 2003), but again, this does not mean that just because learners notice the form they will acquire it. Let's take for example the past tense *–ed* in English as in the case of J. White (1998). A learner could be directed to its form (in some way having the input enhanced), and even notice the form is different from other verb forms, but just noticing that the form is different, does not indicate that the learner will acquire it, as evidenced by her findings. This is also evident in the findings from Shook, (1994) and Alenan, (1995), where in all cases learners noticed the target forms (measured differently from study to study); however, target form acquisition outcomes varied. It cannot be concluded outright that noticing leads to acquisition; however, some kind of attention to form is necessary for acquisition. In this light, learners may benefit most from noticing the target form in an environment that pushes them to make the desired form-meaning connections. Based on the findings of Morgan-Short & Bowden (2006), the jury is still out as to whether it may simply be the exposure to input that is driving acquisition. Therefore, further research, such as the current study, needs to be conducted comparing various of input types. In the following section, I present the additional considerations for the present study.

Additional Considerations for the Present Study: Explicit Information

Based on the studies reviewed in the domain of Processing Instruction there is little room for debate about the positive effects of Processing Instruction on acquisition of the target forms investigated. However, Processing Instruction has produced varying results regarding the role of the explicit information. In studies addressing the Spanish accusative clitics as the target form, it appears that explicit information may not be necessary because learners tend to perform similarly with the SI activities alone (VanPatten and Oikkenon, 1996; Sanz and Morgan-Short, 2004; Fernandez, 2008). The findings of some studies have lead some researchers to suggest that the explicit information component of Processing Instruction may help speed up the acquisition process but is not critical in facilitating the acquisition of the target form, the Structured Input activities are enough (Farley, 2004; Fernandez, 2005). Research in the area of SI has come to produce many important findings regarding the processing involved with Structured Input activities such as the role of explicit information, either before, during and after task practice or in the form of feedback (VanPatten & Cadierno, 1993; Sanz, 1995; VanPatten & Oikennon, 1996; Benati, 2004; Farley, 2004; Sanz & Morgan-Short, 2004; Fernandez, 2005; Wong, 2004).

According to research, Structured Input activities are sufficient to push learners in making form-meaning connections and the explicit information about the target structures is not necessary. In such cases where explicit information was reported as aiding learners in processing the target forms (Farley, 2004), it was concluded that SI was the necessary component of Processing Instruction pushing learners to make form-meaning connections. In light of these findings, explicit information can at best be considered an ancillary component of Processing Instruction and in other cases unbeneficial. Furthermore, in her review of PI studies, Doughty (2004) points out that "the metalinguistic explanation that precedes structured processing activities is not a necessary component of PI" (p. 264). Therefore, based on the findings of the studies investigating the role of explicit information within PI, it was decided to exclude explicit information from the instructional treatments in this study.

Research Questions and Hypotheses

Based on the studies reviewed in this chapter as well as the limitations discussed above, the following research questions guide the present study:

1. Do input-based instructional treatments lead to improved performance on L2 Spanish learners' interpretation and production of 3rd person accusative clitics?
2. If the input-based instructional treatments lead to improved performance, are the effects of the treatments comparable?

This research study will investigate the following hypotheses:

Hypothesis 1. Input-based instructional treatments will lead to improved performance on L2 Spanish learners' interpretation and production of 3rd person accusative clitics.

This hypothesis is based on consistent findings for SI/PI as well as the exposure only group in Morgan-Short and Bowden (2006). However, given the mixed findings of IF and TE research, it is not clear whether the input-based treatments will lead to improved performance.

Hypothesis 1a. Providing Structured Input activities with the Spanish 3rd person accusative clitcs as the target structure will facilitate acquisition.

This hypothesis follows research in the domain of PI/SI that has consistently found positive effects of SI on acquisition of the accusative clitics in Spanish (VanPatten & Oikkenon, 1996; Sanz & Morgan, 2004; Fernandez, 2005). Research on SI has repeatedly produced

findings suggesting that SI successfully altered learners' first noun processing strategy. Their erroneous processing strategy of assigning subject status to the first noun in OVS sentences was altered to make the appropriate form-meaning connections. It is hypothesized that similar findings will be found in this study.

Hypothesis 1b. Isolating the variable of implicit negative feedback as a treatment type (titled Focused Input) will facilitate acquisition of the accusative clitics in Spanish.

No research to date has investigated the effects of isolating the inherent variable of implicit negative feedback in SI activities. Sanz and Morgan-Short (2004) speculate whether the effects of SI activities is alone due to exposing learners to input alone or if the SI activities are responsible for altering learners incorrect processing strategies. Therefore, it is possible that if the effects on acquisition are due to exposure to the input, that this instructional type will facilitate acquisition of the target forms.

Hypothesis 1c. Providing input in the form of an input flood will not facilitate acquisition of the accusative clitics in Spanish.

Even though positive effects have been found for input flood, this hypothesis is in line with SLA research on the effects of input flood on acquisition. Some studies suggest that input flood is enough for learners to acquire the target form, but not enough to acquire what is not possible in a language (Trahey & White, 1993; Spada & Lightbown, 1999), and another study suggests that input flood may be effective for some forms but not others (Williams & Evans, 1998). Based on the nature of the processing problem related to the acquisition of the accusative clitics in Spanish, it is hypothesized that the input flood will not alter learners processing strategies, and therefore result in application of the First Noun Strategy.

Hypothesis 1d. Providing input in the form of input flood with text enhancement will facilitate the acquisition of the accusative clitics in Spanish.

This hypothesis is in line with research investigating the effects of text enhancement that posit that text enhancement directs learners' attention to the enhanced forms (Shook, 1994; Alenan, 1995; Overstreet, 1998). In this case, The input will be enhanced for frequency effects (in the Input Flood) and visual saliency (in the Text Enhancement). The text enhancement functioning to draw learners' attention to the target forms in the input, paired with the increased target form frequency in input flood, may lead this combination of input enhancement techniques to be effective.

Hypothesis 2. If the input-based instructional treatments lead to improved performance, the effects of the treatments will not be comparable.

This hypothesis is based on the consistent findings for the SI leading to improved performance and the mixed findings in the areas of IF and TE. SI and FI will outperform the other input-based treatment groups because they attempt to alter learners' processing strategy. Because IF and IFTE are based on noticing, and the research in noticing is not as consistent as in SI, the results of these two treatment groups will not be comparable to the SI and FI groups.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

Introduction

This chapter describes the study that investigates the research questions posed in Chapter 2. The following sections describe the research design, participants, materials, scoring methods, and analyses pertaining to the present study.

Research Design

The purpose of this study is to determine whether input enhancement (i.e., Input Flood, Text Enhancement, Structured Input, and Focused Input) would affect L2 learners' interpretation and production of Spanish accusative clitics. An overview of the basic design is presented in Figure 3.1. This study used a quasiexperimental design in which the participants in this study, depending on the class section in which they were enrolled, were assigned to one of five instructional treatment groups (Input Flood, Input Flood with Text Enhancement, Structured Input, Focused Input). An overview of the treatment schedule can be found in Figure 3.2. This allowed for accounting for such variables as time of day, class size and instructor. For example, because participants for every treatment group came from three to four class sections, some of the participants completed the treatment in the morning and others in the afternoon, depending on their class meeting time. After taking a pretest, each group completed a series of activities based on their determined treatment. Immediately following the treatment, all groups completed an immediate posttest. Three weeks after the treatment end they took a delayed posttest, and six weeks after the treatment end they took the second delayed posttest.

Day 1 (Week 1)	Day 2 (Week 2)	Day 3 (Week 5)	Day 4 (Week 8)
Informed Consent Pretests	Treatment Posttest 1	Posttest 2	Posttest 3

Figure 3.2. Treatment Schedule.

Independent Variables

1. Input type (Between Subjects)
    a. Input Flood
    b. Input Flood plus Text Enhancement
    c. Structured Input
    d. Focused Input
    e. No input (control)
2. Time (Within Subjects)

Dependent Variables

1. Interpretation of accusative clitics
2. Production of accusative clitics

Figure 3.1. Treatment Variables.

The independent variables in this study were input enhancement type and time. The variable of input enhancement type was operationalized by providing participants with one of five types of instruction: Input flood, Input Flood with Text Enhancement, Structured Input, Focused Input, or no input (control group). The independent variable of time was operationalized by participants' completion of assessment measures on various occasions (pretest, posttest 1, posttest 2, and posttest 3). Detailed descriptions of the activities are provided in the Materials section.

The dependent variables were interpretation and production of the accusative clitics. Interpretation of the accusative clitics was measured by a sentence-level interpretation task. Production of the accusative clitics was measured by a sentence level completion task and a discourse level production task. Descriptions of these tasks are provided in the Materials section.

Participants

The participants in this study were drawn from nineteen sections of third level Spanish classes (SPN 2220) at Florida State University. Each course section had approximately twenty-three students in each. There was an initial N size of 470 participants. The final N size of this

study who participated in all four test times including attrition was 290. In order for participant's data to be included in the analyses in this study, all of the following criteria must have been met:

- The participant was a native English speaker (as reported on the background questionnaire);
- The participant did not speak a language besides English at home (as reported on the background questionnaire);
- The participant reported no uncorrected vision or hearing impairment (as reported on the background questionnaire);
- The participant reported no unfamiliarity with basic computer use (as reported on the background questionnaire);
- The participant completed all tasks;
- The participant scored lower than 70% on the pretest (see Materials section).

Participants were deemed suitable for this study as determined by a pretest and a language history questionnaire administered one week prior to receiving the treatment materials. These materials are described in detail in the materials section. Participants who obtained higher than a 70% on the pretest with both interpretation and production measures were not included in the data analysis; however, they were permitted to participate in the treatment session. Learners who choose not to participate in the study were administered the same treatment materials to complete during the class meetings, however; their data was not included in the analyses.

The course in which the participants were enrolled was a communicative, film-based course that used the textbook *Sol y viento* (VanPatten, Leeser, Keating, & Roman-Mendoza, 2005). The nineteen course sections are taught by ten graduate student instructors. Although the course sections were taught by different instructors, for all intents and purposes, students received the same instruction. This was made possible by a common syllabus, assessment measures (i.e. exams, oral exams, compositions, and homework), and instructional approach.

Class sessions regularly met three times a week for fifty minutes. Class time was devoted to meaningful student-to-student interaction along with meaningful student-instructor interaction. An online component of the course offered input-based vocabulary and grammar activities and

was done so with the premise that many input activities could be completed at the student's own pace and time outside of the classroom. Therefore, class meetings consisted primarily of opportunities to engage in meaningful interaction. This course level was chosen based on the previous research performed in the area of Processing Instruction with the same target form (Fernández, 2005; VanPatten and Cadierno, 1993; VanPatten and Oikennon, 1996).

Materials

The materials in this study included the pretreatment materials (oral announcement, consent form, background questionnaire, and a pretest), the treatment materials (input enhancement type), and the post treatment assessment measures (interpretation and production). The treatment materials for this study were delivered using the computer program Superlab and accessed on computers in the computer laboratory used in this study. The materials for the study were located in folders dedicated to these materials on a server. Each of these is described below and can be found in the appendices.

Participant Information

Consent Form

The consent form explained to the participants that they were invited to participate in a study investigating second language acquisition. Participants were not provided with details involving the investigation so as not to influence learner responses on the tasks. They were informed that they were going to read some sentences and paragraphs in Spanish as well as view some images followed by some grammar tasks. They were asked to sign the consent form if they agreed to participate in the study and were assured that all personal information on the consent form, background questionnaire, and assessment measures would be kept confidential. The consent form can be found in Appendix A.

Background Questionnaire

The background questionnaire was used to obtain information about the participants' L1 and L2(s). It was also used to weed out any participants whose native language was not English

and participants with difficulties with basic computer skills. The questionnaire can be found in Appendix B.

Treatment Materials

Input Flood and Input Flood with Text Enhancement

The Input Flood and Input Flood with Text Enhancement treatment materials consisted of four reading passages, each focusing on one of the third person accusative clitics. There were six tokens of each target form embedded in the four passages for a total of twenty-four tokens (Appendix C). The four target forms were the accusative clitics '*lo, la, los, las*' (him, her, them [masculine, masculine/feminine], them [feminine]). Each story also contained at least one sentence that established an agential subject/object relationship by using nouns in place of object pronouns. For example: *El mesero ve a las mujeres*. (The waiter sees the women.).

The Input Flood plus Text Enhancement materials were the same as those of the Input Flood with one exception: the target forms were bolded and the font size was made larger than the surrounding text. The font was changed to fourteen-point font on the tokens and the rest of the text was in twelve-point font. The tokens were made larger and bolded in an attempt to draw learners' attention to these forms.

The stories were reviewed for consistency in overall length, sentence number, and number / placement of target form items. The average word count of the stories was 128, the longest being 133 words and the shortest being 125. The average number of sentences per story was 14.5, the most sentences per story were 15 and the least were 14. None of the sentences in any of the stories contained more than two verbs. Table 3.1 contains a table comparing the details of all of the passages.

Each story contained six tokens of one target form and did not contain tokens of any other target form. Therefore, one passage included six tokens of the accusative clitic '*la*' (her / it [feminine]), one included six tokens of '*lo*' (him), one included six tokens of '*las*' (them [feminine]), and one included six tokens of '*los*' (them [masculine, masculine/feminine]). All target form tokens were found in sentence medial position. Example 3.1 provides an example of one of the story texts (Input Flood with Text Enhancement) containing six target form exemplars of the feminine singular, '*la*' (her). The accusative clitics are bolded in the text below and the example of the subject/object relationship established with nouns is underlined.

Table 3.1.

Comparison of Reading Passages.

Passage	Word Count	Sentence Number	Token	Token Number	Token Location	Agent Number
La Escuela	133	14	*la*	6	Medial	1
El Abuelo	129	15	*lo*	6	Medial	1
El Ladrón	125	13	*las*	6	Medial	1
Los Libros	126	14	*los*	6	Medial	1

Example 3.1. *Sample Input Flood with Text Enhancement Passage.*

Un Día en La Escuela (One day in School)

Juan va a la escuela y siempre sigue a una chica en particular. Un día Juan conoce a Marisol, una muchacha bonita. Juan **la** saluda de beso en la clase de biología. Juan regresa a su casa. Quiere hablar con ella; entonces busca su número. Encuentra su número y **la** llama por teléfono. Juan y Marisol hablan por dos horas. Juan está muy nervioso, pero quiere ir al cine con ella. Juan **la** invita al cine y ella acepta. Van al cine, comen muchos dulces y toman un refresco muy grande. Después de la película regresan a la casa de Marisol. Juan **la** besa y Marisol está muy feliz. Al día siguiente Juan **la** lleva a comer y a conocer a sus padres. Sus padres **la** abrazan y dicen: "bienvenida a la familia".

(Juan goes to school and always follows one girl in particular. One day Juan meets Marisol, a beautiful girl. Juan greets **her** with a kiss in biology class. Juan returns to his house. He wants to talk with her, so he looks up her number. He finds her number and calls **her** by phone. Juan and Marisol talk for two hours. Juan is very nervous, but he wants to go to the movies with her. Juan invites **her** to the movies and she accepts. They go to the movies, eat a lot of sweets and drink a very large soft-drink. After the movie they return to Marisol's house. Juan kisses **her** and Marisol is very happy. The following day Juan takes **her** to eat and meet his parents. His parents hug **her** and say: "welcome to the family".)

Participants in both the Input Flood and Input Flood with Text Enhancement groups read the passages at their own pace. Participants clicked 'next' when they finished reading the passage. After reading each story, participants answered three multiple-choice questions about the content delivered one question at a time on individual pages. The Input Flood (or Input Flood with Text Enhancement) passage was included along with each question in order to account for exposure time to the target forms across treatment conditions. As protocol with Input Flood, the questions did not directly deal with the target forms but rather with the content of the text. Example 3.2 provides examples of the content questions that accompany one of the passages.

Example 3.2. *Input Flood Questions.*

1. Where do Juan and Marisol meet?
    A. Church
    B. The mall
    C. Class
2. Where do Juan and Marisol go?
    A. School
    B. A party
    C. Movies
3. Marisol meets Juan's parents.
    A. True
    B. False

There were a total of six pages in the treatment materials for each passage in the Input Flood group. Page one functioned as a prompt instructing participants to begin as soon as they are ready. Page two provided general instructions informing participants that they would read a passage and immediately after they would answer questions about the text. The third page in the Input Flood and Input Flood with Text Enhancement materials was the story itself with the embedded target forms. Pages four through six contained one content question pertaining to the story along with the complete written passage. Participants read four stories and answered a total

of twelve content questions before continuing on to complete posttest 1. Appendix D contains the complete materials for the Input Flood and Input Flood with Text Enhancement group.

Structured Input

The Structured Input treatment materials were based on those in VanPatten and Oikkenon (1996) and Sanz and Morgan-Short (2004), which were adaptations of those used in VanPatten and Cadierno (1993). The materials consisted of twenty-four instances of accusative clitics located in sentences and six sentences that established agential subject/object relationships similar to those with the target form but with nouns in place of accusative clitics. The target forms were the third person accusative clitics in Spanish, both singular and plural. They included, six exemplars of '*la*' (her), six exemplars of '*lo*' (him), six exemplars of '*las*' (them) [feminine], and six exemplars of '*los*' (them [masculine, masculine/feminine]). The Structured Input materials can be found in Appendix E.

As discussed in Chapter 1, the goal of the Structured Input materials was to push learners away from incorrect processing strategies in order to increase the likelihood of making form-meaning connections. They were pushed to attend to the meaning of the target items in order to correctly process the overall meaning of the sentence. It has been observed that learners often incorrectly identify the first noun they encounter in a sentence as the subject, referred to as the First Noun Principle (VanPatten, 2007). Each Structured Input item consisted of two parts: a short sentence and two pictures. One of the pictures matched up with the sentence and the other picture did not. Each sentence with a target form token contained the target item in sentence initial position or sentence medial position along with two pictures; one image illustrating the event in the sentence and the other image illustrating the commonly interpreted incorrect meaning of the sentence. In other words, one of the pictures depicted the correct meaning processed and the other illustrated the first noun being incorrectly processed as the subject, instead of as the object. Choosing the correct picture to match with the sentence was dependent upon attending to the meaning of the target form. It was necessary to interpret the target form correctly in order to determine the overall meaning of the sentence. In order to complete the activity learners must have chosen which picture they believed depicted the events in the sentence (Example 3.3).

Example 3.3. *SI Activity: Accusative clitics.*

1. [Participant read: “Lo llaman sus padres por teléfono.”] (“His parents call him.”)

Select:

a) Picture “A”.

b) Picture “B”.

2. [Particpant read: “Las invita al cine Manuel.”] (“Manuel invites them to the movies.”)

Select:

a) Picture “A”.

b) Picture “B”.

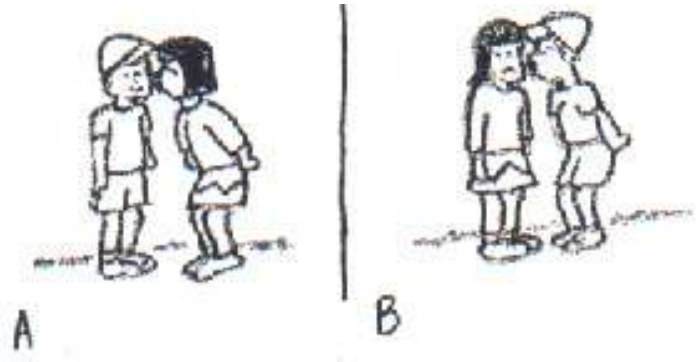
In Example 3.3 (1) the sentence ‘*Lo llaman sus padres por teléfono.’* (His parents call him by telephone.) refers to picture A. Picture B refers to the incorrectly processed meaning of the sentence. In this example the accusative clitic is in sentence initial position. In item (2) of Example 3.3, the sentence ‘*Las invita al cine Manuel.*’ (Manuel invites them to the movies.)

refers to picture A. Picture B depicts the meaning of the sentence with its incorrect interpretation.

The Structured Input activities that did not contain the target form, but rather nouns as subject and direct object, also followed the same format. They consisted of one sentence illustrating the agential relationship (subject/object) accompanied with the two pictures. Example 3.4 contains an example of this type of activity.

Example 3.4. *SI Activity: Subject/object Agential Relationship.*

1. [Participant read: "El niño besa a la niña."] ("The boy kisses the girl.")



Select:

a) Picture "A".
b) Picture "B".

Example 3.4 demonstrates the use of a sentence establishing agential relationship with nouns as the subject and nouns as the object of the sentence (in contrast with the other sentences containing the target grammatical form; the accusative clitics). The correct interpretation of the sentence '*El niño besa a la niña.*' (The child kisses the girl.) matches up with option B. Option A is incorrect.

All sentences used common vocabulary covered in the course curriculum, were similar in length, and were controlled for probability of events. That is, according to The Event Probabilities Principle (VanPatten, 2004), which states that, "learners may rely on event probabilities, where possible, instead of word order to interpret sentences" (p.18).

After the participants chose a picture that they thought illustrated the meaning of the sentence, they received feedback. Feedback in this study was operationalized by informing participants whether their answer was incorrect by the word "incorrect" appearing written on the screen or correct, by moving directly on to the next item. The instructions presented prior to completion of the activity explicitly outlined this procedure. Fernandez (2005) also operationalized feedback in a similar way.

This study operationalized feedback differently from Sanz and Morgan-Short (2004). Sanz and Morgan-Short (2004) operationalized feedback by requiring participants to redo the question if they incorrectly answered it. Their operationalization of feedback happened on the same initial screen and they immediately answered the same question again. In the present study, however, participants receive information as to whether their response was correct or incorrect, and then move on to the next item similarly to the procedure used by Fernandez (2005).

As in the previous studies involving Structured Input with the Spanish accusative clitics (VanPatten & Cadierno, 1993; VanPatten & Oikennon, 1996; Sanz & Morgan-Short, 2004; Fernandez, 2005; VanPatten & Fernandez, 2006; Morgan-Short & Bowden, 2006) participants completed thirty Structured Input items (twenty-four target form tokens and six agential subject/object items). Participants were then prompted to continue on to the post-treatment assessment measures.

Focused Input

As noted in chapter 2, the purpose of the Focused Input (FI) group was to isolate the variable of implicit negative feedback inherent in SI activities. This implicit negative information forms an integral part of SI because it provides evidence to the learner which answer is incorrect when they correctly answer a question. This study isolated the variable of implicit negative information and the following section discusses the operationalization of Focused Input.

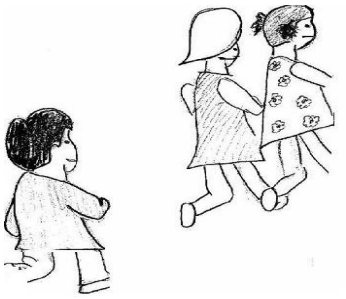
The materials for the focused input group included equal numbers of target forms as the previously discussed treatment groups: six examples of '*la*' (it/her [feminine]), '*lo*' (it/him [masculine]), '*las*' (them [feminine]), and '*los*' (them [masculine, masculine/feminine]). The materials also included six examples of agential subject/object relationships with nouns in place

of the object pronouns. All together the FI treatment materials contained thirty items. All Focused Input materials can be found in Appendix F.

Because the purpose of the FI materials was to eliminate the variable of implicit negative feedback, the participants progressed from one example to another without any intervening information such as feedback. The FI activities contained one picture and one sentence, compared with SI activities that included two pictures and one sentence. Participants received one picture with its corresponding sentence, with or without the target form, and read the sentence that matched up with the picture. Learners received instructions that stated, "You are about to see a series of slides that contain a picture along with a corresponding sentence in Spanish. All the Spanish sentences correctly correspond with the picture. When you think you understand how the sentence explains the picture, press any button to move to the next slide." An Example of an FI activity can be found in Example 3.5.

Example 3.5. *FI Activity: Las sigue Pedro. (Pedro follows them.).*

[Participant read: "Las sigue Pedro."] ("Pedro follows them.")



Press any key to continue

.

The materials did not contain any explicit information about the target form nor was learners' attention explicitly directed to the target form. Learners moved from one item to the next by pushing a designated button on the button box. After participants completed the FI materials they continued to the first post-treatment measure: the immediate posttest.

Assessment Measures

Pretest

The pretest included assessment measures in the areas of both interpretation and production of Spanish accusative clitics. To account for a test effect, participants completed the production measure before completing the interpretation measure. That is participants completed the interpretation measure second so that it did not serve as more input for the learners. The purpose of the pretest was to measure participants' previous knowledge of the target form prior to treatment. The complete test materials can be found in Appendix G.

A criteria of a score below 70% was set on learners' interpretation pretest scores in order to be included in the data. The purpose of using 70% as a cut off score was to avoid a ceiling effect. A criteria of 70% on the interpretation task was chosen based on the criterion set by previous studies in the area of PI with the accusative clitics (VanPatten & Cadierno, 1993; VanPatten & Oikennon, 1996; Sanz & Morgan-Short, 2004; Fernandez, 2005). Morgan-Short & Bowden, (2006) used a 33% cutoff score and found the same pattern of significance differences as the studies using a higher cutoff score.

Interpretation Tasks

The materials in the interpretation measures were the same materials used in Sanz and Morgan-Short, (2004) adapted from their original version used in VanPatten and Cadierno (1993). It is also important to point out that the pictures used in the assessment measures were not the same as those used in the treatment materials, in any of the studies. Different pictures were used in order to avoid testing participants with the same materials they received during the treatment.

The interpretation measure consisted of fifteen items, ten of the questions addressed the use of the target form and five of the fifteen questions were distracters dealing with agential subject/object relationships. VanPatten and Cadierno (1993) and Sanz and Morgan-Short (2004) both used ten critical items and five distracters. Fernandez (2005) used seven critical items and eight non-critical. To be consistent, ten targets were used along with five distracters for a total of fifteen.

Each question displayed two pictures and one sentence. The sentence matched up with one of the pictures and the other picture represented the incorrect processing of the sentence. The pictures were labeled 'A' and 'B'. Students chose between pictures A, B, or an option labeled 'Not sure'. The instructions for participants stated to select the picture that matched with the sentence and if they were not sure then to choose the option 'Not sure'. An example of this interpretation measure is found in Example 3.6.

Example 3.6. *Interpretation Task.*

[Participant read: "Los Saluda la mujer."] ("The woman greets them.")

Select:

a) Picture "A".
b) Picture "B".
c) Not sure.

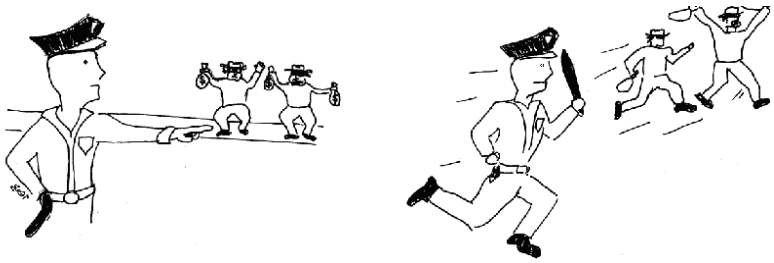
Sentence-level Production Task

In the sentence-level production task there were fifteen sentence completion items: ten critical and five distracters. In the sentence-level production task used in their study, VanPatten and Cadierno (1993) included 10 items (5 critical and 5 distracters), VanPatten and Oikkenon (1996) also included 10 items (5 critical and 5 distracters), and Sanz and Morgan-Short (2004) included 11 items (7 critical and 4 distracters). Again, to be consistent with the amount of items in the interpretation task in this study, a total of fifteen sentence completion items were used: ten critical and five distracters. The questions consisted of a sequence of two pictures. The first part of the sentence described the first of the two pictures and the last part of the sentence was left uncompleted with a verb in parenthesis (which described the second of the two pictures). The

task required participants to finish the sentence according to what was being depicted in picture number two. The goal of the task was to incorporate the accusative clitics to complete the sentences. Ten of the items had obligatory contexts for the target forms and the other five items were distracters. Although it was possible to use nouns instead of object pronouns to complete the sentences, the sentences more naturally lent themselves to the use of the object pronouns. An example of the sentence level production task is found in Example 3.7.

Example 3.7. *Sentence-level Production Task.*

[Participant read: "La policía reconoce a los ladrones y después _____ (seguir)".]
(Answer: los sigue)
(The police recognize the thieves and then _____ (follow). (Answer: they follow them)



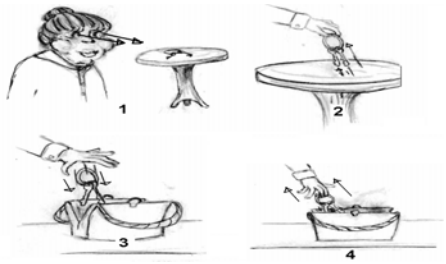
Discourse-level Production Task

The discourse-level production assessment consisted of three series of still images of four connected events each. Each series of still images involved the repeated use of one item thereby, creating four obligatory contexts for the use of the accusative clitics during the narration of the pictures. For this task, participants described three different sets of images: two of the sets of four events elicited the production of the target items and the one of the four picture series was a distracter. That is, one series elicited the production of the masculine singular accusative clitic 'lo' (it/him [masculine]) and the other narration task eliciting the production of the feminine plural accusative clitic 'las' (it/her [feminine]). The accusative clitics elicited in the two image narration tasks were not the same for each individual, thereby pushing participants to produce

two different accusative clitics. Learners were told to describe the event in each picture with as few words as possible. An example of the still images task is found in Example 3.8.

Example 3.8. *Discourse-level Production Task.*

[Participant read: "¿What is the woman doing with her keys (*llaves*)?"]



Verbs:

sacar	(to take out)
agarrar/recoger	(to grab/pick up)
ver	(to see)
poner	(to put)

Procedure

Pretreatment

This study was conducted at The Florida State University in Tallahassee, Florida during the fall semester 2007. The study was conducted during four class meetings throughout the fall semester. Day 1 took place in the participants' regular classroom and involved recruitment, background questionnaire completion and the pretest including both comprehension and production tasks. The assessment measures were delivered using Microsoft Powerpoint on a drop down projection screen in the front of the classroom and participants wrote their responses on a paper answer sheet provided. The answer sheet can be found in Appendix H.

Instructors from the Spanish Division of the Department of Modern Languages and Linguistics were selected to collect the data during all sessions. The instructors selected were experienced teachers of Spanish and were not participants' regular teachers. In order to eliminate any "teacher effect", all instructors collected data multiple treatment groups. Before the first session, the instructors were given a list of written guidelines explaining how to execute their duties. These guidelines include the following:

- Answer procedural questions only.
- Never provide English translations of any word or grammatical form.
- Never explain grammar.
- Remind participants that they should do the best they can.

At the beginning of the first session, the instructor read a description of the investigation found in Appendix I. They were informed of the procedures of the study and that participation was voluntary. The study was described in a general sense as dealing with Spanish grammar. The students were informed that by participating in this study they may actually improve their ability to understand and communicate in Spanish. The instructor also informed students that their course grade would not be affected by not participating in the study. They were also informed that by participating in the study they would receive a 100% on their lowest completed homework set (roughly 1% of their final course grade).

The participants were administered the pretreatment packet in paper form which included a consent form, background questionnaire, and the pretest answer sheet. They were then given an opportunity to ask questions or raise concerns, and asked to sign the consent form if they agreed to participate. They were informed that if anyone chose not to participate in the study they would be given alterative materials to work on during class time. No one chose not to participate. Participants were instructed to turn the page to the pretest answer sheet in the packet and place it on their desk. Once everyone was ready to begin the pretest, the pretest materials were projected onto the projector screen in the front of the classroom. After completing the pretest, instructions were projected onto the screen directing participants to complete the background questionnaire in the packet. After completing the questionnaire, the participants were instructed to pass their completed packet to the front of the room where they would be collected by the instructor. Participants were reminded that the treatment would take place during their next class meeting in the computer laboratory in lieu of their regular classroom.

Treatment

Upon arriving at the computer laboratory, participants were informed that they may occupy the space at the computer of their choice. Once all of the participants for that class meeting time arrived, they were given an activity packet including procedures for how to access

the materials and an answer sheet for posttest 1. The materials for the study were housed on a server in the laboratory. The treatment materials were labeled as SI, FI, IF, or IFTE. The posttests were labeled as either Version A or Version B. Participants were instructed begin with the activity corresponding to their class section and follow the instructions on the computer screen that prompted them of the next step. The instructions given to the participants are found in Appendix J.

At the end of the treatment session all learners were thanked for their participation. They were then directed to the whiteboard where the instructor wrote the contact information of the primary researcher if anyone were to have any questions about the study at a later date.

Post treatment

Posttest 2 was conducted three weeks from the day of the treatment and a posttest 3 was conducted six weeks after the treatment. In both events, the posttests followed a similar procedure as the pretest and posttest 1; they took place in the participants' regular classrooms and were delivered using a paper/pencil answer sheet with the test questions projected on the pull-down projector screen in the classroom.

Scoring Procedures

Interpretation Tasks

In the interpretation tasks participants received scores on a one-point scale. There is only one correct answer and no possibility for variation in this assessment measure. Therefore, participants either answer the question correctly or incorrectly. They receive one point for answering the question correctly, zero points for answering the question incorrectly.

Production Tasks

The production scores on both the sentence level production task and the discourse level production task were given two scores: 1 point for accusative clitic position and 1 point for each gender, number, and position, for a total of 3 points. Because this study addressed the processing problem of the first noun strategy, a separate score specifically for accusative clitic position was awarded. Therefore, the combinations of related analyses in Chapter four address the data

reflected in these tasks as recorded in this way. Table 3.2 Includes examples of answers to the sentence-level production task and their corresponding point values.

Table 3.2.

Scoring-chart: Production Measures.

Question: La policía reconoce a los ladrones y después _____ (seguir) (Answer: los sigue).

(The police recognize the thieves and then _____ (follow) (Answer: they follow them).

Answer	Gender	Number	Position	Gender/Number/Position
los sigue	1	1	1	3
sigue los	1	1	0	2
lo sigue	1	0	1	2
la sigue	0	0	1	1
Las sigue	0	1	1	2
Los sigo/sigues/seguimos/seguis/siguen	1	1	1	3
Sigo/sigues/sigue/seguimos/seguis/siguen	0	0	0	0
La sigo/sigues/seguimos/seguis/siguen	0	0	1	1
Las sigo/sigues/seguimos/seguis/siguen	0	1	1	2
Lo sigo/sigues/seguimos/seguis/siguen	1	0	1	2
Nos sigo/sigues/seguimos/seguis/siguen	0	1	1	2
No answer provided	0	0	0	0

Data Collection Procedures

A split-block design was used that included four versions of the assessment measures described previously: A, B, C, and D. Half of the participants received version A as the pretest and the other half of the participants received version B as the pretest. Those who received version A as the pretest received version B as the immediate posttest and those who received version B as the pretest received version A as the immediate posttest. Versions C and D were used as the first delayed posttest and the second delayed posttest. Half of the participants received version C as the first delayed posttest and the other half received version D. In the

second delayed posttest, those who received version C as the first delayed posttest received version D as the second delayed posttest. In turn, those who received version D as the first delayed posttest received version C as the second delayed posttest. Participants must have been present for at minimum the pretest and immediate posttest in order for their data to be included in the study.

Analyses

In order to answer the first research question (i.e., Do each of the input instruction types promote improved interpretation and production of accusative clitics?), the data for each assessment measure (interpretation, sentence level production, and discourse level production) for each treatment group were submitted to separate on-way ANOVA's with repeated measures. If the data did not meet the assumptions of the ANOVA, non-parametric Friedman tests were conducted.

In order to answer the second research question (i.e., Are the input treatment types comparable in promoting improved interpretation and production of Spanish accusative clitics?), the data were submitted to a 5x4 ANOVA for each assessment measure. The between-groups variable was input enhancement type (Input Flood, Text Enhancement, Structured Input, and Focused Input), and the within-groups variable was time (pretest, posttest 1, posttest 2, and posttest 3). If the data did not meet the assumptions of the ANOVA, a non-parametric Kruscal-Wallis test was used.

CHAPTER 4: RESULTS

Introduction

This chapter presents the results of the analyses for the effects of treatment type on acquisition of Spanish 3rd person accusative clitics as measured by both an interpretation task and two production tasks. The research questions seek to address (a) whether the various input treatment types (Input Flood, Input Flood + Text Enhancement, Focused Input, and Structured Input) would lead to increased performance on the correct interpretation and production of 3rd person accusative clitics; and (b) whether the effects of the various input treatment types are comparable.

This study began with an initial sample size of 470 participants and due to attrition 290 participated in all four of the data collections (pretest, posttest 1, posttest 2, and posttest 3). All participants were randomly assigned to one of four treatment groups or the control group. The treatment groups included Input Flood (IF), Input Flood with Text Enhancement (IFTE), Focused Input (FI), and Structured Input (SI).

The sections that follow present the results of each of the three tasks. First, the results of the interpretation task are presented. Second, the results of the sentence-level production tasks are reported. Third, the results of the discourse-level production task are presented. The chapter concludes with a summary of the results found for the effects of treatment type on acquisition of the target form.

Results for the Interpretation Test

The descriptive statistics for the interpretation task are presented in Table 4.1. Among the treatment groups, two general trends can be observed. First, two groups (FI and SI) make immediate gains at the time of posttest 1 (immediately after the treatment) and then begin to taper off by the time of posttest 3. Second, the other two treatment groups (IF and IFTE) do not show an immediate increase in test scores, but rather show a steady increase in scores and by the time of posttest 3, score higher than any of the other test times.

The Control group's behavior on the interpretation measures displayed some change in performance over time. They decreased in performance from the pretest to posttest 1, and then performed better on posttest 2 (three weeks after treatment), than on both the pretest and posttest 1. On posttest 3, they also displayed an increase in performance from posttest 1. In general, the Control group performed better on the posttest 2, than they did on the pretest, displaying an increase in performance over time.

Table 4.1.

Mean Score Percentages on the Interpretation Task by Treatment Group and Time.

Group	Pretest	Posttest 1	Posttest 2	Posttest 3
Input Flood (IF)				
M	46.40	47.80	51.20	56.40
SD	1.64	20.40	20.00	20.80
IF + Text Enhancement (IFTE)				
M	43.20	46.00	42.90	52.80
SD	15.50	19.50	20.80	19.60
Focused Input (FI)				
M	43.13	58.10	47.80	55.20
SD	19.90	26.90	17.00	20.80
Structured Input (SI)				
M	46.80	66.50	56.20	61.90
SD	18.40	24.30	28.60	21.80
Control				
M	43.00	34.90	43.90	46.10
SD	12.60	16.40	26.90	18.70

In order to determine whether the treatment type lead to increased performance on the interpretation task, separate ANOVAs with repeated measures were conducted for each of the five groups (Input Flood, Input Flood + Text Enhancement, Focused Input, Structured Input, and Control). Main effects for Test were found for all four of the input treatment groups: IF, $F(3, 171) = 3.76$, $p = .012$ $n_{partial}^2 = .06$; IFTE, $F(3, 192) = 5.43$, $p = .001$ $n_{partial}^2 = .07$; FI, $F(3, 198) = 9.66$, $p < .001$ $n_{partial}^2 = .12$; and SI, $F(3, 201) = 12.38$, $p < .001$ $n_{partial}^2 = .15$. There was no effect for Test for the control group, $F(3, 96) = 2.23$, $p = .09$.

To examine the effect for Test for each of the treatment groups, pairwise comparisons with a Bonferroni adjustment for multiple comparisons were conducted to determine the differences among each test. The significant findings are displayed in Table 4.2.

As Table 4.2 illustrates, the pairwise comparisons reveal three major findings. First, all input treatment types lead to increased performance between the pretest and posttest 3, which was conducted six weeks after the treatment. Second, only two input treatment types, Structured Input and Focused Input, showed an improved performance between the pretest and the immediate posttest. Finally, these same two groups showed a decrease in performance from posttest 1 to posttest 2. That said, both of these groups; scores of posttest 3 were still greater than the pretest scores.

Table 4.2.

Pairwise Comparisons between Interpretation Tests by Treatment Group.

Group	Mean Difference	*p*
Input Flood (IF)		
Post 3 > Pretest	10.00	.005
Post 3 > Post 1	8.62	<.001
IF + Text Enhancement (IFTE)		
Post 3 > Pretest	9.54	.001
Post 3 > Post 1	6.77	.022
Post 3 > Post 2	9.85	.020
Focused Input (FI)		
Post 1 > Pretest	14.93	<.001
Post 1 > Post 2	10.30	.023
Post 3 > Pretest	12.10	.001
Structured Input (SI)		
Post 1 > Pretest	19.71	<.001
Post 1 > Post 2	10.29	.026
Post 3 > Pretest	15.15	<.001

To determine whether input treatment types are comparable, a second set of analyses was conducted. First, the pretest scores were submitted to a one-way ANOVA to insure that there were no pre-existing differences among the treatment groups. The ANOVA revealed no main effect for group $F(4, 315) = 118.05$, $p = .80$. For this reason, it can be assumed that any gains in performance were due to instructional treatment type.

Next, a 5 × 4 ANOVA with repeated measures was conducted on the data for all of the groups on all tests. The between-groups variable was Group and the within-groups variable was Test.

The repeated-measures ANOVA revealed a main effect for the within-subjects variable Test, $F(3, 858) = 14.45$, $p < .001$, $\eta_{partial}^2 = .048$; a main effect for the between subjects variable Group, $F(4, 286) = 9.48$, $p < .001$, $\eta_{partial}^2 = .117$; and a significant Test × Group interaction, $F(12, 858) = 3.82$, $p < .001$, $\eta_{partial}^2 = .051$. The Test × Group interaction is displayed visually in Figure 4.1.

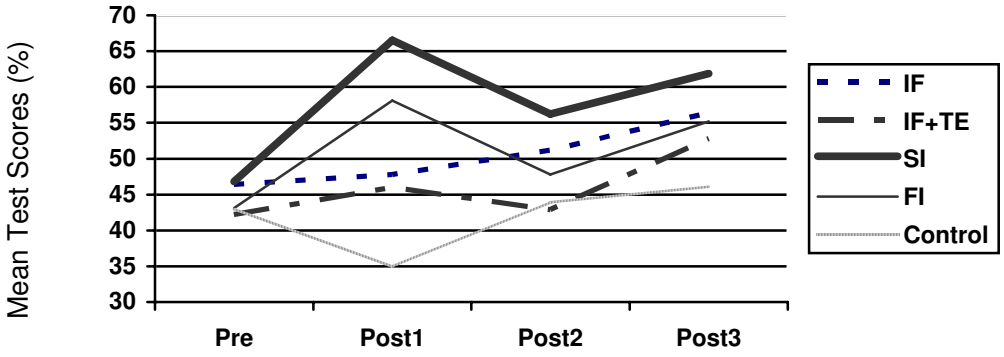


Figure 4.1. Group × Test Interaction on the Interpretation Test.

To examine the main effect for Group, Tukey HSD post hoc analyses revealed the following significant between group contrasts: (a) SI outperformed the control group (M_{diff} = 1.57, p = .001), the IF group (M_{diff} = .74, p = .03), the IFTE group (M_{diff} = 1.16, p = .001), and also the FI group (M_{diff} = .68, p = .04). In addition, both the FI and IF groups outperformed the Control group. FI vs. Control: (M_{diff} = .91, p = .02) and IF vs. Control: (M_{diff} = .85, p = .04). No other significant contrasts were found.

For the main effect for Test, pairwise comparisons with a Bonferroni adjustment for multiple comparisons revealed the following differences: scores on posttest 2 (immediate posttest) were greater than pretest, M_{diff} = 6.12, p < .001; scores on posttest 3 (6 weeks after treatment) were greater than all other tests: posttest 1, M_{diff} = 9.96, p < .001; posttest 2, M_{diff} = 3.84, p = .019; and posttest 3, M_{diff} = 6.07, p = .006.

In order to explore the Group × Test interaction, three separate one-way ANOVAs were conducted for each posttest. For all three ANOVAs, main effects were obtained for Group: posttest 1: $F(4, 315) = 16.25$, $p < .001$ $n_{partial}^2 = .17$, posttest 2: $F(4, 313) = 3.44$, $p = .009$ $n_{partial}^2 = .042$, posttest 3: $F(4, 288) = 3.56$, $p = .007$ $n_{partial}^2 = .047$. At posttest 1, the Tukey's HSD revealed that the SI group outperformed the IFTE group M_{diff} = 20.84, p < .001, the IF group, M_{diff} = 19.28, p < .001, and Control, M_{diff} = 30.58, p = .001. In addition, the FI group outperformed Control, M_{diff} = 22.19, p = .001. For

posttest 2, SI outperformed IFTE, $M_{diff} = 12.41$, $p = .013$. At posttest 3 SI outperformed Control, $M_{diff} = 15.51$, $p = .004$. A summary of these findings is displayed in Table 4.3.

Table 4.3.

Summary of Comparisons between Treatment Groups on Interpretation Posttests.

Posttest 1		Posttest 2		Posttest 3	
Contrast	*p*	Contrast	*p*	Contrast	*p*
SI > IFTE	< .001	SI > IFTE	.013	SI > Control	.004
SI > IF	< .001				
SI > Control	< .001				
FI > Control	< .001				

Summary of Interpretation Test Results

In general, the findings for the interpretation test revealed that all groups, except the control group, made significant gains over time in the correct interpretation of Spanish 3rd person accusative clitics. In terms of differences among the treatment groups, the findings for SI were the most consistent. SI was the only treatment group that outperformed the Control on two of the three posttests (posttest 1 and posttest 3). In addition, SI also outperformed both Input Flood groups (IF and IFTE) on at least one of the posttests. It is also worthwhile noting that FI was the only other treatment group to outperform the Control on at least one posttest. Furthermore, there were no significant differences between FI and SI on any of the posttests.

Sentence Level Production

Two sets of analyses were conducted on the Sentence level production measure. The first set examined the scores for correct placement of 3rd person accusative clitics. The second set examined the scores for correct gender, number and placement of the 3rd person accusative clitics. The descriptive and inferential statistics for clitic placement are presented first, followed by the findings for correct gender, number, and placement.

Placement of Accusative Clitics

The descriptive statistics for correct placement can be found in Table 4.4 and a graph of their performance is displayed visually in Figure 4.2. As the table indicates, the scores for correct placement are very low. In fact, 66% of all participants received a score of "0" on all tests, indicating that these learners were unable to correctly place at least one accusative clitic. For this reason, parametric tests (ANOVAs) could not be conducted on the data.

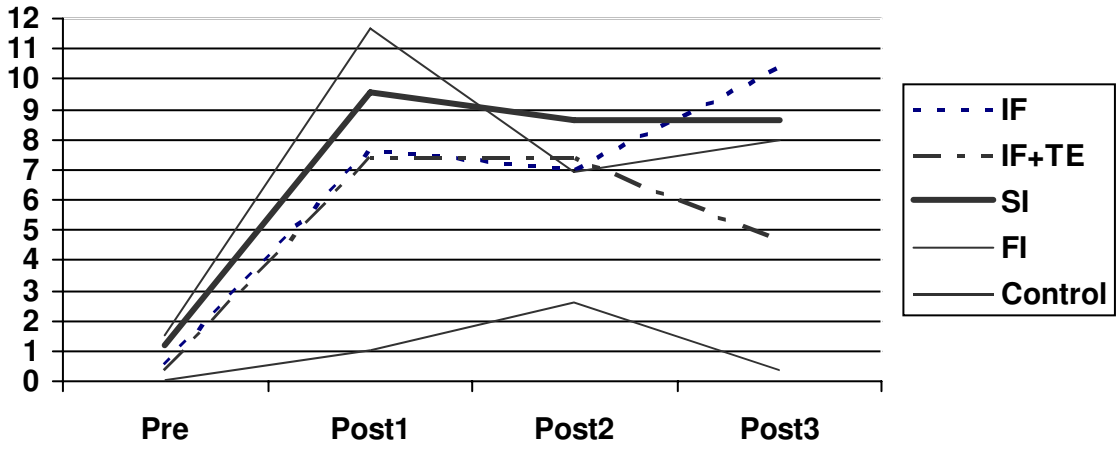


Figure 4.2. Performance by Group on Accusative Clitic Placement on Sentence-Level Production Test.

Table 4.4.

Mean Score Percentages of Placement on Sentence-level Production Task by Treatment Group and Time.

Group	Pretest	Posttest 1	Posttest 2	Posttest 3
Input Flood (IF)				
M	0.54	7.68	6.96	10.36
SD	2.97	18.78	16.17	19.63
IF + Text Enhancement (IFTE)				
M	0.31	7.38	7.38	4.62
SD	1.74	16.79	16.80	11.87
Focused Input (FI)				
M	1.54	11.69	6.92	8.00
SD	7.34	23.42	17.58	17.96
Structured Input (SI)				
M	1.19	9.55	8.66	8.66
SD	4.45	21.49	16.50	17.74
Control				
M	0.00	0.97	2.58	0.32
SD	0.00	3.01	9.65	1.80

To determine whether the various treatments led to increased performance on clitic placement, five separate Friedman tests were conducted for each group. These nonparametric tests were conducted because of the low scores and the basic assumptions of the ANOVA could not be met. The results of the Friedman tests revealed that the following groups demonstrated a significant increase in performance over time: IF, χ^2 (3,

$N = 56) = 20.33$, $p < .001$; IFTE, χ^2 (3, $N = 65$) = 17.00, $p = .001$; FI, χ^2 (3, $N = 67$) = 11.56, $p = .009$; and SI, χ^2 (3, $N = 67$) = 19.81, $p < .001$. There was no significant finding for the control group: χ^2 (3, $N = 31$) = 6.09, $p = .11$.

In order to test whether any differences existed among the treatment groups, the scores on the three posttests were combined and the data were submitted to a Kruscal-Wallis test, with Group as the between-subjects variable. The results revealed no significant differences among the four input groups, χ^2 (3) = 2.72, $p = .437$.

Correct Gender, Number, and Placement of Accusative Clitics

The descriptive statistics for correct gender, number, and placement of accusative clitics can be found in Table 4.5 as well as displayed visually in Figure 4.3. As with the findings for correct placement, the scores are quite low and are not normally distributed. 58% of the participants received a score of "0" on all tests. Therefore, nonparametric Friedman tests were conducted to determine whether the five groups improved in their performance over time. In addition, the Krusal-Wallis test was conducted to determine whether differences existed among the treatment groups.

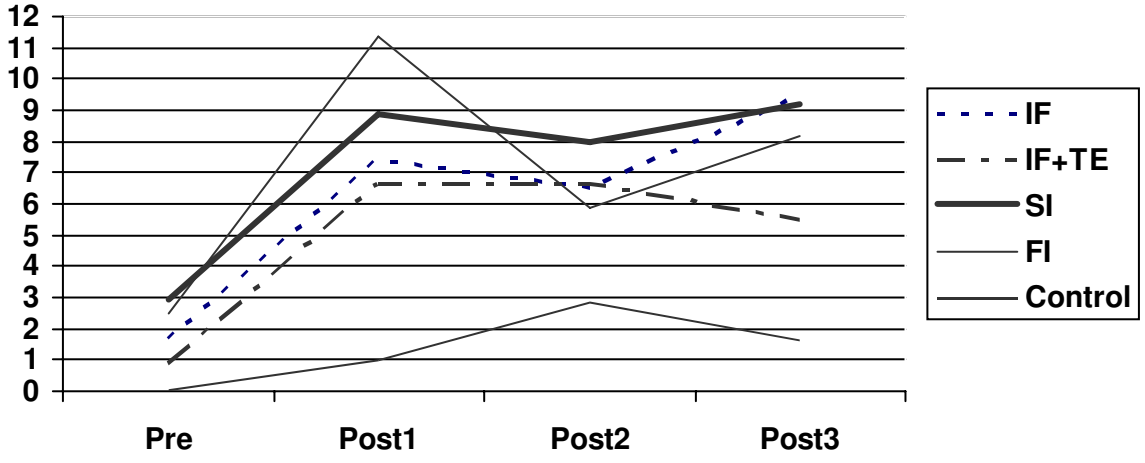


Figure 4.3. Performance by Group on Accusative Clitic Gender/Number/Placement on Sentence-Level Production Test.

Table 4.5.

Mean Score Percentages on Sentence-level Production Task of Gender/Number/Placement by Treatment Group and Time.

Group	Pretest	Posttest 1	Posttest 2	Posttest 3
Input Flood (IF)				
M	1.67	7.38	6.49	9.46
SD	6.23	17.68	15.13	17.72
IF + Text Enhancement (IFTE)				
M	0.88	6.62	6.62	5.49
SD	4.38	15.54	15.54	10.98
Focused Input (FI)				
M	2.51	11.38	5.85	8.15
SD	12.12	22.58	11.20	17.67
Structured Input (SI)				
M	2.94	8.86	7.96	9.20
SD	10.34	20.03	14.54	16.06
Control				
M	0.00	0.97	2.80	1.61
SD	0.00	3.01	7.21	5.64

The results of the Friedman tests revealed that the following groups demonstrated a significant increase in performance: IF, χ^2 (3, N = 56) = 17.49, p = .001; IFTE, χ^2 (3, N = 66) = 14.39, p = .002; FI, χ^2 (3, N = 75) = 12.46, p = .006; and SI, χ^2 (3, N = 89) = 19.81, p = .004. There was no significant finding for the control group: χ^2 (3, N = 42) = 6.46, p = .091.

In order to test whether any differences existed among the treatment groups, the total number accusative clitics correctly placed, with correct gender and correct number, for the three posttests was determined for each input group (IF, IFTE, FI, and SI), and the data were submitted to a Kruscal-Wallis test, with Group as the between-subjects variable. The results revealed no significant differences among the four input groups, χ^2 (3) = 1.72, p = .736.

Summary of Findings for Sentence-Level Production

The results of the nonparametric tests for correct clitic placement and gender, number, and placement on the sentence-level production test indicate that the four input treatment groups showed significant improvement over time, whereas the control group did not. Furthermore, no significant differences emerged among the four treatment groups.

Results for Discourse Level Production

As with the sentence-level production task, two sets of analyses were conducted on the discourse-level production measure. The first set examined the scores for correct accusative clitics placement and the second set examined the scores for correct gender, number and placement of accusative clitics. The descriptive and inferential statistics for clitic placement are presented first, followed by the findings for correct gender, number, and placement.

Table 4.6.

Mean Score Percentages of Placement on Discourse-level Production Task by Treatment Group and Time.

Group	Pretest	Posttest 1	Posttest 2	Posttest 3
Input Flood (IF)				
M	0.00	4.74	3.33	3.86
SD	0.00	16.49	12.72	15.44
IF + Text Enhancement (IFTE)				
M	0.00	3.38	1.69	2.62
SD	0.00	10.20	7.41	10.50
Focused Input (FI)				
M	0.75	6.89	4.33	5.52
SD	4.01	16.07	15.69	17.78
Structured Input (SI)				
M	0.29	1.74	1.59	4.93
SD	1.69	9.39	7.60	16.42
Control				
M	0.31	0.00	0.00	0.94
SD	1.77	0.00	0.00	5.30

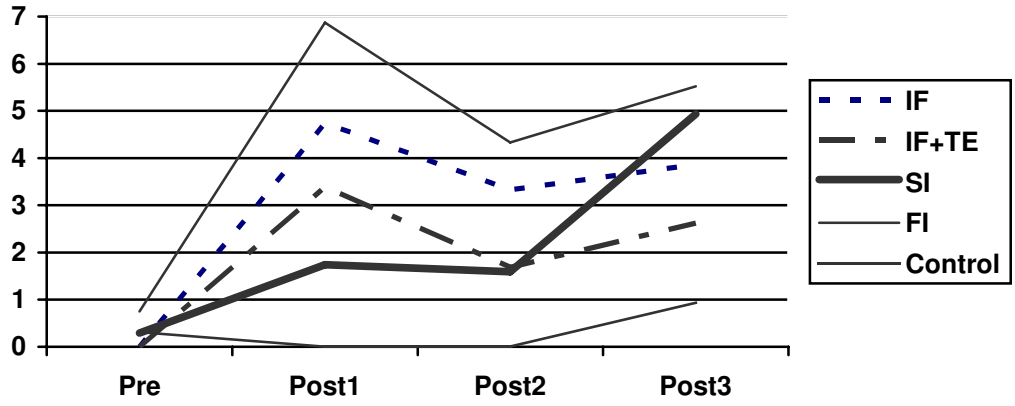


Figure 4.4. Performance by Group on Accusative Clitic Placement on Discourse-Level Production Test.

The results of the Friedman tests revealed that the following groups demonstrated a significant increase in performance: IFTE, χ^2 (3, N = 65) = 9.94, p = .019; and SI, χ^2 (3, N = 69) = 8.04, p = .045. Approaching significance were IF, χ^2 (3, N = 57) = 7.42, p = .06; and FI, χ^2 (3, N = 67) = 7.57, p = .056. There was no significant finding for the control group: χ^2 (3, N = 32) = 2.00, p = .572.

In order to test whether any differences existed among the treatment groups, the total number of correctly placed accusative clitics for the three posttests was determined for each input group (IF, IFTE, FI, and SI), and the data were submitted to a Kruscal-Wallis test, with Group as the between-subjects variable. The results revealed no significant differences among the four input groups, χ^2 (3) = 2.60, p = .458.

Table 4.7.

Mean Score Percentages on Discourse-level Production Task of Gender/Number/Placement by Treatment Group and Time.

Group	Pretest	Posttest 1	Posttest 2	Posttest 3
Input Flood (IF)				
M	0.00	4.04	3.68	3.51
SD	0.00	15.57	12.91	15.11
IF + Text Enhancement (IFTE)				
M	0.00	3.03	4.15	3.23
SD	0.00	8.91	11.84	10.62
Focused Input (FI)				
M	0.85	6.17	4.58	6.48
SD	4.08	15.23	15.70	18.67
Structured Input (SI)				
M	0.68	1.74	1.06	4.69
SD	3.50	9.39	5.06	15.14
Control				
M	0.31	0.10	0.52	0.94
SD	1.77	0.59	1.72	5.30

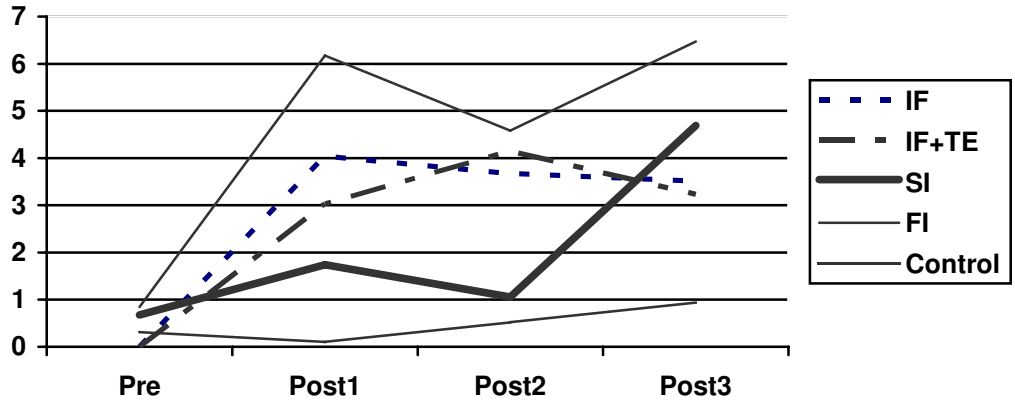


Figure 4.5. Performance by Group on Accusative Gender/Number/Placement on Discourse-Level Production Test.

The results of the Friedman tests revealed that the following groups demonstrated a significant increase in performance: IFTE, χ^2 (3, N = 65) = 12.14, p = .007; and SI, χ^2 (3, N = 69) = 8.41, p = .038. There was no significant finding for: IF, χ^2 (3, N = 57) = 6.82, p = .078; FI, χ^2 (3, N = 67) = 5.68, p = .128 or the control group: χ^2 (3, N = 32) = 2.11, p = .550.

In order to test whether any differences existed among the treatment groups, the total number accusative clitics correctly placed, with correct gender and correct number, for the three posttests was determined for each input group (IF, IFTE, FI, and SI), and the data were submitted to a Kruscal-Wallis test, with Group as the between-subjects variable. The results revealed no significant differences among the four input groups, χ^2 (3) = 4.76, p = .190.

Summary of Findings for Discourse-Level Production

The results of the nonparametric tests for correct placement on the discourse-level production test indicate that the four input treatment groups either showed significant improvement or approached significance over time, whereas the control group did not. The results on gender/number/placement revealed that IFTE and SI showed significant improvement whereas IF, FI and the control group did not. Furthermore, no significant differences emerged among the four treatment groups.

Summary of Results

The major findings for this study are:

1. On the interpretation task, all groups made significant gains over time except the control group.
2. On the interpretation task, SI results were the most consistent. SI was the only group to outperform the control group on two of three posttests and to outperform both Input Flood groups (IF and IFTE) on at least one posttest.
3. On the interpretation task, FI was only other treatment group, other than SI, to outperform the Control group on at least one posttest.
4. On both sentence-level and discourse-level production tasks, no significant differences were found among the four input based treatment groups.

CHAPTER FIVE: DISCUSSION AND CONCLUSIONS

Introduction

This study set out to examine the effects of different types of input-based instruction types (Input Flood (IF), Input Flood with Text Enhancement (IFTE), Structured Input (SI), and Focused Input (FI)) on interpretation and production of the Spanish 3rd person accusative clitics. This final chapter provides a discussion of the findings presented in Chapter four and includes a discussion of the effects of the various input-based treatments. The pedagogical implications of these findings are then discussed. Lastly, the limitations of the study are discussed, followed by avenues for future research.

As discussed in Chapter 1, Structured Input activities are one component of Processing Instruction that stems from one model of Input Processing (VanPatten, 1996, 2004, 2007). The nature of Structured Input activities is that they attempt to address a particular processing problem and push learners away from their non-optimal processing strategies and towards a more optimal strategy. In this case, the processing problem is known as the First Noun Principle where learners, at least at beginning stages, tend to process the first noun or pronoun they encounter in an utterance as the subject. Due to flexible word order in Spanish, this is problematic because OVS sentences are acceptable, whereas, in English they are not. Furthermore, as noted in Chapter 1, accusative (and dative) clitics must appear before a finite verb. Therefore, the noun that L2 learners tend to interpret as the subject is in fact, the object. For example learners tend to interpret a sentence such as: *Lo besa la mujer*. "The woman kisses him" (Him – OBJECT kisses - VERB the woman – SUBJECT) as "He kisses her", in which case the role of subject and object are erroneously assigned. The purpose of SI is to push learners away from this strategy and towards a more optimum processing strategy in order to make the appropriate connections between form and meaning.

During the past 15 years, the findings in SLA investigating the effects of Processing Instruction (PI) and one of its pedagogical interventions known as Structured Input (SI) activities, have consistently revealed positive findings for the effects of this type of activity. These results have come from studies investigating various forms across

multiple languages such as: Spanish (VanPatten & Cadierno, 1993; VanPatten & Oikkenon, 1996; Farley, 2004; Fernandez, 2004; Sanz & Morgan-Short, 2004; VanPatten & Fernandez, 2004), Italian (Benati, 2004) and French (Wong, 2004). The findings have consistently revealed that PI or SI was as good as if not better than other types of production-based treatments for both interpretation and production. The effectiveness of these activities is not under dispute here. Instead, the issue is the following: what is it about SI activities that lead to such consistent results? Is it the exposure to input that learners receive by completing the activities? Or, is it that SI activities are in fact altering learners' processing strategies.

Instead of comparing the effectiveness of SI with other production-based activities, as in previous research, this study focused exclusively on comparing SI with other input-based instructional treatments. In order to address this question, a type of SI activity used in the aforementioned studies was examined closely and it was determined that the activity itself contained various components that could be isolated. One of which was a variable of implicit negative feedback (see Ch. 2 for a discussion on this). This variable was isolated and it led to the development of a type of activity referred to as Focused Input (FI). For all intents and purposes, FI is SI without the implicit negative feedback.

During the initial design of the study and when considering the *why* of the consistent findings in PI, a question was raised as to whether it might be the exposure alone to comprehensible input that facilitates acquisition. If this were the case, then could other types of input-based activities yield similar findings? In order to address this, two other input-based instructional types were included in this study: Input Flood (IF) and Input Flood accompanied with Text Enhancement (IFTE). The flood of input would provide the same amount of target item exposure as the SI and FI groups and the text enhancement would investigate whether visually enhanced text aided processing compared to its unenhanced version of the Input Flood without enhanced text. Once again, if the exposure to input alone is promoting improved performance, then similar findings among all treatment groups would be expected.

Therefore, a general question in this study addresses the following: Is input enough? If so, then we would expect to find no difference among any of the treatment

groups in the study, because they were all input-based. If implicit negative feedback plays a significant role in acquisition of the target form then we would expect there to be a significant difference between the SI group and the FI group. However, if implicit negative feedback does not play a significant role, then no significant difference between these two groups would be expected.

Discussion of the Findings

The results of the data analysis presented in Chapter four revealed that on the interpretation task, SI outperformed the Control group at all but one (posttest 2) of the posttests. In fact, SI was the only group to outperform the Control group at two of the three interpretation posttest times. In addition to this finding, SI was also the only group to significantly outperform any of the other treatment groups on any interpretation posttest (and did so not only on the immediate posttest but also on posttest 2). On the sentence level production task for both placement and gender/number/placement, all treatment groups (except the control) demonstrated significant improvement; however, no significant differences were found among any of the groups. On the discourse level production task for placement, all treatment groups (except the control) either showed significant improvement or approached significance, also with no significant differences among the groups. For gender/number/placement, IFTE and SI showed significant improvement whereas IF and FI (and control) did not, and no significant differences were found among the groups.

Explanation of Findings

In order to explain the findings of this study, I will return to the original research questions that guided this study.

- Research Question 1: Do input-based instructional treatments lead to improved performance on L2 Spanish learners' interpretation and production of 3rd person accusative clitics?

The answer to the first research question is 'yes'. All groups (except control) showed significant improvement on interpretation and production measures. These findings are indicated by the results of the repeated measures ANOVA for interpretation and Friedman tests for production. The control group showed no improvement on any of the posttest measures. These findings suggest that, for this form, input is enough to improve learners' interpretation and production of accusative clitics.

These findings, however; differ slightly from those of Morgan-Short and Bowden (2006) with respect to the control group's performance. In their study the control group showed improved performance over time; however, the control group in their study was not a typical control group. That is, their control group actually received a sort of input flood of the target form as opposed to a typical control group receiving no input of the target form at all. The findings suggest that their exposure to the target form may have lead to their improved performance, thereby explaining why they showed improved performance but the control group in this study did not.

In fact, in this light, the findings from Morgan-Short and Bowden (2006) converge with the findings in this study; comprehensible input alone is enough to facilitate the acquisition of this target form. In this study all treatment groups (except the control) showed significant improvement for interpretation and production as measured by their respective tasks; as did the control group in Morgan-Short and Bowden (2006). The control group in this study, however, was not exposed to input of the target form and therefore, did not show improvement. In both this study and in Morgan-Short and Bowden (2006), it appears that the exposure to input is facilitating acquisition.

However, even though all groups receiving some type of input (SI, FI, IF, or IFTE) showed improvement, as VanPatten and Leeser (2006) posit, "But is comprehensible input enough? It might be in the long run – but the business of language teaching is to help acquisition in any way it can. Given this aim, we might ask the following question: in what way can instruction help so that comprehensible input is indeed accessible and learners can maximize what they will do with it?" (p. 9). So, even though all groups showed improvement, were there differences in performance among the groups? This leads to the second research question in this study:

- Research Question 2: If the input-based instructional treatments lead to improved performance, are the effects of the treatments comparable?

The answer to this question is twofold: the results of the treatments are not comparable for interpretation, but in some ways are for production. For interpretation, even though all groups showed improvement, there were significant differences among some of the groups. I will begin the discussion of these findings focusing on the interpretation results and then discuss the findings of the production measures.

Interpretation Measure

Both the IF and IFTE groups showed improvement over time on interpretation measures; however, neither group performed significantly better than the control group on any posttest. So, even though they showed improvement, they did not perform significantly better than those receiving no input at all (control group). To remind the reader of the nature of the IF treatment types (both IF and IFTE), they provide learners with a written text that contains several instances of the target form (i.e., "flooded") embedded within story passages. This flood (with or without textual enhancements) serves to increase the likelihood that learners will notice the target form/structure while they are processing the text for meaning (Wong, 2005), and learners are held responsible for the content of the written texts via some kind of comprehension check. In this study, participants answered multiple-choice questions related to the content of each passage. Although it is likely that learners may have noticed the target forms while reading for meaning, simply noticing the target form does not indicate that the form will go on to be processed further. As Izumi (2002) points out, noticing the target forms does not necessarily encourage the cognitive processes necessary for acquisition to take place. In other words, even though learners may notice the target forms, the depth of processing necessary for acquisition to take place may not be involved. Izumi (2002) states, "This condition of input enhancement might render form learning essentially a hit-or-miss affair, with only some learners likely to benefit fully from it (perhaps those with most form-conscious tendencies, those with metalinguistically sophisticated prior knowledge, or both)." (p. 567). According to Izumi, even if learners notice the target forms, there is no guarantee that learners will be able to map those forms onto their corresponding

meanings and/or functions. For this reason, even though both IF and IFTE groups made significant gains in interpretation and production of accusative clitics, this type of input-based instruction may not be the most effective for this group of learners.

Regarding the FI and SI groups, no significant differences emerged between these two groups on any of the interpretation posttests. That said, only SI outperformed the input flood groups. The first question asked here is, what explains the similarities in the findings for SI and FI? One of the possible explanations for SI not outperforming FI is that the type of comprehensible input provided by these two input based treatment types is similar enough to push learners to make form-meaning connections. Both SI and FI share in common that they provide input that is manipulated so that learners are pushed to alter their incorrect processing strategy. In other words, both treatment groups contained input in which the first noun was *not* always the subject (e.g., *Lo ve María* 'Him sees Maria') and asked learners to select among two pictures the correct interpretation (SI) or to understand how one picture illustrates the meaning of the sentence (FI). Although all of the input-based treatments (IF, IFTE, FI, and SI) were meaning-based treatments, only the SI and FI treatments pushed learners to pay attention to formal properties of Spanish in order to understand meaning (i.e., agent-patient relationships). Furthermore, only SI and FI are predicated on non-optimal processing strategies and attempt to push learners away from them. Perhaps, for this reason, these two treatment groups performed similarly.

Although no significant differences emerged between SI and FI, the findings for SI seem to be more robust given that only SI significantly outperformed the input flood groups. Why might this be the case? Even though FI is a variation of an SI activity, (SI without implicit negative feedback) one possible explanation is that learners are not required to react to the input in the same way as they do with the SI activities. In SI activities, learners must choose between two pictures that correctly match up with at sentence. In this sense, they must choose between a 'correct' picture and an 'incorrect' picture to match with the sentence. In contrast, in the FI group, learners were provided one sentence that matched up with one picture. In this event, learners were not required to choose between two pictures that corresponded with a sentence, they just clicked a button to continue on to the next example. In fact, with FI there is no 'correct' or

'incorrect' answer, learners simply clicked a button on the button box to move on to the next item.

The finding that FI did not significantly outperform the two input flood treatment groups but SI did, suggests that SI must be doing something that FI is not, whatever the 'something' may be is up for debate. It is important to point out that at no point did SI significantly outperform the FI group; however, the findings for SI are more robust and may be because of two reasons: learners have a choice to make in SI activities and are provided with implicit negative feedback.

Because the input itself was the same for both groups, it may be that in SI activities learners are held accountable for their responses. That is, they are forced to make a choice and are then informed of the correctness of that choice. Lee and VanPatten (2003) point out that learners must be actively engaged in the activity and cannot be mere passive receivers of language in order for effective acquisition to happen. The element of active involvement in the activity may be the key difference between SI and FI. In the former, learners take an active part in the activity by choosing what they believe to be the correct answer, and in FI activities, learners are simply instructed to view the examples and press a button to move on to the next example. This line of reasoning is consistent with recent proposals that acquisition is indeed an "error" or "failure-driven process" (e.g., Carroll, 2007). That is, a change in parsing procedures can only occur when the procedures or strategies in place to parse the input stream fail (Carroll, 2001, 2007; VanPatten, 2007). Perhaps, then, learners completing the SI activities had opportunities to 'fail' in their comprehension during the activities. It could be precisely this failure and resulting implicit negative evidence that is aiding learners in readjusting their processing strategy to a more optimal one and pushing them to interpret the input correctly. Clearly more research in this area needs to be performed; however, these are possible explanations for the differences in performance in interpretation.

Production Measures

The production tasks used in this study were a similar format to those used in previous studies despite the difference in ordering of the assessment measures. In fact, the sentence-level production measure was the same format and the discourse-level

measure was modified to be a still picture narration to control for the number of target form items produced. The difference being that the task used in Sanz & Morgan-Short (2004) was a video retelling task and learners' target form production varied depending on how much information they provided.

Although analyses were performed on gender/number/placement of the accusative clitics, the focus of this discussion is on learners' production of the target form regarding its placement. This is due to the processing strategy investigated in the study; the First Noun Principle, which states that learners' erroneously interpret the first noun in an utterance as the subject. Placement of the accusative clitic in the production tasks is the most relevant due to the nature of the processing strategy.

The findings for the production measures are different than those of the interpretation measure: the findings for the sentence-level production measure revealed that all treatment groups (except control) showed improvement from the time of the pretest to posttests; however, no significant differences were found among any of the groups. The findings for discourse-level production task on placement revealed that all treatment groups (except control) either showed significant improvement or approached significance. These findings are different from those of the interpretation task; however, it is important to keep in mind that even though no significant differences among the groups were found, all groups showed improvement (or approached significance) on target form placement after exposure to the treatment. The findings for the production measures are not as clear as those of the interpretation task due to the low scores and the amount of zeros present in the data. Due to the number of zeros in the data, non-parametric statistical tests had to be used in the analyses of the data. Therefore, given the low scores, the findings need to be interpreted with caution.

When considering the difference in performance among the groups on the interpretation tasks and the production tasks it is important to keep in mind the different nature of these tasks. The interpretation task is essentially a parsing task in that learners are pushed to extract meaning from the target linguistic form in the provided sentence in order to answer the questions correctly. The production task, however, involves accessing and retrieving the linguistic information stored in the developing system. These two processes are fundamentally different.

According to positions of skill acquisition theory and Anderson's ACT theory (Anderson, 1993; Anderson & Lebiere, 1998; and Anderson et al., 2004), learners progress through stages of skill acquisition beginning with declarative knowledge, or "knowledge that", to procedural knowledge, or "knowledge how", to do something. The procedural knowledge undergoes a process of automatization in which the skill is made automatic. The knowledge from one domain to another, that is for example, from comprehension to production, does not transfer well (see DeKeyser, 1997; DeKeyser & Sokalski, 2001; Tanaka, 2001). In this study, as the findings suggest, learners show improved performance on interpretation measures; however, their production skills, although improve, do not show a significant improvement. This suggests that learners need more than input for production gains, whereas for interpretation it seems to be enough. Even though skill acquisition is more than the process of "improvement through practice", learners need opportunities to produce output in order to develop the skill of producing the form.

As sketchy as this summary is, at this point learners are evidently not able to access or retrieve the target form in order to produce it. SI at this point is not enough to help them to access/retrieve the target form for production whereas, for interpretation tasks, their performance findings were more robust than the other treatment groups. It is important to keep in mind that learners' exposure to the target form was limited to one class day.

In any event, being that production is a skill and the automatization of that skill takes place through repeated access, it is understandable why learners' scores were low on the production measures. Learners in all treatment groups (except control) were exposed to an input-based treatment receiving only input throughout the entire treatment. At no time during the treatment did learners produce the target forms. In this light, learners were not provided with the opportunity to practice the skill of production by accessing the target forms in the developing system. The differences in the processes of interpretation and production explain the differences in the results of the interpretation and production tasks among the treatment groups, however; why are the scores on the production measures in this study lower than learners' scores in other studies?

The results on the production measures differ from those of VanPatten & Cadierno (1993), the range of gains from pretest to posttest in their study was from 4.3 to 6.7, Sanz & Morgan-Short report mean gains ranging from 31% to 70%, and VanPatten and Oikkenon (1996) from means of .55 to 3.00, whereas in this study mean score increases ranged from 4% to 10%. In comparison to other studies, learners' scores on the production measures were low. However, it is important to keep in mind that even though scores were low on the production measures, all of the input treatment groups did show improvement over time.

One possible explanation for the low scores on both production measures in comparison with previous research is the order in which these tasks were completed. In other studies, learners completed the interpretation measure first, and then they completed the production measures. In such an event, the interpretation test provided input to the learner in which the target form was required to interpret the meaning of the sentence. In this study, however; learners first completed the sentence-level production measure, followed by the discourse-level production measure and the last measure to complete was the interpretation measure.

Again, the ordering of the tasks was essential in order to control for the amount and type of input to which the treatment groups were exposed. The production measures were completed first so that learners were not exposed to more input of the target form through the interpretation measure. In this event, after learners completed the production task, they received the input from the interpretation task, but not until the last measure of the test. Another way to look at this is that if learners were to complete the interpretation task prior to the production tasks, then the input on the interpretation task (being that there are instances of the target form) could help learners on the production task. Therefore, in this study, learners may not have even been aware of what the target structure was when completing the tasks. In this case, learners were not able to use the input from the interpretation measure (as they could in the other studies) in order to complete the production task. This means that they relied purely on the instructional treatment to which they were exposed. Future research will have to investigate the effects of ordering of the assessment measures.

Another possible explanation is the amount of time that learners had to complete the task. In this study, the tests were displayed on the projector screen (with the exception of Posttest 1, which was on each learner's individual computer monitor) using the Microsoft PowerPoint program and each test question was automatically timed to move on to the next question. In this study, each question in the sentence-level production measure was displayed for 10 seconds, however, in Sanz and Morgan-Short (2004) learners were given 20 seconds to complete the same task. Ten seconds was chosen as an appropriate amount of time based on a pilot study demonstrating that ten seconds was enough time, yet not too long in order to minimize learners engaging in 'monitoring', thereby drawing upon metalinguistic declarative knowledge (Doughty, 2004).

Clearly, acquisition is a long process, and after a short training phase, any improvement can be seen as making steps in the right direction toward acquiring the target form. Even though mean scores for all groups did not exceed 12% on any of the production test times, two important points are to be made: (1) all treatment groups made significant improvement on sentence level placement and (2) participants' exposure time to the target form was only limited to twenty four instances of the target items during one treatment session. In this light, it is surprising that learners were able to produce anything at all after this brief of a treatment. Seeing any increase in performance based on such limited exposure, especially without explicit information about the form is evidence that the treatment is doing something. Lee (2002) states, "…acquisition starts with processing and occurs incrementally" (p. 74). Language acquisition is a long gradual process and does not happen overnight. Some grammatical forms take years to acquire and in some cases learners do not reach native like competency with certain forms. In this case, considering that learners' exposure time to the target items was limited to one treatment session, and some of their starting points were zero, it is a astounding that learners showed the gains they did (Lee, 2002).

Pedagogical Implications

A general implication from this study is that input may be enough to facilitate acquisition. However, as VanPatten and Leeser (2006) point out, "the business of language teaching is to help acquisition in any way it can." (p. 9). Some of the goals are to maximize acquisition and to get learners to do particular things with the input in order for this to take place.

The first pedagogical implication that can be taken from the findings in this study is that SI is an effective and plausible input type in pushing learners to make connections between form and meaning with this target form. One of the advantages to SI is that it is able to be used via various delivery methods. SI activities can be done in the classroom or via a computer assisted language learning tool delivery system online. In effect, there are many options for the delivery of SI. SI also has the element of 'forced choice' inherent in this type of activity. Learners are forced to make a choice, in this case between two pictures of which one corresponds with a sentence, and they then receive feedback based on their response. In this case, learners received implicit negative feedback alone, however, it would be possible to include explicit feedback as well. This type of feedback could be operationalized by a simple 'correct!' or 'incorrect' after the corresponding response.

Second, although effective, FI may not be the best pedagogical tool. First off, due to the nature of the activity, learners are able to passively complete the task. Because of this, learners may also not see much of a point to the activity. It may be possible to use some examples of FI as a quiz or sort of game in class, however, solely as a pedagogical learning tool, it may not be effective. This is mainly because of the affective effect on learners; they may just not get the point of the activity.

Lastly, both of the input flood types (IF and IFTE), based on the findings of this study, may be overloading the cognitive processing constraints of the learner to the extent that learners are not able to attend to the target form. Because of the flood of input, learners may only focus on the meaning of the input alone and not the target forms. Pedagogically, learners may benefit from other aspects of reading passages, vocabulary

exposure, reading comprehension practice, pronunciation; however, for acquiring this target form, there may be better options, such as SI, at least for this level of learner.

Limitations and Directions for Future Research

One limitation in this study is that the results are limited to one processing strategy (First Noun) and one target form (Spanish 3rd person accusative clitics). Therefore, the findings reported here cannot be generalized to other strategies or other forms. Future research, therefore, could investigate the effectiveness the input-based instructional treatments for other processing strategies, such as the Lexical Preference Principle. As pointed out in Chapter 1, this principle states that learners rely on lexical items (e.g., temporal adverbs) to interpret meaning instead of grammatical forms (e.g., inflectional temporal morphology). In this case, the strategy is not a misinterpretation (as in the First Noun Principle), but instead learners tend to "miss" inflectional morphology encoding tense, aspect, mood, etc., because this information is often redundant in that it is also encoded elsewhere via lexical items. Research in this area will shed light on to the effectiveness of SI and other input-based treatments with respect to other processing strategies and forms. This would inform the field to whether the findings from this study, and others, are transferable to other forms and strategies. Researching this limitation will also contribute to determine if some input-based treatments are more/less effective than others with regards to specific forms and processing strategies.

Another limitation is that this study only focused on one level of learner. The level of learner was chosen based on their level being comparable to the level of learners who participated previously in similar investigations. Future research can include learners of higher levels such as intermediate high or advanced levels in order to investigate whether SI is more effective at beginning stages or if higher level learners still benefit from it. It may be that learners at lower levels benefit most from SI due to the altering of non-optimal processing strategies and that higher-level learners do not need to be pushed away from these strategies. Higher-level learners may already be aware that 'things are not as they seem' in second language grammar and are ready to react according to the linguistic data and negotiate with meaning in the input. Possibly

learners at higher levels have already adjusted their processor to seek out the similarities in the linguistic input and what they observe, in order to extract the most information from the linguistic data. If nothing else more robust results might be found with higher level learners than with lower-level learners. This type of study could be cross-sectional in nature and include learners of various levels in order to shed light on benefits of learner level and input type.

Another direction for future research can investigate the role of individual differences in L2 learners. One of the avenues for future research can include the relationship between working memory capacity and SLA. Input processing takes place in working memory and therefore, the processing capacity of the learner may affect the rate at which they process input. Because some learners have a greater capacity for processing incoming information than others, it is hypothesized that this may have an effect on language acquisition. Working memory has been shown to account for individual differences in reading comprehension and it is expected that because comprehension is a precursor to acquisition, that acquisition will also be affected by a learners' working memory capacity. The relationship between working memory and language acquisition will be especially insightful for the acquisition of grammatical forms that are not meaning based, such as inflectional verb morphology. In such an event, for the nonmeaningful forms to get processed, the working memory processing capacity must not be exhausted by processing for meaning so that learners can also attend to form.

The working memory capacity of individual learners and their performance on tasks after exposure to input will shed light on the effectiveness of types of input in relation to their working memory capacity. Insight can be gained as to whether input type varies in its effectiveness for learners with different working memory capacities. This will also provide insight into the processing mechanisms involved in language acquisition and what information from the input may convert into intake.

Conclusions

This dissertation investigated the effectiveness of various input-based instructional techniques on L2 Spanish learners' interpretation and production of accusative clitics. Keeping in mind the limitations, the findings of this study suggest that Structured Input, a component of Processing Instruction, is not only effective when compared with production-oriented instructional techniques, but it is also effective when compared with other input-based treatments, thus shedding some light onto *why* this kind of instruction is effective. It is hoped that this study will serve as a springboard to further research on a variety of processing problems as well as to gain a clearer picture of the role of these instruction types in promoting learners' accurate production.

APPENDIX A – CONSENT FORM

CONSENT FORM

Purpose of study: To investigate students' performance in a computer based learning environment and how language learning activities in that environment facilitate the learning of object pronouns.

I have been asked to participate in the above research regarding the students' performance in the use of computer based materials to learn Spanish grammar, conducted by Justin P. White during one (1) class day of Spanish 2220 class. I will do a pre-test to measure my knowledge of the Spanish grammar. Then, I will read web pages and answer questions related to the content of the text during class time. I will do a post-test almost immediately after accessing the learning materials and another post-test approximately one month later and a delayed post-test two months after the treatment. I will also answer a set of survey questions addressing topics of my experience with formal and informal education of the Spanish language. By participating in this project, I agree to have the survey results and data collected through my access logs (i.e., web pages that I visited and the answers I gave during the learning activities) to be included in the statistical analysis. **I have been informed that my participation is voluntary and will neither positively nor negatively affect my academic standing in the course and the study does not bear the possibility of affecting either my psychological or physical health.** On the contrary my command of the Spanish language is expected to increase after learning in this environment using the aforementioned approach. I also have been informed that the researcher will maintain confidentiality regarding my identity and participation in this study under any circumstances. I will access the materials online and my name will be replaced by a code consisting of one random letter and two random digit numbers when my data [i.e., access logs, answers to survey questions] are converted into a data base file for statistical analysis.) The information obtained during the course of the study will remain confidential, to the extent allowed by law. If I have any questions regarding the study, I will contact Justin P. White at this number (419) 601-1374 or at the following e-mail, jwhite2@fsu.edu. I may also contact Dr. Michael Leeser if I have any questions regarding the study at mleeser@fsu.edu. (In case of injury,) If I have questions about my rights as a subject/participant in this research, or if I feel I have been placed at risk, I can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Office of the Vice President for Research, at (850) 644-8633. Therefore, my signature below indicates my consent to participate in this study. Finally, I have been informed that even by signing this consent form I am free to withdraw from this research at any time or after my participation.

Name of the participant:_____(Please print)

Signature of the participant:_____Date:__/__/__

APPENDIX B - BACKGROUND QUESTIONNAIRE

BACKGROUND QUESTIONNAIRE
ALL INFORMATION WILL REMAIN CONFIDENTIAL

1. Name: _____ 2. E-mail: _____

3. Year in School: Freshman Sophomore Junior Senior Other

4. Did you take Spanish in high school? YES NO

5. If you answered YES to #3, how many years of high school Spanish have you had?

_____ years

7. Have you studied or do you study presently any of the following languages?
   FRENCH - YES NO For how long?_____
   ITALIAN - YES NO For how long?_____
   GERMAN - YES NO For how long?_____
   OTHER - YES NO For how long?_____
   (Please specify :_____)

8. Is English your native language? YES NO

9. Have you **EVER STUDIED ABROAD**? YES NO

(If YES, WHERE? _____; LENGTH OF TIME_____)

10. Do you have basic computer knowledge such as e-mail, web surfing or word processing? YES NO

11. Do you have any reading impairments? YES NO

APPENDIX C – INPUT FLOOD PASSAGES

Passage 1: Un Dia en La Escuela
Juan va a la escuela y siempre sigue a una chica en particular. Un día Juan conoce a Marisol, una muchacha bonita. Juan la saluda de beso en la clase de biología. Juan regresa a su casa. Quiere hablar con ella; entonces busca su número. Encuentra su número y la llama por teléfono. Juan y Marisol hablan por dos horas. Juan está muy nervioso, pero quiere ir al cine con ella. Juan la invita al cine y ella acepta. Van al cine, comen muchos dulces y toman un refresco muy grande. Después de la película regresan a la casa de Marisol. Juan la besa y Marisol está muy feliz. Al día siguiente Juan la lleva a comer y a conocer a sus padres. Sus padres la abrazan y dicen: "bienvenida a la familia".

Accompanying questions:
1. Where do Juan and Marisol meet?
    D. Church
    E. The mall
    F. Class
2. Where do Juan and Marisol go?
    A. School
    B. A party
    C. Movies
3. Marisol meets Juan's parents.
    A. True
    B. False

Pasaje 1 (translated): One day in School
Juan goes to school and always follows one girl in particular. One day Juan meets Marisol, a beautiful girl. Juan greets her with a kiss in biology class. Juan returns to his house. He wants to talk with her, so he looks up her number. He finds her number and calls her by phone. Juan and Marisol talk for two hours. Juan is very nervous, but he wants to go to the movies with her. Juan invites her to the movies and she accepts. They go to the movies, eat a lot of sweets and drink a very large soft-drink. After the movie they return to Marisol's house. Juan kisses her and Marisol is very happy. The following day Juan takes her to eat and meet his parents. His parents hug her and say: "welcome to the family".

Passage 2: Un Viaje Familiar
El abuelo de Ángela vive en Canadá. Ángela lo llama mucho. Ángela busca un boleto de avión en el Internet. Compra el boleto y va a Canadá. Llega a Canadá y va a la casa de su abuelo. Ángela lo ve por la ventana. Grita: "¡Abuelo, Abuelo!" Su abuelo abre la puerta y empieza a llorar. Ángela lo abraza y recuerda muchos buenos momentos. Su abuelo no sale mucho porque no tiene muy buena salud, pero le gusta ir a comer. Ángela lo invita a cenar a su restaurante favorito. Su abuelo dice que ya no quiere vivir solo. Ángela lo invita a vivir con ella. Su abuelo dice que sí, entonces lo lleva con ella a su casa. Su abuelo compra un televisor plasma y está muy feliz.

Accompanying questions:
1. Who does Ángela visit?
    A. Her cousin
    B. Her aunt
    C. Her grandfather

2. Ángela is in good health.
    A. True
    B. False

3. What does Angela buy?
    A. A house
    B. A plane ticket
    C. A plasma TV

Passage 2 (translated): A Family Trip
Angela's grandfather lives in Canada. Angela calls him a lot. Angela looks for a plane ticket on the Internet. She buys a ticket and goes to Canada. She arrives to Canada and goes to her grandfather's house. Angela sees him through the window. She screams: "Grandpa, Grandpa!" Her grandfather opens the door and starts to cry. Angela hugs him and remembers many good memories. Her grandfather doesn't go out much because he is not in good health, but he likes to go to eat. Angela invites him to dinner at his favorite restaurant. Her grandfather says that he doesn't want to live alone anymore. Angela invites him to live with her. Her grandfather says 'yes', so, she takes him with her to her house. Her grandfather buys a plasma TV and is very happy.

Passage 3: ¿Quiénes Son los Ladrones (*Theives*)?
Dos mujeres con mucho dinero caminan por la calle. Un ladrón las ve y piensa, "ajá, voy a robar todo su dinero". El ladrón las sigue a un restaurante. Las mujeres entran al restaurante. El mesero las saluda y van a una mesa frente a la ventana. El ladrón las escucha cuando están en la mesa. Las mujeres hacen su plan de ataque y deciden que van a robar el restaurante. El ladrón está sorprendido. De repente, las mujeres empiezan a gritar, "¡Vamos a robar todo su dinero!". El gerente abre la caja fuerte y ellas toman todo el dinero. El ladrón las mira. La gente grita y una persona llama a la policía. Llega la policía muy rápidamente y las llevan a la cárcel.

Accompanying questions:
1. Where do the women go?
    A. To their house
    B. To eat dinner
    C. To the bathroom

2. Who does the money come from?
    A. The women
    B. The waiter

C. The manager

3. Who robs the restaurant?
   A. The bus boy
   B. The original thief
   C. The women

Passage 3 (translated): Who are the Thieves?
Two women with a lot of money are walking down the street. A thief sees them and thinks, "aha, I am going to rob all of their money". The thief follows them to a restaurant. The women enter the restaurant. The waiter greets them and they go to a table in front of the window. The thief listens to them when they are at the table. The women make their plan of attack and decide that they are going to rob the restaurant. The thief is surprised. All of a sudden, the women begin to shout, "We are going to rob your money!" The manager opens the safe and they take all of the money. The thief watches them. The manager screams and a person calls the police. The police arrive very quickly and take them to jail.

Passage 4: ¿Adónde Van?
Dos estudiantes están en la escuela. Caminan por la escuela y no pueden encontrar su clase. Una maestra los ve y dice, "¿adónde van?". Los estudiantes dicen que buscan su salón de clase. La maestra los lleva a su salón de clase. Cinco minutos después la maestra los mira en el pasillo otra vez. La maestra sigue a los estudiantes. Los estudiantes salen de la escuela y van a su carro. La maestra los sigue a su carro. La maestra ve que los estudiantes salen de su carro con dos libros. La maestra se da cuenta de que esos libros son de ella, ¡los estudiantes se están robando sus libros! La maestra grita mucho. La policía los lleva a la cárcel. Sus padres no los abrazan.

Accompanying questions:
1. In the hallway the teacher sees...
   A. two students.
   B. two people who are not students at the school.
   C. security guards.

2. First, the students were looking for…
   A. their books.
   B. their class.
   C. their classmate.

3. Whose books did the students get from their car?
   A. Their own books
   B. Another student's books
   C. The teacher's books

Passage 4 (translated): Where are you going?
Two students are at school. They are walking through the school and they can't find their class. A teacher sees them and says, "Where are you going?" The students say that they are looking for their classroom. The teacher takes them to their classroom. Five minutes later the teacher sees them in the hallway again. The teacher follows the students. The students leave the school and go to her car. The teacher follows them to her car. The teacher sees that the students leave her car with two books. The teacher realizes that those books are hers. The students are stealing her books! The teacher screams a lot. The police take them to jail. Their parents don't hug them.

APPENDIX D – INPUT FLOOD WITH TEXT ENHANCEMENT PASSAGES

Passage 1: Un Dia en La Escuela
Juan va a la escuela y siempre sigue a una chica en particular. Un día Juan conoce a Marisol, una muchacha bonita. Juan **la** saluda de beso en la clase de biología. Juan regresa a su casa. Quiere hablar con ella; entonces busca su número. Encuentra su número y **la** llama por teléfono. Juan y Marisol hablan por dos horas. Juan está muy nervioso, pero quiere ir al cine con ella. Juan **la** invita al cine y ella acepta. Van al cine, comen muchos dulces y toman un refresco muy grande. Después de la película regresan a la casa de Marisol. Juan **la** besa y Marisol está muy feliz. Al día siguiente Juan **la** lleva a comer y a conocer a sus padres. Sus padres **la** abrazan y dicen: "bienvenida a la familia".

Pasaje 1 (translated): One day in School
Juan goes to school and always follows one girl in particular. One day Juan meets Marisol, a beautiful girl. Juan greets **her** with a kiss in biology class. Juan returns to his house. He wants to talk with her, so he looks up her number. He finds her number and calls **her** by phone. Juan and Marisol talk for two hours. Juan is very nervous, but he wants to go to the movies with her. Juan invites **her** to the movies and she accepts. They go to the movies, eat a lot of sweets and drink a very large soft-drink. After the movie they return to Marisol's house. Juan kisses **her** and Marisol is very happy. The following day Juan takes **her** to eat and meet his parents. His parents hug **her** and say: "welcome to the family".

Passage 2: Un Viaje Familiar
El abuelo de Ángela vive en Canadá. Ángela **lo** llama mucho. Ángela busca un boleto de avión en el Internet. Compra el boleto y va a Canadá. Llega a Canadá y va a la casa de su abuelo. Ángela **lo** ve por la ventana. Grita: "¡Abuelo, Abuelo!" Su abuelo abre la puerta y empieza a llorar. Ángela **lo** abraza y recuerda muchos buenos momentos. Su abuelo no sale mucho porque no tiene muy buena salud, pero le gusta ir a comer. Ángela **lo** invita a cenar a su restaurante favorito. Su abuelo dice que ya no quiere vivir solo. Ángela **lo** invita a vivir con ella. Su abuelo dice que sí, entonces **lo** lleva con ella a su casa. Su abuelo compra un televisor plasma y está muy feliz.

Passage 2 (translated): A Family Trip
Angela's grandfather lives in Canada. Angela calls **him** a lot. Angela looks for a plane ticket on the Internet. She buys a ticket and goes to Canada. She arrives to Canada and goes to her grandfather's house. Angela sees **him** through the window. She screams: "Grandpa, Grandpa!" Her grandfather opens the door and starts to cry. Angela hugs **him** and remembers many good memories. Her grandfather doesn't go out much because he is not in good health, but he likes to go to eat. Angela invites **him** to dinner at his favorite restaurant. Her grandfather says that he doesn't want to live alone anymore. Angela invites **him** to live with her. Her grandfather says 'yes', so, she takes **him** with her to her house. Her grandfather buys a plasma TV and is very happy.

Passage 3: ¿Quiénes Son los Ladrones (*Theives*)?
Dos mujeres con mucho dinero caminan por la calle. Un ladrón **las** ve y piensa, "ajá, voy a robar todo su dinero". El ladrón **las** sigue a un restaurante. Las mujeres entran al restaurante. El mesero **las** saluda y van a una mesa frente a la ventana. El ladrón **las** escucha cuando están en la mesa. Las mujeres hacen su plan de ataque y deciden que van a robar el restaurante. El ladrón está sorprendido. De repente, las mujeres empiezan a gritar, "¡Vamos a robar todo su dinero!". El gerente abre la caja fuerte y ellas toman todo el dinero. El ladrón **las** mira. La gente grita y una persona llama a la policía. Llega la policía muy rápidamente y **las** llevan a la cárcel.

Passage 3 (translated): Who are the Thieves?
Two women with a lot of money are walking down the street. A thief sees **them** and thinks, "aha, I am going to rob all of their money". The thief follows **them** to a restaurant. The women enter the restaurant. The waiter greets **them** and they go to a table in front of the window. The thief listens to **them** when they are at the table. The women make their plan of attack and decide that they are going to rob the restaurant. The thief is surprised. All of a sudden, the women begin to shout, "We are going to rob your money!" The manager opens the safe and they take all of the money. The thief watches **them**. The manager screams and a person calls the police. The police arrive very quickly and take **them** to jail.

Passage 4: ¿Adónde Van?
Dos estudiantes están en la escuela. Caminan por la escuela y no pueden encontrar su clase. Una maestra **los** ve y dice, "¿adónde van?". Los estudiantes dicen que buscan su salón de clase. La maestra **los** lleva a su salón de clase. Cinco minutos después la maestra **los** mira en el pasillo otra vez. La maestra sigue a los estudiantes. Los estudiantes salen de la escuela y van a su carro. La maestra **los** sigue a su carro. La maestra ve que los estudiantes salen de su carro con dos libros. La maestra se da cuenta de que esos libros son de ella, ¡los estudiantes se están robando sus libros! La maestra grita mucho. La policía **los** lleva a la cárcel. Sus padres no **los** abrazan.

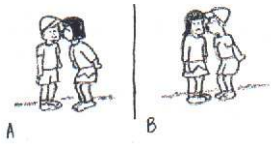
Passage 4 (translated): Where are you going?
Two students are at school. They are walking through the school and they can't find their class. A teacher sees **them** and says, "where are you going?" The students say that they are looking for their classroom. The teacher takes **them** to their classroom. Five minutes later the teacher sees **them** in the hallway again. The teacher follows the students. The students leave the school and go to her car. The teacher follows **them** to her car. The teacher sees that the students leave her car with two books. The teacher realizes that those books are hers. The students are stealing her books! The teacher screams a lot. The police take **them** to jail. Their parents don't hug **them**.

APPENDIX E – STRUCTURED INPUT MATERIALS

1. [Participant reads: “Lo llaman sus padres por teléfono”] (“His parents call him”)

2. [Particpant reads: “Las invita al cine Manuel”] (“Manuel invites them to the movies”)

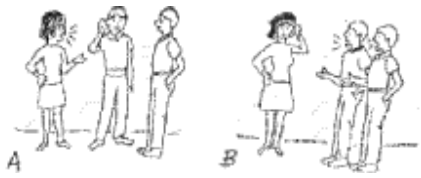
3. [Participant reads: “El niño besa a la niña”] (“The boy kisses the girl”)



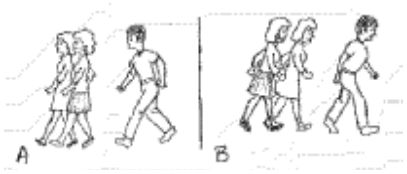
4. [Participant reads: “Lo escucha la abuela”] (“The grandma listens to him”)

5. [Participant reads: “La saluda la madre”] (“The mother greets her”)

6. [Participant reads: “La mujer los escucha”] (“The woman listens to them”)



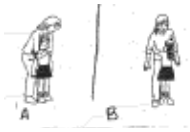
7. [Participant reads: “El chico sigue a las chicas”] (“The guy follows the women”)



8. [Participant reads: “Lo ve el perro”] (“The dog sees him”)

9. [Participant reads: “Los Saluda la mujer”] (“The woman greets them”)

10. [Participant reads: “La abraza la hija”] (“The daughter hugs her”)



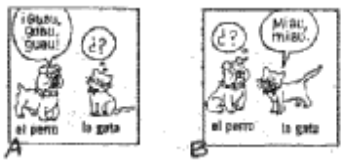
11. [Participant reads: “La abuela lo escucha”] (“The grandma listens to him”)

12. [Participant reads: “Las sigue Pedro”] (“Pedro follows them”)

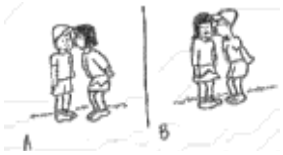
13. [Participant reads: “Los escucha la mujer”] (“The woman listens to them”)

14. [Participant reads: “El perro ve al gato”] (“The dog sees the cat”)

15. [Participant reads: “No la comprende el perro”] (“The dog doesn’t understand her”)

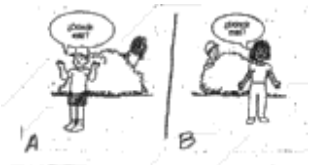


16. [Participant reads: “Lo besa la niña”] (“The girl kisses him”)



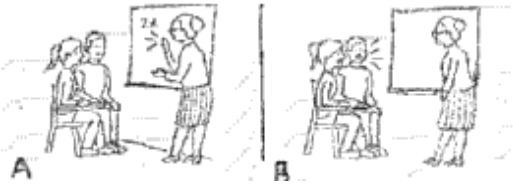
17. [Participant reads: “Las escucha Luis”] (“Luis listens to them”)

18. [Participant reads: “El niño la busca”] (“The boy looks for her”)

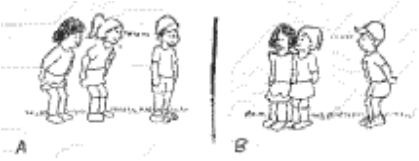


19. [Participant reads: “La madre saluda a la hija” (“The mother greets the daughter”)

20. [Participant reads: “Los escucha la profesora”] (“The professor listens to them”)



21. [Participant reads: “Las ve el niño”] (“The boy sees them”)

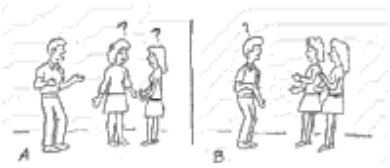


22. [Participant reads: “El chico las invita”] (“The boy invites them”)

23. [Participant reads: “La llama Roberto”] (“Robert calls her”)

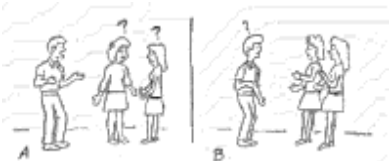
24. [Participant reads: “Los sigue la mujer”] (“The woman follows them”)

25. [Participant reads: “No las comprende el hombre”] (“The man doesn’t understand them”)

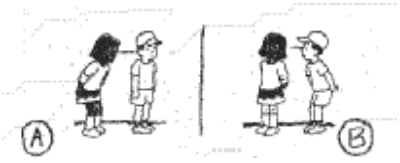


26. [Participant reads: “Los llama Juan”] (“John calls them”)

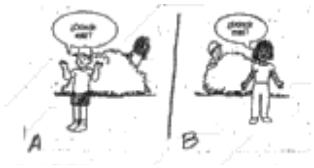
27. [Participant reads: “Las chicas no comprenden al hombre”] (“The women don’t understand the man”)



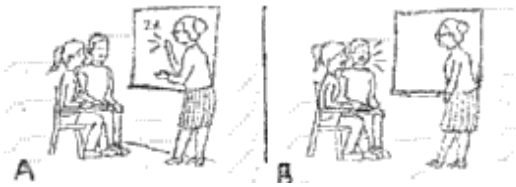
28. [Participant reads: “La ve el niño”] (“The boy sees her”)



29. [Participant reads: “Lo busca la niña”] (“The girl looks for him”)



30. [Participant reads: “La profesora escucha a los estudiantes”] (“The professor listens to the students”)



APPENDIX F – FOCUSED INPUT MATERIALS

1. [Participant reads: “Las ve el niño”] (“The boy sees them”)

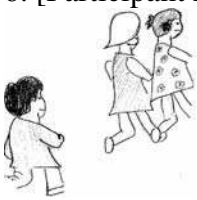
2. [Participant reads: “Las chicas no comprenden al hombre”] (“The girls don’t understand the man”)

3. [Participant reads: “La mujer los escucha”] (“The woman listens to them”)

4. [Participant reads: “La madre saluda a la hija”] (“The mother greets her daughter”)

5. [Participant reads: “El niño besa a la niña”] (“The boy kisses the girl”)

6. [Participant reads: “El chico sigue a las chicas”] (“The boy follows the girls”)



7. [Participant reads: “Lo escucha la abuela”] (“The grandmother listens to the boy”)

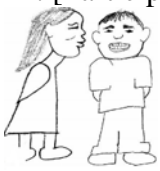
8. [Participant reads: “No la comprende el perro”] (“The dog doesn’t understand her”)

9. [Participant reads: “No las comprende el hombre”] (“The man doesn’t understand them”)

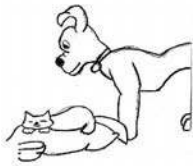
10. [Participant reads: “Los escucha la mujer”] (“The woman listens to them”)

11. [Participant reads: “El perro ve al gato”] (“The dog sees the cat”)

12. [Participant reads: “Lo besa la niña”] (“The girl kisses the boy”)



13. [Participant reads: “Lo ve el perro”] (“The dog sees it”)



14. [Participant reads: “La abraza la hija”] (“The daughter hugs her”)

15. [Participant reads: “El niño la busca”] (“The boy looks for her”)

16. [Participant reads: “Los saluda la mujer”] (“The woman greets them”)

17. [Participant reads: “Las sigue Pedro”] (“Pedro follows them”)

18. [Participant reads: “El chico las invita”] (“The boy invites them”)

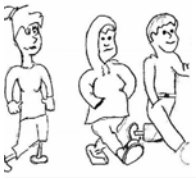
19. [Participant reads: “La abuela lo escucha”] (“The grandmother listens to him”)

20. [Participant reads: “Las invita al cine Manuel”] (“Manuel invites them to the movies”)

21. [Participant reads: “Lo llaman sus padres por teléfono”] (“His parents call him”)

22. [Participant reads: “La profesora escucha a los estudiantes”] (“The profesor listens to the students”)

23. [Participant reads: “Los sigue la mujer”] (“The woman follows them”)



24. [Participant reads: “La ve el niño”] (“The boy sees her”)

25. [Participant reads: “Las escucha Luis”] (“Luis listens to them”)

26. [Participant reads: “Lo busca la niña”] (“The girl looks for him”)

27. [Participant reads: “Los escucha la profesora”] (“The profesor listens to them”)

28. [Participant reads: “La llama Roberto”] (“Roberto calls her”)

29. [Participant reads: “Los llama Juan”] (“Juan calls them”)

30. [Participant reads: “La saluda la madre”] (“The mother greets her”)

APPENDIX G – ASSESSMENT MEASURES

Sentence-Level Production: Version A

Part 1

Instructions: On each screen you will see a pair of pictures of two successive events. Complete the narration of the **SECOND** event by finishing each sentence. Write the rest of the sentence on your answer sheet. (You need not rewrite the entire sentence.)

Let's look at a couple of examples in English first:

Press any key on the keyboard to continue

For example, you see:

Marco studies and then _____ (*to eat*)

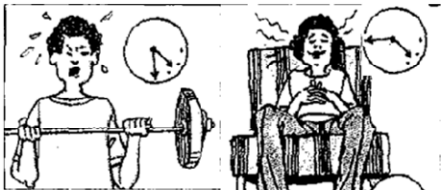
Then, you fill in the blank with a form of the verb *to eat*.

So, you would write on your answer sheet:

eats dinner alone.

Press any key on the keyboard to continue

Let's try another: you see



Juan lifts weights and then _____ (*to listen*).

Then, you fill in the blank with a form of the verb *to listen*.

So, you would write on your answer sheet:

listens to music.

Press any key on the keyboard to continue

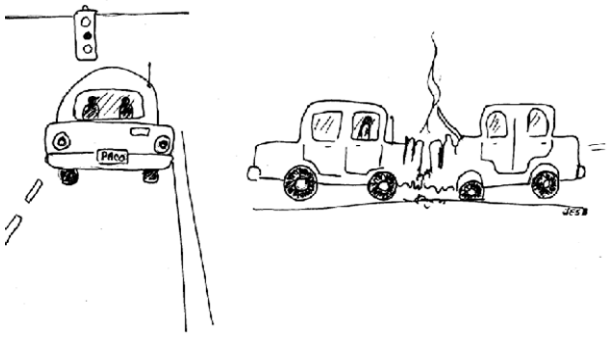
Remember:

If you feel you don't have enough time to finish each one, or you're not sure about them, don't worry, just do the best you can and write down as much as you can in the time allotted.

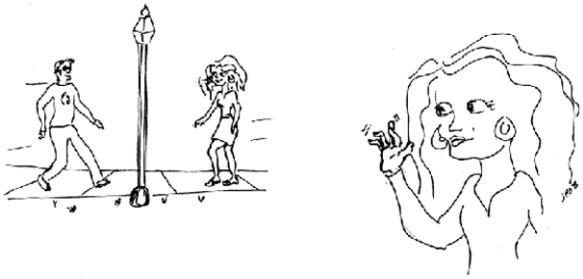
From this point on, the screens will change on their own.

Answer in Spanish!
Ok, lets begin!

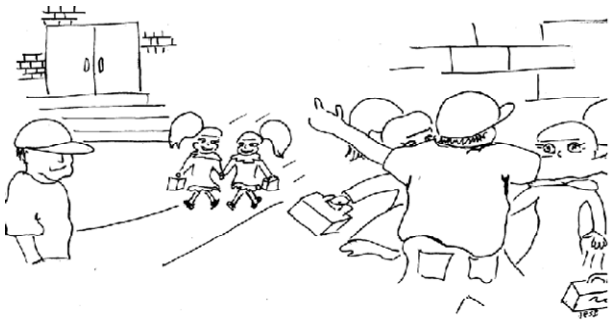
Press any key on the keyboard to continue



1. Juana y Paco están en el carro y _____ (tener).



2. María encuentra a un amigo y luego _____(saludar).



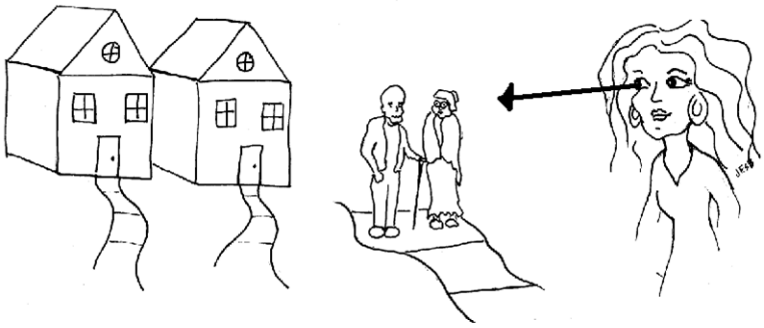
3. Juan va a la escuela por sus hermanas y luego _____(abrazar).

4. Felipe está en el supermercado y _____ (comprar).

5. La policía reconoce a los ladrones y después_____(seguir).

6. Paco está enamorado de María y _____ (llamar).

7. Perla y María _____ (ser) amigas.



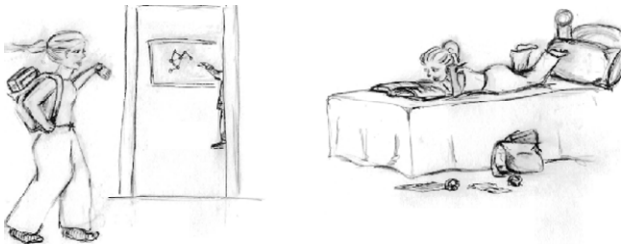
8. María vive cerca de sus abuelos entonces _____ (ver).

9. Felipe es impaciente con sus amigas pero siempre_____(escuchar).

10. Esmeralda conoce a Paco y luego _____ (llamar).

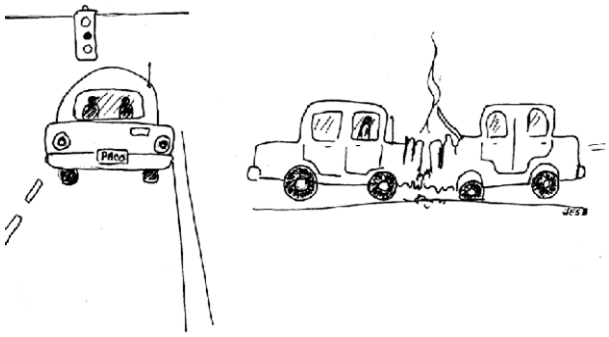
11. Pedro y María están en el parque y _____ (caminar).

12. Pedro piensa en Maria y después _____(invitar).



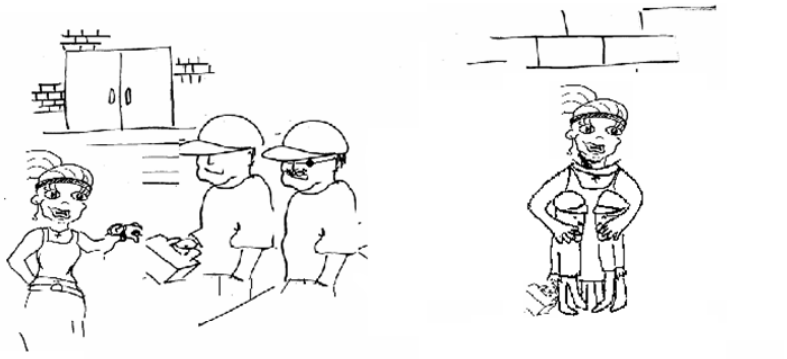
13. Josefa va a clase y _____(estudiar).

Sentence-Level Production: Version B



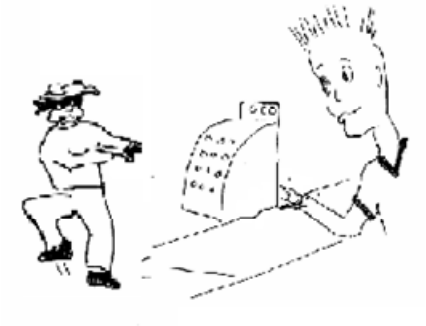
1. Juana y Paco están en el carro y _____ (tener).

2. Juan encuentra a una amiga y luego _____ (saludar).



3. María va a la escuela por sus hermanos y luego _____ (abrazar).

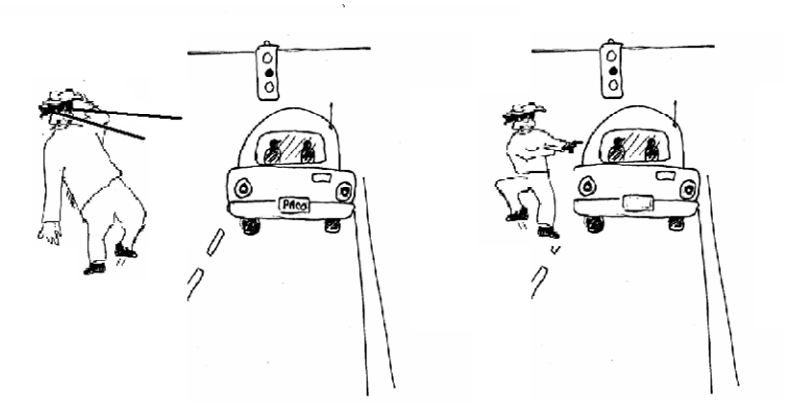
4. Felipe está en el supermercado y _____ (comprar).



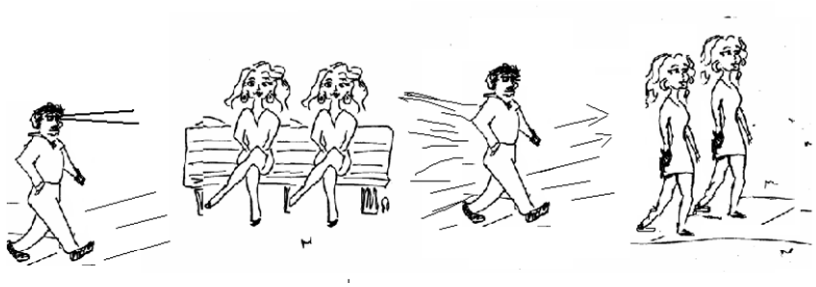
5. El ladrón va a la tienda y luego _____ (robar).

6. Linda es impaciente con sus amigos pero siempre _____ (escuchar)

7. Perla y María _____ (ser) amigas.

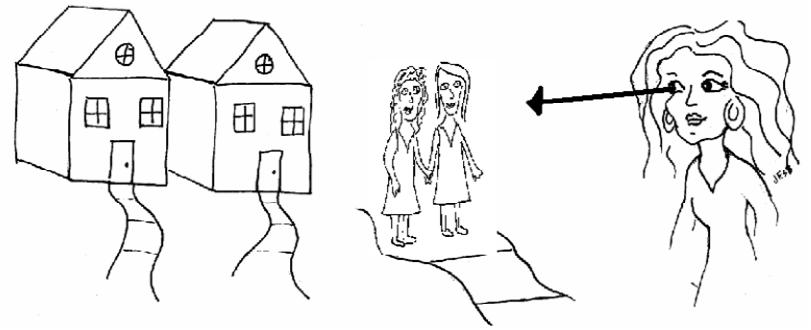


8. El ladrón ve al coche y luego _____ (robar).



9. El hombre reconoce a las mujeres y después _____ (seguir)

10. Pedro y María están en el parque y _____ (caminar).

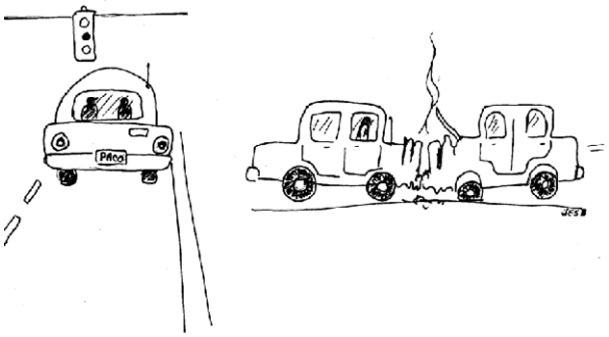


11. María vive cerca de sus abuelos entonces _____ (ver).

12. María está enamorada de Pedro y _____ (llamar).

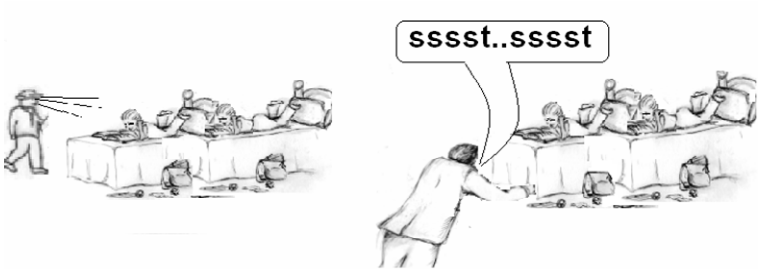
13. Josefa va a clase y _____(estudiar).

Sentence-Level Production: Version C



1. Juana y Paco están en el carro y _____ (tener).

2. La niña saluda al niño y entonces _____ (besar).



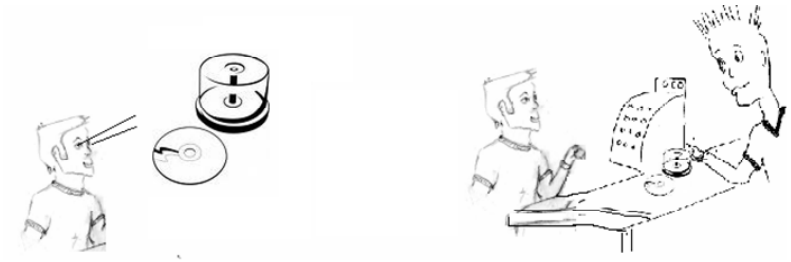
3. El esposo mira a los niños y entonces _____ (despertar).

4. Felipe está en el supermercado y _____ (comprar).

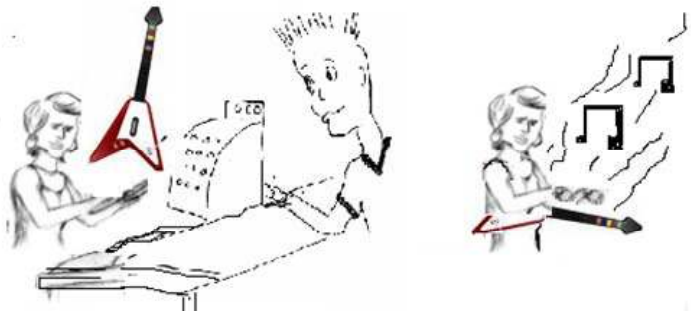
5. El hombre llama a la mujer y entonces _____ (visitar).

6. Silvia llama a Carlos y luego _____ (esperar) en la estación.

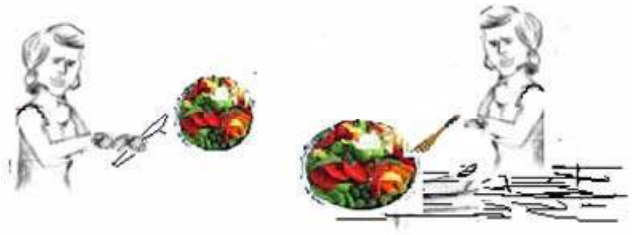
7. Perla y María _____ (ser) amigas.



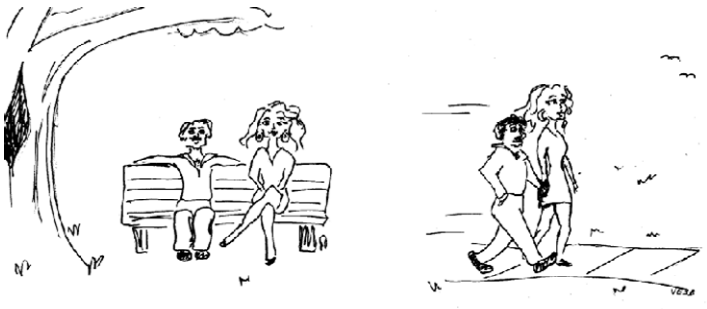
8. Juan ve unos discos y luego _____ (comprar).



9. Julia compra una guitarra y luego _____ (tocar).



10. Elena prepara unas verduras y luego _____ (comer).

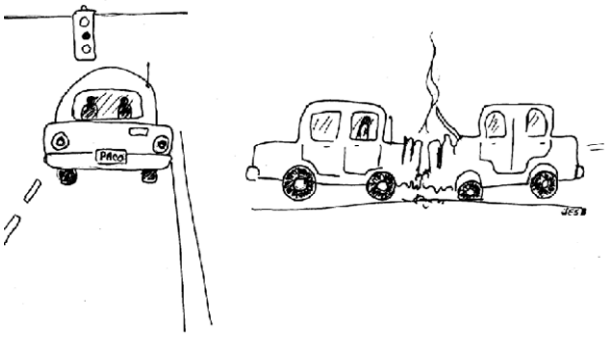


11. Pedro y María están en el parque y _____ (caminar).

12. Jaime compra unas cervezas y luego _____ (tomar).

13. Josefa va a clase y _____(estudiar).

Sentence-Level Production: Version D

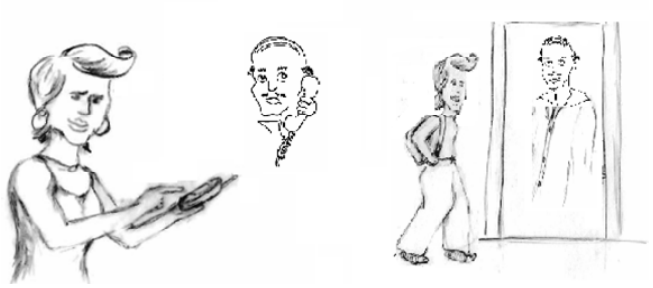


1. Juana y Paco están en el carro y _____ (tener).

2. El niño saluda a la niña y entonces _____ (besar).

3. El niño mira a sus hermanas y luego _____ (despertar).

4. Felipe está en el supermercado y _____ (comprar).



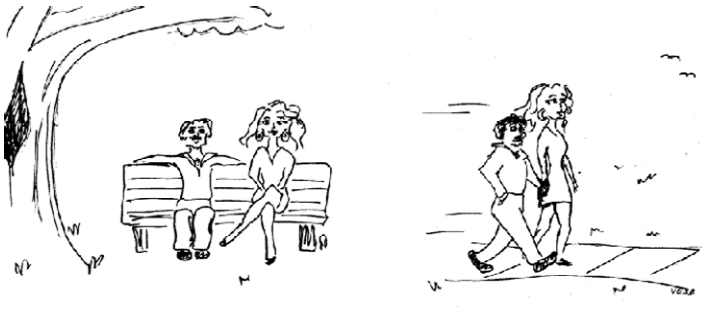
5. La mujer llama al hombre y entonces _____ (visitar)

6. El hombre escucha a las mujeres pero no _____ (creer).

7. Perla y María _____ (ser) amigas.

8. Carlos llama a Silvia y luego _____ (esperar).

9. Juan compra un piano y luego _____ (tocar).



10. Pedro y María están en el parque y _____ (caminar).

11. Marco prepara unos huevos y luego _____ (comer).

12. Elena pide un café y una vaso de agua y luego _____ (tomar).

13. Josefa va a clase y _____(estudiar).

Great job! Now let's go on to Part 2

Part 2

Instructions: On each screen you will see a series of pictures. Note that each series of pictures consists of four successive events. Describe **EACH** event individually by writing a sentence on your answer sheet in the spaces provided.

You may use the verbs provided!

Let's look at an example:

For example, you see:

What is Pepe doing?

***Verbs**: to listen to music, to play the guitar, to eat, to lift weights

On your answer sheet you could write:
1. He eats a big breakfast. 2. He plays the guitar.
3. He listens to music. 4. He lifts weights at the gym.
* Note that the verbs are not in the order they are used.

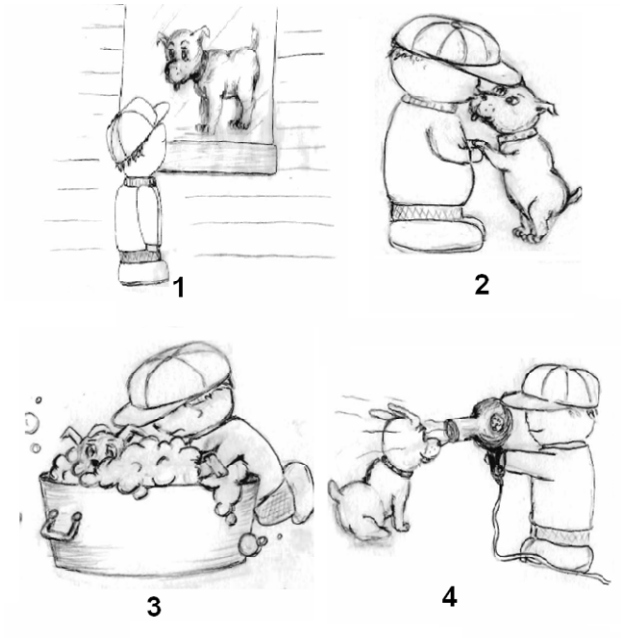
Remember

If you feel you don't have enough time to finish each one, or you're not sure about them, don't worry, just do the best you can.

Provide your answers in **SPANISH**!

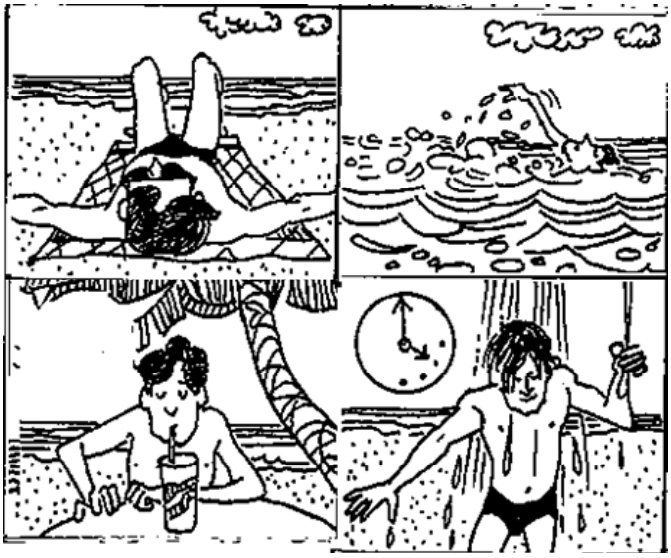
Ok, lets begin!

What is the boy doing to the dog (*el perro*)?



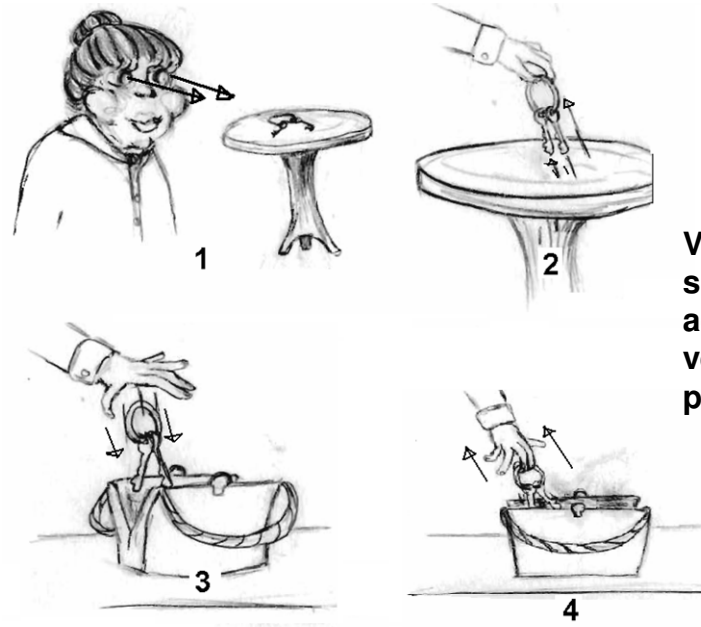
Verbs:
besar
lavar
secar
ver

What did Raúl do at the beach yesterday?



Verbs:
bañarse
tomar
tomar el sol
nadar

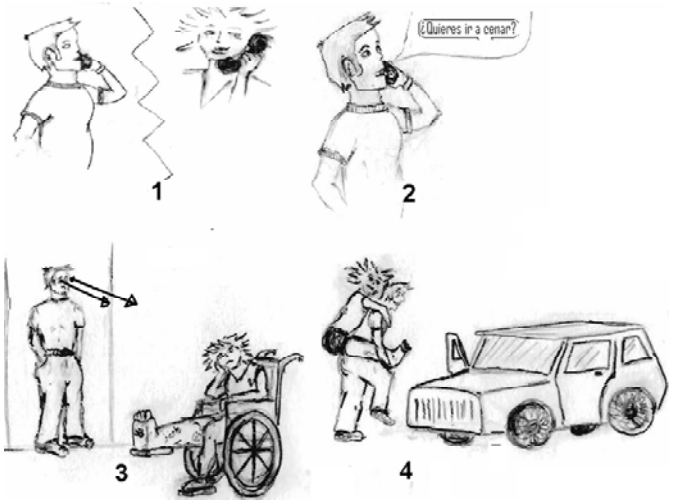
What is the woman doing with her keys (*las llaves*)?



Verbs:
sacar
agarrar/recoger
ver
poner

Discourse -Level Production: Version B

What is Pepe doing to Elsa (*ella*)?

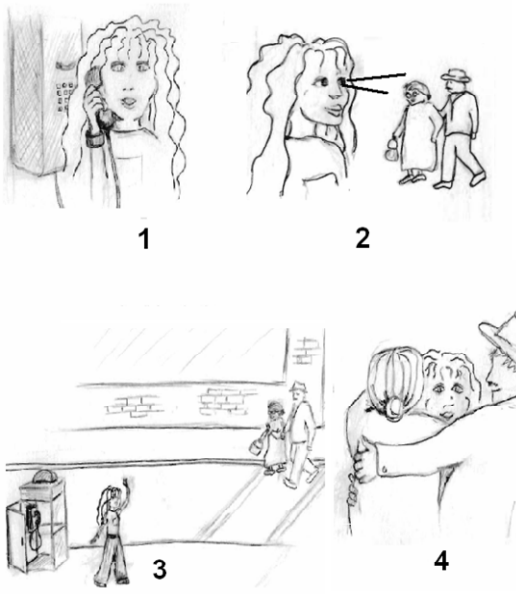


Verbs:
llevar
ver
invitar
llamar

What did José do yesterday?

Verbs:
comer
bañarse
nadar
ver

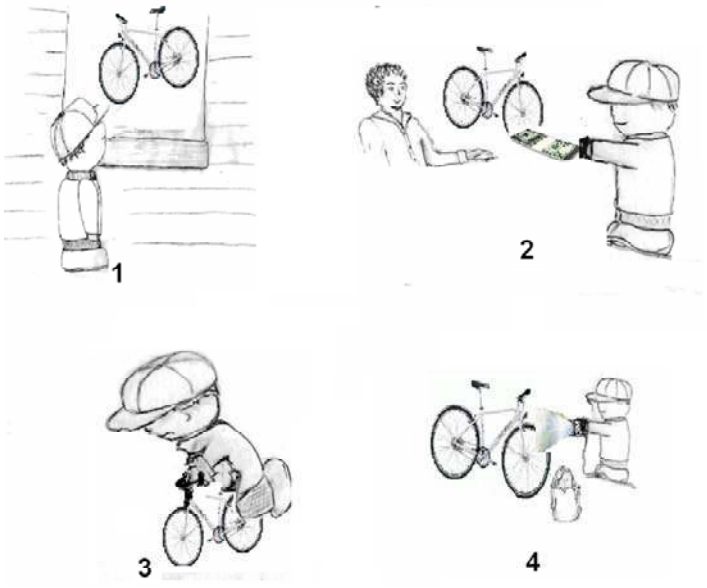
What is María doing to her parents (*sus padres*)?



Verbs:
llamar
ver
abrazar
saludar

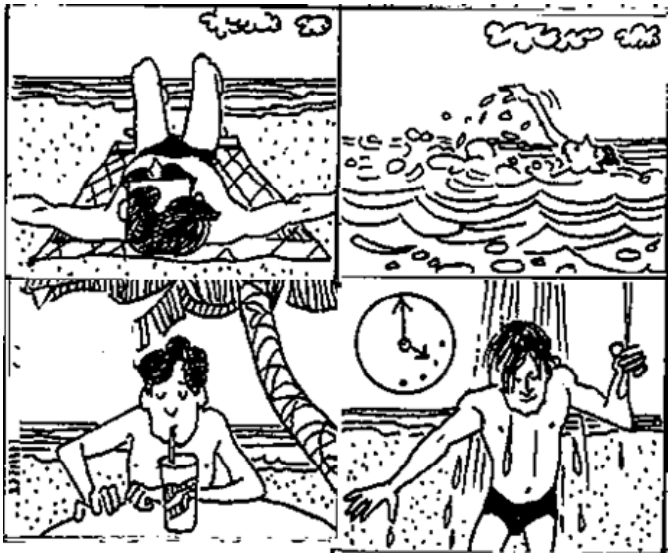
Discourse -Level Production: Version C

1. What is the boy doing with the bike (la bicicleta)?



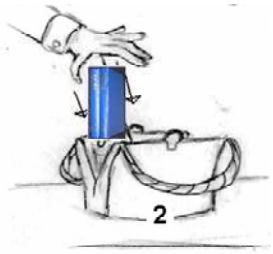
Verbs:
lavar
montar
ver
comprar

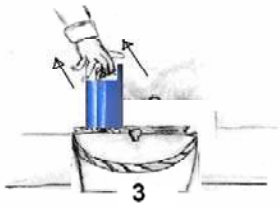
2. What did Raúl do at the beach yesterday?



Verbs:
bañarse
tomar
tomar el sol
nadar

3. What is the woman doing with her books (los libros)?

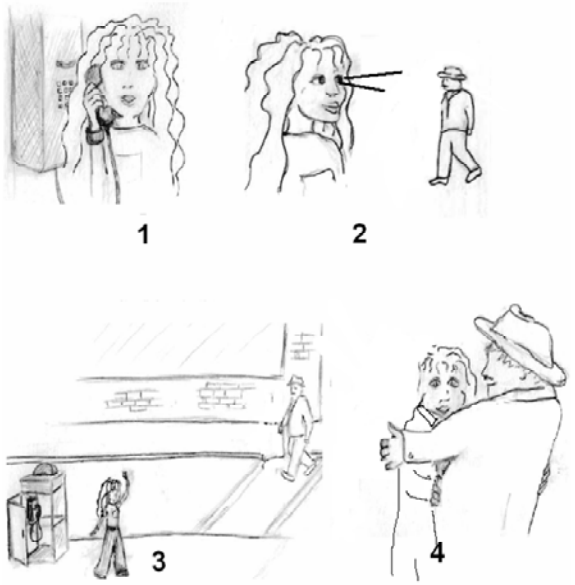




Verbs:
ver
poner
leer
sacar

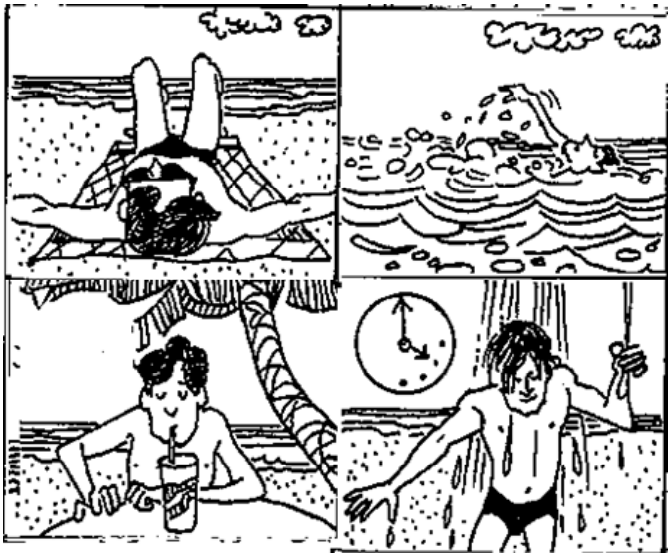
Discourse -Level Production: Version D

1. What is Elsa doing to Pepe (él)?



Verbs:
Ver
Saludar
Llamar
abrazar

2. What did Raúl do at the beach yesterday?

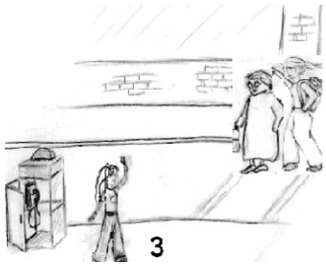


Verbs:
bañarse
tomar
tomar el sol
nadar

3. What is María doing to her girlfriends (sus amigas)?

1

2



3

4

Verbs:
abrazar
ver
saludar
llamar

Great job! Now on to the final part!
Part 3

Part 3

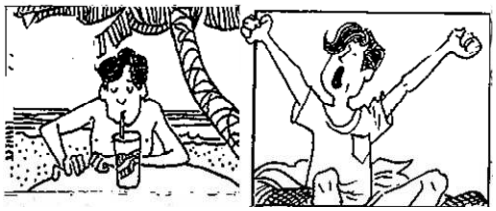
You will read a series of sentences in Spanish accompanied by two pictures. Select the correct picture described in the sentence.

For each question mark either "**A**" or "**B**". If you are not sure choose "**C**" . Mark your response on the answer sheet. You will have eight seconds between sentences to mark your response.

Let's look at an example:

For example, you'll see

"Paco toma un refresco".



Select:

a) Picture "A".
b) Picture "B".
c) Not sure.

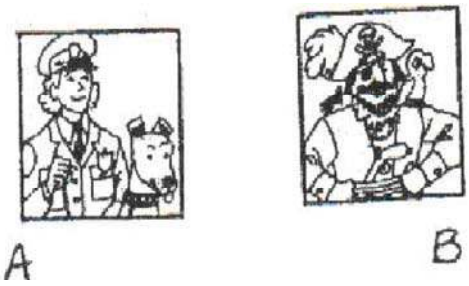
Mark either "A", "B", or "C" on your answer sheet.

Remember:

If you feel you rushed, or you're not sure about your answer, don't worry, just do the best you can.

Ok, lets begin!

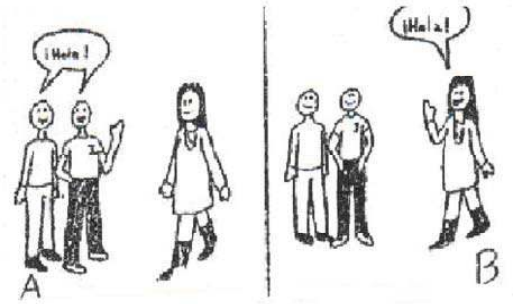
1. “No tiene perro”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

2. “Los saluda la mujer”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

3. “Juan llama a sus padres”.

Select:

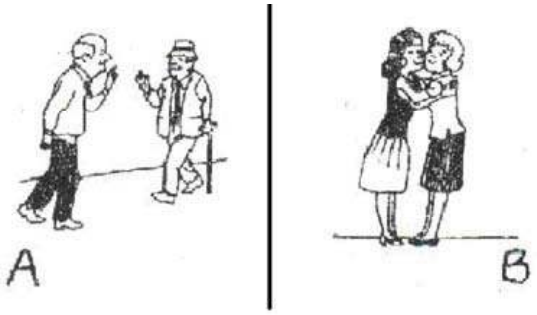
a) Picture “A”.
b) Picture “B”.
c) Not sure.

4. “La busca el niño”.

Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

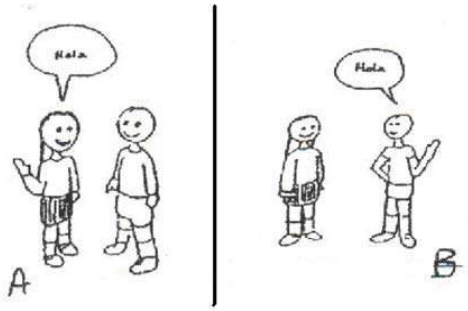
5. “Son amigas”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

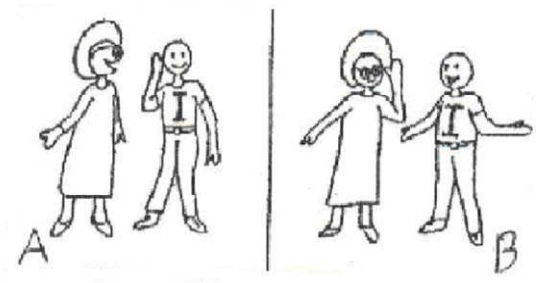
6. “Lo saluda la niña”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

7. “El chico escucha a la abuela”.



Select:

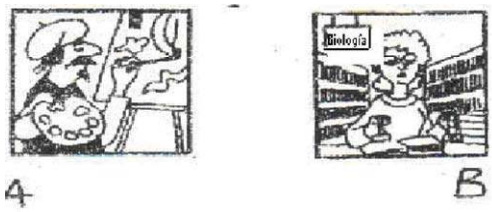
a) Picture “A”.
b) Picture “B”.
c) Not sure.

8. “Las invita al cine José”.

Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

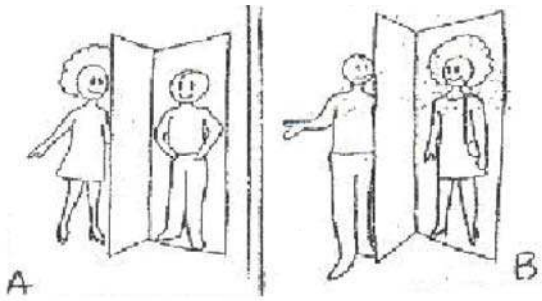
9. “Estudia arte”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

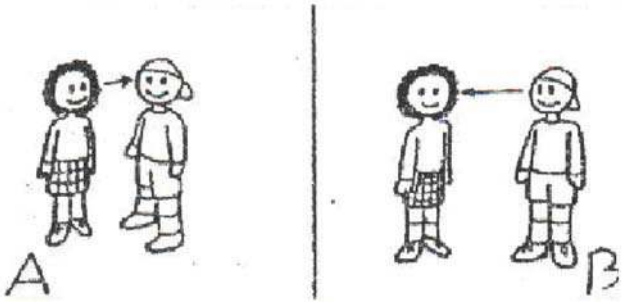
10. “Lo visita la mujer”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

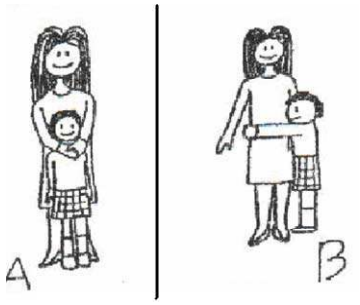
11. “El niño ve a la niña”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

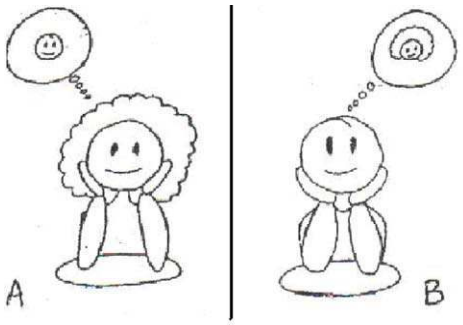
12. “La abraza la madre”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

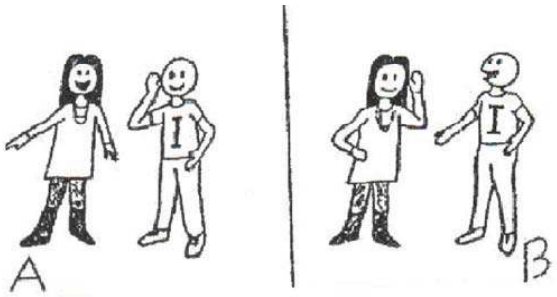
13. “Piensa en ella”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

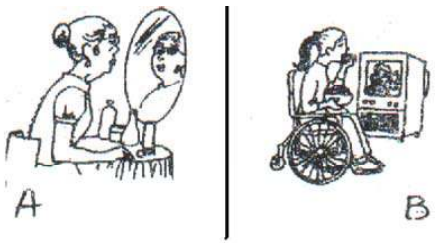
14. “Lo escucha María”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

15. “La mujer se mira”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

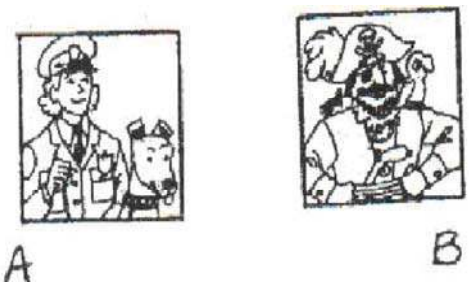
Great job!

Now, turn to page five (5) in your packet and complete a brief language history questionnaire.

We’re almost done!

Interpretation Test: Version B

1. “No tiene perro”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

2. “Lo busca la niña”.

Select:

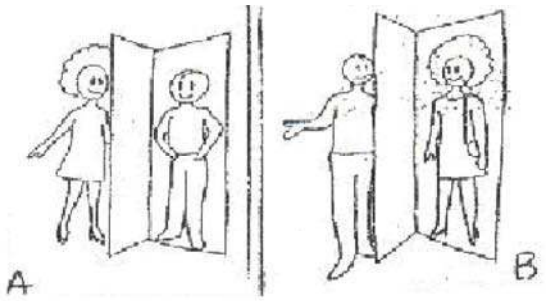
a) Picture “A”.
b) Picture “B”.
c) Not sure.

3. “Sus padres llaman a Juan”.

Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

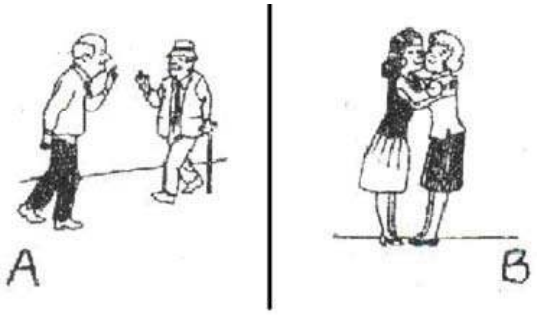
4. “La visita el hombre”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

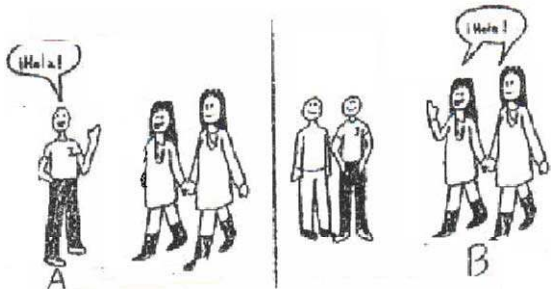
5. “Son amigas”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

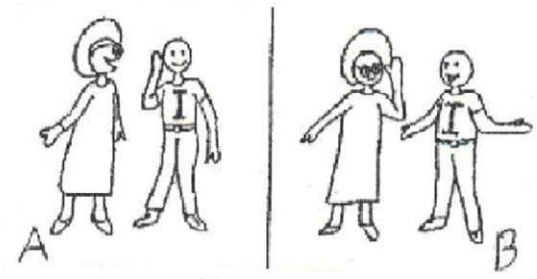
6. “Las saluda el hombre”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

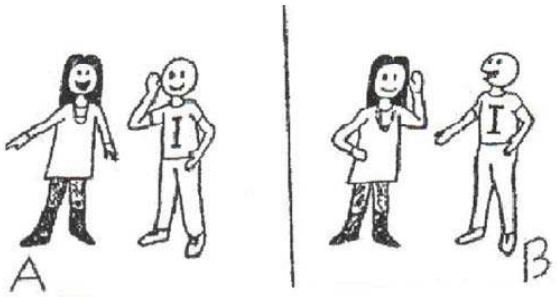
7. “La abuela escucha al chico”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

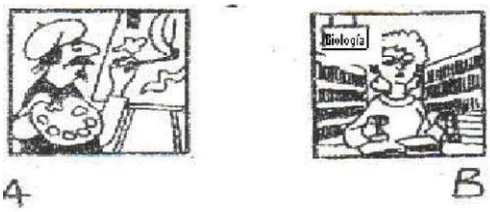
8. “Lo escucha María”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

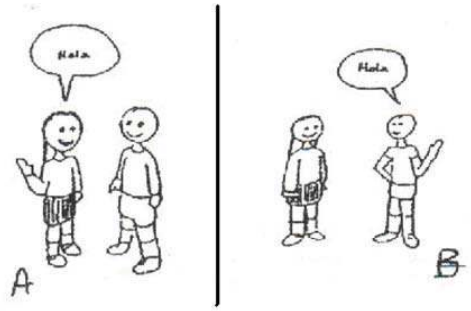
9. “Estudia arte”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

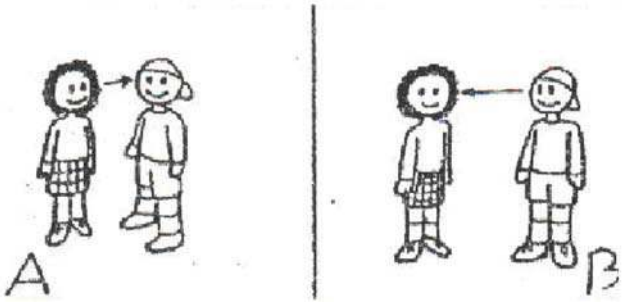
10. “La saluda el niño”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

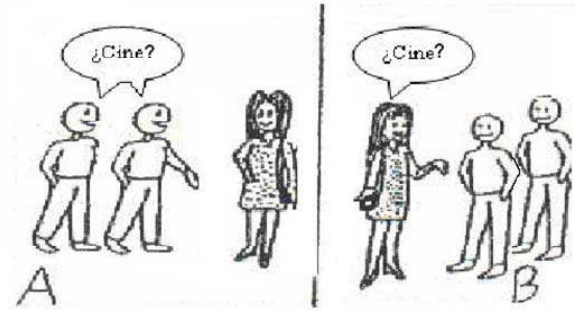
11. “La niña ve al niño”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

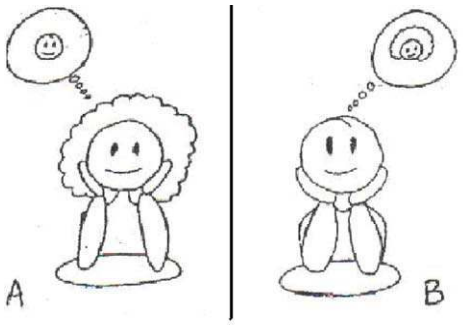
12. “Los invita al cine la mujer”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

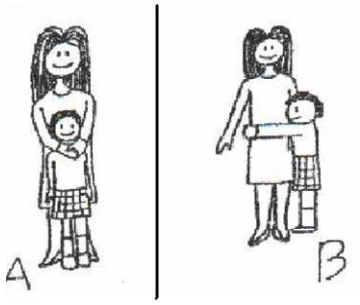
13. “Piensa en ella”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

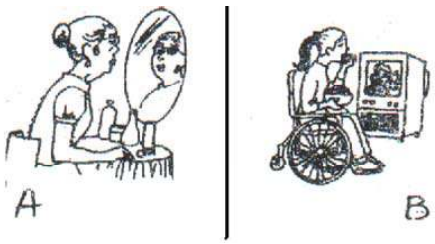
14. “La abraza la hija”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

15. “La mujer se mira”.

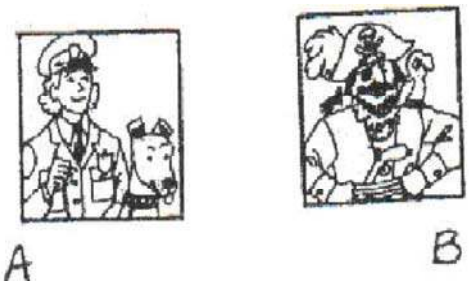


Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

Interpretation Test: Version C

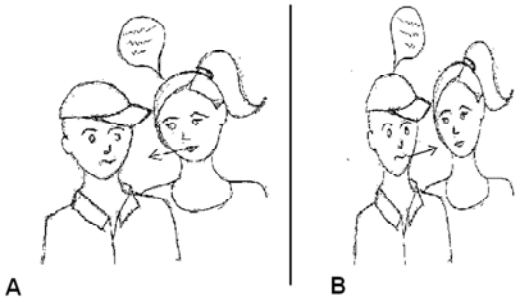
1. “No tiene perro”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

2. “La escucha el chico”.



Select:

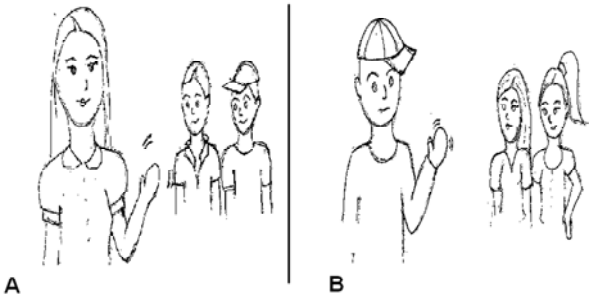
a) Picture “A”.
b) Picture “B”.
c) Not sure.

3. “Juan llama a sus padres”.

Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

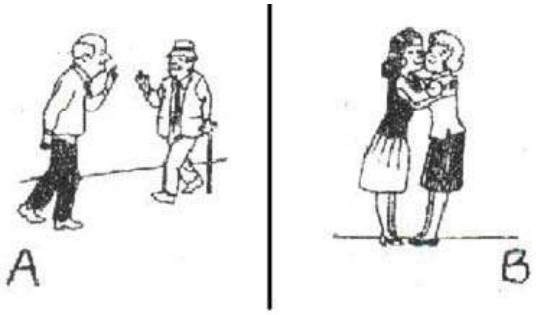
4. “Los saluda la mujer”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

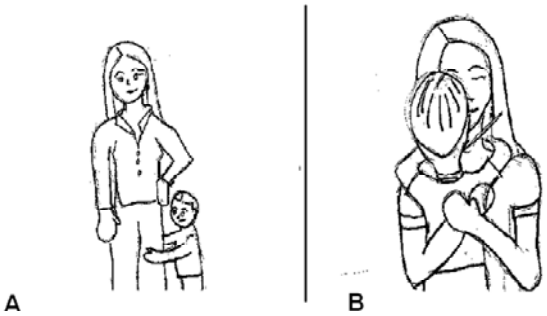
5. “Son amigas”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

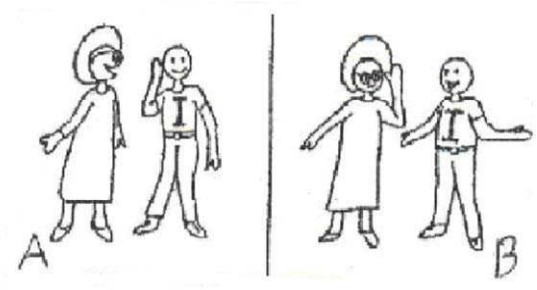
6. “Lo abraza la madre”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

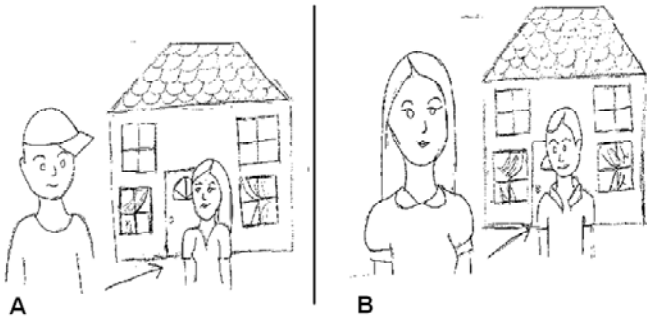
7. “El chico escucha a la abuela”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

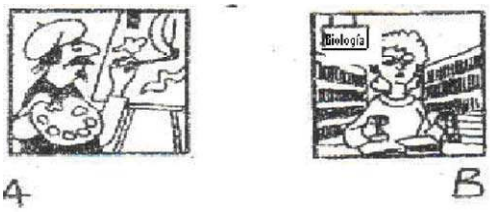
8. “Lo visita María”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

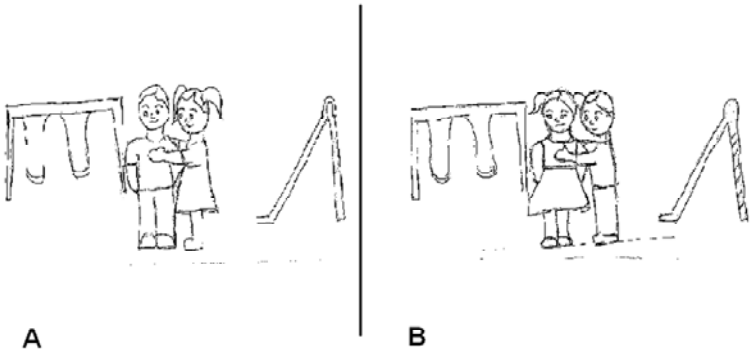
9. “Estudia arte”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

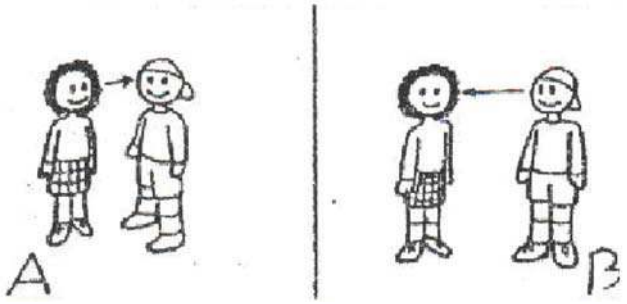
10. “La abraza el chico”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

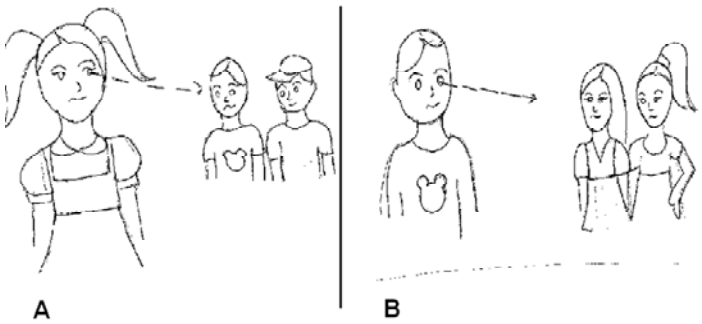
11. “El niño ve a la niña”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

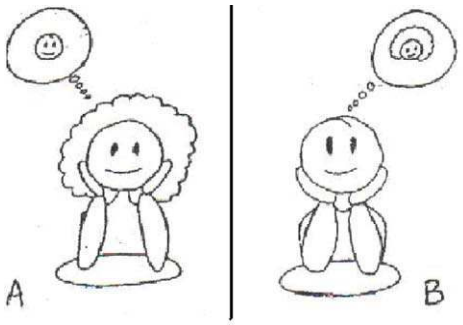
12. “Las ve el niño”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

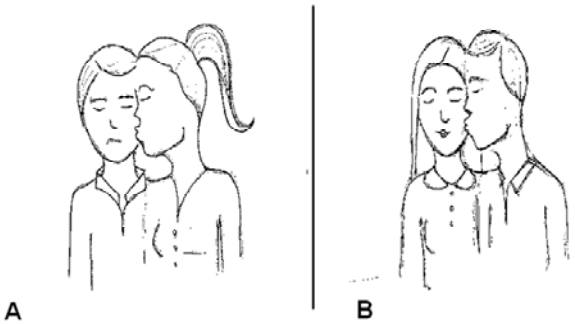
13. “Piensa en ella”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

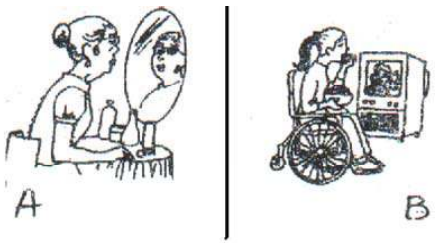
14. “La besa Marco”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

15. “La mujer se mira”.

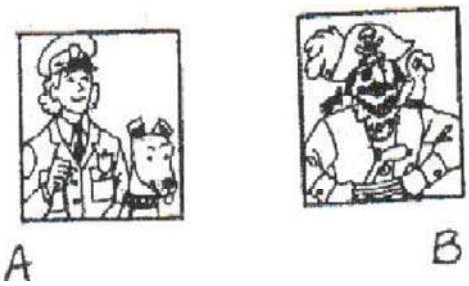


Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

Interpretation Test: Version D

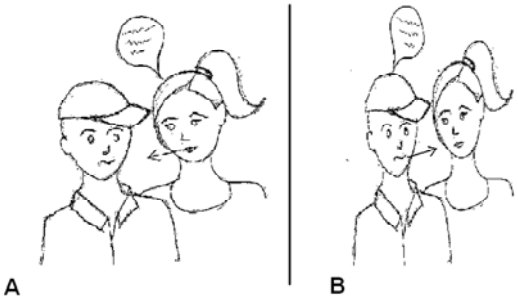
1. “No tiene perro”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

2. “Lo escucha la chica”.



Select:

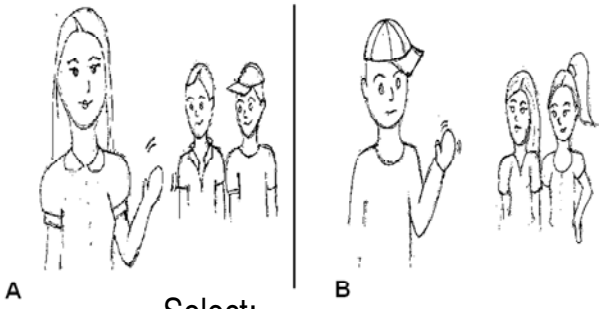
a) Picture “A”.
b) Picture “B”.
c) Not sure.

3. “Sus padres llaman a Juan”.

Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

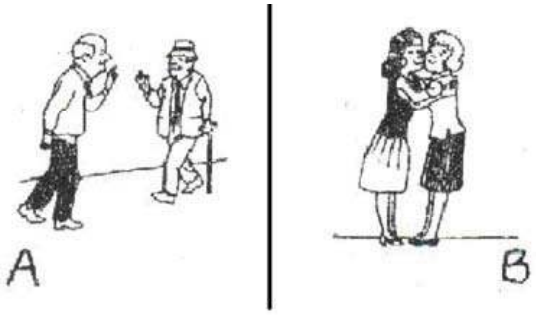
4. “Las saluda el hombre”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

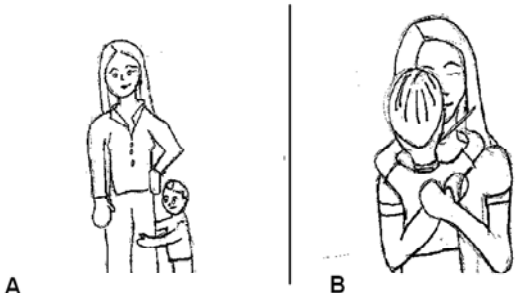
5. “Son amigas”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

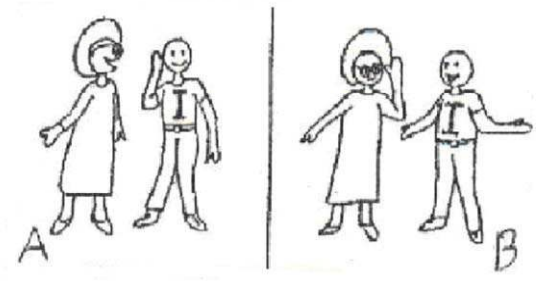
6. “La abraza el hijo”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

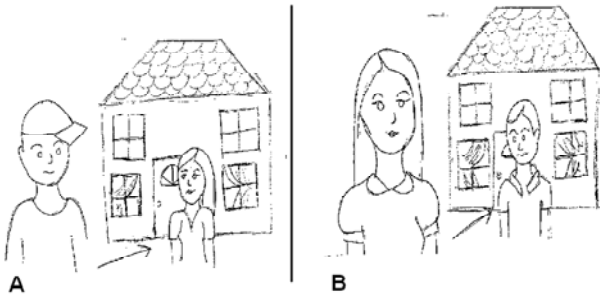
7. “La abuela escucha al chico”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

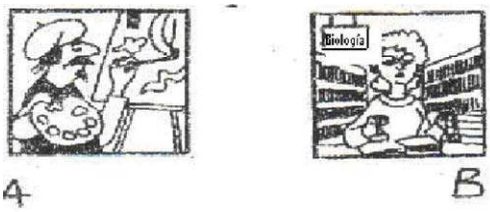
8. “La visita Marco”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

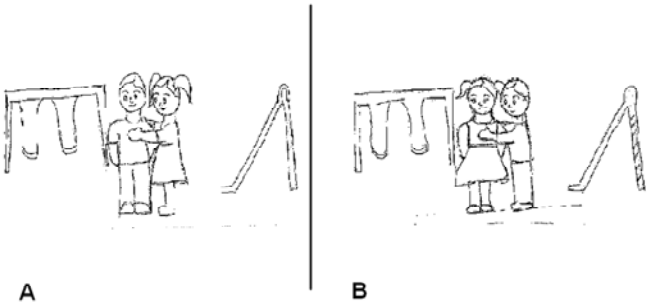
9. “Estudia arte”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

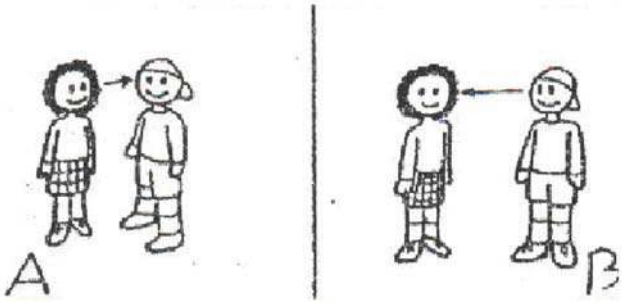
10. “Lo abraza la chica”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

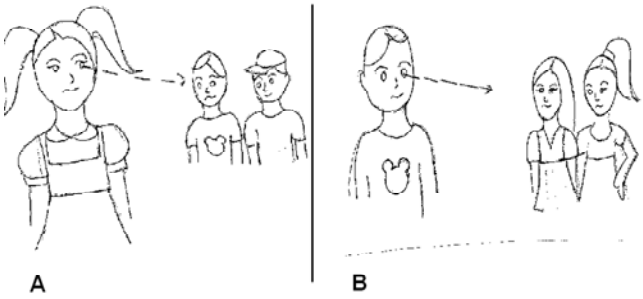
11. “La niña ve al niño”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

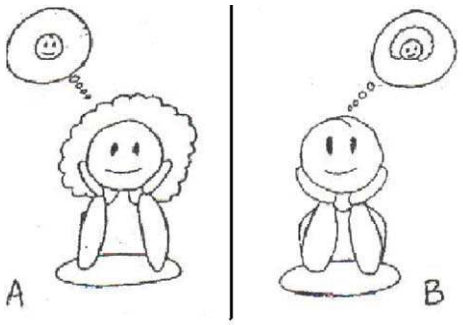
12. “Los ve la niña”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

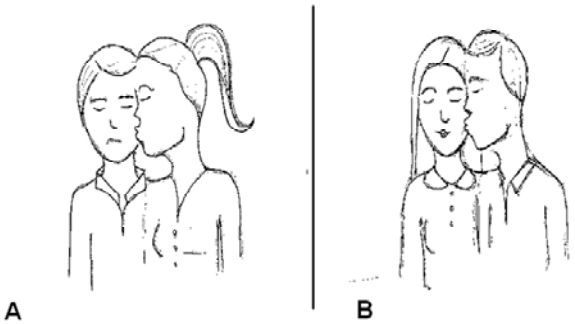
13. “Piensa en ella”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

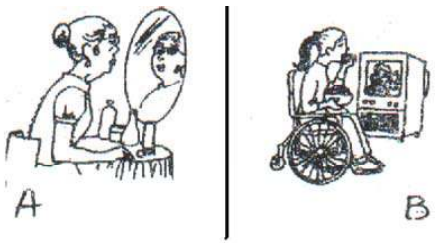
14. “Lo besa María”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

15. “La mujer se mira”.



Select:

a) Picture “A”.
b) Picture “B”.
c) Not sure.

APPENDIX H – TEST ANSWER SHEET

Part I

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

Part II

Picture Series 1

1. _____

2. _____

3. _____

4. _____

Picture Series 2

1. _____

2. _____

3. _____

4. _____

Picture Series 3

1. _____

2. _____

3. _____

4. _____

Part III

1. A B Not sure

2. A B Not sure

3. A B Not sure

4. A B Not sure

5. A B Not sure

6. A B Not sure

7. A B Not sure

8. A B Not sure

9. A B Not sure

10. A B Not sure

11. A B Not sure

12. A B Not sure

13. A B Not sure

14. A B Not sure

15. A B Not sure

APPENDIX I – INVESTIGATION DESCRIPTION SHEET

You are invited to participate in a study focusing on the learning of Spanish Grammar. There are no risks for participating and you may even improve your Spanish by taking part! In fact, by participating in the study you will receive an automatic 100% on your lowest completed Acción assignment. The study will take place at the regularly scheduled class time during the next class session. Attendance will be taken and if you choose not to participate you will be provided alternative activities.

APPENDIX J – TREATMENT INSTRUCTIONS

Structured Input Instructions

Instructions: You are about to see slides with two pictures and one sentence. By pressing the "A" or "B" button on the button box, select the picture that corresponds with the sentence. You will receive feedback on whether your answer was correct or incorrect.

Press the "next" button on the button box to begin!

Focused Input Instructions

Instructions: You are about to see slides with one picture and one sentence. All of the sentences correctly correspond with the picture. Press the center button on the button box labeled "next" to move from one picture set to the next.

Press the **"next"** button to begin.

Input Flood Instructions

Instructions: You are going to read four stories. After reading each story you will be asked a few questions about the story's content.

Press the **"next"** button on the grey button box to change screens.

Input Flood with Text Enhancement Instructions

Instructions: You are going to read four stories. After reading each story you will be asked a few questions about the story's content.

Press the **"next"** button on the grey button box to change screens.

APPENDIX K – FSU HUMAN SUBJECTS COMMITTEE APPROVAL LETTER

Florida State
UNIVERSITY

Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 7/26/2007

To:
Justin White
545 E. Call Street
Tallahassee, FL 32301

Dept.: **MODERN LANGUAGES AND LINGUISTICS**

From: **Thomas L. Jacobson, Chair**

Re: **Use of Human Subjects in Research**
The Effects of Input Enhancement Type on the Acquisition of Spanish Direct Object

The forms that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be Expedited per 45 CFR § 46.110 (B) cat. 7 and has been approved by an accelerated review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If the project has not been completed by **7/25/2008** you must request renewed approval for continuation of the project.

You are advised that any change in protocol in this project must be approved by resubmission of the project to the Committee for approval. Also, the principal investigator must promptly report, in writing, any unexpected problems causing risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is IRB00000446.

Cc: Michael Leeser
HSC# 2007.510

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BIOGRAPHICAL SKETCH

Justin Patrick White was born in Sandusky, Ohio and raised in the outskirts of the lakeside town of Vermilion. After a year and a half of studies at Firelands College, the extension of Bowling Green State University, he moved to study full time at the main campus. During his completion of an undergraduate degree in Secondary Education – Spanish, he spent one year in Costa Rica in which one semester was dedicated to studying at the National University of Costa Rica in Heredia, Costa Rica.

Justin went on to study in the Department of Linguistics for one full academic year at The Autonomous University of Guadalajara, in Guadalajara, Jalisco – Mexico during the first of a two-year masters program. After returning to BGSU to finish his degree, he went on to complete a PhD in Second Language Acquisition at Florida State University. He enthusiastically headed on his way to Texas A&M-Commerce as part of the Department of Languages and Literatures.