ACQUIRING SPANISH AT THE INTERFACES: AN INTEGRATIVE APPROACH TO THE L2 ACQUISITION OF PSYCH-VERBS

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ABSTRACT

INMACULADA GÓMEZ SOLER: Acquiring Spanish at the Interfaces: An Integrative Approach to the L2 Acquisition of Psych-Verbs
(Under the direction of Dr. Misha Becker)

This dissertation provides a comprehensive analysis of the L2 acquisition of Spanish psych-verbs (e.g. *gustar* 'to like') across four different proficiency levels. In particular, psych-verbs constitute a testing ground for the predictions of the Interface Hypothesis (Sorace and Filiaci, 2006; Tsimpli, Sorace, Heycok & Filiaci, 2004; Sorace, Serratrice, Filiaci & Baldo, 2009; *inter alia*), one of the most influential theories in current generative second language acquisition. Its main claim is that properties that hinge on external interfaces (i.e. those that require the interaction between a linguistic module and a cognitive module) are more problematic for learners than those that do not hinge on that interface (i.e. internal interfaces/narrow syntax). In order to assess the empirical adequacy of the IH, this project encompasses five experiments that test different syntactic properties of psych predicates as well as phenomena that belong to both internal and external interfaces. The results of this study indicate that clitic and verb agreement is the most problematic aspect of psych-verb acquisition in accordance with the previous literarture in the field (e.g. Montrul, 1998, 2001). As for the issue of interfaces, this project is only partially consistent with the proposals of the IH. Whereas external interfaces present a certain level of difficulty for some groups of L2 learners, the low-proficiency participants are sensitive to pragmatic factors in spite of their lack of mastery of the morphosyntax of these constructions. Thus, external interfaces are

problematic for L2ers but not more so than internal interfaces. Additionally it is not a necessary condition that syntax will precede the understanding of pragmatic phenomena. Instead, pragmatics can come for free in L2 acquisition while the learner still struggles with the target syntactic templates. Because of these inconsistencies with the IH, I turned to a more articulated model, the Integrative Model of Bilingual Acquisition (Pires & Rothman, 2011), that accounts for the differences between native and non-native speakers by resorting to the interplay of a series of factors (i.e. formal complexity, L1-L2 parameter mapping, processing resources and primary linguistic data). I argue that this more sophisticated model not only is able to more successfully account for the patterns found in this dissertation but it is also a more integrated explanation for the intricacies of the acquisition process.

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CHAPTER 1
INTRODUCTION

Psychological predicates (e.g *to please, to worry, to frighten*) have consistently attracted special attention from researchers in a number of different fields: theoretical linguistics (e.g. Belletti & Rizzi, 1989; Grimshaw, 1990; Pesetsky, 1995; Franco & Huidobro, 2003, 2007; Dowty, 1991; Landau, 2010), first language acquisition (e.g. Lord, 1979; Figueira, 1984, Torrens at al, 2006; Gómez Soler, 2011), second language acquisition (e.g. Montrul, 1998; White et al. 1998, 1999; Toribio & Nye, 2006; de Prada Pérez & Pascual y Cabo, 2011), language pedagogy (e.g. López Jiménez, 2003; Rubio, 2000, 2001), and language deficits (e.g. Manovilidou, 2008; Thompson & Lee, 2009; Beretta & Campbell, 2001).

It is primarily the exceptional properties associated with psych-verbs' argument structure that have made them such an endless source of scrutiny. The first challenge posed by these predicates is to understand at a theoretical level how a single theta grid [Experiencer, Theme] has the ability to surface as three different syntactic configurations. This led Belletti & Rizzi (1988) to propose a tripartite division for Italian psych-verbs in their seminal work, which has been replicated, confirmed but also challenged by numerous researchers, as I will discuss extensively in chapter 2. The second challenge is to ascertain the learnability conditions of these predicates and determine why they pose

significant difficulties for L1 and L2 learners and speakers who suffer from language disorders.[1]

This dissertation engages the second question and, specifically, sets out to explore the issue of the second language acquisition of Spanish psych-predicates (e.g. *gustar* 'to like', *encantar* 'to love', *preocupar* 'to worry') by L1 English speakers. In particular, through a series of five experiments, I will provide a detailed account on how acquisition of these predicates takes place and how it develops across four L2 proficiency levels: near-native, advanced, intermediate and low.

This project emerged from a preliminary survey, which consisted of an evaluation of about 150 written compositions from students taking their last semester of Spanish at an institution of higher education. The courses in which students were enrolled were topics courses equivalent to, at least, a 6th semester course. The purpose of the survey was to determine some of the areas of Spanish grammar that students were still contending with at the highest levels of proficiency attainable through college instruction and study abroad stays. Psychological verbs proved to be one of the areas more resistant to instruction judging by the amount of mistakes found in the compositions. Here I group some of the errors found into five different categories:

- **Wrong agreement on the clitic**
  (1) *A las personas estadounidenses le fascina el fútbol
  To the people US-born le-dat. cl.-3sg. fascinate-3sg. the football
  Correct version: A las personas estadounidenses les fascina el fútbol
  Americans love football

- **Wrong agreement on the verb**
  (2) *Me gusta sus pinturas

[1] The studies on the L1 acquisition of psych-verbs and the acquisition of psych-verbs in populations with language disorders mainly point to problems with the unorthodox mapping of thematic roles to syntactic positions that this class of predicates exhibits.

Me-dat. cl.-1sg. like-3sg. his paintings
Correct version: Me gustan sus pinturas
I like his paintings

(3) *Sabíamos que a papá y mamá no les gustarían el restaurante
Knew-1pl. that dad and mom no les-dat. cl.-3pl. the restaurant
Correct version: Sabíamos que a papá y mamá no les gustaría el restaurante
We knew dad and mom would not like the restaurant

- **Wrong agreement on the clitic and the verb**

(4) *Las películas de horror les asusta a mí
The movies of horror les-dat cl.-3pl. scare-3sg. to me
Correct version: Las películas de horror me asustan a mí
Horror movies scare me

- **Wrong use of the pronoun *se***

(5) *Los estudiantes se importan sobre los temas que afectan a su vida.
The students *se* care-3pl. about the issues that affect-3pl. to their life
Correct version: A los estudiantes les importan los temas que afectan a su vida
Students care about the issues that affect their lives

(6) *Los padres se caen bien con Calvin
The parents *se* get along-3pl. with Calvin
Correct version: A los padres les cae bien Calvin
The parents get along Calvin

- **Wrong word order/Lack of clitic**

(7) *A Sarah sorprendió el profesor
To Sarah surprised-3sg. the professor
Correct version: El profesor sorprendió a Sarah
Correct version: A Sarah le sorprendió el profesor
The professor surprised Sarah

It is certainly unsettling for a Spanish instructor to find this type of mistakes at such a high level of proficiency. On the other hand, for a researcher, this just opened the door to an exciting path of unanswered research questions. These problems seem to stem not only from difficulties with morphology and argument structure (1-4), but also with

the relationship between the semantics of aspect (i.e eventive vs. stative) and how these aspectual differences are morphosyntactically encoded (5-7).

Thus, taking these students' errors as a starting point, I designed a series of experiments that would allow me to test a varied set of properties (e.g. morphological, syntactic, semantic, and pragmatic), which, in turn, would help me uncover the underlying reasons for the difficulty intrinsic to the acquisition of these predicates. This scenario provided the perfect opportunity to ultimately enlighten questions relevant for the field of generative second language acquisition such as: access to UG, the structure and development of non-native grammars, the causes of learner difficulty, and the issue of fossilization.

In order to answer some of these questions I turned to two different models of bilingual acquisition: the Interface Hypothesis (Sorace and Filiaci, 2006; Tsimpli, Sorace, Heycok & Filiaci, 2004; Sorace, Serratrice, Filiaci & Baldo 2009; Sorace 2011 *inter alia*) and the Integrative Model of Bilingual Acquisition[2] (Pires & Rothman, 2011). The Interface Hypothesis (henceforth IH) is a theory on ultimate attainment based on a particular understanding of the architecture of the language faculty in which three main areas are differentiated: narrow syntax, internal interfaces and external interfaces. First of all, structures that depend on narrow syntax are considered to be purely syntactic. Secondly, structures dependent on internal interfaces are claimed to be those in which two (or more) linguistic modules interact with each other (e.g. syntax-morphology). Finally, external interfaces are those in which linguistic modules interface with other cognitive modules (e.g. syntax-pragmatics). The main argument of the IH is that external

[2] This name has been coined by the author of this dissertation for the sake of clarity.

interfaces raise more difficulty for learners than internal interfaces/narrow syntax. Consequently, residual optionality, when present at the level of ultimate attainment, will be restricted to external interfaces.[3]

Psychological predicates offer an excellent testing ground for the Interface Hypothesis since their numerous intricate properties can be tested independently with regard to the type of interface to which they belong. The experiments in this dissertation have been specifically designed to evaluate the soundness of the Interface Hypothesis as a theoretical account of language acquisition (particularly second language acquisition).[4] Thus, experiments 1 and 2 test a narrow syntactic property, experiments 3A and 3B test an internal interface phenomenon, and experiment 4 tests an external interface property.

Nevertheless, because the empirical results of this study are incompatible with the Interface Hypothesis, I resort to Pires & Rothman's (2011) Integrative Model to account for the patterns present in the current project. This model is a multidimensional model, which ascribes differences between native and non-native speakers to the interplay of several factors that influence the language acquisition process; namely, formal complexity of the construction in question, the setting of the L1 and the L2 parameters with respect to this specific construction, the processing resources[5] of bilingual speakers,

[3] I would like to underscore that the IH in its most recent instantiation argues that underlying representation even of syntax-discourse properties can be totally target-like, but the enactment of such knowledge in real-time is constrained by processing considerations.

[4] The IH has been proposed to account for different types of bilingual acquisition (L2 acquisition, L1 bilingual acquisition and L1 attrition). However, since this dissertation is an empirical study of second language acquisition, I will merely evaluate the IH in terms of its claims about second language acquisition.

[5] Reaction time was collected in this study as a measure of processing resources. Unfortunately, the data had to be discarded because of methodological issues having to do with the way it was measured. For

and the characteristics of the primary linguistic data. This model, by encompassing a number of different factors that are crucial to evaluate the acquisition process, is able to accurately portray the patterns of behavior shown by the non-native speakers in this dissertation.

Specifically, the differences between the L1 and the L2 with respect to several of the constructions tested turned out to be an essential element in understanding the development of properties related to psych-verbs. Because the L1 plays such an important role in participants' understanding of particular structures in the L2, and because the non-native grammars showed evidence of being constrained by UG, we can conclude that these data support Schwartz & Sprouse's (1996) Full Transfer/Full Access Hypothesis. This hypothesis states that the L1 is the starting point of the L2 acquisition process. However, L2ers are considered to be able to reset parameters and achieve native-like linguistic representations.

The comparison of these two models (the Interface Hypothesis and the Integrative Model of Bilingual Acquisition) will allow me to answer some of the most prevalent questions in current generative second language acquisition research: particularly, what the vulnerable areas in second language acquisition are and why. Over the past decade in particular, generative L2 researchers have shifted their focus from the binary question of (in)accessibility to UG as the main driving force in the field; mainly, because most authors (although definitely not all) believe that UG is somehow available either partially (Partial Accessibility theories such as the Interpretability Hypothesis, Tsimpli & Dimitrakopulou, 2007) or entirely (Full Aceesibility Theories, Schwartz and Sprouse,

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that reason, the current project will not evaluate either the Interface Hypothesis or the Integrative Model of Bilingual Acquisition in terms of processing.

1996). As a result, the research focus, even for those who believe that access to UG is in fact unrestricted, is on elucidating the reason for non-native divergence from native behaviors in areas of the language outside of the realm of UG. Conceived under this specific theoretical framework and with these questions motivating my research, the current project will help us enlighten some of these general queries about L2 acquisition with empirical data from the acquisition process of L2 Spanish psych-verbs.

Next, I will present a brief outline of the organization of this dissertation. The current study encompasses 7 chapters in which 5 different experiments will be analyzed. As I pointed out previously, in order to test the reliability of the IH, the experiments were designed following the theoretical constructs of this hypothesis. That is, two of the experiments tested narrow syntactic properties of psych verbs; another two examined internal interface structures, and finally, the last experiment focused on an external interface phenomenon. This allows me to compare the alleged difficulty of the external interface property as compared with the properties tested in the syntax and the syntax-semantics experiments respectively.

Chapter 2 presents a review of the literature relevant for the current project. The first part of the chapter presents a review of the main theories in generative second language acquisition research with respect to issues of access to UG, representation of non-native grammars and possibility of target-like ultimate attainment. Then, I will provide an extensive summary of the two models compared in the present study: the Interface Hypothesis and the Integrative Model of Bilingual Acquisition. The second part will focus on a survey of the theoretical models that have been proposed to account for the idiosyncratic properties of psychological predicates. I will present several models on

the general literature of psych-verbs but also some accounts that have been specifically proposed to address the idiosyncrasies of Spanish psych-verbs. These models take into consideration their individual properties that distinguish them from psych-verbs in other languages and also the dialectal variability to which these predicates are subject in different areas of the Spanish-speaking world. These diverse models will be summarized in a section called 'A crosslinguistic model of psych-verbs' which emphasizes the common arguments of the different researchers. Next, a review of the studies on second language acquisition of psych-verbs will be presented as a starting point for the present project. Finally, I will introduce the current study and elucidate how it fits with the previous research and what unanswered questions in the field it answers.

Chapter 3 starts by describing the methodology that was followed to design the 5 experiments of the current project. Then, it will focus on the description and analysis of experiments 1 and 2, which test properties that belong to the narrow syntax. Experiment 1 tests issues related to the use of the clitic in psych-verb constructions; particularly, the case of the clitic, the obligatory nature of this element, and its position with respect to its host (i.e. the verb). Experiment 2 also explores the acquisition of syntactic properties but focuses on a different issue: agreement. In particular, this experiment examines L2 learners' ability to react to clitic and verb agreement violations. Agreement has been the most extensively studied property of L2 acquisition studies of Spanish psych-predicates (e.g. Toribio & Nye, 2006, dePrada Pérez & Pascual y Cabo, 2011) but there are some unresolved questions, which will be addressed in this chapter.

Chapter 4 sets out to test constructions that belong to an internal interface; specifically, the syntax-semantics interface. Like the previous chapter, it also

encompasses two different experiments but this time they assess learners' understanding of constructions that hinge on the interaction between syntax and semantics. The main question in these two experiments targets non-native speakers' ability to categorize different classes of Spanish psych-verbs according to the distinct aspectual and morphosyntactic properties that set them apart. This task is rendered even more complicated by the fact that these classes tend to overlap. The overlapping issue between different classes of psych-verbs and how learners are able to categorize these verbs according to their syntactic and semantic properties has only been examined by Rubio (2000, 2001), who focused on a very specific aspect of this divide. In this chapter, I will test two different phenomena unexplored by the previous literature. In particular, experiment 3A focuses on the relation between the distinct aspectual nature of Spanish psych-verbs and their possible word order configurations. On the other hand, experiment 3B examines the distribution of antipassive *se* in two different classes of psych-verbs.

Chapter 5 presents the last experiment of the series. Experiment 4 evaluates second language learners' ability to understand the connections between discourse and syntactic structure with respect to psych-verb constructions. Specifically, experiment 4 assesses knowledge of how discourse topichood affects the word order configurations of psychological predicates. Consequently, the interface targeted in this experiment is the syntax-discourse interface.[6] This experiment is key in testing the IH since it is within external interfaces where residual optionality lies at the highest stages of L2 attainment

[6] Rothman and Slabakova (2011, p.571) warn us about the confusion generated in the field by using the terms syntax-pragmatics and syntax-discourse interface interchangeably. Discourse is a subset of pragmatics. Thus, whereas syntax-pragmatic interface properties includes areas such as conversational, implication, deixis or presupposition among others, syntax-discourse has a much restricted scope: constructions in which syntax hinges on information provided in the previous discourse.

according to this theory. Currently, Toribio & Nye (2006) are the only authors who have studied this property of Spanish psych-verbs. However, I will try to improve their methodology with an experimental design that captures more accurately discourse-related judgments.

Chapter 6 presents a general discussion of the study. A comparison of second language participants' behavior across the 5 experiments allows me to appraise the empirical adequacy of the IH. Because the results of these experiments are inconsistent with its main tenets, this chapter presents an alternative theoretical model, the Integrative Model of Bilingual Acquisition (Pires & Rothman, 2011), which is able to account for the empirical findings of this series of experiments taking into account the intricate relationship of different factors that intertwine during the acquisition process: formal complexity, parameter resetting, processing, and primary linguistic data. Furthermore, this chapter will explore questions intrinsic to the generative approach to second language acquisition research, which will allow the reader to understand the patterns found in this study from a theoretical standpoint. First of all, I will claim that the L2ers participating in this study have access to UG since their grammars are UG-constrained. Consequently, my data supports Schwartz & Sprouse's (1996) Full Transfer/Full Access Hypothesis. Secondly, I will resort to Herschensohn's (2000) Constructionism as a model that explains the development of the participants' non-native grammars in this study; namely, second language learners start with the L1 parameter settings, then they move to a stage of indeterminacy and, eventually, they transition to a final stage where the structures tested might be acquired at the native-like level. Finally, I will focus on the issue of ultimate attainment and argue against fossilization of properties related to psych-verbs.

This is evidenced in near-native speakers' response patterns that closely resemble the native patterns of behaviors.

Chapter 7 presents some concluding remarks about the empirical findings of the present study and the theoretical model used to address the patterns in the data.

Finally, Appendix A includes the test items and the fillers for all of the experiments. Appendix B includes some additional calculations done in experiments 1 and 2, which were not included in the main body of this dissertation.

CHAPTER 2
PYSCH VERB STRUCTURE AND ACQUISITION: A LITERATURE REVIEW

2.1. Theories of Second Language Acquisition

2.1.1 The Logical Problem of Language Acquisition

The language acquisition task would be both daunting and unexplainable if children did not count on a biological mechanism to guide their language choices. This innate mechanism has been termed Universal Grammar (UG) (Chomsky, 1965, 1981; Pinker, 1984, 1994). Children acquire all of the abstract subtleties of language in a minimal amount of time and without access to negative evidence. The key issue is that these subtle aspects of language are underdetermined by the input. This has been referred to as the logical problem of language acquisition or the poverty-of-the-stimulus argument: How does the child achieve an adult language production and comprehension system if the input available to them is insufficient? Advocates of UG have proposed this innate language program as the answer to the logical problem of language acquisition. If we believe that children's grammars are constrained by UG, then the rapid acquisition of language is explained by the fact that UG restricts the child's language choices to only those possible in natural languages.

Second language learners potentially face a similar problem (see Schwartz, 1998). They need to acquire abstract properties of the target language taking as a starting point an impoverished input in which these properties are not instantiated. On the other hand, some researchers (e.g. Bley-Vroman, 1990, 2009; Clahsen and Hong, 1995; Meisel 1997,

2011) have claimed that there is actually no such a thing as a logical problem in second language acquisition. They believe that if L2 learners' unconscious knowledge of the target L2 language comes only from the L1 (i.e. there is no direct access to UG in adulthood), then they are not faced with the same challenge as L1 learners.

Thus, in order to test if interlanguage grammars are constrained via direct accessibility to UG in adulthood, there is a necessary set of requirements that have to hold of the situation being tested (see e.g. Schwartz and Sprouse, 2000; Rothman and Iverson, 2008):

(i) The construction investigated needs to be underdetermined by the L2 input. That is, this construction cannot be acquired by means of instruction, observation based on frequency and statistical analysis or any other general language mechanisms.

(ii) This construction needs to work differently in the L1 and the L2. That way, we can rule out the possibility that the learners are transferring the knowledge from the L1.

With respect to the constructions that concern us in this dissertation, psych-verbs, I can say that certain aspects are underdetermined by the input (i.e. pragmatic conditions). Conversely, other aspects such as the morphology of these verbs are actually clear from the input and also taught in the L2 classroom. Thus, we cannot discard the possibility that morphological properties have been learned through instruction. In addition, English and Spanish psych-verbs have some overlapping properties (e.g. eventive vs. stative interpretation) but also differ in other respects (e.g. clitic system and word order). So, it is

not clear that learners can actually resort to the L1 to perform tasks related to Spanish psychological predicates.

This logical problem of second language acquisition takes us to the next issue, which has been considered the main question that has dominated the field of generative L2 acquisition research since its establishment in the early 1980s: do L2 learners have access to UG?

2.1.2 Access to UG and Non-Native Linguistic Representations

There are two main approaches to this question that have implications for the nature of interlanguage grammars and the possibility or impossibility of achieving native competence. The first half of this debate subscribes to a representational deficit approach. Within this trend, several accounts have been proposed, for example: the No Parameter Setting Hypothesis (Clahsen & Muysken, 1986; Meisel, 1997), the Fundamental Difference Hypothesis (Bley-Vroman, 1990), the Failed Features Hypothesis (Hawkins & Chan, 1997) and the Interpretability Hypothesis (Hawkins, 2005; Tsimpli & Dimitrakopulou, 2007). Similar claims come from theories belonging to other cognitive approaches to language acquisition that do not necessarily agree with the construct of a language-specific mechanism such as UG (e.g. DeKeyser, 2000, 2003; Paradis, 2004; Ullman, 2001). All of these accounts have a common theoretical ground, the claim that L1 and the L2 acquisition processes are fated to be *fundamentally* different from each other. L2 learners do not have access to the universal linguistic mechanisms (UG) of which children make use; thus, they need to rely on domain-general problem-solving skills. This is because these learners are restricted by maturational constraints; in other words, they have surpassed the critical period. According to this position, L2 learners

cannot attain native competence to the extent that the L2 underlyingly differs from the L1. In other words, adult L2ers keep the parameter setting of their L1 upon which local modifications are made, which can give the impression of new L2 acquisition. Under such approaches, the L2 acquisition process is characterized by incompleteness and impaired linguistic representations. There are important differences between these approaches that have come from changes in the development of syntactic theory as well as their particular claims as to exactly what is subject to a critical period. For instance, whereas the Failed Functional Features Hypothesis claimed that new functional features (i.e. those not instantiated in the L1) are subject to a critical period and thus, unacquirable after puberty, the Interpretability Hypothesis argues that it is specifically uninterpretable features (only) that are subject to this critical period. However, as we just saw, all of these accounts form part of the representational deficit approach and share similar theoretical foundations.

In contrast, full accessibility theories support learners' ability to access UG post-critical period. Within this position, we also have several different accounts. For instance, the advocates of the Full Access position believe that L2 learners can access UG without having to turn to the L1 (e.g. Epstein, Flynn & Martohardjono, 1996). On the other hand, defendants of the Full Transfer/Full Access Hypothesis (e.g. Schwartz & Sprouse, 1996) contend that L2 learners have direct access to UG after the L1 is first applied at the initial stages of acquisition as a filter. This first stage can be followed by subsequent parameter resetting to the extent that parsing failures are possible given the transferred L1 grammar. Another theory in the same line is the Missing Surface Inflection Hypothesis (Prévost & White, 2000), which states that failure of L2ers to provide functional inflection should be

ascribed to deficits in their ability to retrieve certain lexical items from the lexicon in real-time language processing and not a deficit in representation. In sum, these two approaches, representational deficit approach and full access, differ in their view of the role of age in second language acquisition (crucial vs. non-crucial), the nature of non-native representations (impaired vs. non-impaired), parameter setting (no-parameter resetting vs. parameter resetting) and finally, the possibility of attaining a target grammar (not possible vs. possible).

2.1.2.1 Underlying vs. Surface Competence

Another question related to the issue of access is whether performance (i.e. the use of linguistic knowledge) actually reflects competence (i.e. underlying knowledge of the linguistic system) of the language. In other words, researchers working on acquisition take performance data to draw conclusions about learners' underlying knowledge. However, Duffield (2003, 2005) has postulated that the relation between competence and performance is not as straightforward as it is currently believed to be. Actually, he provides a finer-grained definition of competence, which encompasses underlying competence (UC) and surface competence (SC).

> UC is categorical and consists of formal (phonological and syntactic) principles, autonomous from the lexicon. It is plausible to think of UC as innate. SC, by contrast, is intimately determined by the interaction of contextual and specific lexical properties with the formal principles delivered by UC; as a consequence, SC generates gradient effects. SC is largely language-specific learned knowledge (Duffield, 2003, p. 101).

The fact that two types of competence are stipulated makes the relation between native and non-native grammars more complicated since performance data from native speakers and L2ers can reflect either of these types of competence. This issue will be discussed in detail in chapter 5.

2.1.3 From Principles & Parameters to Minimalism

As we saw in the previous section, acquisition theories are constantly getting updated to keep up with changes in syntactic theory. The transition from the Principles & Parameters framework to the Minimalist Program has been particularly important in this respect. One of the key differences between the Principles & Parameters framework and Minimalism is that whereas the former considered that crosslinguistic variation was mainly syntactic, the latter centers this variation in morphology and the lexicon. Syntax and the features that make up lexical items are part of the UG inventory; thus, the main task of the language learner is to acquire the morphology and the lexicon of a language. Parameters, at the heart of the Principles & Parameters framework, have also been redefined in terms of movement triggered by feature strength. Parametric variation depends on the fact that (a) languages select different features, (b) a feature may or may not project a functional projection and (c) languages allow different combinations of features for a specific functional category (Liceras, Zobl and Goodluck, 2008).

Along with features, interfaces have gained a prominent role in the Minimalist Program (Marantz, 1995). Thus, acquisition researchers have focused their attention on interfaces and the challenges that they pose for bilingual learners. One of the theories that is inspired by the construct of interfaces and that has promoted much fruitful research in language acquisition is the Interface Hypothesis. In the next section, I present a summary of the IH, a theory that proposes a compelling solution for *some* non-native deviance from native behavior, specifically at the highest level of L2 attainment.

2.1.4 The Interface Hypothesis

The term Interface Hypothesis was coined by Sorace & Filiaci (2006). However, research interest in the challenges posed by interfaces in L2 acquisition had started over a decade earlier. This hypothesis attempts to find a unifying reason for residual optionality at the near-native level of second language acquisition (Belletti, Bennati & Sorace 2007; Sorace & Filiaci, 2006), emerging optionality in L1 attrition (Tsimpli, Sorace, Heycok & Filiaci, 2004) and protracted indeterminacy in bilingual first language acquisition (Serratrice, Paoli & Sorace, 2004; Sorace, Serratrice, Filiaci & Baldo, 2009). Sorace defines residual optionality in the following way: 'In the typical L2 endstate grammar characterized by optionality, optional variants are not in free variation: a steady state is reached, in which the target option is strongly but not categorically preferred, and the non-target option surfaces in some circumstances' (Sorace, 1999, p. 666). However, the Interface Hypothesis has developed its predictions over the years, which has resulted in two different versions of the proposal. The first version of the Interface Hypothesis (e.g. Sorace, 2005, 2006) claims that interface properties are the locus of variability as compared to the narrow syntax (i.e. syntax proper, not as it interfaces with morphology or semantics), which is hypothesized to be less problematic. The second version (e.g. Sorace & Filiaci, 2006; Sorace & Serratrice 2009; Tsimpli & Sorace 2006; Sorace 2011) makes a further division between external and internal interfaces. Processes related to internal interfaces, that is, those that require formal properties of the grammar to interact with each other (e.g. syntax-semantics, morphology-phonology) are equated to narrow syntax with regard to the fact that whatever difficulties were there in these areas should have been abandoned by the level of near-nativeness. In contrast, the locus of optionality is

now placed on external interfaces, those that require the language modules to interact with cognitive modules such as the syntax-pragmatics interface or the semantics-pragmatics interface.

The Interface Hypothesis is a powerful proposal that has generated a multitude of studies both supporting and rejecting its main tenets. Consequently, it has also generated much debate and discussion, which is far from settled. However, before I analyze this debate, it is important to establish some theoretical constructs intrinsic to the tenets of this hypothesis. We will start by defining the concept of interface and the implications for the architecture of the mental faculties that are subsumed under the Interface Hypothesis.

2.1.4.1 On Interfaces and Why We Should Study Them

Although the term interface has become popular in the past two decades, the concept of interface dates back to the Principles and Parameters framework. Here, Chomsky (1981, 1986) proposes a model in which syntactic computations have to be evaluated at the interfaces with phonetics and phonology (PF) and semantics (LF). In the Minimalist Program (Chomsky, 1995, 2000, 2001) these interfaces are redefined as the articulatory-perceptual interface and the conceptual-intentional interface.

However, the most prevalent concept of interfaces in the current L2 research seems to be connected to Ramchand & Reiss's (2007, p.2) proposal that interfaces are: (a) "informational connections and communication among putative models within the grammar" and (b) "the connection between the language faculty and other aspects of cognition (e.g. vision, reasoning)."

The concept of interface is consistent with Fodor's (1983, 1984) modular view of the mind.[7] In particular, we can see how the notions of information encapsulation and domain-specificity are consistent with this idea of interface because, although a specific mental domain (linguistic or cognitive) cannot affect the inner workings of another domain, it can provide inputs to it or it can use the outputs produced by this other domain. So, the next logical question would be: how are interfaces represented in this modular model of the language faculty? I will review two specific models of the language faculty that have been particularly relevant in the field of second language acquisition and what the role of interfaces is within these models.

The most widespread model of the language architecture in the acquisition realm is the one put forward by Reinhart (2006). This model stems from Jackendoff's (2002) parallel architecture. Reinhart's (2006) model, although based on Jackendoff's (2002) breaks away from it by returning to a more traditional view of syntax as the main computational system. However, it still keeps the core idea of interfaces. In particular, syntax interfaces with concepts (the lexicon), context (discourse-pragmatics), inference (semantics) and sensory motor-systems (phonetics-phonology).

[7] Smith (2011) notes that this concept is not inconsistent with other models of the mental architecture such as O'Grady's (1996) non-modular view of language.

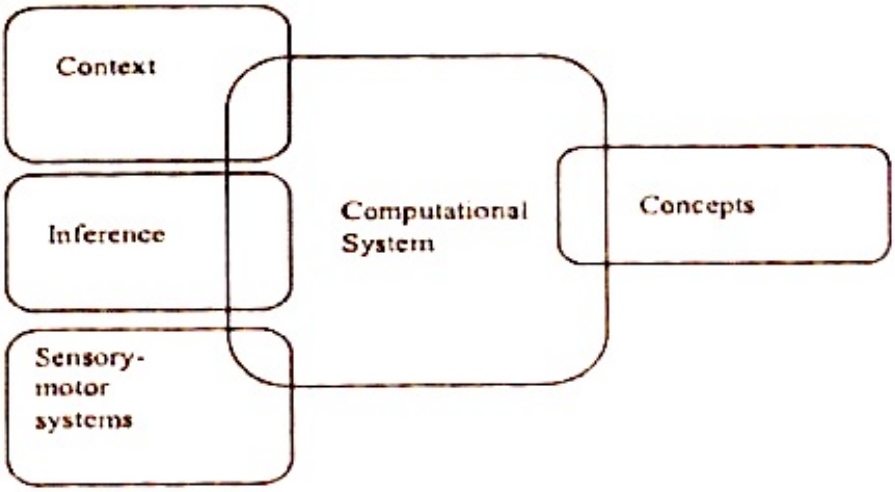


Figure 1. Reinhart's (2006) model of the language architecture

Reinhart's model makes specific predictions for acquisition that are in line with the proposals of the Interface Hypothesis. Specifically, she connects difficulty of acquisition with processing limitations in concordance with Sorace and colleagues' claims (Sorace & Filiaci, 2006; Sorace & Serratrice, 2009; Sorace, 2011 *inter alia*). Her specific proposal is that when learners have to entertain competing derivations, their processing slows down as a result of a cognitive overload.

Most researchers working on acquisition at the interfaces make specific assumptions and simplifications with respect to the previous models. Consequently, I will present White's (2009) model, which clearly represents the theoretical assumptions followed by acquisitionists working in this area. This model presents a clear division between internal and external interfaces. In this model, discourse and pragmatics are included in the conceptual structure or information structure and thus, considered to be outside of the computational system. As other researchers have claimed before (Lambrecht, 1994; Neeleman & van de Koot, 2008), this model puts forward the idea that

the relationship between language and discourse takes place in a separate cognitive module not within the computational system.

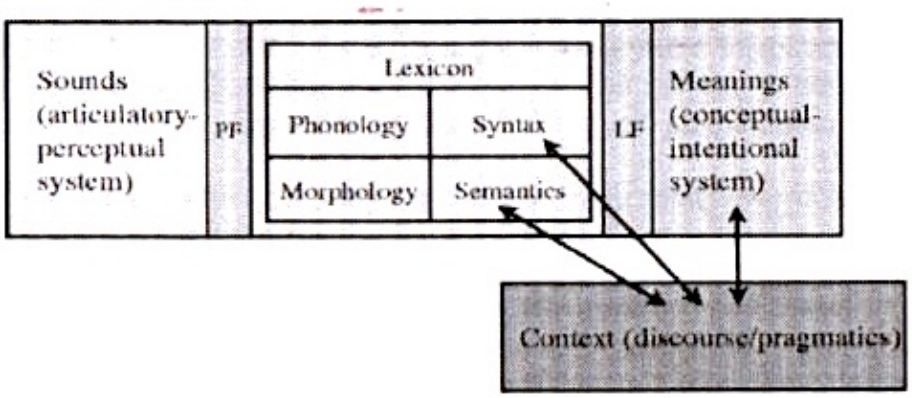


Figure 2. White's (2009) depiction of interfaces

However, there is indeed ample disagreement with regard to the formal relation between syntax and discourse. Although we have seen that some researchers support a discourse-free syntax model like the ones presented before, researchers such as Belletti (2004) and Rizzi (1997) propose a syntax that encodes discourse functions through specific functional categories and features that represent discourse phenomena (e.g. FocP). So, the assumptions about acquisition at the interfaces are going to be intimately connected with researchers' particular views on how interfaces are represented in the language architecture.

Finally, we should go back to the question: why study interfaces? In the first place, the study of the acquisition of interfaces is relevant not only for acquisitionists but also, more generally, for theoretical linguists because it allows us to a unravel some of the big queries in the field (see e.g. Montrul, 2011; White, 2011; Rothman & Slabakova, 2011; Rothman & Guijarro-Fuentes, 2012). Specifically, it allows us to make claims about the architecture of the language faculty, which will help us reach a more complete

and sophisticated understanding of how language works. This could be done more successfully within the framework of the IH since it allows us to compare specific phenomena across different bilingual populations (L1 bilingual acquisition, L2 acquisition, L1 attrition). On the other hand, the IH opened a new path of research in the acquisition field that, moving away from questions of access to UG alone, tries to find the underlying reasons for language variability at different levels of language development. In particular, stressed processing resources or, more concretely, lack of efficiency in resource allocation have been claimed to underlie acquisition delays for bilingual speakers. Hence, this area opens a path for fruitful research for both acquisitionists and theoretical linguists.

Next, I will provide a review of the literature on the most widely studied interfaces in L2 acquisition (others include, for instance, the phonology-morphology interface or the semantics-pragmatics interface). I will start by describing the findings with respect to internal interfaces and then present the research on external interfaces.

2.1.4.2 Internal Interfaces

2.1.4.2.1 Syntax-semantics interface

Several authors have claimed that properties related to the syntax-semantics interface are acquired without great difficulty. Among them, Dekydtspotter and colleagues demonstrated this with several articles that focused on syntax-semantics interface properties of French-English interlanguage grammar. For instance, Dekydtspotter, Sprouse & Anderson (1997) looked at result and process nominals and multiple *de*-phrases. Later, Dekydtspotter, Sprouse & Swanson (2001) studied the interpretive properties related to the scope of continuous and discontinuous *combien*

('how many'). The conclusion of these studies is that syntax-semantics interface properties are successfully acquired by L2 learners. As long as the syntactic mechanism is in place, the interpretive nuances will develop with ease.

Another advocate of the relative ease with which syntax-semantic properties are acquired is Slabakova (2008). Her claim differs from the main gist of the Interface Hypothesis since Slabakova places the locus of difficulty in morphological acquisition (the Bottleneck Hypothesis). Thus, she considers that major acquisition challenges are related to an internal interface (i.e. syntax-morphology). She claims that morphology requires a higher degree of automaticity than syntax and semantics do (Slabakova, 2008, p.107). So, syntax and semantics impose a lower processing load on the L2 learner. Thus, as a general rule, the syntax-semantics interface seems to be unproblematic, which is not surprising, given that both LF and the computational system are universal (Dekydtspotter et al., 1997).

2.1.4.2.2 Syntax-Morphology

In spite of being an internal interface and, thus, according to the IH should be *a priori* not problematic, the syntax-morphology interface, is deemed to be the source of many lasting problems for second language learners. Inflectional morphology is frequently omitted in L2 learners' speech or replaced by a default form. This has been shown nicely in, among other research, Lardiere's (1998) study on tense morphology or White's (2003) investigation on articles. Prévost & White (2000) also demonstrated the difficulty of acquisition of this interface with a study on the use of non-finite forms, which usually replace finite forms. Finally, White, Valenzuela, Kozlowska-MacGregor,

& Leung's (2004) research on gender agreement found that masculine agreement usually replaces feminine agreement.

The proponents of the Missing Surface Inflection Hypothesis (Haznedar & Schwartz, 1997; Prévost & White, 2000) postulate that lack of morphological markers does not necessarily demonstrate lack of the abstract features and functional categories associated with those markers. They believe the problem comes from an inability to access lexical items, which forces speakers to resort to the use of defaults. Lardiere (2008, 2009) has approached this issue claiming that the problems with the syntax-morphology interface stem from the difficulty intrinsic to disassembling the features of your L1 and re-assembling them in a way that observes the rules and principles of the L2 (Feature Re-Assembly Hypothesis). On the other hand, the Representational Deficit Hypothesis (Hawkins & Liszka, 2003 *inter alia*) claims that these morphological errors are connected to a representation problem.

2.1.4.3 External interfaces

2.1.4.3.1 Syntax-pragmatics (syntax-discourse)

The syntax-pragmatics interface has been extensively studied in L2 acquisition. Much of the initial research in this area was devoted to the study of subject distribution in null subject L2 languages as well as related anaphora resolution. Sorace (2003) and Belletti, Benatti & Sorace (2007) found that L2 learners are not as sensitive as natives to the discourse properties that regulate the use of null vs. overt subjects in spite of their understanding of their syntactic properties. This results in an overgeneralization of overt subjects to contexts where null subjects are required. Tsimpli & Sorace (2006) obtained similar results with respect to overt subjects with Russian learners of English. In contrast,

other authors such as Montrul & Rodríguez-Louro (2006) and Rothman (2009) have actually found evidence for the opposite phenomenon: overgeneralization of null pronouns.

Another phenomenon related to this interface is word order alternations that are regulated by discourse factors. Specifically, several authors studied the acquisition of the word order possibilities of unergative and unaccusative constructions: although in neutral contexts SV and VS is the normal order for unergative and unaccusative verbs respectively; in contexts in which the subject is focused, VS is the expected order for both types of predicates. Lozano (2006) and Hertel (2003) for Spanish and Belletti & Leonini (2004) for Italian found that although learners acquired the syntax side of this distinction, they performed poorly on the conditions regulated by pragmatic factors.

Hopp (2004) also looked at the dichotomy between syntactic and discursive properties with respect to scrambling in L2 German. As in the studies previously mentioned, he found a reliable knowledge of the syntax of scrambling paired with a much less consistent understanding of the pragmatic regulations ruling this phenomenon.

Valenzuela (2006) studied the acquisition of clitic left dislocation (CLLD) in L2 Spanish. Ivanov (2009) and Ivanov and Slabakova (2011) analyzed the same phenomenon with respect to Bulgarian clitics as did Donaldson (2011) for L2 French. However, while Valenzuela claimed that the discursive properties of CLLD could not be acquired by L2 learners and were doomed to fossilize, Ivanov (2009), Ivanov & Slabakova (2011) and Donaldson's (2011)'s results show that this is actually not an insurmountable problem. In fact, even as it relates to Spanish L2 Slabakova, Rothman and Kempchinsky (2011) and Slabakova, Kempschinsky and Rothman (*in press*) have

recently shown, contrary to what Valenzuela claimed to have shown, that English learners of L2 Spanish at high levels of proficiency can perform indistinguishably from native controls on CLLD and other related structures. A similar disagreement arises from the conflicting results of Rothman (2009) and Belletti et al. (2007) both dealing with the acquisition of overt and null pronouns in L2 Spanish and L2 Italian respectively. While the former advocates for the target-like acquisition of these structures, the latter claim that near-native speakers never reach native proficiency with respect to these constructions. Although Rothman (2009) and Belleti et al. (2007) both examined discourse constraints on overt vs. null subject pronominal use in L2 Spanish and Italian, the former examined contrastive focus and the latter topic shift environments. Indeed, it is possible that this fact alone explains the disparity in their respective findings, however, as it relates to the IH this difference is of no consequence. The IH predicts residual optionality for all properties involving the integration of syntax and discourse, and so, Rothman's (2009) evidence constitutes counter evidence to the predictions of the IH even if not completely comparable to Belleti et al. (2007).

In summary, there seems to be a general agreement that the syntax-pragmatics interface has certain characteristics that render it a challenging area of acquisition for L2 learners, at least developmentally (see Rothman 2009 for discussion). However, there is disagreement as to whether it is an inevitable locus of permanent fossilization and what the source of its special status is. We will focus on this last issue in the next section.

2.1.4.4 Why are certain interfaces particularly prone to optionality, transfer and fossilization?

There is not a straightforward answer to the question of what interfaces are prone to optionality, transfer and fossilization. The intrinsic difficulty related to external interfaces arises from the coalescence of a series of complicated factors. There are opposing views as to what these factors might be and how they interact together. Hence, here I present an overview of the possible causes of this interface's vulnerability.

(1) Underspecification and crosslinguistic influence: The representational account (Hopp, 2007; Lozano, 2006; Tsimpli, 2007; Tsimpli et al., 2004) argues that differences between bilinguals and monolinguals stem from a representational deficit. The advocates of this position believe that optionality is connected with a parametric choice that differs between the L1 and L2. This results in the underspecification of certain interpretable features on the part of the bilingual speaker (e.g. [+Topic Shift], a feature that in monolingual grammars like Italian and Greek maps onto an overt pronoun (Tsimpli et al., 2004)). This account predicts unidirectional crosslinguistic effects: the language with the less restrictive option will affect the other but not *vice versa*.

(2) Processing limitations: Sorace & Serratrice (2009) and Sorace (2011) among others argue against the representational account as an explanation for bilingual optionality. Underspecification can only account for the case of a bilingual speaker who speaks a combination of languages in which one language has a complex setting with respect to the syntax-pragmatics interface and the other one has a more restrictive setting. Consequently, it is unable to explain why we find similar patterns in different language

combinations (e.g. overgeneralization of null pronouns in Spanish learners of Italian (Bini, 1993) and Greek learners of Spanish (Marzagaza & Bel, 2006)).

Sorace believes that the vulnerability of the syntax-pragmatics interface is connected with the restricted processing resources of bilingual speakers. Bilingual speakers have the same finite cognitive capacity as monolinguals, however, they have to divide these resources differentially. For example, only bilinguals have to inhibit another grammar while they are accessing the other during language production (see e.g. Green 1998). So, it's not the combination of the languages being acquired but the mere fact of being bilingual that causes the differences between monolinguals and bilinguals that the IH is most concerned with explaining.

Numerous psycholinguistic studies have demonstrated empirically that accessing two levels of representation is more costly than accessing only the syntactic level for both monolingual and bilingual speakers. Parsing syntactic operations is both faster and more automatic than accessing multiple levels (Sturt, 2002; Burkhard, 2005; Piñango, Burkhard, Brun, & Avrutin, 2001). So, material at the interfaces would be more vulnerable than properties of the narrow syntax because they are harder to process (i.e. they are processed more slowly and in a less automatic way). In particular, the syntax-pragmatics interface will pose special difficulties because it is more costly to integrate material that belongs to different types of modules, in this case, a linguistic module (syntax) and a cognitive model (pragmatics) (Carminatti, 2002, 2005; Alonso-Ovalle, Clifton, Frazier & Fernández-Solera, 2005).

Up to now, we have explored the possibility that L2 learners' stressed processing resources cause a lack of efficiency at integrating material that belongs to different

interfaces, particularly, external interfaces. Another possibility is that L2ers' limitations come from a problem with allocation of processing resources (Wilson, Keller & Sorace, 2010). This is linked to the fact that bilinguals, who have to constantly use processing resources to inhibit the language they are not using, have less attentional resources to devote to other tasks such as linguistic tasks.

(4) Input: both the quality and the quantity of the input have an effect on the properties at the interfaces (Sorace 2005, Paradis & Navarro, 2003). The input that L2 learners/L1 attrited speakers are exposed to can be infrequent since they usually reside in an area where the L2 is not spoken, which restrict their interactions with speakers of this target language. Also, their interactions take place with other L2 learners' and L1 attrited speakers, which do not provide the best quality of input (see Rothman and Guijarro-Fuentes, 2010). Unsworth et al. (2010) in their studies of simultaneous bilingualism portrayed the complicated relation between type and quantity of input, age of exposure and linguistic factors. Finally, research on priming and alignment mechanisms (Costa, Pickering & Sorace, 2008) has pointed out the importance of the frequency and the type of input in the acquisition of these challenging structures.

In conclusion, according to the IH, properties of external interfaces are predicted to be acquired later (and lost earlier in language attrition) than properties of the internal interfaces or the narrow syntax. This is because coordination of material between a linguistic and a cognitive module imposes a higher processing load on speakers with already stressed processing resources.

2.1.5 Against the Interface Hypothesis

As I pointed out previously, the IH has given rise to a very productive line of research. However, the multiple investigations within the framework of interfaces have also led many researchers to fully or partially contradict the main tenets of the IH. Several of its theoretical concepts have been called into question. For instance, the concept of interface has been claimed to be in need of redefinition. Particularly, Tsoulas & Gil (2011) question the nature of the syntax-pragmatics interface and how it is generated since under current approaches to syntax, pragmatics does not interact with syntax but with the interpreted structure (LF). Another issue that has been the target of objection is the division between internal and external interfaces (Gürel, 2011; Pires & Rothman, 2011): first of all, there is no *a priori* reason why one interface should be easier or harder to acquire than another. Secondly, empirical data has clearly shown that not only external interfaces but also internal interfaces can be subject to residual optionality at the level of ultimate attainment. For instance, Lardiere (1998) and Slabakova (2008), among many others, found that phenomena related to the syntax-morphology interface are extremely hard to acquire and, actually, quite prone to fossilization. These issues put into question the validity and applicability of the internal vs. external interface divide.

Intimately related to these criticisms is the fact that many researchers have addressed as the problem of circularity (Duffield, 2011; Gürel, 2011; Pérez-Leroux, 2011; Rothman & Slabakova, 2011): in other words, because of the vagueness of the theoretical constructs, which underlie the interface hypothesis (e.g. interface, internal vs. external interfaces *et cetera*), external interfaces could simply become a synonym for learner's difficulty. Thus, there needs to be a clear evaluation of what the problematic

areas for language learners are and what causes this difficulty from a theoretical standpoint.

This leads us to another issue of debate around the IH: or in the words of Lardiere (2011) "who is the Interface Hypothesis about?" Sorace has clearly stated that the IH is a theory of ultimate attainment and, as such, its tenets are only applicable to near-native speakers. Several authors have challenged this claim: Montrul & Polinsky (2011) have advocated for the extension of the IH predictions to a heritage speaker population. Furthermore, Lardiere (2011) and White (2011b) contended that the IH cannot be restrained to end-state grammars since their predictions clearly hold for lower levels of development: in other words, if external interfaces are especially problematic at near-native levels, we should logically anticipate lower-proficiency speakers to have even more problems with this interface. So, we should expect the asymmetry between internal and external interfaces to hold at all levels of second language proficiency. Understandably, at lower levels, we should find other types of problems related to internal interfaces or narrow syntax. However, we should never expect the opposite trend, that is, internal interfaces causing more difficulty than external interfaces, regardless of proficiency level.

Researchers have proposed several alternatives to Sorace's Interface Hypothesis. For instance, O'Grady (2011) praised Sorace's reliance on processing resources as a source of explanation for non-native speakers' deviance from native rules. However, he questions the way in which the issue of processing has been related to the concept of external vs. internal interfaces. Rather, he believes that processing should be a measure of learner difficulty with complete disregard for the question of interfaces. This is because,

in theory, we could find a narrow syntactic property that is hard to acquire because it is, in turn, hard to process. Or, on the other hand, there could be an external interface property, which is easy to acquire because it is easy to process. This would contradict the predictions of the Interface Hypothesis, vouching instead for an explanation based exclusively on processing.

Other researchers have encouraged us to redefine the acquisition problem in more traditional terms. For instance, Pérez-Leroux (2011, p. 72) argues that we should structure our research program taking into account familiar concepts such as "learnability conditions for each of those vulnerable areas of the grammar, the type of processing they require, the types of crosslinguistic interaction that may occur in such processing, and the input conditions relevant for these areas, as defined by the bilingual context." Pires & Rothman (2011), in the same line as Pérez-Leroux (2011), propose a model of language acquisition that takes into account the role of several factors in the acquisition process and how these factors interact with each other. According to them, the problem with the Interface Hypothesis is its restricted focus, which disregards several factors that are essential in our understanding of how language is acquired by bilingual speakers. From now on, we will refer to this as the Integrative Model of Bilingual Acquisition. Pires & Rothman (2011, p. 74) argue that differences between bilinguals (due to the scope of this dissertation, we will only refer to L2ers) and native speakers can be more accurately explained when we take into consideration the following criteria:

a. The complexity of multiple linguistic domains at stake, involving among others not only the syntax-pragmatics interface, but also internal interfaces (e.g. syntax-semantics);

b. The nature of the parameter mapping between different L1s and L2s;

c. The role played by processing factors among bilinguals;

d. Properties of the primary linguistic data (PLD).

The results of this project will be evaluated in light of both the Interface Hypothesis and the Integrative Model of Bilingual Acquisition, which will allow us to appraise the soundness of these theories.

In the next section, we will review the literature on psych-verb constructions, particularly, the syntactic models put forward to explain the idiosyncrasies of these predicates.

2.2 Theoretical Models of Psych-Verbs

Psych-verbs, verbs that express psychological states (Belletti and Rizzi, 1988, p. 291), have fascinated linguists for decades because they represent a challenge for linguistic theory. First of all, the goal of linguistic theory is to explain the universal constraints that underlie all languages. One of these universal constraints is the Uniformity of Theta Assignment Hypothesis (UTAH): "Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure" (Baker, 1988, p. 46). Another universal principle is the existence of a hierarchy of thematic roles that directly relates to positions in the syntactic structure: the arguments that are situated higher in the thematic hierarchy are mapped onto higher positions in the tree. Jackendoff's (1990) Thematic Hierarchy is the following: (Agent (Experiencer (Goal/Source/Location (Theme)))).

However, psych-verbs seem to violate both UTAH and the Thematic Hierarchy because they present an *apparently* arbitrary mapping between thematic roles and syntactic positions.

(3) **I** fear *snakes*
Experiencer *Theme*

(4) *Snakes* frighten **me**
Theme ***Experiencer***

In (3) the Experiencer is the subject whereas the Theme is the object. Conversely, in (4) the Theme is the subject whereas the Experiencer is the object. However, both sentences encode roughly the same meaning. This appears to contradict UTAH. Also, (4) violates the Thematic Hierarchy because the Theme is projected higher than the Experiencer. However, several authors have shown that this apparently arbitrary linking from thematic roles to syntactic positions actually arises from regular patterns that can only be found if we perform a more detailed syntactic (Belletti & Rizzi, 1988) or semantic (Pesetsky, 1995) analysis of the Experiencer-predicate sentences. In general, verbs like (3) have been labeled Subject Experiencer verbs whereas predicates like the one in (4) are considered to be Object Experiencer verbs. Subject Experiencer verbs appear in transitive constructions. In contrast, Object Experiencer Verbs occur in causative or unaccusative structures depending on their interpretation in the specific context in which they are embedded.

Secondly, psych-verbs are also interesting for acquisition theory because they represent a learnability problem for the language learner. On the one hand, the learner has to understand this non-canonical mapping of thematic roles to syntactic positions. On the

other hand, he has to realize that the surface structure of these verbs does not correspond directly with the deep structure. If we add the fact that there is crosslinguistic variation as to what verb belongs to which class (e.g. *disappoint* is an Object Experiencer verb in English but a Subject Experiencer verb in Chinese, *like* is a Subject Experiencer verb in English but an unaccusative Object Experiencer verb in Spanish) and how the different classes of psych-verbs are represented morphologically, the puzzle becomes even harder to solve. We will explore this issue in depth in section 2.3. This section, however, will provide a survey of the syntactic theories proposed for psych-verbs.

2.2.1 Syntactic Theories of Psych-Verbs

Belletti and Rizzi (1988) divide psych-verbs into three classes in their seminal work. These three classes have the same θ-grid involving an Experiencer and a Theme. However, these arguments are mapped onto three different syntactic configurations. Here, I will present Belletti and Rizzi's (1988) classification of psych-verbs and explain how they differ syntactically:

(i) Class I (*temere*)
Gianni teme questo
Gianni fears this

(ii) Class II (*preoccupare*)
Questo preoccupa Gianni
This worries Gianni

(iii) Class III (*piacere*)
a. A Gianni piace questo
To Gianni pleases this
b. Questo piace a Gianni
This pleases to Gianni

Class I and Class II seem to be transitive structures but the mapping of θ-roles to syntactic positions is reversed in the second class. In Class I the Experiencer is the

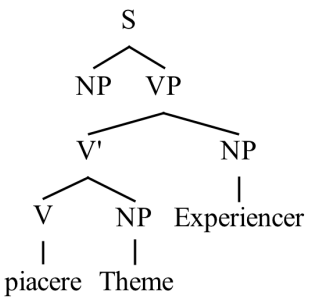
subject and the Theme is the object. On the contrary, the Experiencer functions as the object and the Theme functions as the subject in Class II. Class III has a dative Experiencer that can function as the subject. A special property of this class is that either argument can appear in preverbal or postverbal position.

The structure B&R propose for Class I is a simple transitive structure. On the other hand, Belletti & Rizzi (1988) argue for an analysis of Italian psych-verbs classes II (*preoccupare*) and III (*piacere*) as unaccusatives. Alexiadou et al. (2004, p. 1-2) present the concept of unaccusativity in the following way:

> The Unaccusative Hypothesis, as first formulated by Perlmutter (1978), and later adopted by Burzio (1981), was a syntactic hypothesis that claimed that there are two classes of intransitive verbs, unaccusative and unergative verbs, each associated with a different underlying syntactic configuration. In Relational Grammar this was expressed as a distinction between verbs taking a final subject originating as an initial direct object (unaccusatives) and verbs taking a final subject that was also an initial subject (unergatives). From a Government Binding perspective (see Chomsky 1981 and subsequent work), an unergative verb takes a theta-marked deep-structure subject and no object, whereas an unaccusative verb takes a theta-marked deep-structure object:
>
> a. NP [$_{VP}$V]
> b.[$_{VP}$ V NP]

The D-structure they propose for classes II and III is a double object construction with a nonthematic subject position. We can see the D-structure in (3). Both the Theme and the Experiencer are projected as internal arguments. However, then the Theme or the Experiencer can move to the subject position [Spec IP] in S-structure (B&R, 1988, p. 335).

(5)



To sum up, B&R (1988) argue that the underlying mapping of thematic roles to syntactic positions is guided by the Thematic Hierarchy and UTAH since in the three classes the Experiencer is projected higher than the Theme (at least at D-structure). The apparent arbitrary mapping that we see in psych-verbs on the surface can be resolved if we understand that the different classes of psych-verbs have different underlying representations: whereas Class I is a transitive construction, classes II and III are unaccusative.

In this dissertation I will use a classification of psych-verbs that stems from B&R's (1988) work. My model will be based on a more refined version of this tripartite taxonomy such as the one used by Parodi-Lewin (1991), Franco and Huidobro (2003, 2007) and Landau (2010). In addition, an analysis such as Pesetsky's (1995) (see below) provides an advantage with respect to B&R's with regard to thematic roles since his more nuanced classification is key to understanding the different classes of psych-verbs, specifically classes II and III. Consequently, this dissertation, although proceeding from B&R's classification, will make use of more recent developments of their taxonomy.

Another influential work in this area has been Pesetsky (1995). He presents an analysis that also explains the apparent arbitrariness of mapping of thematic roles to

syntactic positions represented by psych-verbs. However, whereas Belletti & Rizzi's (1988) analysis explores a more detailed syntactic analysis of these predicates, Pesetsky (1995) presented a more detailed semantic analysis. Pesetsky (1995) classifies psych-verbs into Subject-Experiencer (henceforth SE) verbs and Object-Experiencer (henceforth OE) verbs and argues that the thematic roles involved in these different classes are not identical. A SE verb has an Experiencer as a subject and a Target or Subject Matter[8] as an object. In contrast, OE verbs have a Causer as a subject and an Experiencer as an object. Pesetsky claims that the Thematic Hierarchy needs to be expanded in order to include these new thematic roles:

(10) Causer>Experiencer>Target/Subject Matter…

Finally, Pesetsky (1995) presents a seemingly contradictory prohibition on the co-occurrence of the Causer and the Target/Subject Matter in the same sentence. This is called the Target/Subject Matter Restriction. However, if Causer and Target/Subject Matter are different thematic roles, there is no apparent reason why they could not co-occur in the same sentence.

(11) *The article in the Times annoyed Bill at the government. (*Causer/Target)

(12) The article in the Times made Bill annoyed at the government.

(13)* The television set worried John about the veracity of Bill's alibi. (*Causer/Subject Matter)

(14) The television set made John worried about the veracity's of Bill's alibi.

Pesetsky claims that the reason for this restriction comes from the syntactic status of causative morphemes and the syntactic consequences that they entail for the sentence,

[8] The distinction between Target and Subject Matter is irrelevant for the present work.

specifically related to the Head Movement Constraint. The T/SM restriction has been tested in L2 acquisition by White et al. (1998), which I will review in section 2.3.

Arad's (1998) clear improvement over previous models of psych-verbs is that it takes into account the flexibility of these predicates with regard to their aspectual interpretation in different contexts. The author relates the notion of stativity to the peculiar syntactic properties of psych-verbs. In particular, she claims that psych-predicates have three possible readings: agentive, eventive and stative, which depend on two main factors:

(i) Whether there is an agent, which deliberately does something in order to bring about a mental change in the Experiencer.

(ii) Whether there exists a change of state in the Experiencer

The agentive reading includes a change of state in the Experiencer that is intentionally caused by an agent.

(15) Nina frightened Laura deliberately/ to make her go away

We have the eventive reading when someone or something is causing a change of state unintentionally.

(16) Nina frightened Laura unintentionally

(17) The explosion/the noise/the thunderstorm frightened Laura

Finally, the stative reading is achieved when there is neither an agent nor a change of state involved in the event. Rather, there is a perception by the Experiencer that causes the Experiencer to be in a specific mental state (Pylkkänen, 1997).

(18) This problem concerned Nina

(19) John/John's haircut annoys Nina

The different readings allowed by specific predicates change on a verb-by-verb basis. For instance, whereas some verbs can have the three readings (e.g. *frighten*), some might have two and some might only have one interpretation (e.g. *worry*, *concern*).

The essential point put forward by Arad (1998) is that these three readings do not only differ semantically but also syntactically. The stative reading is the typical "psych" reading. That is, when a psych-predicate has a stative interpretation, it exhibits all of the idiosyncratic properties of psych-verbs. For example, in the stative reading we find no external argument, a non-canonical object and psych effects.[9] On the other hand, with the agentive interpretation all of the psych-properties disappear and the verb behaves as a regular transitive verb. In this case, we have an external argument, a canonical object and an absolute absence of psych effects.

The aspectual flexibility of these predicates has also been the main assumption underlying Parodi-Lewin's (1991) analysis of Spanish psych-verbs (see section 2.2.2.1). Understanding how L2 learners acquire these aspectual distinctions is an important question that I will try to answer with my research. Chapter 4 will focus on this specific issue.

Finally, Landau (2010) is to this date the most recent account put forward for psych predicates crosslinguistically. His main proposal is that Experiencers are mental locations and undergo locative inversion. For Landau, the Experiencers we are dealing with in this dissertation, that is, the Experiencer subjects of Spanish psych-verb predicates are considered to be quirky subjects. He describes a quirky subject as "an

[9] Psych-effects were originally described in Belletti & Rizzi's (1988) seminal work. Psych effects are those characteristics that distinguish psych-verbs from verbs that have an external argument (deep subject) and a canonical mapping of arguments: backward binding, impossibility of binding an anaphoric clitic, taking an arbitrary *pro* subject or being embedded in a causative construction.

argument that displays more canonical subject properties (except for agreement), but bears inherent case" (Landau 2010, p. 81). He proposes the Quirky Subject Parameter and argues that languages are parameterized according to this parameter. For instance, languages like Icelandic, Faroese, and Greek allow dative, accusative or genitive quirky subjects. In the middle of the quirkiness scale are languages like Italian, Spanish, and Dutch, which only allow dative Experiencers. Finally, languages like English, French, and Hebrew completely disallow quirky subjects. Thus, we need to understand the Experiencer subjects of Spanish psych-verbs as dative quirky subjects.[10]

2.2.2 Syntactic Theories of Spanish Psych-Verbs

2.2.2.1 Parodi-Lewin (1991)

This author provides a classification of Spanish psych-verbs that replicates B&R's (1988) taxonomy for Italian psych-predicates. However, she incorporates the concept of causation, proposed by Pesetsky (1990), into her analysis.

The three classes she proposes are:

(i) Transitive verbs like *odiar* 'to hate' or *amar* 'to love' (B&R's Class I)

(ii) Causative verbs like *molestar* 'to bother' (similar to B&R Class II)

(iii) Unaccusative verbs like *gustar* 'to like' (B&R Class III)

Where she departs from B&R is in her depiction of Class II. Class II has a hybrid behavior. The predicates belonging to this class can have an eventive or a stative interpretation depending on the context in which they are embedded. For her, the main differences between classes II and III and between the members of the Class II themselves lie in the aspectual notions encoded by these predicates. Class III is composed

[10] Here I am referring to classes II(b) and III (see Table 1 in section 2.4.1 for an complete explanation of Spanish psych-verbs' classes).

of stative predicates, which select a [-eventive] argument. This argument is [-affected] and bears dative case. She defines affectedness following Anderson's (1979, p. 43-45) definition: "a direct object NP is affected if it is changed, moved, created or exposed by the action of the verb head." Affectedness is impossible with Class III psych-verbs because these predicates are temporally simple and, thus, there is no place for change in their temporal structure. These are individual-level predicates (Kratzer, 1989). On the other hand, eventive verbs select a [+eventive] argument and assign structural accusative case. This object is [+affected] and this is possible because the temporal structure of these predicates is complex. These are stage-level predicates.

The difference between the *molestar* (Class II) and the *gustar* (Class III) classes is that in the *molestar* class the verb, having the option of being [+eventive], projects an extra event argument position, which is lacking in the *gustar* class. This extra argument position is projected in Class II independently of the reading (eventive or stative). In this class, the Experiencer may optionally raise to the extra argument position if the verb is [-eventive] (20a-b). This is possible because in the stative reading the extra position is empty.

(20) a. A Juan le molesta el ruido
Noise bothers John

b. El ruido le molesta a Juan
Noise bothers John

Conversely, if the predicate is [+eventive] the Experiencer cannot raise to this position because it is already filled by the [+eventive] argument, which is a null element that licenses the presence of temporal and spatial adjuncts. So, in the eventive reading only one order of arguments is allowed (Theme/Causer-Verb-Experiencer) (21a-b).

(21) a *A Juan molestó el ruido
To Juan (Acc) bothered the noise

b. El ruido molestó a Juan
The noise bothered Juan

With the verbs of the *gustar* class, that is Class III, the order of arguments can be reversed since they lack that extra argument position. These verbs have the same unaccusative structure as the one proposed by B&R for the *piacere* class. (For a complete analysis and comparison of these classes please refer to Table 1 in section 2.4.1).

Parodi-Lewin points to a very interesting distinction that takes place in some dialects of Spanish. The eventive predicate case marks the object with accusative Case whereas the stative predicate case marks it with dative Case, as it can be seen in the clitic system:

(22) a. El ruido ***la (Acc)*** molesta
The noise once or iteratively bothers her

b. El ruido ***le (Dat)*** molesta
The noise bothers her always

This distinction by means of clitic case does not take place in the *leísta* dialects [11] (see Franco and Huidobro, 2003, 2007 below). Additionally, in the Spanish of Argentina, Chile and Peru, the distinction is also blurred since their speakers use accusative case across the board (Fernández-Ordóñez, 1999, p. 1325). In conclusion, Parodi-Lewin (1991), although faithful to B&R's (1988) model, includes the important concepts of causation and affectedness and how these influence both the syntax and the semantics of psych-predicates. This distinction does not only distinguish classes II and III from each

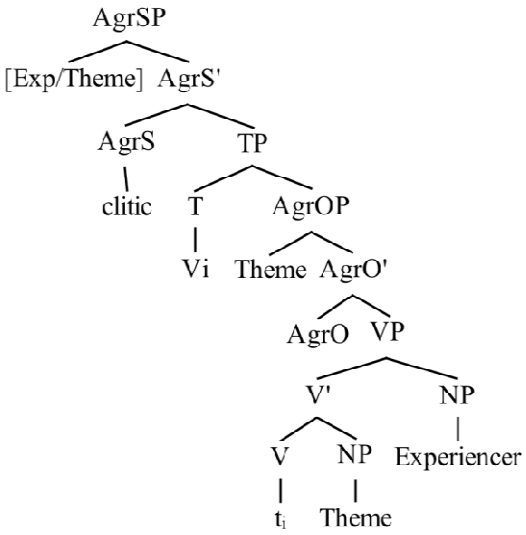
[11] Dialects spoken mainly in Spain but also in some areas of Peru, Bolivia, Paraguay and northeastern Argentina (RAE, 2005, pp. 395-396).

other but also makes a division within Class II. The interesting hybrid behavior of Class II and its overlapping characteristics with Class III has only been studied in the L2 acquisition literature by Rubio (2000, 2001) from a pedagogical perspective. Research studies have tended to focus on either Class II or Class III but not on their overlapping features. So, this is one of the aspects of psych-verbs that I intend to examine in my research.

2.2.2.2 Montrul (1996)

Montrul (1996) provides an analysis for the *gustar* class (Class III). Her analysis is especially relevant because she puts forward a very specific proposal about the clitic: about its nature and its precise position in the syntactic structure. The presence of a dative clitic, which is obligatory in Spanish, distinguishes Spanish psych-verbs from their Italian counterparts, and thus from B&R's (1988) account. She presents the structure for *gustar* in (23), which is applicable to the whole class of unaccusative Class III psych-verbs.

(23)



In (23) we can see how the clitic, which is non-argumental, is base-generated in AgrS as an inflectional morpheme and it is the overt spell-out of dative agreement features. The dative Experiencer clitic is an inherent clitic. Inherent clitics are the morphological manifestation of changes in theta role assignment, case and even aspectual properties of predicates. Specifically, the dative Experiencer clitic in Spanish Class III psych-verbs is the morphological manifestation of a change in case: this type of verb can assign either nominative case to the Experiencer and partitive case to the Theme, or, in a different configuration, dative case is assigned to the Experiencer and nominative case is assigned to the Theme:

(24) a. María gusta de Juan
María like-3ps. of Juan
María likes Juan

b. A María le gusta Juan
To María le like-3ps. Juan
María likes Juan

This proposal is not unanimously accepted since other authors (e.g. Franco & Huidobro, 2003, 2007) consider the clitic to be the head of AgrIOP instead.

2.2.2.3 Franco and Huidobro (2003, 2007)

These studies go a step further than Parodi-Lewin (1991) in analyzing the overlapping and distinguishing features of classes II and III in Spanish. Their analysis, as Parodi-Lewin's, stems from the taxonomy of psych-verbs presented by B&R (1988). However, the authors claim that certain facts about Spanish psych-predicates cannot be accommodated in this earlier model, so they expand it in order to account for the Spanish data. In particular, B&R's (1988) model is based mainly on case distinctions. A classification of psych-verbs according to case is not tenable in Spanish due to some

dialectal differences. The authors draw examples from *leísta* varieties of Spanish. However, their analysis is applicable to both *leísta* and *non-leísta* varieties. *Leísta* speakers do not distinguish between accusative and dative case in the clitic system, especially when the object is animate:

(25) *Non-leísta* variety
¿Has visto a Nacho? Sí, ***lo (Acc.)*** vi ayer
Did you see Nacho? Yes I saw him yesterday

(26) *Leísta* variety
¿Has visto a Nacho? Sí, ***le (Dat.)*** vi ayer
Did you see Nacho? Yes I saw him yesterday

As a consequence, many case-related phenomena are not displayed in this variety. One of the case-related grammatical distinctions in psych-verbs has to do with the correspondence of the case of the clitic with eventiveness and stativity. This distinction takes place in Mexican Spanish and some other Latin American dialects that are *non-leísta*:

(27) Juan ***lo*** aburrió a Pedro (eventive)
John CL-ACC bore-past to Peter
John bored Peter

(28) Juan ***le*** aburrio a Pedro (stative)
John CL-DAT bore-past to Peter
Peter got bored with John

Parodi and Luján (2000) see this as an aspectual distinction (eventive vs. stative): the object of (27) is [+affected] while the object of (28) is [-affected]. This distinction is not inexistent in the *leísta* varieties. The phenomenon is simply encoded in a different way in these varieties: through the presence versus the absence of the clitic as we can see in (29-30).

(29) A Juan le preocupan sus padres (stative)
To Juan le-dat. cl. Worry-3pl. his parents
John worries about his parents

(30) Sus padres preocupan a Juan (eventive)
His parents worry-3pl. to Juan
His parents worry John

The proposed analysis for the *gustar* class is as follows. The clitic is the head of some functional projection above VP. Franco & Huidobro argue that the movement of the Experiencer, which is the unmarked order in Spanish, is motivated by the EPP feature and Shortest Move since it is projected higher than the Theme. On the other hand, movement of the Theme is related to discourse factors. Syntactically, it is motivated by the fact that the Theme has to check a salient topic feature hosted in T. This is based on Zubizarreta's (1998, p. 117) argument that 'T may constitute a syncretic category with discourse features.'

In Franco and Huidobro's analysis of the *preocupar* class in Spanish, they highlight the fact that these verbs share certain characteristics in Spanish that cannot be explained through B&R's (1988) model, which is solely based on case. The predicates of Class II exhibit remarkable similarities with the verbs of Class III: (i) the Experiencer is preceded by the pseudopreposition *a* (ii) clitic doubling takes place throughout, (iii) the order of the arguments can be reversed (Experiencer-Verb-Theme/Theme-Verb-Experiencer), (iv) also, as we saw previously, in *leísta* dialects, the clitic is always dative.

However, this class still possesses some independent characteristics that motivate a tripartite division in Spanish psych-verbs: (i) They can appear in the *se* construction as we can see in (31), (ii) They can undergo causative embedding as we can see in (32):

(31) a. Juan se preocupa por sus padres
John se worry by his parents
John worries about his parents

b. *Juan se gusta por sus padres
John se like by his parents
Juan likes for his parents

(32) a. María hizo preocuparse/enojarse/divertirse a Juan
María made worry-se/anger-se/have fun-se to Juan
María made John worry/anger/have fun

b. *María hace gustarse/amarse a Juan
María makes like-se/love-se to Juan
María makes John like/love himself

Interestingly, clitic doubling is always obligatory with the *gustar* class regardless of the order of arguments (33). On the other hand, clitic doubling is not obligatory when the Experiencer is postverbal in the *preocupar* class (34).

(33) a. A Juan *(le) gustan sus padres
John likes his parents

b. Sus padres *(le) gustan a Juan
John likes his parents

(34) a. A Juan *(le) preocupan sus padres
John worries about his parents

b. Sus padres (le) precupan a Juan
His parents worry John

The configuration in (34b) is also similar to postverbal goals where the clitic is non-obligatory.

(35) Pedro (le) ha visto a Juan
Pedro has seen John

These facts can again be related to aspectual notions (Parodi and Luján, 2000). The internal Experiencer arguments, which are not clitic-doubled, such as the one in

(34b), are [+affected] whereas the preverbal Experiencer in (34a) is [-affected]. The Experiencer with *gustar* is always [-affected]. In *leísta* dialects, the version of (34b) with the clitic is ambiguous between [+/- affected]. In contrast, the version without the clitic can only be interpreted as [+affected] (Franco and Huidobro, 2003, p. 151). Affectedness is related to canonical objects or Causees in causative constructions. So, Franco and Huidobro's (2003, 2007) proposal is to embed *preocupar* under a causative light verb. Both the causative and the non-causative readings can be obtained through this configuration. The causative meaning can be achieved through reconstruction to the vP shell.

In sum, Franco and Huidobro (2003, 2007) still maintain a tripartite classification of Spanish psych-verbs à la Beletti and Rizzi (1988) but with some modifications to account for the specific phenomena found in Spanish. Class I consists of Subject Experiencer verbs. Class II covers those Object Experiencer verbs that can have both a causative and a non-causative meaning depending on their interpretation in a specific context. Finally, Class III is composed of non-causative Object Experiencer verbs.

This classification is the starting point for the current project. Franco and Huidobro's work is especially relevant for my research for two reasons: first of all, it gives us a very complete analysis of the hybrid nature of Class II and its overlapping characteristics with Class III. Secondly, it brings up the issue of native dialectal variation, which I should take into account in the experimental design and in my predictions about the level of difficulty that these predicates pose for L2 learners.

2.2.3 A Crosslinguistic Model of Psych-Verbs

As we saw in the previous section, there are several proposals that try to account for the syntactic peculiarities of psych-verbs. In this section, I will point to the commonalities among all of them. This will allow me to depict a clear model of psych-constructions crosslinguistically. Hence, I will be able to make a clear comparison between the patterns found in Spanish and English. As a result, I should be able to predict what the sources of difficulty would be for the L1 English learner of L2 Spanish.

This model is largely based on Landau's (2010) in-depth crosslinguistic analysis of psych-predicates. However, it also incorporates the earlier literature. This model is a tripartite classification based on B&R's (1988) seminal work, which has been expanded in order to accommodate new theoretical proposals as well as the patterns of languages as disparate as French, Faroese, Icelandic or Spanish. The theta role Causer, as described by Pesetsky's (1995) terminology will be included in this model. Next, I proceed to describe the characteristics of each individual class.

Class I can be represented by the sentence *John fears snakes* or in Spanish *Juan teme las serpientes*. This class has the following characteristics:

- It is a regular transitive sentence
- The theta-roles involved are the Experiencer and the Theme
- It is aspectually stative
- The predicate is an individual-level predicate
- The object of this construction is not affected by the action of the verb ([-affected])
- Case: Experiencer-Nom. and Theme-Acc.

I have divided Class II into Class II(a) and Class II(b) to emphasize the different aspectual notions that these predicates encode in different contexts. However, the reader has to take into account that this nomenclature is not standard, but it has been put forward by the author of this dissertation. Some authors (e.g. Montrul, 1998) have simply considered that verbs of Class II alternate between classes II and III. I believe that a more accurate portrayal of this situation is to define Class II as a hybrid class whose verbs can have eventive or stative interpretations depending on context. The advantage of this proposal is that it allows us to distinguish between Class II(b) and Class III, which although apparently identical differ in that Class II(b) predicates count with an eventive counterpart that Class III verbs lack. This could predict asymmetrical acquisitional patterns with respect to these classes since dealing with the polysemous forms in Class II(b) could create more difficulty for the learner than acquiring Class III verbs that do not alternate in different syntactic frameworks. Some empirical evidence for this proposal is found in chapter 4. Thus, I follow Franco & Huidobro's (2003, 2007) proposal that denies the existence of a causative (i.e eventive) and a non-causative (i.e. eventive) lexical entry for Class II verbs. On the other hand, they propose that the contrast between these two structures hinges simply on word order; that is, they are derived from the same syntactic configuration. It is, indeed, this subdivision that is able to fill the gaps left unexplained by previous analyses.

Class II (a) (*The explosion frightened Nina/La explosión asustó a Nina*) can be described as follows:

- Transitive
- The theta roles involved in this type of constructions are Causer and an

Experiencer

- It is not subject to the T/SM (Target/Subject Matter) restriction
- It involves a causative meaning
- It is aspectually eventive
- The predicate is a stage-level predicate
- Ths object is [+affected]
- Case: Causer-Nom and Experiencer-Acc.[12]

Class II (b) (*The problem worried Nina/El problema le preocupó a Nina-A Nina le preocupó el problema*) has the exact same characteristics as Class III, which is described below.[13]

Class III (*The play appealed to Mary[14]/La obra le gustó a María-A María le gustó la obra*) can be characterized as follows:

- It is an unaccusative construction[15]
- The theta roles in this construction are the Experiencer and the Theme

[12] The case assignment in Class II (a) might or might not be different from English depending on the dialect. In *non-leísta* dialects, the case of the Experiencer is accusative and in *leísta* dialects the case of the Experiencer is dative.

[13] The standard case assignment for this class is the following: Causer-Nom and Exp.-Acc This is the case of English. However, in Spanish this class has some especial characteristics that make it closer to Class III, as Franco and Huidobro (2003, 2007) proposed. One of the characteristics that overlaps between Class II(b) and III in Spanish is case marking, which is Causer-Nom and Exp.-Dat .

[14] Although I am comparing Class III predicates in Spanish and English, it is important to underline that *gustar* is a much more frequent verb that *to appeal to*. Furthermore *gustar* is informal whereas *to appeal* is part of the formal register. So, *to appeal to* is the literal translation of *gustar* because of their similar morphosyntactic properties, *gustar* seems to be closer in meaning and function to *to like*

[15] This claim is controversial. Although most authors consider these predicates as unaccustive (Parodi-Lewin, 1991; Landau, 2010), researchers such as Franco & Huidobro (2003, 2007) reject this claim for Spanish psych-verbs on the basis of their inability to co-occur with bare nouns *A Ana le gustan *(las) matemáticas* 'Ana likes Math'.

- It is subject to the T/SM restriction
- It is aspectually stative
- The predicate is an individual-level predicate
- The object is not affected by the action depicted in the sentence [-affected]
- Case: Experiencer-Dat. and Theme-Nom.

Having reviewed the past literature on psych-verb syntactic models, I will proceed to present a review of the studies on L2 acquisition of psych-predicates.

2.3. L2 Acquisition of Psych-Predicates

In general, studies on the acquisition of psych-verbs suggest that L2 learners are guided by UG principles such as UTAH or the Thematic Hierarchy. However, they experience more problems related to the different morphological properties that these predicates exhibit in different languages. This is in line with the claim in the Minimalist Program that crosslinguistic variation lies within morphology and the lexicon, and thus outside of the computational system.

Juffs (1996) studied the acquisition of a lexical parameter by L1 Chinese learners of English. He found that L2ers started with L1 parameters but, eventually, were able to change the parameter to the target language (TL) setting. He pointed out that if the L2 input adds a new representation to the grammar, parameters will be reset (e.g. the fact that psych-verbs can be causative in English). On the other hand, L2 input cannot pre-empt overgeneralizations transferred from the L1 (e.g. even advanced L2ers use a greater number of *make* causatives, which is the most common pattern in Chinese, than the native speakers). In this case, positive evidence might need to be accompanied by negative evidence as previously claimed by other authors (White 1991a, 1991b, 1992;

Trahey and White, 1993). He concludes that L2 grammar seems to be constrained by UG since the L2 learners acquired some syntax-semantic correspondences underdetermined by the input. However, he leaves an open question regarding the role of L1 transfer after parameter resetting has taken place.

Montrul (1998) is an interesting study because it brings up the topic of the role of instruction and how this could influence students' representations of these predicates. As the previous study, she finds that the major difficulties of L2 learners are outside syntax-semantics properties. Instead, the more problematic aspect seems to be connected to morphology.

Montrul studied the acquisition of Spanish *gustar*, which is an unaccusative Class III psych-verb, and unaccusative *se* by French and English learners. The grammatical explanations offered by language teachers in classroom settings seem to be misleading and far from what is known through theoretical research. Dative Experiencers are presented in classrooms as indirect objects. Hence, Montrul predicted that, if students were guided by grammatical explanations and grammar manuals, they would treat the dative Experiencer as a Goal. On the contrary, if their grammar was UG-constrained and thus guided by UTAH and the Thematic Hierarchy, they would be aware of the subject-properties exhibited by dative Experiencers (i.e. dative Experiencers are controllers in adjunct clauses, and they also behave like subjects for subject-verb inversion in wh-questions, negative polarity, extraction and embedding).

Results showed that both French and English speakers are guided by the Thematic Hierarchy and not by grammatical explanations. This can also be seen in the pattern of errors exhibited by both groups in which all Experiencers are considered as subjects.

English speakers have a harder time with these unaccusative configurations than the French speakers. The reason for this can be traced to the L1 morphology, particularly, the lack of dative case morphology in English. The English subjects had difficulty with a variety of structures (e.g. psych-verbs and active verbs with Goal arguments) that indicate that their problem with unaccusative psych-verbs might come from the fact that they are in the process of acquiring the dative-case morphology in Spanish. In conclusion, the L2 learners in this study seemed to have access to principles of UG such as the Thematic Hierarchy. Their errors came from a lack of command of the dative-case system in Spanish.

White et al. (1998) were the first authors to stress the importance of understanding the different aspectual interpretations of psych-verbs and how these are morphologically and syntactically encoded for the successful acquisition of these predicates. And although they do not provide a solution, they point us in an interesting direction that we will be able to follow in this dissertation. White et al. (1998) tried to determine if L2 learners of English were aware of the Target/Subject Matter (T/SM) restriction with Class II psych-verbs (see section 2.2.1.3 for an explanation of the T/SM restriction). They assumed Pesetsky's (1995) analysis of psych-verbs. They tested speakers whose L1 was Malagasy, French and Spanish. A higher proportion of Malagasy speakers were able to recognize that violations of the T/SM restriction are ungrammatical.

They account for these facts by updating Pesetsky's (1995) analysis of the T/SM restriction. For Pesetsky, the T/SM restriction was a consequence of the zero CAUSE morpheme and the implications of its presence for the Head Movement Constraint. On the contrary, White et al. (1998) argue that this restriction is related to stativity and the

way it is morphologically encoded in both the L1 and the L2. Following Parodi-Lewin's (1991) intuitions about Spanish psych-verbs, the authors claim that the T/SM restriction applies only if a verb is stative but not when the verb has an eventive reading. Thus, the problem of acquiring the T/SM restriction gets redefined in this paper. The learner needs to discover which predicates in the language are stative and which ones are eventive. The way the stative/eventive distinction is morphologically encoded in the native language will have consequences for the acquisition of these differences in the target language as it was reflected by the different performance of French and Spanish speakers on the one hand, and Malagasy speakers on the other. Malagasy speakers performed better than Spanish and French speakers. The reason for this lies in the fact that Malagasy has two affixes that attach to psych-verbs: *maha* makes the verb stative and *mampa* is a causative morpheme. Conversely, Spanish and French do not have different morphemes that attach to the verb to indicate causativity/eventiveness vs. stativity. The morphological encoding in Malagasy provides an advantage for its speakers over the Spanish[16] and French participants. Hopefully, we should be able to clarify these issues with a more in-depth analysis of the acquisition of the different aspectual classes of psych-verbs in Spanish by English L1 speakers; specifically we will look at classes II(a) and II(b)/III.

In a later study White et al. (1999) focus on a different issue related to the acquisition of psych-verbs. They show that, in spite of the high frequency of Object Experiencer psych-verbs in the input, L2 learners from different L1 backgrounds tend to show the same pattern of error with this type of predicate: they treat the Experiencer as a subject in Object Experiencer verbs. They followed B&R's (1988) analysis of Class II

[16] In Spanish, the accusative or dative clitic signals eventiveness or stativity in some dialects.

verbs and they did not include Class III in the study. They tested speakers of Malagasy, Japanese, French and Spanish learning English as their second language. As they predicted, the errors were unidirectional and consisted of promoting the Experiencer as the subject. This pattern of error is in accordance with the Thematic Hierarchy since Experiencers are projected higher than Themes. So, the subjects' interlanguage seemed to be constrained by the Thematic Hierarchy and UTAH. The problem then lies in the fact that L2ers were unable to move the Theme to subject position. However, this did not seem to be part of a more general difficulty with A-movement since they were able to do passives. They conclude by leaving the door open to another possibility: if Pesetsky's (1995) model is followed, then the L2 learners' problems might stem from an inability to recognize the causative nature of OE verbs. This relates to what White et al. (1998) had previously claimed. If the problem lies in L2 learners' inability to recognize the causative nature of these predicates, that is their eventiveness, then it seems like lexical aspect is at the heart of the problem.

Montrul (2001) takes a different stance on the issue by focusing on morphology and the problems derived from the way psych-predicates are morphologically encoded in different languages. Montrul tries to determine whether L2 learners' morphological problems with argument-changing morphology are unconstrained or systematic. She studied a group of subjects whose native languages were English, Spanish, Turkish and Japanese. The L2 languages tested were English, Spanish, and Turkish. The phenomenon under scrutiny was the causative/inchoative alternation in agentive change-of-state verbs and in OE psych-verbs (e.g. *frighten*). This alternation occurs in all the languages tested but it is expressed with different morphological reflexes. She found that zero morphology

is harder to acquire than overt morphology. Also, speakers whose L1 expresses the alternation with a null morpheme but are learning a target language in which the alternation is morphologically overt, tend to assume that the morpheme is phonologically null. Conversely, L2ers learning a TL in which the alternation is morphologically null but whose L1 indicates the alternation morphologically, tend to find a morphophonological form to express the phenomenon in the L2. She claims that the errors are computational rather than representational since the learners have problems merging features and forms and are constrained by the morphological form of the L1 affixes. They also experienced more problems with psych-verbs than agentive verbs since they have the added difficulty of misalignment of thematic roles to syntactic positions. The findings of this study provide further support for the Full Transfer/Full Access Hypothesis (Schwartz & Sprouse, 1996), which predicts that L2 learners have full access to UG although they take the L1 to be the starting point of the acquisition process. Morphology seems to be a vulnerable area in the acquisition of psych-verbs. However, as Montrul explained in her work, the level of difficulty will depend on the different language combinations and how these predicates are realized in each of them.

Rubio (2000, 2001) studied the hybrid behavior of Class II psych-verbs, which can surface as eventive or stative predicates. Particularly, he studied L2 learners' ability to use a morphosyntactic cue (the case of the clitic: accustive vs. dative) as a reflex of the eventivity vs. the stativity of the predicate. He compared two teaching methods with regard to the acquisition of these predicates: traditional instruction and processing instruction (VanPatten, 1996). Processing instruction is an output-based approach, which aids students in developing form-meaning connections in the L2 by restructuring their L1

processing strategies. Processing instruction proved to be more advantageous for both producing and understanding this phenomenon.

Toribio and Nye (2006), as in the current study, present their research in the framework of the Interface Hypothesis. They studied the acquisition of reverse psychological predicates by Spanish heritage speakers in the U.S. This term, reverse psychological predicates, has been used by several authours such as dePrada Pérez et al. (2005); Toribio & Nye (2006); dePrada Pérez & Pascual y Cabo (2011) to refer to psych-verbs that present a non-canonical mapping of thematic roles to syntactic positions. In this particular study, they focus on Class III psych-predicates. They argue that heritage speakers' grammars are incomplete with regard to these constructions. These authors find evidence for invariable *le*, that is, a less categorical rejection of *le* with plural Experiencers than *les* with singular Experiencers. This is considered to be the result of phonological simplification. This specific issue will be tested in experiment 2 (chapter 3). The authors conclude that the heritage speakers have mastered properties of the core grammar such as Agreement and Case but they still exhibit non-target behavior in the properties that relate to interfaces, both the syntax-pragmatics interface and the syntax-lexicon interface. The former becomes evident through the constant preference for pre-verbal Experiencers, while the latter is reflected in the restructuring of the argument structure. This is evidenced in participants' responses that point towards a more transparent mapping of reverse psych-predicates: they map the animate argument to the structural subject position and the inanimate argument to the structural object position.

dePrada Pérez & Pascual y Cabo (2011) also studied heritage speaker participants; however, they centered on the study of the reverse agreement properties of

two predicates: *gustar* 'to like' and *encantar* 'to love'. Unlike Toribio & Nye (2006) they did not find evidence for invariable *le* or for a tendency to restructure the argument structure of these predicates. Nevertheless, they found empirical support for invariable *gusta,* which becomes evident with participants' less categorical rejection of *gusta* with a plural Theme than *gustan* with a singular Theme. They ascribe this behavior to a process of morphological simplification of the verbal paradigm, although they encourage future researchers to investigate a possible phonological or syntactic process underlying invariable *gusta*.

Since most of these studies were conducted before the advent of the Interface Hypothesis, we cannot establish clear parallels between them and this theoretical account. It would be difficult to appraise the IH since these studies do not test pragmatic properties, which are at the heart of this theory. However, what is clear from these studies is that psychological predicates pose many difficulties connected with morphology, semantics (particularly, aspect) and also pragmatics (as stated by Toribio & Nye (2006)). It is obvious from the results of previous research that the role of the L1 is essential in order to determine if these predicates are going to be easily acquirable and to predict the areas where transfer will occur. This is one of the aspects highlighted by the Integrative Model of Bilingual Acquisition and also, as we will see, a key aspect in understanding the behavior of the participants in the present project.

Before introducing the experiments that are the focus of this study, I will briefly discuss how the role of instruction can affect the acquisition of psych-predicates. Many researchers in the field of generative second language acquisition subscribe to the view that instruction can be beneficial and it can accelerate the rate of acquisition not as

language instruction *per se* (i.e. metalinguistic knowledge) but as it provides input for the L2ers. It is important to underscore that the general idea is that instruction is beneficial neither as negative evidence (i.e. information about what an impossible structure is in the target language) nor as explicit positive evidence (i.e. metalinguistic explanations about the target language) but insofar as instruction provides primary linguistic data (i.e. contextualized utterances in the target language) which is able to cause the learner to re-structure his grammar (Schwartz & Gubala-Ryzak, 1992). On the contrary, Slabakova (2008, 2010) claims that meaningful focus on morphological forms (what she considers the 'bottleneck' of acquisition) should be useful for the learner. Particularly, she argues against communicative methods and for pedagogical approaches like the Focus on Form (Doughty, 2001), Input Processing (VanPatten, 1996, 2000, 2007), and Skill Acquisition (DeKeyser, 1997, 2001, 2007).

Having explained how the role of instruction is considered in generative SLA, I would like to underline as Montrul (1998) did in her study of psych-verbs that instruction of these constructions seems to be misleading and does not foster the correct analysis of these constructions. First of all, the Experiencer is presented as the indirect object, being deprived of all of its subject properties. On the other hand, the Theme is presented as the subject of the sentence, which does not explain why actually the unmarked order has the Experiencer in subject position. Secondly, we can say that, even if under an incorrect analysis, the presence of the dative Experiencer (with the preposition *a*) and the clitic are introduced in the L2 classroom. So, the functional morphology is explicitly taught and drilled in L2 classroom settings. Yet it is an area that remains problematic for L2 learners. Thirdly, under the "Verbs like *gustar*" title, classes II and III, and other

unaccusative verbs get collapsed into just one analysis. There is also no mention of the aspectual subdivision in Class II in textbooks. Finally, pragmatic conditions are never addressed in L2 classrooms. So, in order to determine if L2ers are guided by instruction or universal mechanisms of language acquisition, we will need to keep these facts in mind. Particularly relevant for this study is the fact that the structures presented in experiments 1 and 2 (i.e. clitic properties and clitic and verb agreement) could have been *learned* through instruction, which does not mean that participants had actually *acquired* this knowledge unconsciously or that their internal grammar had been restructured.

2.4 Introduction to the Current Project

2.4.1 Filling a gap in the literature

My project was designed with a dual goal in mind: the first one is to expand our understanding of the L2 acquisition of Spanish psych-verbs. By providing a comprehensive analysis on how different areas of psych-predicates are acquired (e.g. their syntax, their discourse properties *et cetera*) through four different proficiency levels (i.e. near-native, advanced, intermediate and low), I intend to address some of the questions unexplored or unanswered by the previous research. The second objective is to assess the adequacy of the Interface Hypothesis as an explanation for Spanish psych-verb acquisition and, ultimately, as a compelling theoretical account for second language acquisition in general.

These goals derive from the main tendencies in generative research that have moved beyond the question of access to UG to explore different types of queries. My line of research has been inspired by the work of those researchers who strive to find the underlying reasons for non-native linguistic challenges in the areas that lie beyond the

realm of UG. The IH is a theory driven by this same force. Particularly, the IH has found a common explanation for optionality at the highest level of second language, simultaneous first language acquisition, and language attrition. This explanation has to do with the relative cognitive load that different types of structures impose on the language learner when processed in real-time. Thus, it is claimed that external interfaces are less likely to be acquired completely than internal interfaces (and narrow syntax) since integrating material from both linguistic and cognitive modules (which is required to process external interface phenomena) is more cognitively taxing than processing material from linguistic modules exclusively (i.e. internal interfaces).

Toribio and Nye (2006) is the only study of psych-verbs grounded in the IH. Since their study targets heritage speakers, the current project will complement their research by presenting some wide-ranging data on second language learners. Next, I believe this project will enhance our perspective on psych-verb acquisition, particularly discourse properties, by resorting to a more appropriate experimental design. Their methodology, consisting of a guided written task and a grammaticality judgment task, does not seem to be the most appropriate to test discourse-related phenomena. The reason for this is that the test items are presented in isolation without a context that controls for pragmatic factors. Thus, the response of the heritage learner is not really based on any pragmatic conditions. Their claims about learners' inability to deal with syntax-pragmatics-interface phenomena are based on the learner's preference for the Experiencer-Verb-Theme order. However, if we do not regulate the pragmatic context, how can we make claims about learners' ability to integrate syntactic and pragmatic information? By using a methodology in which the learner is forced to show his

preference (on a scale of pragmatic felicitousness) for Theme-Verb-Experiencer (TVE) or Experiencer-Verb-Theme (EVT) in relation to specific discourse conditions, I will be able to make stronger claims about their ability to integrate information from both the language system and cognitive domains.

Another issue about the acquisition of psych-predicates that has not been settled by the previous research is the use of invariable *le* and invariable *gusta*. Toribio & Nye (2006) and, previously, Dvorak & Kirschner (1982) had argued for the existence of a phenomenon they named invariable *le*. This resulted from heritage learners' overacceptance of the singular clitic in ungrammatical contexts. On the other hand, dePrada Pérez & Pascual y Cabo (2011) found no empirical evidence for invariable *le*. On the contrary, their data provide support for a similar phenomenon invariable *gusta*, which consisted of the overacceptance of *gusta* in ungrammatical contexts. In chapter 3, we will explore this issue in order to ascertain whether any of these phenomena are present in L2ers' grammars.

Furthermore, learners' understanding of the subtle differences between classes II/III has not attracted much attention in the past research of Spanish psych-verb acquisition.[17] As I presented earlier, Class II has a hybrid behavior and can be eventive (Class II(a)) in some contexts and stative (Class II(b)) in other contexts. On its stative interpretation, Class II(b) functions both morphologically and syntactically like Class III, which is also aspectually stative. Table 1 summarizes the different properties of these

[17] Experiments 3A and 3B will test the categorization problem of classes II(a) and II(b)/III. In contrast, experiments 1, 2 and 4 will focus on phenomena that concern classes II(b) and III. For clarity purposes, I will refer to these classes as III. However, as I pointed out earlier, there are theoretical reasons to keep II(b) and III as two different classes.

classes, which have been formerly described by Parodi-Lewin (1991) and Franco & Huidobro (2003, 2007).

Table 1. Semantic and morphosyntactic differences between Class II(a) and Class II (b)/III

Class II (a)	**Class II(b)/III**
Class II(a): *molestar* 'to bother', *preocupar* 'to worry', *asustar* 'to scare', *sorprender* 'to surprise'	Class II(b): *molestar* 'to bother', *preocupar* 'to worry', asustar 'to scare', *sorprender* 'to surprise'
	Class III: *gustar* 'to like', *encantar* 'to love', *importar* 'to matter'
Eventive	Stative
Leísta dialect: no clitic or dative clitic Non-leísta dialect: Accusative clitic	Clitic is obligatory Dative clitic
One order: Theme/Experiencer order	Two orders: Experiencer/Theme Theme/Experiencer
Object [+affected]	Object [-affected]
Se construction: Juan se preocupa por sus padres *Juan worries about his parents*	No *se* construction: *Juan se gusta por sus padres *Juan likes by his parents*
Causative embedding: María hizo preocuparse a Juan *Mary made Juan worry*	No causative embedding *María hizo gustarse a Juan *María made John like*

Rubio (2000, 2001) has been the only researcher to this point that actually studied the acquisition of the hybrid properties of Class II verbs. In particular, he focused on the acquisition of the case of the clitic as a cue for eventiveness and stativity. Interestingly, the area that he chose to study, case of the clitic as an indicator of the aspectual status of

the predicate, is subject to a great deal of dialectal variation (see section 2.2.2.1). Thus, in this project, I decided to focus on two other constructions: word order and antipassive *se*, which are consistent across dialects. Also, I included Class III predicates. Hence, participants did not only have to understand the hybrid nature of Class II predicates but also, how this class compares to predicates of Class III.

By investigating these properties, we will have not only a clearer picture of how learners acquire psych-verbs in relation to predicates that exhibit a canonical mapping of theta roles to syntactic positions, but also we will have a better insight into their understanding of the different classes of psych-verbs and the role that lexical aspect plays in this acquisition process.

The second goal of this dissertation, as I pointed out previously, is to ascertain the validity of the Interface Hypothesis as a theory for second language acquisition. Because the experimental results of this study are not consistent with the claims of the IH, I argue that the solution to native vs. non-native differences must be accounted for through a more sophisticated model, namely, the Integrative Model of Bilingual Acquisition. This model encompasses four factors (formal complexity, L1 and L2 parameter settings, processing and PLD) and explains the acquisition process through the integration of these factors.

Finally, my empirical data will help us enlighten some questions at the core of the generative line of research in second language acquisition such as access to UG, the structure and development of non-native grammars and the question of fossilization.

2.4.2 Predictions for the L2 Acquisition of Spanish Psych-Verbs

In this section, I will propose some specific predictions about the L1 English-L2 Spanish acquisition process. On the one hand, these predictions will be motivated by language particular differences between English and Spanish patterns of psych-verbs. On the other hand, these predictions are based on theoretical assumptions and previous findings in the L2 literature.

First of all, I will point out the similarities and differences between Spanish and English patterns of psych-verbs and explain how certain difficulties in the L2 acquisition process can stem from these divergences. Class I functions the same way in Spanish and in English *(John fears snakes/Juan teme las serpientes).* So, in principle, no errors are predicted in this class. This is also supported by the previous literature (White et al., 1999). For this reason, Class I predicates have not been included in this study.

With respect to Class II, we have to remind the reader about the important dialectal differences in Spanish, which were mentioned in the previous section, with regard to the case of the clitic and the presence or absence of this element in order to express the stative/eventive distinction. This would mean that a learner might encounter teachers and friends that speak different dialects and therefore would get conflicting input. This could make the acquisition of these properties even less straightforward. Hence, I predict this class to present a big challenge for the L2 learner since it is subject to dialectal variability.

Furthermore, the hybrid nature of this class and how the aspectual distinctions of Class II(a) and II(b) are morphologically and syntactically encoded could be a challenging area of the L2 grammar. The syntax of Class II (a) (*The explosion frightened*

Nina/La explosión (la/le) asustó a Nina) functions in the same way in English and Spanish since the Experiencer cannot function as a subject so it always has to appear in postverbal position. Some morphological differences between English and Spanish are the oblique case of the Experiencer (which might be dative or accusative depending on the dialect), the preposition *a* that marks the oblique case and the clitic, which is optional for this class but, when present, could bear accusative or dative case depending on the dialect.

Next, I will describe Class III (*The play appealed to Mary/La obra le gustó a María-A María le gustó la obra*) and Class II (b) (*The problem worried Nina/El problema le preocupó a Nina-A Nina le preocupó el problema*) as a unified group since they exhibit the same properties in Spanish.[18] These classes function morphologically and syntactically differently in both English and Spanish. Morphologically, we have an obligatory dative clitic in Spanish that has no overt correspondence in English. There is also a dative quirky subject preceded by the preposition *a*. Syntactically, the order of the arguments can be reversed in Spanish (depending on pragmatic factors) since the Experiencer in Spanish is a quirky subject; however only one order of arguments is permitted in English:

(36) La obra le gusta a María
A María le gusta la obra
Mary likes the play

(37) The play appeals to Mary
*To Mary appeals the play

[18] In English, these classes (II(b) and III) are different from each other because in Class II(b) verbs, the Experiencer receives accusative case and in Class III, it receives dative case. However, this distinction is blurred in Spanish since both Class II(b) and Class III have a dative Experiencer.

An added difference that might cause difficulty for the L2 learner is the fact that several verbs belong to different classes in each language. For instance, *gustar* and *encantar*, which belong to Class III in Spanish are most commonly translated as *to like* and *to love*, which belong to Class I in English. And although it might depend on the translation (many books translate *gustar* as *to be pleasing* or *to appeal to*), the truth is that *to like/to love* seem to be the most natural counterpart based on frequency and the informal nature of these verbs in Spanish. So, we can expect to find *gustar* used as a Class I verb with a nominative subject and a non-reversible order of arguments (**Yo gusto los deportes* 'I like sports'). On the other hand, we can also expect to find overgeneralizations that act in the opposite way (although, as White at al. (1999) empirically demonstrated, these are not nearly as common): analyzing a Spanish Class I verb as a Class III verb following the *gustar* mismatch of c lasses.

(38) Odio las zanahorias
Hate-1p.sg. the carrots
I hate carrots

(39) *Me odian las zanahorias
Me-dat hate-1p.sg. the carrots

The experiments of this dissertation test different types of these predicted errors: Experiments 1 and 2 test narrow syntactic properties. In particular, experiment 1 tests the case, position, and obligatory nature of the clitic. Experiment 2 tests the question of clitic and verb agreement. According to the Interface Hypothesis, this type of properties are supposed to be the least problematic since they belong to the narrow syntax. On the other hand, if we think of a different model such as the Integrative Model of Language Acquisition, which includes the role played by the L1, we could predict certain difficulty

in this area since the clitic is an element that has no counterpart in English grammar and the agreement system is certainly much less sophisticated in English than in Spanish.

Experiments 3A and 3B test learners' ability to categorize psych-verbs into different classes according to their aspectual and morphosyntactic properties. According to the IH, because these structures belong to an internal interface, they should be less vulnerable in acquisition than properties that hinge on external interfaces. Furthermore, they should not present residual optionality at the highest level of second language attainment. In this specific area I agree with the predictions of the IH because I believe that L2 learners can make use of some universal principles that will guide their acquisition process of these properties, particularly, with regard to classifying different classes of predicates. Additionally, if we consider the Integrative Model of Bilingual Acquisition, which includes the role of the L1, we can see how the L1 can provide some scaffolding in these tasks (although not complete guidance as I will explain in chapter 4). Thus, the acquisition of the relation between the syntax and the semantics of these predicates should not be insurmountable. However, some difficulties are predicted with respect to the morphological reflexes of the eventive/stative divide since those have to be learned on the basis of input.

Experiment 4 tests an external interface property, namely, the effect of pragmatic factors on the word order of psychological predicate constructions. The Interface Hypothesis predicts this property to show residual difficulties as opposed to the properties tested in the previous experiments. However, if we look at the Integrative Model of Bilingual Acquisition and taking into account that L2 learners can be guided by universal principles that regulate pragmatically-derived word order crosslinguistically

and in their L1, then there is no reason to believe that this property will be particularly problematic for L2 learners if they can access this universal principle and the L2 syntactic patterns are in place.

If we follow Minimalism's stance on crosslinguistic variation and language acquisition, we expect students to be more accurate with the syntax than with the morphology. This is because Minimalism places the locus of crosslinguistic variation in morphology and the lexicon. Thus, the task of the L2 learner is to acquire lexical features in the target language and the way these are encoded morphologically. Syntactic computations (e.g. principles such as *Move* or economy of derivation) are universal and L2 learners have access to these operations. Thus syntax *per se* is not predicted to cause major problems in terms of acquisition. In fact, the predictions described above are confirmed by previous findings in the L2 literature (Juffs, 1996; Montrul, 1997; White et al. 1999, 1999; Montrul 2001; Zhang, 2007). All these studies point to the conclusion that L2 learners do not experience difficulty with the syntactic properties of these predicates. Conversely, they claim that the pattern of errors found in the L2 learners' interlanguage has to do with an incomplete knowledge of the specific morphological properties (e.g. zero CAUS morpheme, clitics etc.) that these predicates exhibit in different languages.

As I pointed out previously, one of the most recent studies on Spanish psych-verbs is Toribio and Nye (2006), who studied the problem of interfaces in connection to Spanish Class III psych-verbs. They did find problems with both the syntax-lexicon and the syntax-pragmatics interfaces. However, they found pretty reliable knowledge of properties related to the narrow syntax of these predicates. Following the theoretical predictions of the Interface Hypothesis and the findings by Toribio and Nye (2008), the

predictions are that interface-conditioned properties will be acquired later than the narrow syntax. According to Toribio and Nye's (2006) study, both external and internal interfaces are areas of residual optionality. So, although it does not contradict the Interface Hypothesis, it does not provide evidence for the main tenet of the IH: the fact that external-interface-conditioned properties would be acquired after properties related to internal interfaces. This is something that we will evaluate in the present study.

In the next chapter, I will describe the methodology for the current project and present the empirical results of experiments 1 and 2, which open this set of experiments by testing several syntactic properties related to psych-verbs.

CHAPTER 3
SYNTACTIC PROPERTIES OF PSYCH VERBS

This chapter presents experiments 1 and 2, which examine two different types of syntactic properties of psychological verbs, namely, the use of clitic pronouns and agreement relations in these predicates. However, before that, I will introduce some aspects of the experimental design that are common to all of the experiments presented in this dissertation. Afterwards, I will focus on the description of the goals, methodology, results and discussion pertinent to experiments 1 and 2.

3.1 Design of the Experimental Study (Experiments 1, 2, 3A, 3B and 4)

3.1.1. Participants

A total of 101 subjects participated in this study. 36 native speakers of Spanish constituted the control group, all of them from Spain. The control group's ages ranged from 20 to 42 years. All participants had a college degree or were attending college at the time of the experiment. With regard to the level of English (or any other foreign language) of the control participants, they had either a very basic knowledge or no knowledge of the language. None of them used English on a daily basis and they had not travelled to an English-speaking country for more than a week. By controlling the level of English in the native speaker population, I made sure that the control sample in this study represented a monolingual variety unaffected by language contact. This is especially important at the level of syntax-pragmatics, since properties related to this

interface tend to be more susceptible to alteration when languages come into contact (Myers-Scott, 2002).

The experimental group consisted of 65 non-native speakers of Spanish whose first language was English. The non-native speakers were assigned to different proficiency groups according to their score in an independent proficiency test. The test is a section of DELE (Diploma de Español como Lengua Extranjera/Diploma of Spanish as a Foreign Language), which assesses knowledge of grammar and vocabulary. This is the common standardized measure used by many L2 researchers (e.g. White, Valezuela, Kozlowska-MacGregor & Leung, 2004; Montrul 2004; Rothman & Iverson 2008, *inter alia*). Sixteen subjects were classified as near-natives, 21 subjects as advanced, 16 subjects as intermediate and, 12 subjects were classified as low-proficiency learners. The second language learner group was composed of both college students taking an advanced grammar and composition class (intermediate and low-proficiency groups) and instructors of Spanish at a research university in the U.S (advanced and near-native groups). Thus, it is important to underscore that even the lower proficiency groups were not beginners, but had taken several semesters or Spanish (an average of 6) and many of them had studied abroad before the time of the experiment. Their ages ranged from 19 to 45. Students received extra credit for their participation in the experiment and the instructors received a small token gift.

3.1.2 Methodology

This dissertation encompasses 5 different experiments. All of the experiments were conducted in PsyScope (Cohen, MacWhinney, Flatt, & Provost, 1993). Each subject received a specific set of instructions before starting the task and conducted a training

trial before each one of the experiments. Four of the experiments consisted of a scalar grammaticality judgment task and one of them required a scalar judgment of pragmatic felicitousness. All of the tasks followed the same procedure. However, there were certain details of the methodology that varied from experiment to experiment due to the specific characteristics of each set of stimuli. I will describe these differences below in the description of each individual experiment. In all experiments the participants were presented with a series of sentences on a computer screen that they had to rate on a Likert scale according to how natural the sentence sounded to them. This is the way the scale was presented to them:

1) *The sentence sounds really bad. You would never use it and you cannot imagine any native speaker using it.*
2) *The sentence sounds bad to you but not as bad as 1. You can imagine some native speakers using this sentence.*
3) *You can't decide or the sentence doesn't sound too bad or too good.*
4) *The sentence sounds pretty good to you but not as good as 5.*
5) *The sentence sounds good to you. It's perfectly natural. You can imagine yourself or other/a native speaker using it.*

In each experiment, the way the sentences were organized was the following. First of all, a brief paragraph showed up in the computer screen. The subject had to read the paragraph and press any key to make the paragraph disappear once he had read it. This paragraph provided a context for the sentences that the subject had to rate subsequently. Next, he would see either two or four sentences (depending on the experiment) following the context. It is important to highlight that these sentences were presented in consecutive order. So, the subject had to rate each sentence in isolation. The experiment did not allow subjects to go back to the previous sentence or change their answers. The test sentences in each experiment always contained psych-verb constructions and were very similar to each other, although they all included some kind of manipulation; syntactic, semantic or

pragmatic depending on the individual experiment. An equal number of fillers were presented in each of the experiments. The fillers included a manipulation similar to the test items: syntactic, semantic or pragmatic depending on the specific task.

The experiments were presented in random order. There were 5 different possible combinations, and participants were assigned to one of these orders randomly. Furthermore, the contexts and their corresponding sentences were randomized with respect to other contexts and sentences. Finally, the sentences within each context were also randomized. By this process of randomization, I minimized the effect of undesirable contamination between experiments, contexts and/or sentences.

3.1.3 Statistical Analysis

A repeated-measures ANOVA was conducted to determine the relation between the subjects' sentence ratings and the conditions tested in each experiment. I tested the appropriate contrasts adjusting for multiple observations within subjects.

From this point onwards, the chapter focuses on the description of experiments 1 and 2.

3.2 Experiment 1: Goal and Research Questions

This experiment was designed to test a narrow syntactic property of psychological predicates. More specifically it tested subjects' knowledge of the syntax of clitics. Subjects needed to demonstrate knowledge of clitics with regard to case (dative vs. accusative), absence vs. presence of the clitic and position of the clitic with respect to the verb. Because these properties hinge on the presence or absence of a specific functional projection (AgrIOP) and spec-head relations, I classified them as narrow syntax. This

experiment was included in the battery of tests because knowledge of clitics is a pre-condition for the correct use of any kind of psych-verb construction.

The main question I tried to answer with this experiment was: Are learners sensitive to clitic manipulations in psych-verb constructions?

3.3 Experiment 1: Methodology

The experiment was a scalar grammaticality judgment task. It consisted of 32 sentences, half of which were fillers. Regarding the test items, there were 4 contexts and each context was associated with 4 possible sentences. The experiment contained four different conditions manipulated within participants and each sentence represented one of the conditions. The first issue that I wanted to test is if participants understood the case restrictions associated with the clitic in psych-verb constructions, namely, that the clitic in psych-verb constructions always bears dative case. (1a) and (1b) below illustrate this question: (1a) is an example of a grammatical sentence because it contains a dative clitic. On the other hand, (1b) is ungrammatical because the clitic bears accusative case. The second question I wanted to analyze was whether L2 learners understood the obligatory nature of the clitic in this type of construction. This case is represented in sentence (1c), which contains a null clitic. This yields an ungrammatical sentence since, as I pointed out, the clitic is a required element of the construction. Finally, the last issue I wanted to explore was whether second language learners were sensitive to the strict placement restrictions of clitics (e.g. the clitic should be attached to a non-finite verb and placed in front of the verb when this is a finite verb). For this purpose, (1d) illustrates an example of a sentence in which the clitic has been misplaced, attached to the end of a finite verb

instead of preceding it. So, out of the four sentences presented to the subject, only one was grammatical (1a).[19]

1) Mercedes acaba de volverse vegetariana. Así que no come nada de carne pero no es una vegetariana estricta
   Mercedes just became vegetarian. So, she does not eat any meat, but she is not vegan

   a. A Mercedes le gusta el pescado
      Mercedes le-dat .cl. like-3p.s. the fish
      Mercedes likes fish

   b. *A Mercedes la gusta el pescado
      Mercedes la-acc. cl. like-3p.s. the fish
      Mercedes likes fish

   c. *A Mercedes gusta el pescado
      Mercedes like-3p.s. the fish
      Mercedes likes fish

   d. *A Mercedes gustale el pescado
      Mercedes like-3p.s.-le-dat cl. the fish
      Mercedes likes fish

The fillers were very similar to the test items insofar as they included the same type of conditions: dative clitic, accusative clitic, null clitic and clitic in the wrong position. The difference between the test items and the fillers lies in the fact that while the former tested psych-verb constructions, the latter targeted double object constructions such as the one we can see in (2).

2) Ana estaba muy agradecida por todo lo que Marcos había hecho por ella

[19] Besides the manipulation previously explained with respect to the clitic, I introduced one more condition: the order of the constituents in the sentence: with half of the sentences exhibiting Experiencer-Verb-Theme order and, the other half, Theme-Verb-Experiencer order. The data that I present here is collapsed across orders. This condition was introduced to balance the stimuli with regard to alternate word orders. This was also done within participants. In general, the sentences with a dative clitic were given higher ratings in the EVT order. However, since these findings are not pertinent to the question we are studying in Experiment 1, they will not be mentioned unless they are particularly enlightening with respect to a specific issue. The results of this manipulation are presented in Appendix B
.

Ana was very thankful for everything Marcos had done for her

a. Ana le dio un regalo a Marcos
   Ana le-dat. cl. gave-3p.s. a present to Marcos
   Ana gave a present to Marcos

b. *Ana lo dio un regalo a Marcos
   Ana lo-acc. cl. gave-3p.s. a present to Marcos
   Ana gave a present to Marcos

c. ?Ana dio un regalo a Marcos
   Ana gave-3p.s. a present to Marcos
   Ana gave a present to Marcos

d. *Ana diole un regalo a Marcos
   Ana gave-3p.s.-le-dat. cl. a present to Marcos
   Ana gave a present to Marcos

(2b) and (2d) are ungrammatical and (2a) is grammatical like for the test items. However, unlike the test items, (2c) is grammatical because it is a simple sentence with SVO order in which the clitic is not obligatory. Nevertheless, certain speakers might find this sentence more natural when a dative clitic is included. Subjects were warned that their judgments for each item were independent of the others.

3.4 Experiment 1: Results

The results of the control group will be presented first in order to set up the standard for the task. Then, the results of the L2 learners groups' will be presented starting with the highest proficiency group (i.e. near-natives) and finishing with the lowest proficiency group (i.e. low). This will be the format followed for all of the remaining experiments.

In general, the experiment did not seem to pose great difficulties for the L2ers, who behaved very similarly to the native speaker group. Next, I will provide a detailed analysis of the findings in each individual group.

3.4.1 Results of the Control Group

Table 2/Figure 3 presents native speakers' mean response rating. The native speakers rated the sentences with the dative clitic significantly higher than each of the other three conditions. So, the dative condition is clearly different from each of the three ungrammatical conditions (Dat vs. Acc χ^2=1026.8, p<.0001; Dat vs. No clitic χ^2=378.78, p<.0001; Dat vs. Wrong position χ^2=2092.1, p<.0001). Within the ungrammatical conditions, the sentences with no clitic received a significantly higher rating than the other two (No clitic vs. Acc: χ^2=20.76, p<.0001; No clitic vs.Wrong position: χ^2=44.40, p<.0001).

Table 2. Response means for experiment 1 (Control group)

Analysis Variable : response		
Clitic manipulation	**N Obs**	**Mean R**
(1a) Dative	144	4.79
(1b) Accusative	144	1.40
(1c) No clitic	144	2.04
(1d) Wrong position	144	1.18

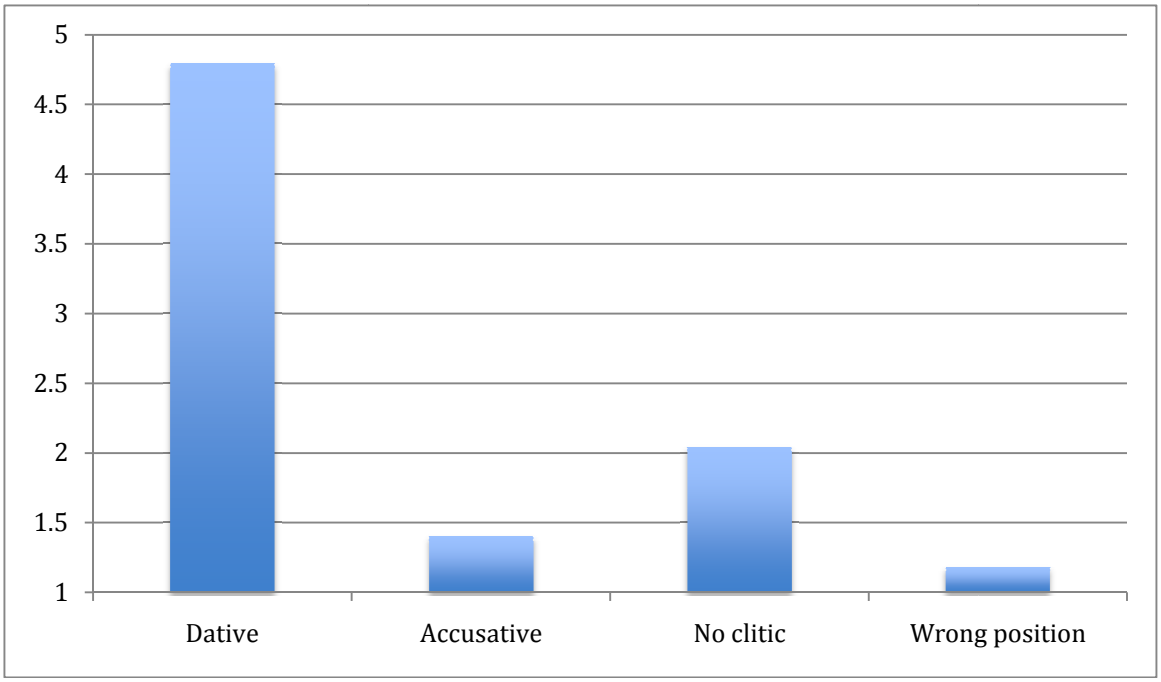


Figure 3. Response means for experiment 1 (Control group)

These general results fit with my expectations: native speakers recognized the dative clitic as the grammatical option. However, there is a surprising result with regard to the ungrammatical category 'No clitic,' which was rated significantly higher than the two other ungrammatical categories. The reason for this unexpected higher rating of sentences lacking the clitic could be due to contamination of the fillers, which consisted of sentences in which the clitic could indeed be omitted (e.g. *Ana dio un regalo a Marcos* 'Ana gave a present to Marcos').

However, a further analysis of these responses leads me to claim that there is a different source for this phenomenon based on verbal agreement recoverability. At this point, it is important to bring up the results of this category broken down by word order (Experiencer-Verb-Theme vs. Theme-Verb-Experiencer) since they are particularly informative. Interestingly, the no clitic condition was rated significantly higher in sentences with TVE order (mean=2.5) than in sentences with EVT order (mean=1.58)

(χ^2=44.00, p<.0001). So, sentences like *La playa encanta a mi hermana* 'My sister loves the beach' was given significantly higher ratings than *A Daniel importa el examen* 'Daniel cares about the test.' The reason for this seems to be based on the ease of recoverability of the agreement features of the verb. This issue will be explained in the Discussion section (see 3.7).

3.4.2 Results Near-Native Group

Table 3/Figure 4 shows that for the near-native speaker group, as was the case for the native speakers, the dative condition was always rated higher than the other conditions (Dat vs. Acc: χ^2=345.18, p<.0001; Dat vs. No clitic: χ^2=222.74, p<.0001; Dat vs. Wrong position: χ^2=377.92, p<.0001). Again, as with the native speakers, the sentences with a null clitic were considered less ungrammatical than the sentences with an accusative clitic or the sentences with the clitic in the wrong position (No clitic vs. Accusative: χ^2=7.76, p=0.0054, No clitic vs. Wrong position: χ^2=10.73, p=0.0011). Additionally, like the control group, sentences without a clitic received a higher rating when the sentence had the TVE configuration (no clitic/TVE mean=1.84; no clitic/EVT mean=1.37). However, for this group of speakers, the distinction did not reach significance (χ^2=3.26, p=0.07).

Table 3. Response means for experiment 1 (Near-native group)

Analysis Variable : response		
Clitic manipulation	**N Obs**	**Mean R**
(a) Dative clitic	64	4.48
(b) Accusative clitic	64	1.15
(c) No clitic	64	1.60
(d) Wrong position	64	1.07

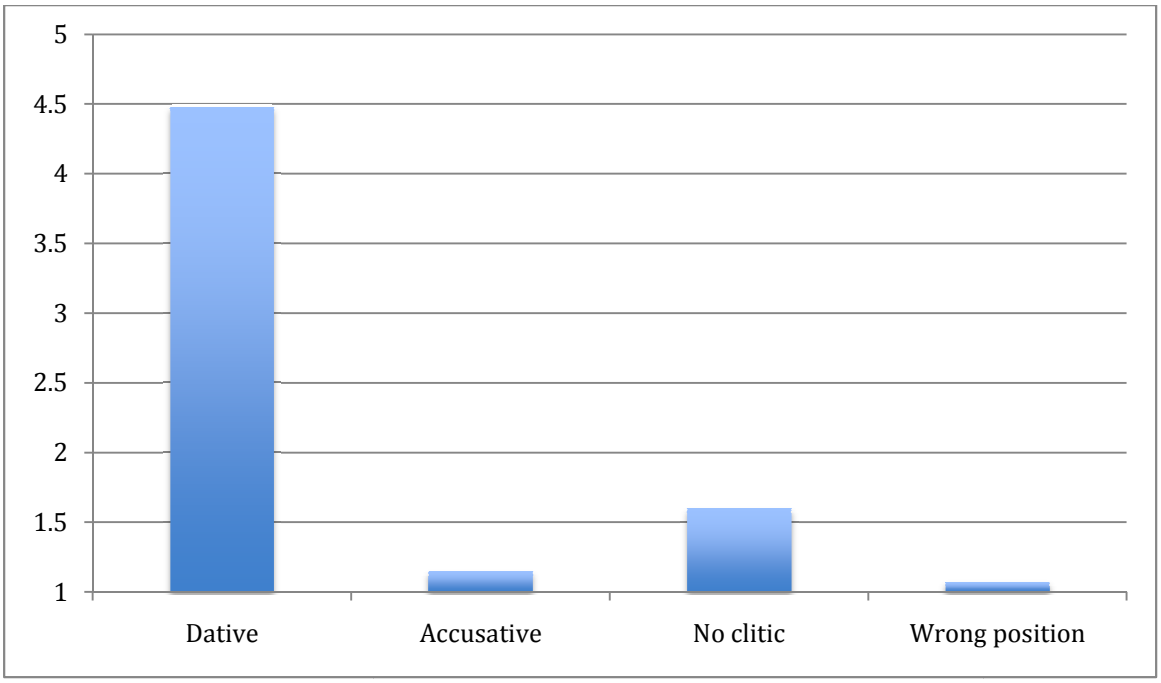


Figure 4. Response means Experiment 1 (Near-native group)

3.4.3 Results Advanced Group

Table 4/Figure 5 shows that, as was the case for the other groups, the advanced learners also distinguished the dative clitic as the grammatical category (Dat vs. Acc: χ^2=404.39, p<.0001; Dat vs. No clitic: χ^2=164.21, p<.0001; Dat vs. Wrong position: χ^2=448.33, p<.0001). Within the ungrammatical categories, the no clitic condition again received significantly higher ratings than the other two (No clitic vs. Acc: χ^2=16.79, p<.0001; No clitic vs. Wrong position: χ^2=3.66, p=0.0557). Replicating the patterns of the control and the near-native group, advanced learners rated these sentences without clitic higher when the order was TVE (mean=1.97) as compared to EVT (mean=1.69). This contrast is significant, which parallels the findings of the control group's pattern (χ^2=4.34, p=0.0371).

Table 4. Response means for experiment 1(Advanced group)

Analysis Variable : response		
Clitic manipulation	**N Obs**	**Mean R**
(a) Dative clitic	84	4.54
(b) Accusative clitic	84	1.36
(c) No clitic	84	1.83
(d) Wrong position	84	1.32

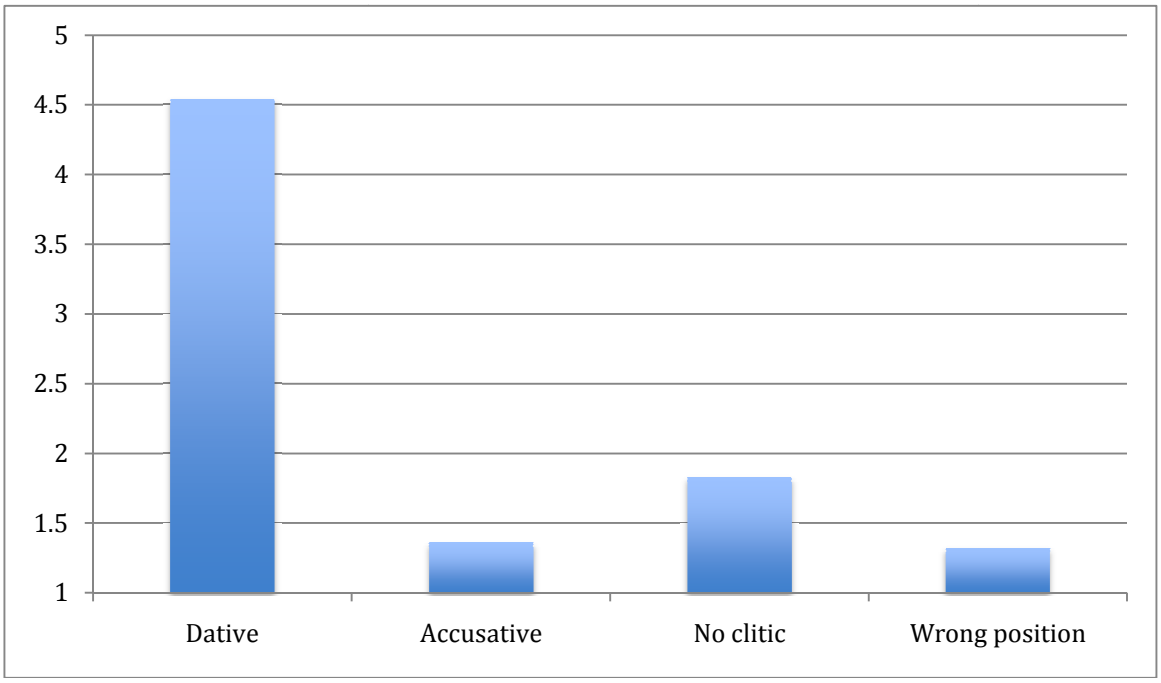


Figure 5. Response means experiment 1 (Advanced group)

3.4.4 Results Intermediate Group

The intermediate group also clearly recognized the dative clitic as the grammatical choice in the set of test items (Dat vs. Acc: χ^2=135.47, p<.0001; Dat vs. No clitic: χ^2=174.69, p<.0001; Dat vs. Wrong position: χ^2=201.60, p<.0001). Also, the no clitic condition is the category that gets the highest rating among the ungrammatical categories. It is rated significantly higher than sentences with the clitic in the wrong position (χ^2=8.28, p=0.0040). However, it is not significantly different from sentences with an accusative clitic (χ^2=0.02, p=0.8981).

Table 5. Response means for experiment 1 (Intermediate group)

Analysis Variable : response		
Clitic manipulation	**N Obs**	**Mean R**
(a) Dative clitic	68	4.33
(b) Accusative clitic	68	1.94
(c) No clitic	68	1.95
(d) Wrong position	68	1.61

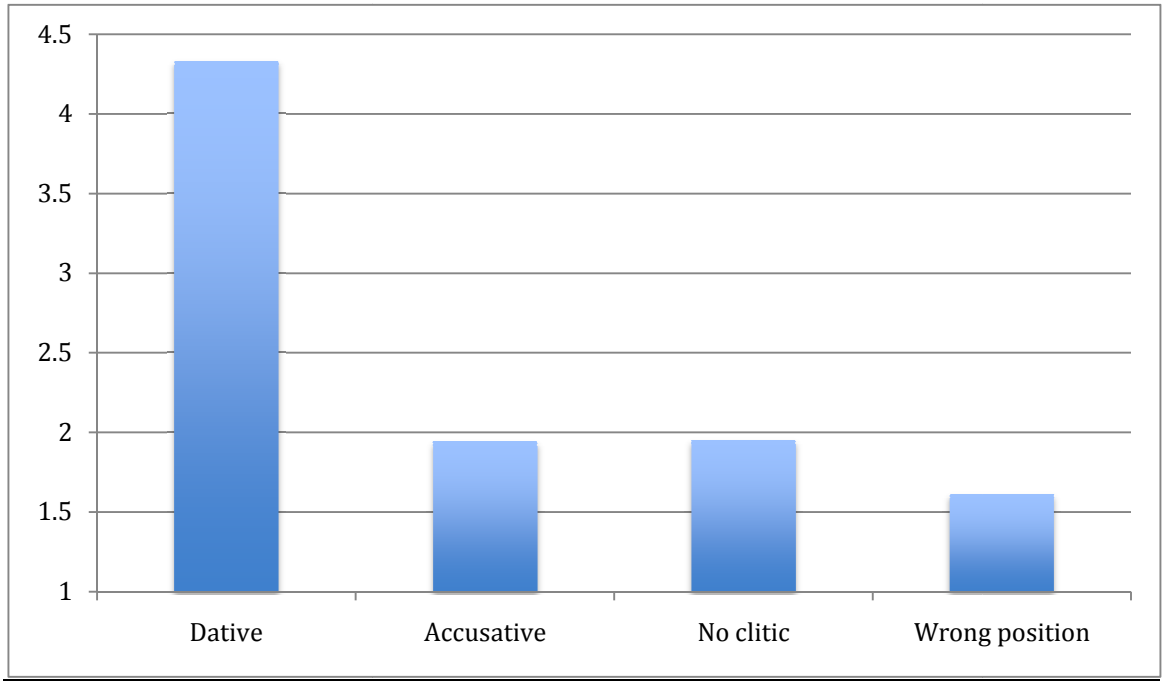


Figure 6. Response means experiment 1 (Intermediate group)

3.4.5 Results Low-Proficiency Group

The low-proficiency group is also able to distinguish the dative clitic category as the grammatical choice and their ratings for this category are significantly different from those in each of the other conditions (Dat vs. Acc: χ^2=21.92, p<.0001; Dat vs. No clitic: χ^2=22.16, p<.0001; Dat vs. Wrong position: χ^2=57.56, p<.0001). However, we can see in Table 6/Figure 7 that these learners do not show such clear-cut distinctions as the other

groups, as the means are much closer to each other than in the rest of the groups. We will analyze this fact in section 3.6. In this group, we find the pattern found in the intermediate group in which sentences without a clitic received significantly higher ratings than other sentences with the clitic in the wrong position (χ^2=17.96, p<.0001) but not higher than sentences with an accusative clitic (χ^2=1.21, p=0.2718). Actually, for these subjects, sentences with accusative clitic receive the highest rating among the ungrammatical options.

Table 6. Response means for experiment 1 (Low-proficiency group)

Analysis Variable : response		
Clitic manipulation	**N Obs**	**Mean R**
(a) Dative clitic	48	3.89
(b) Accusative clitic	48	2.70
(c) No clitic	48	2.31
(d) Wrong position	48	1.95

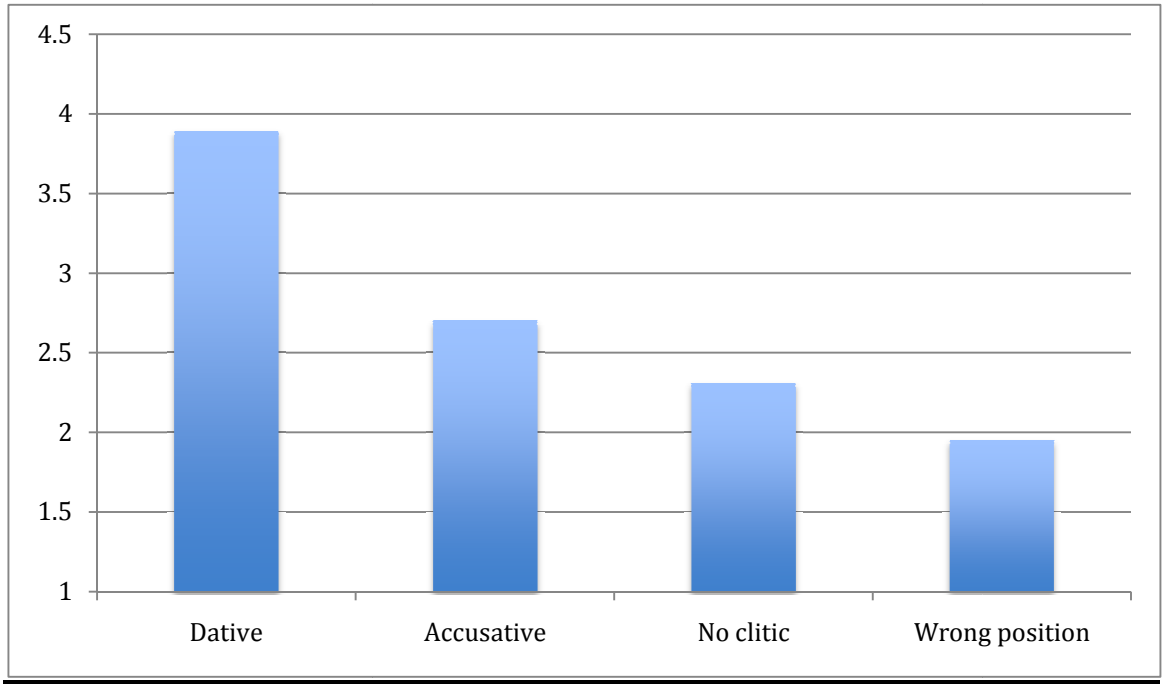


Figure 7. Response means experiment 1 (Low-proficiency group)

3.5 Experiment 1: Summary of Results

All of the groups distinguished the dative clitic as the grammatical option. The distinctions of the low-proficiency students were less categorical than the rest of the groups' but the contrasts among the different categories (dative vs. accusative, dative vs. no clitic, dative vs. wrong position) were significant for all of the groups. Furthermore, the control group, near-native and advanced group showed a significant preference for sentences lacking a clitic within the ungrammatical categories. These ratings were higher when the sentences had TVE order.

3.6 Experiment 1: Contrasts among Groups

None of the contrasts between the native and the near-native speaker group were significant. So, these groups seem to show the same patterns of behavior. The opposite is true for contrasts between the native speaker group and the low proficiency group, which turned out to be significant (Dat vs. Acc: χ^2=63.80, p<.0001; Dat vs. No clitic: χ^2=10.23, p=0.0014; Dat vs. Wrong position: χ^2=38.89, p<.0001). So, it seems that, even if the low-proficiency learners are able to distinguish the different categories the same way the control group does on a descriptive level, they do it to a lesser extent. This becomes obvious when we look at figure 8, in which we can see that the low-proficiency learners' judgments are less definite. In order to ascertain where these less defined distinctions came from, I analyzed the way these participants were using the Likert scale (i.e. the 1-to-5 scale they had to use to make their judgments) and how it differed from the way the rest of the participants were using the scale. What is clear from this analysis is that, whereas the more advanced groups tend to use the extremes of the scale more often (i.e. 1

and 5), the low-proficiency group (and, to a certain extent, the intermediate group) tend to use the middle of the scale (i.e. numbers 2, 3 and 4) more frequently than their more advanced counterparts. This shows that their more restricted mastery of the target language prohibits them from selecting the most definite rating categories (i.e. 1 and 5).

Regarding the advanced speakers, I found one significant contrast with the control group (Dat vs. Wrong position: χ^2=4.86, p=0.0276). This stems from the fact that the advanced speakers give significantly lower ratings to the grammatical test items. This added to the fact that the items with the clitic in the wrong position received slightly higher ratings in the advanced group results in a somewhat smaller distinction between the two categories (i.e. dative clitic and wrong position). However, as we can see in Figure 8 this difference seems minimal. So, it does not really show a very different behavior of the advanced learners as compared to the native controls.

Finally, there are two significant contrasts between the intermediate and the control groups (Dat vs. Acc: χ^2=18.11, <.0001; Dat vs. Wrong position: χ^2=18.19, p<.0001). Again, in this case we find that the second language learner group is less definite in their judgments than the control group.

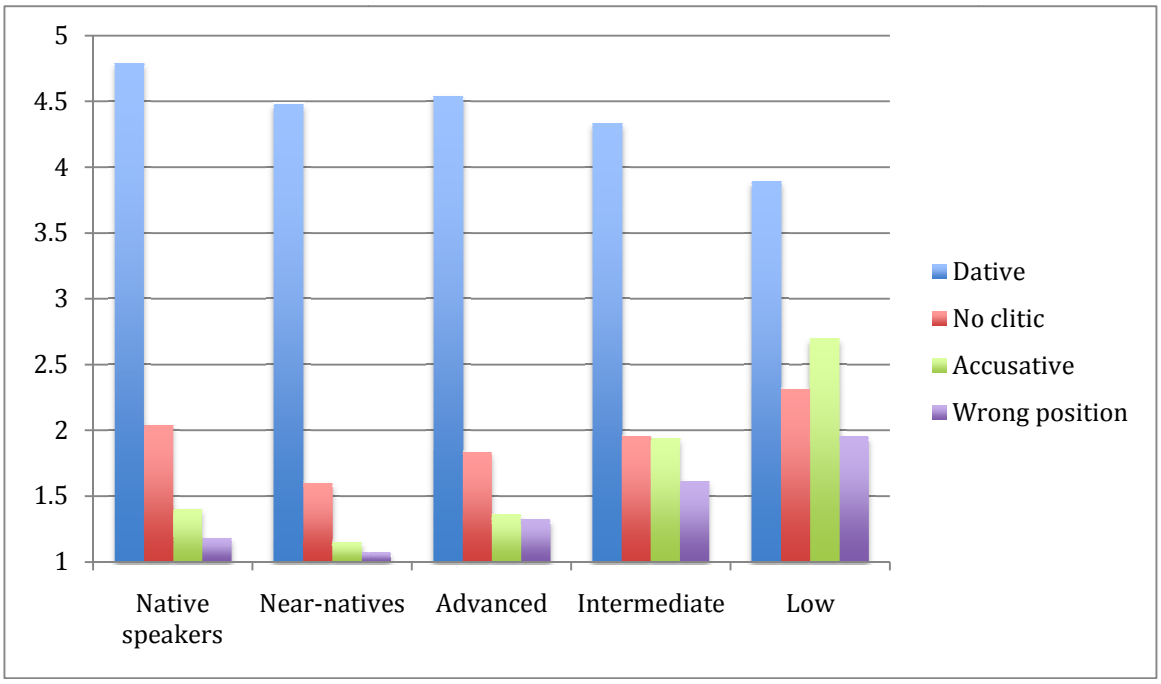


Figure 8. Response means for experiment 1 (All groups)

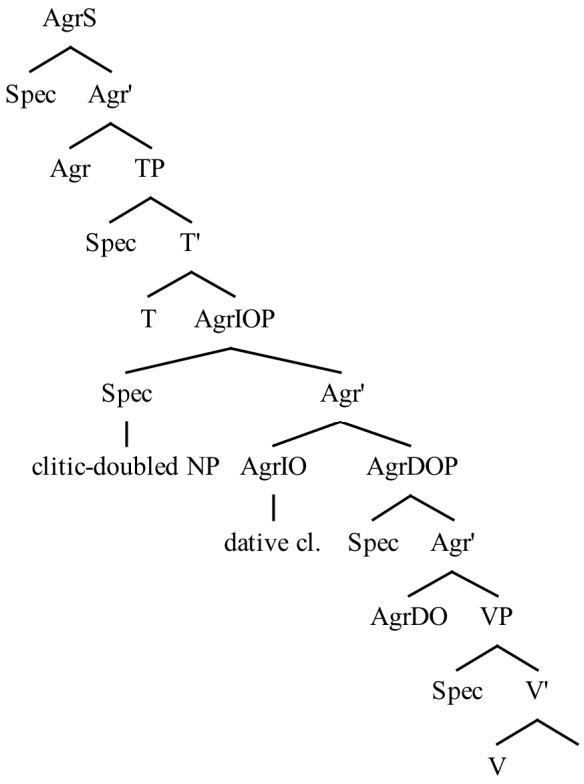
3.7 Experiment 1: Discussion

This experiment tests a syntactic property related to clitic use in psych-verb constructions. The results of this task show that, in spite of the differences across groups, all of the participants were aware of the violations regarding clitic use and consistently selected the dative clitic as the grammatical option in the set of stimuli. Thus, it seems that this task did not pose major difficulties for the second language learners participating in this experiment, even those at the lowest level of proficiency. However, we have to remember that the participants that classified as low-proficiency speakers in the current study were not beginners but students taking an advanced grammar class (6th semester class). So, I cannot make any claims about these issues being problematic at lower levels of language development. In general, the participants demonstrated their knowledge of clitic use with psych-verb constructions in three different ways: (1) the L2 learners in this

study are aware of the restrictions that have to do with the case of the clitic; (2) they also show a consistent understanding of the obligatory nature of the clitic in these constructions, and (3) they respect the position of the clitic with respect to its host (i.e. the verb) as regulated by the finiteness of the verb.

In order to analyze our findings and discuss the implications of these findings with respect to second language learners' representations of these constructions, we need to place this research within a specific syntactic theory of clitics. In particular, the theory of clitics that will be followed in this dissertation is based on Franco (2000) and his proposal that Spanish object clitics are agreement morphemes on the verb. Specifically, dative clitics (which are the ones that concern us in this dissertation) are agreement morphemes base-generated as the head of the functional projection AgrIOP. The clitic-doubled NP is projected in the specifier of AgrIOP as we can see in (3).

(3)



Franco proposes the interesting idea of looking at agreement as a continuum. The proposal is that agreement, far from being a dichotomy, is more a gradable continuum along which agreement elements from different languages stand. Because the morphological and syntactic properties of Spanish object clitics replicate those of inflectional morphemes, Franco positions them on the far left side of the scale in (4).

(4) Inflectional affixes [-Z-Y-X-W-] Pronouns

Some of these properties involve: fixed order of clitic, strict adjacency to host, and the variation of agreeing features (*leísmo* and *lo/laísmo*), which are all characteristics reminiscent of bound inflectional morphology.

The participants in this experiment showed not only an understanding of dative clitics as agreement morphemes (e.g. through their understanding of case restrictions and the obligatory status of the clitic) but also, they proved to be able to place them correctly on the agreement continuum given their understanding of clitic properties that reflect their status as bound morphology (e.g. strict adjacency to host dependent on finiteness). This is remarkable considering that English lacks a clitic system. Next, I will review each of the conditions of this experiment and argue what these findings reveal about second language learners' interlanguage grammar.

First of all, participants showed an understanding of the case restrictions with Class III psych-verbs; namely, the clitic is always dative. This is noteworthy if we take into account that clitic use is subject to a great deal of dialectal variation. *Loísmo* (5) and *Laísmo* (6) are two processes typical of dialects in central Spain that can affect the choice of the clitic case. These processes consist in replacing a dative clitic by an accusative clitic (masculine or feminine respectively). These processes emphasize the gender of the dative participant.

(5) A Pablo **lo** gustan los deportes
To Pablo lo-masc.-acc. cl. the sports
Pablo likes sports

(6) A María **la** encantan los zapatos
To María la-fem-acc. cl. the shoes
María loves shoes

Also, Fernández-Ordóñez (1999) claims that Argentina, Chile and Perú also show dialectal differences connected to the case of the clitic in psych-verb constructions. In particular, in these countries, the use of the accusative clitic has been extended to stative

psych-predicates. Thus, both stative and eventive psych-verb constructions exhibit an accusative clitic.

I could not confirm if the participants had in fact been exposed to these dialects. If they had in fact been exposed to this dialectal variability, it actually seems not to distinguish non-native speakers' judgments from the standard norm regarding clitic case for stative psych-verb constructions (except in the low-proficiency group where sentences with accusative clitics get an average rating of 2.70). This provides evidence that second language learners project the clitic in AgrIO, and not in AgrDO where the clitic would surface with accusative case. This behavior also manifests that they establish a spec-head relationship between the clitic-doubled element and the clitic, which has the clitic surfacing as the overt spell-out of dative agreement features. Thus, the clitic is the realization of dative case-checking in the VP extended projection and this seems to be the case for both native and non-native speakers.

Secondly, these learners considered that only sentences with a clitic were grammatical as compared to those without the clitic. Thus, they understood the obligatory nature of the clitic in psych-verb constructions. This indicates that L2ers are projecting the necessary functional projection (AgrIOP) and also, that they are aware of the fact that it cannot be absent from the structure.

Montrul (1998) carried out a study on the acquisition of dative Experiencers in Spanish with intermediate L2ers whose L1 was either French or English. She claimed that the difference between these two groups of learners was that the English L1 participants experienced problems with the dative case morphology. This manifested in English learners' lower acceptance of dative clitics and preference for nominative

Experiencers (e.g. *Yo adoro la moda* 'I adore fashion') instead of dative Experiencers (e.g. *A mí me encanta la moda* 'I like fashion'). Clearly, this is not what I found in this experiment where all of the groups (even the low-proficiency group) show consistent knowledge of the dative clitic morphology and its restrictions.[20] However, Montrul's participants seem to be at a lower level of language proficiency than the participants in the current study since they were enrolled in low-intermediate courses, as opposed to my participants who were taking advanced grammar classes or graduate seminars. However, this indicates that, even if at the earlier stages, dative morphology hinders acquisition of psych-verbs, my participants had overcome those challenges and their grammars included structural dative case as instantiated in AgrIO (Lightfoot, 1991; Franco, 2000).

The two previous findings (i.e. learners' understanding of the obligatory status of the clitic and its case assignment) show that learners recognize the clitic as a required element in psych-verb constructions, and, also, as an agreement morpheme that regulates dative case agreement. The final set of results, L2ers' rejection of the manipulation on the clitic position, showed participants' understanding of the clitic as an inflectional morpheme that is strictly adjacent to its host (i.e. the verb) and whose position is regulated by the finiteness of the verb: in front of the verb if the verb is finite and attached to the verb if it is a non-finite verb.

In addition to these main findings, there was an unexpected result: the control, near-native, and advanced groups rated sentences without a clitic significantly higher than the two other ungrammatical categories (Accusative and Wrong position). This trend was especially robust when sentences had TVE order. My argument is that this finding

[20] This study did not test preference of nominative vs. dative Experiencers. So, I cannot confirm or disprove this fact in the participants I tested.

has to do with the ability to recover verbal agreement in the sentence. The absence of the clitic in TVE order in (7a) results in the closer proximity of the verb and the Theme, which is the element that controls verbal agreement. In contrast, the overt clitic in the grammatical version disrupts this proximity (7b). Thus, the null clitic makes verbal agreement more easily established.

(7) a. *La playa encanta a mi hermana
The beach love-3sg. to my sister
My sister loves the beach
[Theme+Verb+Experiencer]

b. La playa le encanta a mi hermana
The beach le-dat. cl. love-3sg. to my sister
My sister loves the beach
[Theme+Verb+Experiencer]

Conversely, in (8a-b), the absence or presence of the clitic has no beneficial effect since verbal agreement is less straightforward to begin with even in the grammatical version (8b) given that the Experiencer controls clitic agreement instead of verbal agreement.

(8) a. *A Daniel importa el examen
To Daniel care-3sg. the exam
Daniel cares about the exam
[Experiencer+Verb+Theme]

b. A Daniel le importa el examen
To Daniel le-dat. cl. care-3sg. the exam
Daniel cares about the exam
[Experiencer+Verb+Theme]

Before concluding, we need to take a step back and reflect on the theoretical constructs on which this experiment has been built. In the current experiment I have studied properties that belong to the narrow syntax of psych-verb constructions and

talked about the implications of these findings for L2ers' interlanguage grammar. However, the concept of narrow syntax is one that is subject to major controversy. Researchers wonder: Are there structures that only involve syntactic computations? Aren't all structures read off at the interfaces? These questions threaten the validity of the concept of narrow syntax. This is a legitimate theoretical concern that warns us about the need to have well-defined and articulated theoretical constructs before making assumptions about acquisitional issues. With respect to this topic Sorace (2011) claims that the fact that syntactic vs. non-syntactic principles have been found to have a different status in both acquisition and processing (Guasti, 2002; Burkhardt, 2005) makes the concept of narrow syntax still a valuable one for acquisition research. In an effort to minimize this problem, and with an understanding that all structures involve a certain amount of interaction with other language modules, the structures manipulated in this experiment (i.e. case, absence of the clitic, and position) are clear examples of syntactic computations that have to do with the absence or presence of functional categories (e.g. AgrIOP) and spec-head agreement relations. However, interaction with morphology in this experiment and with both morphology and semantics in experiment 2 cannot be denied. Thus, I argue that an absolute divide between narrow syntax and interfaces is not plausible. For that reason, the claims in this dissertation about narrow syntax, internal interfaces and external interfaces are to be understood as properties that are placed along a continuum with some properties being closer to narrow syntax and other properties being closer to specific types of interfaces, but with an understanding that absolute isolation of properties in order to categorize them into one or other grouping is doubtful and, most of the time, problematic:

(9)

narrow syntax syntax-semantics syntax-pragmatics

Finally, keeping in mind the caveats just mentioned with respect to narrow syntax, I claim that the results of experiment 1 are consistent with the prediction of the Interface Hypothesis about narrow syntax, mainly, that specific interfaces (e.g. syntax-pragmatics) are more prone to residual optionality than narrow syntax at the highest level of language attainment. This is to be expected if we assume that narrow syntax is a universal computational system that is shared by all speakers of any human language. However, I still need to underline that the low-proficiency speakers were much less categorical in their judgments than the rest of the groups, so at this particular developmental stage, learners do not exhibit completely native-like behavior although they do show trends in the right directions and significant distinctions among categories.

Next, I will analyze this experiment in light of the Integrative Model of Language Acquisition. The construction analyzed (i.e. clitic) in this experiment is not instantiated in the participants' L1 since English lacks a clitic system. Additionally, the input might include some dialectal variability, which could potentially blur non-native participants' judgments. However, as I pointed out previously, I have no evidence that participants have been exposed to this dialectal feature and, if they have not, the input is actually quite straightforward. The level of formal complexity is not immense since successful acquisition of these structures is based on successful application of *Merge* and *Move*, which are syntactic operations. Thus, the complication of this experiment comes from the

ability to encode these operations morphologically into the clitic, which is an element absent from the English grammar. However, as we saw, this does not seem to pose problems for the majority of the participants of this experiment.

3.8 Experiment 2: Goal and Research Questions

This experiment was designed in order to test a further narrow syntactic property of psych-verbs; namely, knowledge of clitic and verb agreement. In psych-predicate constructions, the Experiencer controls clitic agreement and the Theme controls verb agreement. Thus, the clitic agrees with the most prominent argument in the Thematic Hierarchy whereas the verb agrees with the least prominent argument.

The goal of this experiment is to ascertain if L2 learners understand the reverse agreement relationship (Toribio et al., 2005; Toribio & Nye 2006; dePrada Pérez & Pascual y Cabo 2011) that takes place with psych-verb constructions: mainly the fact that the Experiencer maps onto the indirect object and the Theme maps onto the subject, which is the opposite pattern that we see in regular transitive verbs. In a regular transitive sentence we have a direct mapping of thematic roles to syntactic positions as we can see in (10) where the Agent, being the most prominent role in the Thematic Hierarchy maps onto the subject position; and the Theme, being a least prominent thematic role, maps onto the object position. In (11) we have an example of a Class I predicate, which also has a direct mapping of thematic roles to syntactic positions: the Experiencer maps to the subject position and the Theme maps to the object position since the Experiencer is higher in the Thematic Hierarchy than the Theme. In (12) we see the inverse mapping of thematic roles to syntactic positions that takes place in Class II(b)/III predicates where the least prominent argument (the Theme) actually occupies the subject position and the

most prominent argument (the Experiencer) occupies the indirect object position. This results in a reverse agreement relation where the verb agrees with the Theme and the clitic agrees with the Experiencer, which is the phenomenon that I will test in the current experiment.

(10)

María	compró	unos zapatos
María	bought-3sg.	some shoes
	María bought some shoes	
AGENT/SUBJECT		THEME/OBJECT

(11)

María	adora	los zapatos
María	loves-3sg.	the shoes
	María loves shoes	
EXPERIENCER/SUBJECT		THEME/OBJECT

(12)

A María	le	encantan	los zapatos
To María	le-dat. cl.	love-3pl.	the shoes
Shoes are pleasing to María/María loves shoes			
EXPERIENCER/INDIRECT OBJECT			THEME/SUBJECT

In particular, there are two main questions that I will try to answer:

1) What is the argument that controls clitic agreement in the grammar of L2ers?

2) What is the argument that controls verbal agreement in the grammar of L2ers?

This experiment partially replicates other recent studies by Toribio and Nye (2006) and dePrada Pérez & Pascual y Cabo (2011). So, I will present a brief review of these studies, which will allow us to draw parallels with the current experiment. Dvorak & Kirschner's (1982) study of Puerto Rican heritage speakers in New York City found evidence for the use of invariable *le*. That is, speakers tended to use the singular clitic irrespective of the number of the Experiencer. Toribio & Nye's (2006) analysis of heritage speaker production data of psych-predicates provided empirical support for the invariable *le* proposal. On the other hand, dePrada Pérez & Pascual y Cabo (2011), who

also focused on the study of heritage speaker population in their comprehension experiment, failed to find evidence for invariable *le*. In contrast, they found a different simplification phenomenon: invariable *gusta*. So, in this study heritage speakers tended to use singular agreement on the verb regardless of the number agreement of the Theme. Because of the conflicting results in the previous literature on the topic, and also because previous studies have focused on issues of agreement in heritage speakers, I will analyze the invariable *le* and invariable *gusta* proposals in my study of second language learners' data. This will allow me to confirm if these proposals also hold for non-heritage L2ers.

3.9 Experiment 2: Methodology

Like experiment 1, this task was a scalar grammaticality judgment task. It consisted of 64 sentences, of which 32 were fillers. Only half of the test items (16) were analyzed due to methodological issues.[21] The test items consisted of sentences that tested agreement questions in psych-verb constructions. In particular, I looked at verb agreement and clitic agreement mismatches. The participant was presented with four possible choices: (13a) is the grammatical version in which both the clitic and the verb carry the correct agreement morphology. (13b) represents a case of clitic agreement violation. So, the clitic agrees with the Theme instead of the Experiencer. (13c) illustrates a verb agreement mismatch. That is, the verb agrees with the most prominent argument, the Experiencer. Finally (13d) includes a double agreement violation since both the clitic and the verb have incorrect agreement. (13d) represents a case of Thematic Hierarchy

[21] The test items removed from the experiment had the same number agreement on the Experiencer and the Theme. This made it impossible to study agreement mismatches on these specific items.

(i) A los alumnos les preocupan las notas
To the students les-dat. cl. worry-3pl. the grades
Students care about grades

derived mapping since the clitic agrees with the least prominent argument and the verb agrees with the most prominent argument. As I stated before, participants would accept this choice if they are uniquely guided by the Thematic Hierarchy and thus, as for transitive predicates for instance, the mapping from thematic roles to syntactic positions will take place in a way such that the most prominent arguments in the Thematic Hierarchy (e.g. Agent/Experiencer) would occupy the subject position and the least prominent thematic roles (e.g. Theme) would occupy a position such as object.

These categories will receive the following labels from this point onwards: (13a) grammatical sentence=right, (13b) wrong agreement on the clitic=*cl agreement, (13c) wrong agreement on the verb=*vb agreement. (13d) wrong agreement on the clitic and the verb=*cl+vb agreement.

(13) *Están haciendo obras justo fuera de mi clase*
There is construction outside my classroom

a. El ruido les molesta a mis alumnos
The noise les-dat. cl.-3pl. bother-3sg. to my students
The noise bothers my students

b. *El ruido le molesta a mis alumnos
The noise les-dat. cl.-3sg. bother-3sg. to my students
The noise bothers my students

c. *El ruido les molestan a mis alumnos
The noise les-dat. cl.-3pl. bother-3pl. to my students
The noise bothers my students

d. *El ruido le molestan a mis alumnos
The noise les-dat. cl.-3sg. bother-3sg. to my students
The noise bothers my students

Two different combinations were tested: 3sg. Experiencer with 3pl. Theme and 3pl. Experiencer with 3sg. Theme.[22] The contrast between these two categories will allow me to test the invariable *le* and the invariable *gusta* proposals. The *vb agreement category in the 3sg. Experiencer-3pl. Theme condition is an example of invariable *gusta*, which can be compared to the *vb agreement category in the 3pl. Experiencer-3sg Theme condition (i.e. *gustan*). This comparison will allow me to see if participants show a preference for the invariable form of the verb. However, we should remember that this experiment tests not only knowledge of *gustar* but also of other Spanish Class III psychological predicates. I will use the term invariable *gusta* for clarity purposes. However, it is understood that this is a label that equates to '3sg. psych-verb form,' which can be equivalent to invariable *encanta* 'to love', invariable *molesta* 'to bother', invariable *conviene* 'to be convenient' and so on.

On the other hand, the category *cl agreement in the 3pl. Experiencer-3sg. Theme condition represents a case of invariable *le*, which can be contrasted with the same category in the 3sg. Experiencer-3pl. Theme condition, which contains a plural clitic (i.e. *les*). This will show if participants are more tolerant of clitic agreement violations when these include invariable *le*.

[22] Another manipulation introduced in the experimental design was the following: half of the sentences presented TVE order and the other half presented ETV order, as was the case for experiment 1. This was introduced in order to counterbalance with the other experiments and to make sure the results were not tied to one specific word order configuration. However, this manipulation will be ignored in the analysis of this experiment since word order manipulations will be dealt with extensively in experiments 3A and 4. Overall, the near-native, advanced and low-proficiency group showed no significant contrast. The control group showed a significant contrast in right and *vb agreement since they gave higher ratings to EVT sentences. The opposite was true for *cl agreement where TVE sentences received higher ratings. Finally, intermediate learners gave significantly higher ratings to EVT sentences in the *vb agreement and *cl+vb agreement categories. This will be included in Appendix B. These calculations were done on the entire set of test items (32) even the ones discarded for analysis.

The fillers consisted of sentences that tested knowledge of gender and number agreement. These sentences contained AP, PP and CP ellipsis (otherwise known as noun-drop, or N-drop (White et al., 2004)). Subjects had to decide on the agreement of the adjective or the article based on the noun present in the preceding context. There are four conditions, one of which is the only grammatical option (14a). (14b) represents a number agreement violation if we compare it to the context. However, this sentence is completely plausible if Pablo only recommended one book; (14c) is a gender and number violation and (14d) illustrates a gender mismatch.

(14) María Rosa leyó los libros que le recomendé…
María Rosa read the books that I recommended…

a. Y Belén leyó los que le recomendó Pablo
And Belén read the-masc-pl that le-cl-sg recommended-3sg. Pablo
And Belén read the ones that Pablo recommended

b. Y Belén leyó el que le recomendó Pablo
And Belén read the-masc-sg that le-cl-sg recommended-3sg Pablo
And Belén read the ones that Pablo recommended

c. *Y Belén leyó la que le recomendó Pablo
And Belén read the-fem-sg that le-cl.-sg. recommended-3sg. Pablo
And Belén read the ones that Pablo recommended

d. *Y Belén leyó las que le recomendó Pablo
And Belén read the-fem-pl that le-cl-sg recommended-3sg. Pablo
And Belén read the ones that Pablo recommended

3.10 Experiment 2: Results

3.3.1 Results Native-Speaker Group

The control group showed a clear preference for the grammatical items in both conditions. In the 3sg. Experiencer-3pl. Theme condition, the grammatical sentence is rated significantly higher than all of the other categories (right vs. *cl agreement:

χ^2=253.77, p<.0001; right vs. *vb agreement: χ^2=66.10, p<.0001; right vs. *cl+vb agreement: χ^2=385.31, p<.0001). The same is true in the 3pl. Experiencer-3sg. Theme condition (right vs. *cl agreement: χ^2=15.01, p=0.0001; right vs. *vb agreement: χ^2=126.56, p<.0001; right vs. *cl+vb agreement: χ^2=207.81, p<.0001). With respect to the use of invariable *le* and invariable *gusta*, I actually found some support for both in the control group. Thus, native speakers allow clitic agreement violations (to some degree) in which the singular clitic (*le*) co-occurs with a plural Experiencer (mean=3.55). However, this is not the case when the agreement violation includes a plural clitic (*les*) with a singular Experiencer (mean=1.66). This contrast between *cl agreement in the 3sg. Experiencer-3pl. Theme and 3pl. Experiencer-3pl. Theme conditions is statistically significant (χ^2=137.80, p<.0001). In a similar fashion, sentences with agreement violations in which a singular verb (*gusta*) concurs with a plural Theme were given a significantly higher rating than sentences in which a plural verb (*gustan*) appears with a singular Theme (χ^2=10.54, p=0.0012). However, I have to underscore here that both invariable *le* and invariable *gusta* received significantly lower ratings that the correct category.[23]

[23] One possibility is that *le gusta* is considered as an unanalyzed expression due to frequency effects. If this is the case, we would expect subjects to be more lenient with ungrammatical *le gusta* than with ungrammatical *le conviene*, *le preocupa et cetera.* Unfortunately, because of the many variables introduced in this experiment (right, *cl agreement, *vb agreement, *cl+vb agreement) added to the fact that sentences presented different word orders (TVE and EVT), this hypothesis could not be tested.

Table 7. Response means for experiment 2 (Control group)

Analysis Variable : response				
Agreement mismatch	**Agreement manipulation**		**N Obs**	**Mean R**
3sg Exp/3pl Theme	Right	Le gustan	72	4.52
	*cl agreement	Les gustan	72	1.66
	*vb agreement	Le gusta **(INVARIABLE GUSTA)**	72	2.59
	*cl+vb agreement	Les gusta	72	1.41
3pl Exp/3sg Theme	Right	Les gusta	72	4.33
	*cl agreement	Le gusta **(INVARIABLE LE)**	72	3.55
	*vb agreement	Les gustan	72	1.83
	*cl+vb agreement	Le gustan	72	1.51

In Figure 9 (and the subsequent figures in this experiment) the first four categories correspond to the sg. Experiencer-pl. Theme condition and the last four categories correspond to the sg. Theme-pl. Experiencer condition.

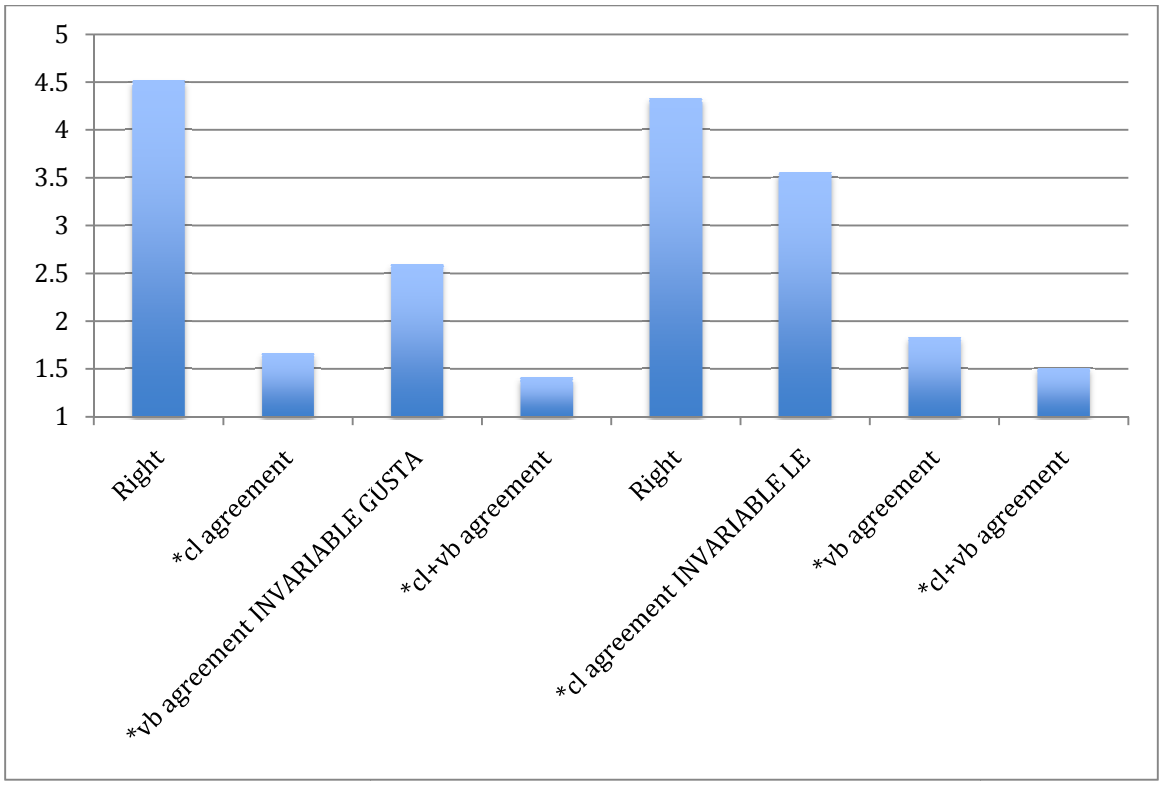


Figure 9. Response means for experiment 2 (Control group)

4.3.2 Results Near-Native Group

The near-native speakers showed a solid understanding of agreement in psych-verb constructions, which they demonstrated by giving significantly higher ratings to the grammatical category with respect to the three ungrammatical ones in the sg. Experiencer-pl. Theme condition (right vs. *cl agreement: χ^2=10.06, p<.0001; right vs. *vb agreement: χ^2=117.58, p<.0001; right vs. *cl+vb agreement: χ^2=215.54, p<.0001). In the other condition, pl. Experiencer-sg. Theme, all of the contrasts are also statistically significant (χ^2=465.05, p<.0001; χ^2=253.40, p<.0001; χ^2=3521.1, p<.0001). In this group, differently from the native speaker group, we find no support for either the invariable *le* or the invariable *gusta* proposals since invariable *le* and invariable *gusta* were not rated significantly higher than their plural counterparts *les* and *gustan* respectively (χ^2=0.12, p=0.7260; χ^2=0.65, p=0.4201).

Table 8. Response means for experiment 2 (Near-native group)

Analysis Variable : Response				
Agreement mismatch	**Agreement manipulation**		**N Obs**	**Mean R**
3sg Exp/3pl Theme	Right	Le gustan	31	4.51
	*cl agreement	Les gustan	31	1.32
	*vb agreement	Le gusta **(INVARIABLE GUSTA)**	31	1.35
	*cl+vb agreement	Les gusta	31	1.22
3pl Exp/3sg Theme	Right	Les gusta	32	5.00
	*cl agreement	Le gusta **(INVARIABLE LE)**	32	1.40
	*vb agreement	Les gustan	32	1.56
	*cl+vb agreement	Le gustan	32	1.09

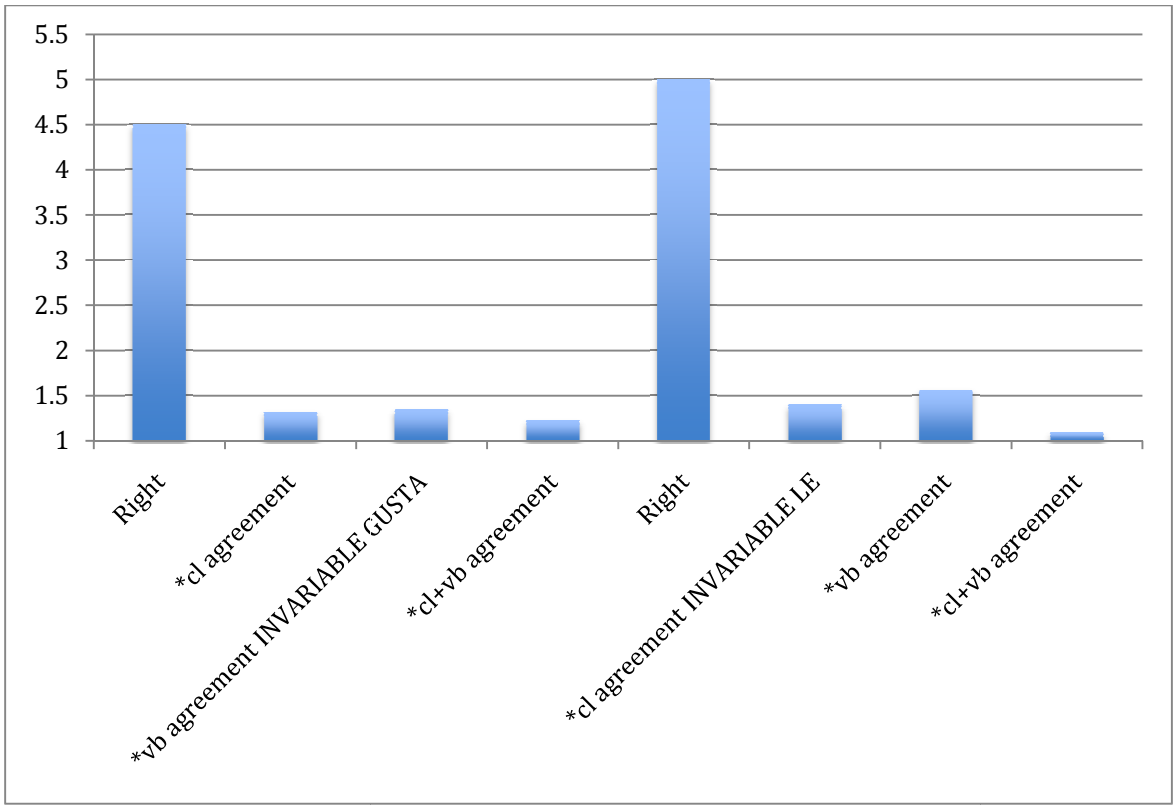


Figure 10. Response means for experiment 2 (Near-native group)

4.3.3 Results Advanced Group

The advanced group showed basically the same patterns as the native and the near-native speaker groups with respect to their responses to agreement violations. The grammatical items received significantly higher ratings than the items with wrong agreement on the clitic (right vs. *cl agreement: χ^2=144.78, p<.0001), wrong agreement on the verb (right vs. *vb agreement: χ^2=129.23, p<.0001), and wrong agreement both on the verb and the clitic (right vs. *cl+vb agreement: χ^2=210.03, p<.0001) in the sg. Experiencer-pl. Theme condition. The same was true of the pl. Experiencer-sg. Theme condition (right vs. *cl agreement: χ^2=71.16, p<.0001; right vs. *vb agreement: χ^2=126.08, p<.0001; right vs. *cl+vb agreement: χ^2=75.63, p<.0001). On the other hand, this group shows a minor preference for invariable *le* as we can see in their slightly

significantly higher ratings of the items with wrong agreement on the clitic on the sg. Experiencer-pl. Theme vs. their rating of these items in the pl. Experiencer-sg. Theme. Their ratings of invariable *le* seem to be significantly higher than their ratings of *les* (χ^2=5.40, p=0.0201). However, the means are so close together (*le*=1.63, *les*=1.41) that we can't really say this is a consistent phenomenon for advanced learners. There is no support for invariable *gusta* in this group of participants, differently from the native speakers. Invariable *gusta* and *gustan* did not receive significantly different ratings (χ^2=0.46, p=0.4953).

Table 9. Response means for experiment 2 (Advanced group)

Analysis Variable : Response				
Agreement mismatch	**Agreement manipulation**		**N Obs**	**Mean**
3sg Exp/3pl Theme	Right	Le gustan	41	4.51
	*cl agreement	Les gustan	41	1.41
	*vb agreement	Le gusta **(INVARIABLE GUSTA)**	41	1.65
	*cl+vb agreement	Les gusta	41	1.39
3pl Exp/3sg Theme	Right	Les gusta	41	4.53
	*cl agreement	Le gusta **(INVARIABLE LE)**	41	1.63
	*vb agreement	Les gustan	41	1.53
	*cl+vb agreement	Le gustan	41	1.60

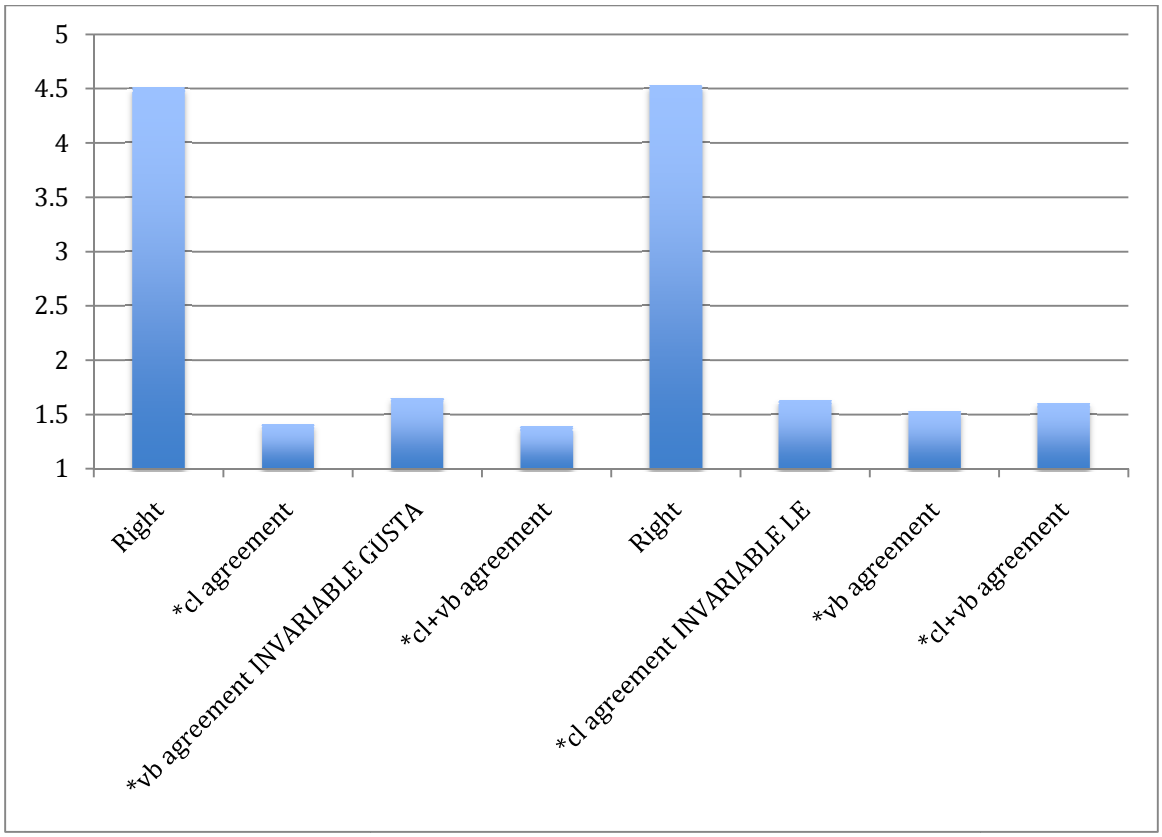


Figure 11. Response means for experiment 2 (Advanced group)

4.3.4 Results Intermediate Group

The intermediate group showed the same trend as the more advanced groups. They gave significantly higher ratings to the grammatical items than to the items with clitic agreement violations, verb agreement violations and clitic and verb agreement violations. This was true in the sg. Experiencer-pl Theme condition (right vs. *cl agreement: χ^2=41.55, p<.0001; right vs. *vb agreement: χ^2=35.34, p<.0001; right vs. *cl+vb agreement: χ^2=33.02, p<.0001) and the pl. Experiencer-sg. Theme condition (right vs. *cl agreement: χ^2=62.98, p<.0001; right vs. *vb agreement: χ^2=72.91, p<.0001; right vs. *cl+vb agreement: χ^2=46.00, p<.0001).

As for the invariable *le* and invariable *gusta* proposals, we find no supporting evidence in this group for either of them, as was the case also for the near-native speaker

group: sentences in which a singular clitic (*le*) co-occurs with a plural Experiencer, receive the same rating as sentences in which a plural clitic (*les*) co-occurs with a singular Experiencer (χ^2=0.13, p=0.7203). Additionally, sentences in which a singular verb (*gusta*) appears with a plural Theme receive roughly the same ratings as sentences in which a plural verb (*gustan*) appears with a singular Theme (χ^2=0.02, p=0.8964).

Table 10. Response means for experiment 2 (Intermediate group)

Analysis Variable : Response				
Agreement mismatch	**Agreement manipulation**		**N Obs**	**Mean R**
3sg Exp/3pl Theme (9-16)	Right	Le gustan	33	4.15
	*cl agreement	Les gustan	33	1.78
	*vb agreement	Le gusta **(INVARIABLE GUSTA)**	33	1.72
	*cl+vb agreement	Les gusta	33	1.81
3pl Exp/3sg Theme (17-24)	Right	Les gusta	33	4.27
	*cl agreement	Le gusta **(INVARIABLE LE)**	33	1.90
	*vb agreement	Les gustan	33	1.69
	*cl+vb agreement	Le gustan	33	1.78

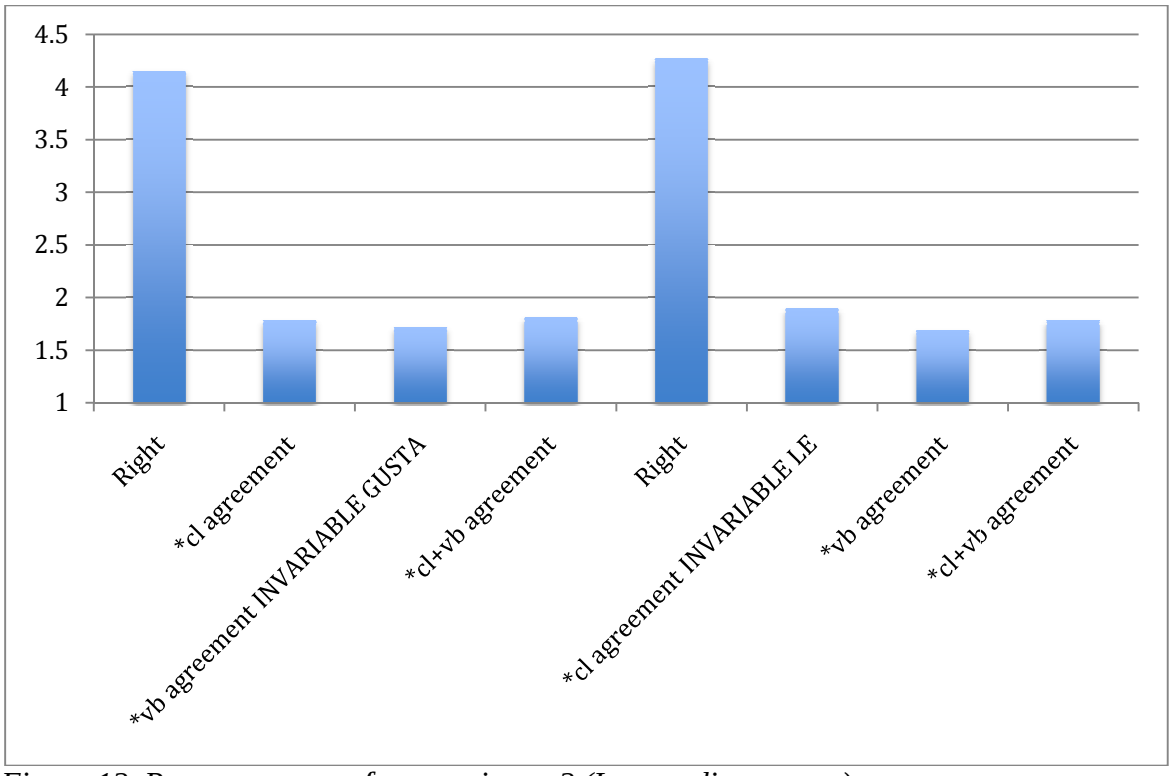


Figure 12. Response means for experiment 2 (Intermediate group)

4.3.5 Results Low-Proficiency Group

The response means of the low-proficiency group show a similar trend to the one we saw with the more advanced groups in the sense that the grammatical items receive higher ratings than the ungrammatical items. However, their distinctions across categories are not as clear-cut as the ones from the more proficient participants. And, in some cases, they are unable to distinguish between grammatical and ungrammatical categories. In the sg. Experiencer-pl. Theme condition, only one of the contrasts is significant: sentences with wrong agreement on the verb are rated significantly lower than those with correct agreement (χ^2=4.47, p=0.0345). On the other hand, sentences with wrong agreement on the clitic or wrong agreement on the clitic and the verb are given similar ratings to the grammatical test items. In the pl. Experiencer-sg. Theme condition, all of the contrasts are significant since sentences with correct agreement are always rated

higher than those with wrong agreement on the clitic, on the verb or on the clitic and the verb (right vs. *cl. agreement: χ^2=25.28, p<.0001; right vs. *vb agreement: χ^2=14.07, p=0.0002; right vs. *cl+vb agreement: χ^2=4.69, p=0.0303).

The low proficiency group did not show a preference for invariable *le* (χ^2=0.02, p=0.8861) or invariable *gusta* (χ^2=1.86, p=0.1723).

Table 11. Response means for experiment 2 (Low-proficiency group)

Analysis Variable : Response				
Agreement mismatch	**Agreement manipulation**		**N Obs**	**Mean R**
3sg Exp/3pl Theme	Right	Le gustan	23	3.47
	*cl agreement	Les gustan	23	2.65
	*vb agreement	Le gusta **(INVARIABLE GUSTA)**	23	2.43
	*cl+vb agreement	Les gusta	23	2.73
3pl Exp/3sg Theme	Right	Les gusta	23	4.21
	*cl agreement	Le gusta **(INVARIABLE LE)**	23	2.60
	*vb agreement	Les gustan	23	2.95
	*cl+vb agreement	Le gustan	23	3.17

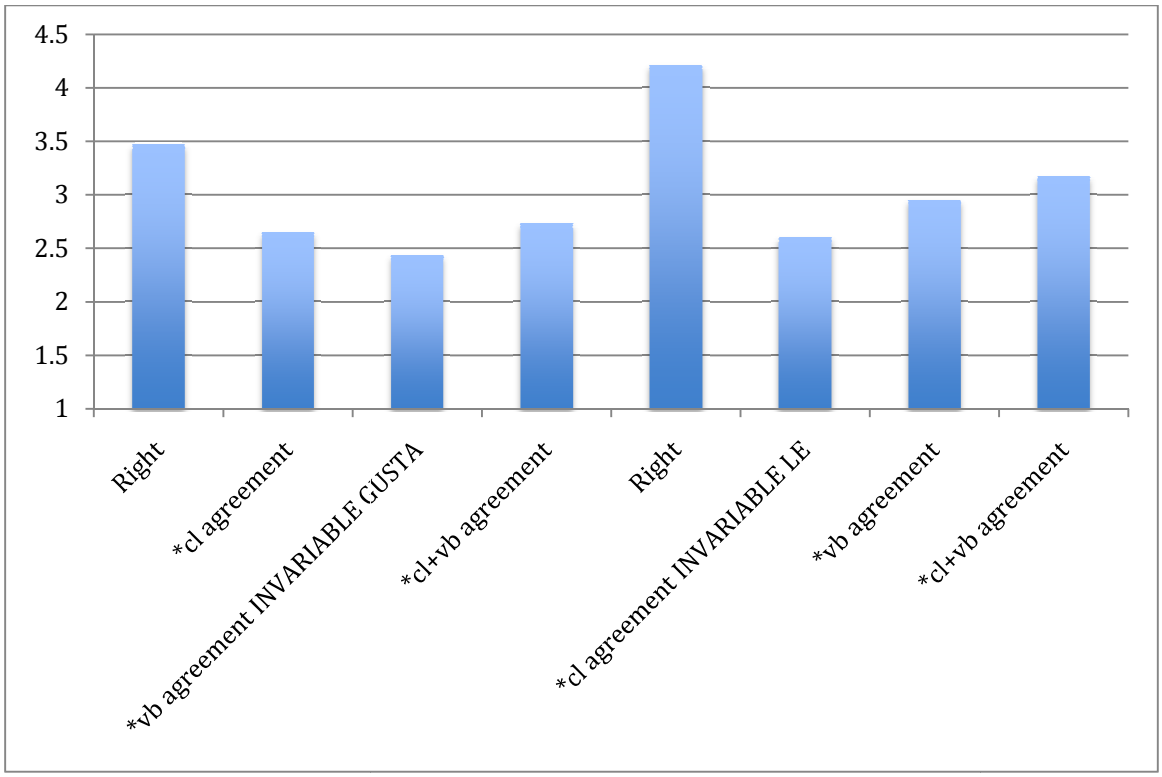


Figure 13. Response means for experiment 2 (Low-proficiency group)

3.11 Experiment 2: Summary of Results

The control, near-native, advanced and intermediate groups invariably recognized the agreement mismatches in the test sentences and consistently rated those lower than sentences with the correct agreement relations. The low-proficiency group did show the same trend to a certain extent; however, their distinctions were less defined than the distinctions of the more advanced groups. Furthermore, they are unable to distinguish between grammatical and ungrammatical items (*cl. agreement and *cl.+vb. agreement) in the sg-pl condition with these two contrasts not even reaching significance.

As for the invariable *le* and the invariable *gusta* proposals, the results of this experiment, in general, do not support either of them in the L2 speaker population. The findings were the following: the native speaker group showed a preference for both invariable *gusta* and invariable *le*. The advanced group showed a very slight preference

for invariable *le*. On the contrary, the rest of the groups (near-native, intermediate and low) did not show a preference for either of the two previously proposed trends. The implications of these findings will be analyzed in the Discussion section 3.13.

3.12. Experiment 2: Contrasts Across Groups

The near-native speaker group had one significant contrast with the control group in the pl. Theme category (right vs. *vb agreement: χ^2=10.71, p=0.0011). This is the result of the near-native speakers judging invariable *gusta* significantly lower than the native speaker group. All of the contrasts in the sg. Theme condition are significant (right vs. *cl agreement: χ^2=116.50, p<.0001; right vs. *vb agreement: χ^2=9.15, p=0.0025; right vs. *cl+vb agreement: χ^2=27.73, p<.0001). This is due to the fact that near-native contrasts in this category are much more defined than the control group's: their grammatical items are rated higher and ungrammatical items are rated lower than in the native speaker group.

The advanced learners performed differently from the control group in the sg. Experiencer-pl. Theme condition (right vs. *vb agreement: χ^2=7.14, p=0.0076). Again, as we saw before, this is the result of the control group's lenient judgment of invariable *gusta*, which receives lower ratings in the advanced group. Also, in the pl. Experiencer sg. Theme condition there is a significant contrast (right vs. *clitic agreement: χ^2=28.45, p<.0001). This is due to a similar phenomenon to the one I just described: native speakers give much higher ratings to invariable *le*, which differs from the advanced group's lower ratings to this item.

The intermediate learners only showed one significant contrast in the sg. Theme condition (right vs. *cl agreement: χ^2=19.50, p<.0001). Once again, the reason for this is

the fact that the control group showed a much less categorical rejection of invariable *le* than the intermediate group did.

For the low proficiency group, all of the contrasts except one were significantly different from the control group both in the pl. Theme condition (right vs. *cl agreement: χ^2=13.36, p=0.0003; right vs. *cl+vb agreement: χ^2=19.96, p<.0001) and in the sg. Theme condition (right vs. *cl agreement: χ^2=4.84, p=0.0278, right vs. *vb agreement: χ^2=9.46, p=0.0021, right vs. *cl+vb agreement: χ^2=11.67, p=0.0006). In general, this stems from the fact that the low proficiency participants showed less categorical distinctions when comparing across categories than the control group does. As we saw in experiment 1, this is due to fact that low-proficiency speakers used the middle of the Likert scale when judging a sentence (i.e. 2, 3 and 4), which results from more indeterminate judgments.

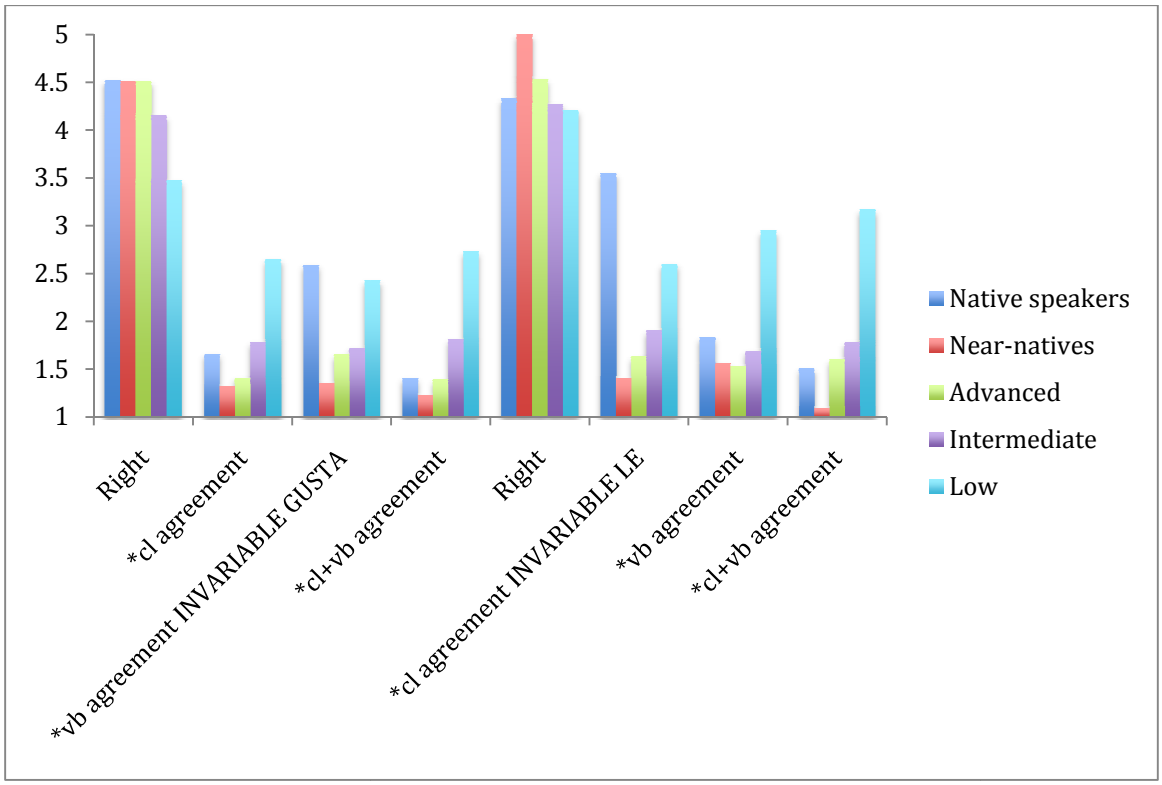


Figure 14. Response means for experiment 2 (All groups)

3.13 Experiment 2: Discussion

The results of this experiment lead me to conclude that agreement of psych-verb constructions could present certain difficulty for L2 learners, judging by the behavior of the low-proficiency group, who does not show complete understanding of these agreement relations. It is important to remind the reader that the low-proficiency participants in this experiment were not beginners but undergraduate students taking a 6th semester class.

Agreement issues are part of the core grammar, that is, it is a property considered to belong to the narrow syntax. This is because agreement is a relation between a head and its specifier: in particular, AgrIO for clitic agreement and V for verb agreement. If this were the only operation involved, there would be no reason to expect difficulties in this area since the computational system is considered to be universal. However, in order to acquire the agreement relations of these verbs, there are other factors besides their pure syntax that need to be understood; in particular, the relation between syntax and semantics (i.e. the non-canonical mapping of semantic roles to syntactic positions) and the relation between syntax and morphology (i.e. the clitic agrees with a non-canonical object (i.e. the Experiencer) and the verb agrees with a non-canonical subject (i.e. the Theme)). Thus, the mastery of the agreement system of psych-verb constructions involves understanding of the relation between syntax, morphology and semantics. This complex interaction of factors could, and as we have seen does, affect the L2 learners' level of success when acquiring this property.

The fact that agreement of Spanish psych-verbs is a source of some non-native divergence from native speakers has already been claimed in the literature. In particular,

Toribio & Nye (2006) and dePrada Pérez & Pascual y Cabo (2011) put forward this same claim for heritage speakers. Toribio & Nye (2006) found a tendency towards a direct mapping of psych-verbs, a mapping in which the most prominent argument (i.e. the Experiencer) agrees with the verb and the least prominent argument (i.e. the Theme) agrees with the clitic. This indicates a restructuring of the argument structure of these verbs, an area in which syntax interfaces with semantics; specifically, with thematic roles. This tendency becomes evident in the low-proficiency group, who actually rated *cl+vb agreement sentences (i.e. sentences that represent a direct mapping of thematic roles onto syntactic positions) as grammatical. On the contrary, the more advanced participants did not show any tendency towards restructuring the argument structure of these verbs since they gave this type of sentences ratings on the ungrammatical side of the scale. My findings for the more advanced groups in this respect are in line with dePrada Pérez & Pascual y Cabo (2011) who also did not find evidence for direct mapping of psych predicates with heritage speaker participants. Additionally, since, differently from dePrada Pérez & Pascual y Cabo (2011), I included verbs other than *gustar* and *encantar*, we can state that this claim applies to other psychological predicates (belonging to Class III[24]).

Furthermore, I tested the invariable *le* and invariable *gusta* proposals due to the disagreement found in the literature (whereas Toribio & Nye (2006) found evidence for invariable *le*, dePrada Pérez & Pascual y Cabo (2011) found evidence for invariable *gusta*) and to determine if any of these proposal holds for L2 learners' grammars. The native speaker group showed a preference for both invariable *le* and invariable *gusta*

[24] There were both Class II(b) and Class III predicates in the test items. However, this distinction is not relevant for the current experiment.

although the effect was stronger for the invariable clitic option. The advanced group also showed a preference for invariable *le* but this preference was minimal. The remaining groups were immune to both invariable *le* and invariable *gusta* since their ratings were not affected by the presence of an invariable element.

Toribio & Nye (2006, p. 268) provide an explanation based on phonetic reduction for the use of invariable *le.* On the other hand, dePrada Pérez & Pascual y Cabo (2011) hypothesized about the possible sources of simplification of invariable *gusta*. They discarded phonological reduction as the source of simplification of the verbal paradigm: N-deletion takes place in Caribbean Spanish although it is a rare phenomenon (Lipski, 1986); however, not all of their participants were in contact with Caribbean Spanish and their place of origin did not seem to be a relevant factor with regard to the use of invariable *gusta*. dePrada Pérez & Pascual y Cabo (2011) proposed two other types of simplification that might have resulted in the phenomenon of invariable *gusta*: morphological simplification of the verbal paradigm to which they subscribe or syntactic simplification. Morphological simplification is a process that has been found in heritage speaker grammars (Bullock & Toribio, 2006); so, dePrada Pérez & Pascual y Cabo believe it to be a reasonable explanation for their findings. Their last proposal is a syntactic simplification phenomenon related to the emergence of an expletive subject in psych-verb constructions. However, since arguing for this explanation would require further testing, they leave this door open to future research.

In my experiment, taking into account that the control group was the only one who showed a consistent preference for both invariable *le* and invariable *gusta*, and given the particular dialect spoken by this native speaker group, an account based on phonetic

simplification seems to be the most plausible explanation. The native speaker group was composed of speakers from Andalusia and Extremadura, southern regions of Spain. These areas are characterized by word-final –s deletion and also velarization of word-final –n, which can turn into deletion of this sound (Hualde, 2005). Because these are very consistent phonological processes in Southern Peninsular Spanish, I claim that invariable *le* and invariable *gusta* stem from phonological deletion processes. Another piece of evidence supporting this theory comes from the fact that invariable *le* (mean=3.55) is given a much higher rating than invariable *gusta* (mean=2.59) in this group. This directly correlates with the robustness of the phonological process in the dialect: whereas loss of –s is a very consistent process, loss of word-final –n is not such a consistent process since word-final –n can be either velarized (which is also a weakening of the articulation) or deleted in this dialect. If I am on the right track, and invariable *le* and invariable *gusta* are products of dialectal variability, it is not surprising that most groups of L2ers did not show these phenomena. Second language learners are exposed to a variety of Spanish dialects from their different instructors, people they interact with in study abroad programs or service learning opportunities. These native speakers might have presented this phonological simplification process or not, depending on their specific variety. Thus, this dialectal feature seems not to be part of the learners' interlanguage system.[25]

[25] Although an explanation based on phonological simplification is consistent with the data found in this experiment, there are other alternatives that should be explored if invariable *le* and invariable *gusta* take place in speakers whose dialects do not include loss of final –s and final –n. Actually, invariable *le* could be related to a more general phenomenon in which the singular indirect object (*le*) replaces the plural indirect object (*les*) in a wide array of contexts and with predicates other than psych-verbs. DeMello (1992) proposes that this phenomenon is connected with linguistic economy because the use of invariable *le* occurs in contexts where the plural information can be recovered from the clitic's referent.

The important issue at hand is to determine what the behavior of the non-native participants lets us infer about their subconscious knowledge of the L2 linguistic system and how this knowledge is represented. The results of this experiment could be interpreted in two different ways: First of all, the problems with agreement might be the result of a mapping problem. Thus, this will be in line with the Missing Surface Inflection Hypothesis (Haznedar & Schwartz, 1997; Prévost & White, 2000). Proponents of this view consider that absence of inflection or the substitution of a particular inflectional morpheme by a default arises from a failure to retrieve inflection under certain circumstances, specifically, this is related to processing load: so, L2ers will be more likely to not provide inflection or to provide defaults when the processing load is high. Secondly, the problems with agreement can reflect a problem at the level of the syntactic representations. So, L2ers might actually not have representations that correspond to the L2 syntax, instead they might be relying on a semantically-driven grammar that chunks the information based on semantic participants in the sentence and L1 parsing. Because I have no way of empirically testing the first option and also, because the results of experiment 4 are consistent with the second possibility, I argue that these low-proficiency speakers lack knowledge of the L2 syntax of psych-verbs.

The findings in experiments 1 and 2 are consistent with the first part of Toribio et al.'s scale (2005) in which TP related features are considered to be the features least susceptible to change and loss in heritage speaker language, followed by argument structure and semantic properties and finally, with discourse-related properties labeled as those most susceptible to change:

Furthermore, he argues that it is related to a reduction of pragmatic emphasis since invariable *le* does not occur in contexts of strong pragmatic emphasis. I will research this possibility in the future.

(15) TP related features<argument structure<semantic properties< discourse-related properties

This scale is based on Myers-Scott's (2002) seminal work on contact linguistics, which states that elements coding conceptual structure are more susceptible to change than those that entail grammatical relations. In my second language learner data, I found that neither TP-related features (e.g. clitic case) nor argument structure (i.e. mapping of thematic roles to syntactic positions) are affected in the L2ers' grammars of the more advanced speakers. On the other hand, when looking at the low-proficiency group, we can see that whereas pure syntactic operations are performed successfully as judging by the results of experiment 1, operations that deal with argument structure pose a higher degree of difficulty. So, this indicates that the continuum proposed for language attrition and convergence, up to this point, is also applicable to second language acquisition by non-heritage speaker learners. Furthermore, it indicates that the IH might need to consider a division between narrow syntax and internal interfaces.

Next, I will evaluate experiments 1 and 2 in light of the Interface Hypothesis. Experiments 1 and 2 showed that the more advanced L2 learner groups tested in this study are able to overcome the challenges connected to the narrow syntax and the argument structure of psych-verb constructions; specifically, issues related to clitic choice and agreement relations. This is not entirely surprising given that the computational system is considered to be universal, and issues related to clitics and agreement in psych-verb constructions are extensively practiced in the L2 classroom. Also, the fact that the more advanced groups were consistent in rejecting sentences with clitic and verb agreement violations (*cl+vb agreement) indicate that there is not a trend

towards a restructuring of the argument structure of psych-verb constructions for these participants. On the other hand, the low-proficiency group showed a certain level of difficulty in dealing with the reverse agreement relations of psych-predicates. This becomes evident in their unexpectedly higher ratings to sentences including clitic and clitic and verb agreement violations. Thus, we can say that low-proficiency participants have problems with the narrow syntax of psych-verbs or more accurately, how this syntax interfaces with both morphology and semantics. This indicates that L2ers have problems at the level of internal interfaces. This fact in isolation does not contradict the IH, since its main claim that external interfaces are not subject to optionality at the highest stages of second language development, has not been challenged. This is so because the IH makes no claims about language development and, thus its tenets do not hold in principle for low-proficiency participants as the ones taking part in this experiment. However, this claim will be challenged in chapter 6 and I will explain the repercussions of this argument for the current project.

Finally, I will consider the different factors included in the Integrative Model of Bilingual Acquisition and how this relate to the specific findings in theses two first experiments. I will start with experiment 2. First of all, the agreement properties of psych-verbs are extremely complex at a formal level. This is because understanding of the agreement relations of these predicates includes the interplay of semantics and syntax (i.e. the mapping of thematic roles to syntactic positions) and also, the interaction between syntax and morphology (i.e. inflectional morphology and how it relates to the syntactic position of participants in the sentence). Handling the intricate interaction between these factors requires a pretty sophisticated command of the L2 linguistic

system. Secondly, the L1 cannot be used as a scaffold to learn these specific properties since these properties are not fully instantiated in the L1 for two reasons: one, the clitic is not part of the English system. And two, English speakers, whose mother tongue has a very poor agreement system, are known to struggle with agreement issues even at high stages of development (Montrul, Foote & Perpiñán, 2008). Finally, an additional complicating factor is the different possible word orders in Spanish (EVT and TVE), which are impossible in English (*Chocolate is pleasing to* me but **To me is pleasing chocolate*) and how that further obscures the transparency of the agreement relations. As compared to the first experiment, we notice a key difference between them, which might have caused lower-proficiency participants to perform better in 1 than in 2. As I said before, it is difficult to classify a certain property as belonging to the narrow syntax or to one particular interface. However, it is clear that experiment 1 is closer to a purely syntactic property than experiment 2, where several aspects of syntax, morphology and semantics actually interact. Because of this, the level of formal complexity of the structures tested in experiment 1 is much lower than in experiment 2. This is because experiment 1 relies more on universal operations like *Merge* or *Move*, whereas constructions in experiment 2 are subject to a number of factors that belong to distinct linguistic modules. So, even if the clitic is not part of the English grammar, when operations involving the clitic are 'purely' syntactic, even the low-proficiency learners are able to master them earlier than properties like the ones tested in experiment 2.

What is clear from these experiments is that these structures are not doomed to fossilize since the more advanced speakers perform at the native speaker level. So, low-proficiency speakers are predicted to overcome these problems as their proficiency level

develops. However, it is important to state that, because these properties are formally instructed, it is not clear whether L2ers are responding to this task using their metalinguistic knowledge of the rules learned in the classroom or they actually have acquired this series of phenomena. In order to answer this question some other properties of clitics not learned in the classroom should be tested.

The next chapter will analyze participants' comprehension of properties that belong to an internal interface; namely, the syntax-semantics interface. This will allow me to proceed with my evaluation of the validity of the IH by testing another of the areas claimed to be attainable at the highest level of proficiency.

CHAPTER 4
PSYCH-VERBS AND THE SYNTAX-SEMANTICS INTERFACE

In chapter 3 I discussed certain syntactic properties of psych-verbs, which in general turned out to be mostly non-problematic for the more advanced L2 learners. On the other hand, the lowest-proficiency level experienced difficulty with agreement issues. In this chapter I will evaluate two different properties of psych-verbs that belong to an internal interface, namely, the syntax-semantics interface. Specifically, I will examine word order and the use of antipassive *se* in psychological verb constructions, which will allow me to ascertain the challenges posed by this interface. Overall, the findings are consistent with the claim that internal interfaces are not the main locus of difficulty in L2 acquisition since the tasks were not particularly demanding for the L2ers in this study.

4.1 Background for Experiments 3A and 3B

An interesting categorization problem arises when L2ers face the task of distinguishing among the different types of psych-verb classes in Spanish, particularly, between eventive (Class II(a)) and stative (Class II(b)/III) predicates. Experiments 3A and 3B deal with L2 learners' ability to distinguish Class II and Class II(b)/III of Spanish psych-verbs. Class I (e.g. *amar* 'to love,' *odiar* 'to hate') should not present problems since it has a canonical mapping of thematic roles to syntactic positions (i.e. the Experiencer maps to the subject position and the Theme maps to the object position). In contrast, classes II and III have a reverse mapping of thematic roles to syntactic positions (i.e. the Experiencer maps onto the object position and the Causer/Theme maps onto the

subject position). Additionally, these classes have some overlapping characteristics that can make the acquisition process extremely challenging. The challenge stems from the fact that whereas Class III verbs are always stative (e.g. *gustar* 'to like' or *convenir* 'to be convenient'), Class II verbs (*preocupar* 'to worry', *molestar* 'to bother', *asustar* 'to scare') could be stative (Class II(a)) or eventive (Class II(b)) depending on the context in which they appear. Furthermore, classes II(b) and III fully overlap with respect to aspectual, morphological and syntactic behavior. Because classes II(b) and III are indistinguishable, from this point onwards when we refer to Class III, the reader should assume that Class II(b) predicates are also included in this classification. Only when necessary for the interpretation of a particular result will classes II(b) and III be distinguished.

As Arad (1998) argued, the difference between the eventive and the stative interpretations is that whereas the eventive involves a change of state in the Experiencer, we do not have this change of state in the stative reading. The stative reading includes a perception by the Experiencer that causes him to be in a specific mental state. So the predicate in the sentence *Juan annoyed Ana* could be interpreted as an eventive predicate if Juan did something that caused Ana to suddenly be angry. On the other hand, if Ana simply gets mad with the idea or the presence of Juan, then the sentence has a stative interpretation. I will consider that participants are assigning a stative interpretation to the sentence when they recognize the morphosyntatic reflexes of stativity in psych-verbs (e.g. the possibility of having two word orders and incompatibility with antipassive *se*). Conversely, I will consider that participants are assigning an eventive interpretation to the sentence when they allow psych predicates to co-occur with antipassive *se* but they

recognize their inability to have a reversed order of arguments. In Table 12 (a replication of Table 1 in chapter 2) I present an outline of the characteristics that distinguish these classes.

Table 12. Morphological, semantic and syntactic differences between Class II and Class III

Class II(a)	**Class II(b)/Class III**
molestar 'to bother', *preocupar* 'to worry', *asustar* 'to scare'	*molestar* 'to bother', *preocupar* 'to worry', asustar 'to scare' (Class II(b)) *gustar* 'to like', *encantar* 'to love', *importar* 'to matter' (Class III)
Eventive	Stative
Leísta dialect: no clitic or dative clitic Non-leísta dialect: Accusative clitic	Clitic is obligatory Dative clitic
One order: Theme/Experiencer order	Two orders: Experiencer/Theme Theme/Experiencer
Object [+affected]	Object [-affected]
Se construction: Juan se preocupa por sus padres *Juan worries about his parents*	No *se* construction[26]: *Juan se gusta por sus padres *Juan likes by his parents*
Causative embedding: María hizo preocuparse a Juan *Mary made Juan worry*	No causative embedding: *María hizo gustarse a Juan *María made John like*

Additionally, it is necessary to underscore that the fact that psych-verbs are classified into different classes, which imply different semantic connotations and require

[26] The assumption here is that stative Class II(b) verbs cannot appear in the*se* constructions or in causative embedding, only their eventive counterparts can.

different syntactic frames is never introduced in the L2 classroom. And so, learners' understanding of these constructions cannot be ascribed to formal instruction.

Finally, the interesting hybrid behavior of Class II has only been studied by Rubio (2000, 2001). In general, most studies in the acquisition literature have focused on either Class II or Class III but not on their overlapping features. So, this is an innovative aspect of my research, which will shed light on this under-researched area of psych-verb acquisition.

4.2 Experiment 3A and 3B: Goals and Research Questions

The relation between syntax and semantics as manifested in the L2 learner's ability to categorize classes II and III of psych-verbs as different types of predicates will be tested in experiments 3A and 3B. Particularly, my goal is to determine whether L2 learners are aware of the subtle aspectual differences between these classes (i.e. Class II(a) is eventive whereas Class II(b)/Class III is stative) and how these are morphologically and syntactically encoded. Furthermore, experiment 3B will also offer the opportunity to see if speakers are able to recognize that Class II verbs have this double semantic and morphosyntactic nature. Although testing different properties of classes II and III, both experiments have a common goal and try to answer the same underlying research question: Can L2 learners acquire properties of the syntax-semantics interface of Spanish psych-verbs? However, whereas experiment 3A will focus on word order and its relation to lexical aspect, experiment 3B will test the relation between the antipassive *se* construction and the aspectual characteristics of psych-verbs.

First, I will focus on the description of experiment 3A and I will introduce its goals, methodology, results and the discussion generated by the results. Then, I will proceed to present experiment 3B.

4.3 Experiment 3A: Goal and Research Questions

Experiment 3A tests a property that belongs to an internal interface; namely, the syntax-semantics interface. The specific property I studied is the relation between word order (i.e. syntax) and the aspectual nature of the different classes of psych-verbs (i.e. semantics). We have to remember at this point that in Class III both Experiencer-Verb-Theme (EVT) order and Theme-Verb-Experiencer (TVE) order are grammatical, although EVT is the unmarked order and, consequently, the preferred configuration. On the other hand, in Class II the order Causer-Verb-Experiencer (CVE) is grammatical whereas the order Experiencer-Verb-Causer (EVC) is ungrammatical. So, in this experiment I will contrast the unmarked orders: EVT in Class III vs. CVE in Class II and the marked/ungrammatical orders: TVE in Class III and EVC in Class II to determine whether learners understand the different degrees of grammaticality of these configurations. The main research questions in this experiment will be the following:

1) Do non-native speakers distinguish between the ungrammatical status of Experiencer-Verb-Causer sentences in Class II and the dispreferred status of Theme-Verb-Experiencer sentences in Class III?
2) Do non-native speakers distinguish between the grammatical order (Causer-Verb-Experiencer) in Class II and the unmarked order (Experiencer-Verb-Theme) in Class III?

3) Which is the preferred word order for these constructions? That is, when comparing orders within each individual class: is EVT or TVE preferred with Class III? Additionally, is CVE or EVC preferred in Class II?

4.4 Experiment 3A: Methodology

Participants saw a total of 48 sentences that were coupled in pairs with respect to a common context. The sentences contained 24 test items and 24 fillers. The test items were divided into two categories: sentences including eventive Class II verbs and sentences including stative Class III verbs. Again, the main issue is that, for Class II verbs, only one order of arguments is allowed (CVE). On the other hand, Class III verbs allow the two orders of arguments (EVT-TVE).

Several theoretical accounts have been proposed to explain this fact. Kratzer (1989, 1995) analyzes the distinction between individual-level predicates (Class III) and stage-level predicates (Class II) in syntactic terms.[27] In her view, stage-level predicates have a Davidsonian event argument that denotes events or spatiotemporal locations. In contrast, individual-level predicates lack this position. As we saw in chapter 2, Parodi-Lewin (1991) applied this same analysis to classes II and III of Spanish psych-verbs: she proposed that while Class II has a [+eventive] argument position, which is only filled when the verb has an eventive interpretation, this position is lacking in Class III. Thus, because in the eventive syntactic configuration there is an extra event argument position, which is filled by a [+eventive] argument, it is not possible for the Experiencer to raise.

[27] I would like to underscore here that the distinction stative/eventive does not fully correspond with individual-level predicates/stage-level predicates. Whereas all individual-level predicates are stative, stage-level predicates can be both stative and eventive. However, only eventive predicates can be stage-level predicates.

Consequently, eventive psych-verbs only allow the Causer-Verb-Experiencer order configuration. On the other hand, the lack of this [+eventive] position in the stative Class III predicates, allows both the Theme and the Experiencer to raise.

Franco (*personal communication*) considers that a sentence with the configuration Experiencer-Verb-Causer (e.g. **A María molesta el ruido* 'Noise is bothering María') is ungrammatical with Class II due to a feature mismatch in AgrIOP. Because this type of sentence is missing a clitic, the Experiencer *A María* cannot check its features in spec AgrIOP. So, the derivation crashes because the features of the Experiencer have not been checked before the derivation is read off at the interfaces.

The different orders of Class III predicates depend on discourse factors. This property will be tested in experiment 4. However, in this task, we will only test L2 learners' understanding of the relationship between aspect and word order in the realm of psych-verbs; that is, their understanding that Class II has only one possible order of arguments but Class III admits the flexibility of two orders. For this reason, the contexts in these tasks were created in a way that underscores the aspectual properties of each class respectively. Thus, for Class II verbs, I created a context that would be unambiguously interpreted as eventive. In turn, I created a context for Class III verbs that highlighted the stative nature of these predicates.

Furthermore, in order to prevent the subjects from assigning the sentences an undesirable prosodic pattern, the sentences were recorded with neutral intonation. Thus, the subjects heard the sentences at the same time that they read them on the screen. This manipulation was introduced to meet a very specific purpose. Class II constructions could be grammatical in a Experiencer-Verb-Causer order if the Experiencer is stressed; in this

case it constitutes a case of focus fronting (*A NICO, asustó Ana* 'Ana scared Nico') (Slabakova et al., 2011). In order to avoid this interpretation of the sentence, the participants listened to all of the sentences with neutral intonation.

I have to underscore that in (1), (1a) is completely grammatical whereas (1b) is completely ungrammatical according to theoretical accounts. In contrast, in (2), while both constructions are grammatical, (2a), that is, EVT is the unmarked construction. So, when comparing (1a) to (2a) we expect both constructions to get similar ratings since both constructions are grammatical. However, when comparing (1b) and, (2b) the prediction would be that the ratings for (2b) would be significantly higher than for (1b) since (2b) is grammatical (although dispreferred) and (1b) is simply ungrammatical.

(1) **Eventive reading:** Nico estaba estudiando silenciosamente cuando de repente Ana entró en la habitación
Nico was silently studying when Ana suddenly came into the room

a. Ana asustó a Nico (Causer-Verb-Experiencer-CVE)
Ana scared-3sg. to Nico
Ana scared Nico

b. *A Nico asustó Ana (Experiencer-Verb-Causer-EVC)
To Nico scared-3sg. Ana
Ana scared Nico

(2) **Stative reading:** Durante toda su infancia, Nico le tenía miedo a la profesora de Matemáticas
During his whole life, Nico was scared by the Math teacher

a. A Nico le asustaba la profesora de Matemáticas (Experiencer-Verb-Theme-EVT)
To Nico le-dat cl scared-3sg the teacher of Math
The Math teacher scared Nico

b. La profesora de matemáticas le asustaba a Nico (Theme-Verb-Experiencer-TVE)
The teacher of Math le-dat cl scared-3sg to Nico
The Math teacher scared Nico

Distractor sentences contained examples of differential object marking (or *a* personal), which also require knowledge of the interfacing properties of both syntax and semantics. The use of *a* is determined by the animacy and the specificity of the object. There were four different categories: (a) inanimate, specific--does not need *a* personal, (b) inanimate, nonspecific--does not need *a* personal (c) animate, specific--needs *a* personal, and (d) animate, nonspecific--does not need *a* personal

An example of a sentence that contains an animate nonspecific object is the following:

(3) *Mi jefe es muy agradable y es fácil trabajar con él*
My boss is very nice and it's very easy to work with him
a. *Mi jefe está buscando a una nueva secretaria
My boss is looking for a-personal *a new secretary*
b. Mi jefe está buscando una nueva secretaria
My boss is looking for (no a-personal) a new secretary

4.5 Experiment 3A: Results

4.5.1 Results of the Control Group

The control group was definitely aware of the word order patterns in different classes of psych-verbs, although the distinctions were not as categorical as described in theoretical accounts. As predicted, the order Theme-Verb-Experiencer (Class III) was rated significantly higher than Experiencer-Verb-Causer (Class II) (χ^2=36.56, p<.0001). That is, while one order was clearly grammatical, the other was rated as ungrammatical. This indicated that, for native speakers, the semantically different classes are equally different at the syntactic level.

Interestingly, the mean for EVC order is not particularly low (mean=2.25), although it received an ungrammatical rating. This could be the result of participants applying a prosodic structure that allows a grammatical interpretation (i.e. focus

fronting), in spite of having been instructed to judge the sentences with the intonation given (i.e. neutral intonation).

With regard to our second research question: neutral order was significantly better for Class III than Class II (χ^2=10.18, p=0.0014). However, we can see that the mean ratings are really close (EVT Class III: 4.92; CVE Class II: 4.75). This could arise from: (a) a general preference for psych-verbs that appear in one syntactic frame (i.e. Class III), (b) a preference of *leísta* speakers (see chapter 2 for an extensive explanation of the *leísta* psych-verb constructions) to include a dative clitic in the eventive reading, or (c) the contamination from other experiments.[28]

Table 13. Reponse means for experiment 3A (Control group)

Analysis Variable : response			
	Order	**N Obs**	**Mean R**
Class III	TVE	216	3.29
	EVT	216	4.92
Class II	EVC	216	2.25
	CVE	216	4.75

[28] This could be teased apart by isolating the subjects that did this experiment first and comparing them to the other subjects.

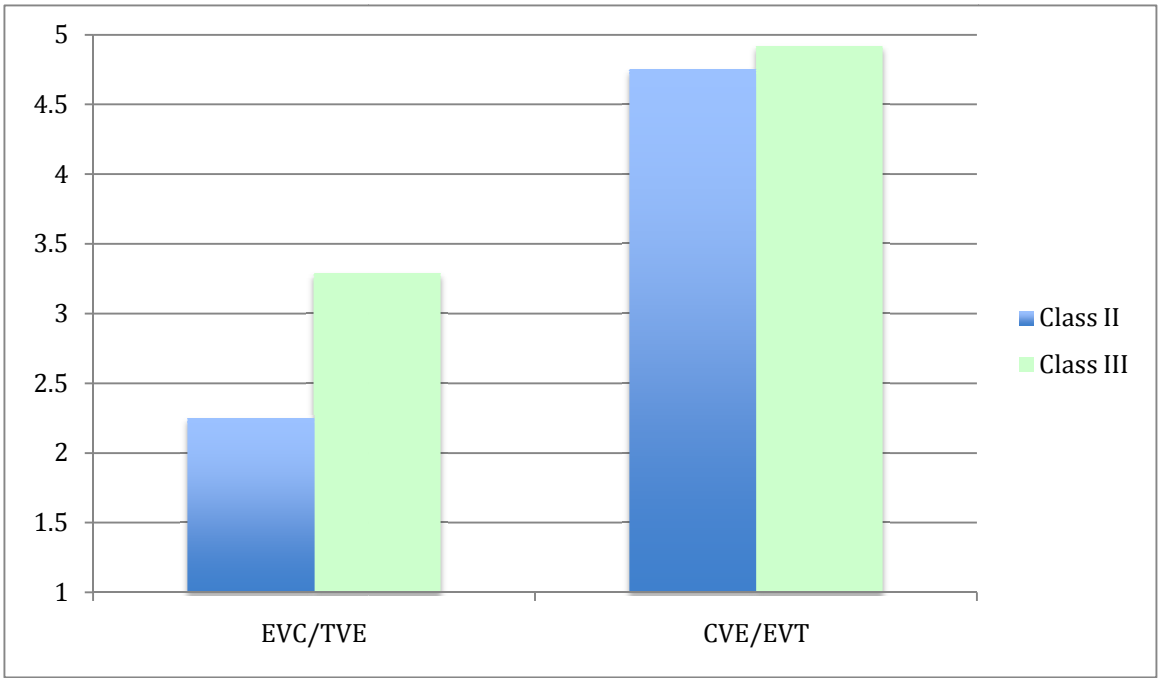


Figure 15. Response means for word order by class (Control group)

Finally, with regard to the last question, which word order is preferred for these constructions, the answer is clear: CVE and EVT are the unmarked orders respectively. There is a main effect of order when we compare across classes (χ^2=402.42, p<.0001), which manifests in the fact that the control group consistently rated the sentences with CVE/EVT order higher than EVC/TVE in Class II and Class III respectively (Class II: χ^2=277.71, p<.0001; Class III: χ^2=190.64, p<.0001).

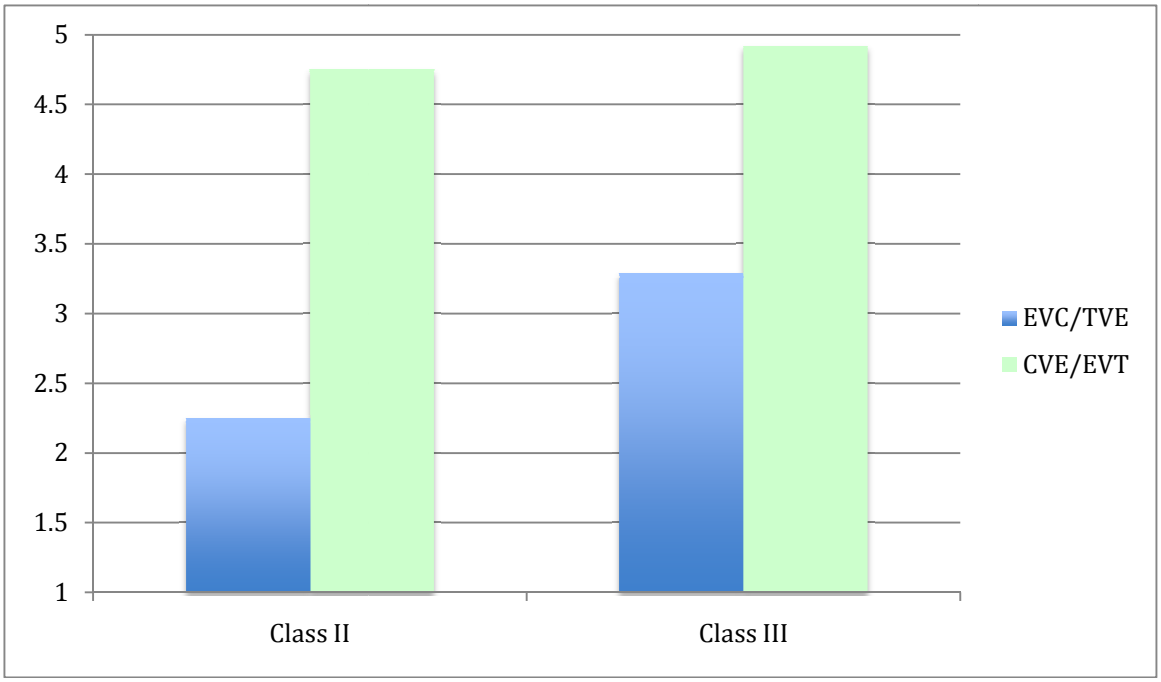


Figure 16. Response means for class by word order (Control group)

4.5.2 Results of the Near-Native Group

As was the case for the native speakers, near-natives also showed knowledge of the word order restrictions in psych-predicates by scoring TVE in Class III significantly higher than EVC in Class II (χ^2=66.29, p<.0001). Again, as in the control group, the neutral order gets higher ratings with Class III than with Class II (χ^2=12.60, p=0.0004).

Table 14. Response means for experiment 3A (Near-Native group)

Analysis Variable : response			
Verb class	**Word order**	**N Obs**	**Mean R**
Class III	TVE	96	4.22
	EVT	96	4.83
Class II	EVC	96	2.05
	CVE	96	4.30

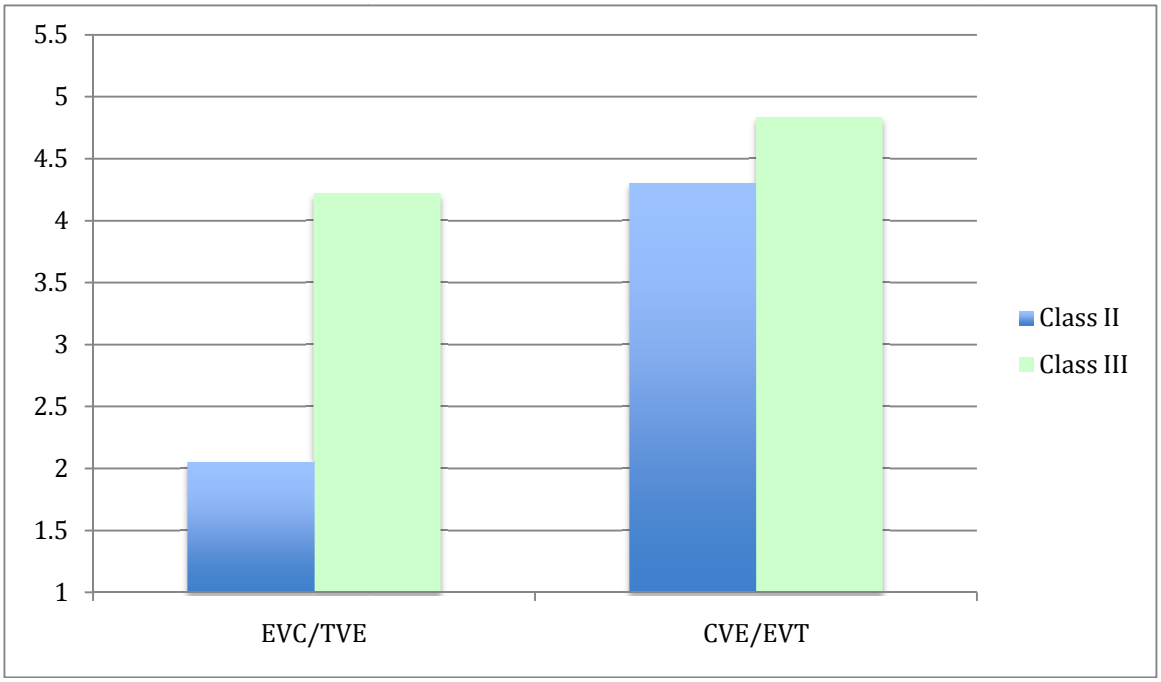


Figure 17. Response means for word order by class (Near-native group)

There is a main effect of order: CVE/EVT is the unmarked order and this is shown in the significantly higher ratings that it gets in classes II and III respectively (χ^2=132.23 p<.0001). Also, within each class, this word order (CVE/EVT) receives significantly higher ratings when compared to the marked/ungrammatical order (EVC/TVE) (Class II: χ^2=83.91, p<.0001; Class III: χ^2= 22.17, p<0001).

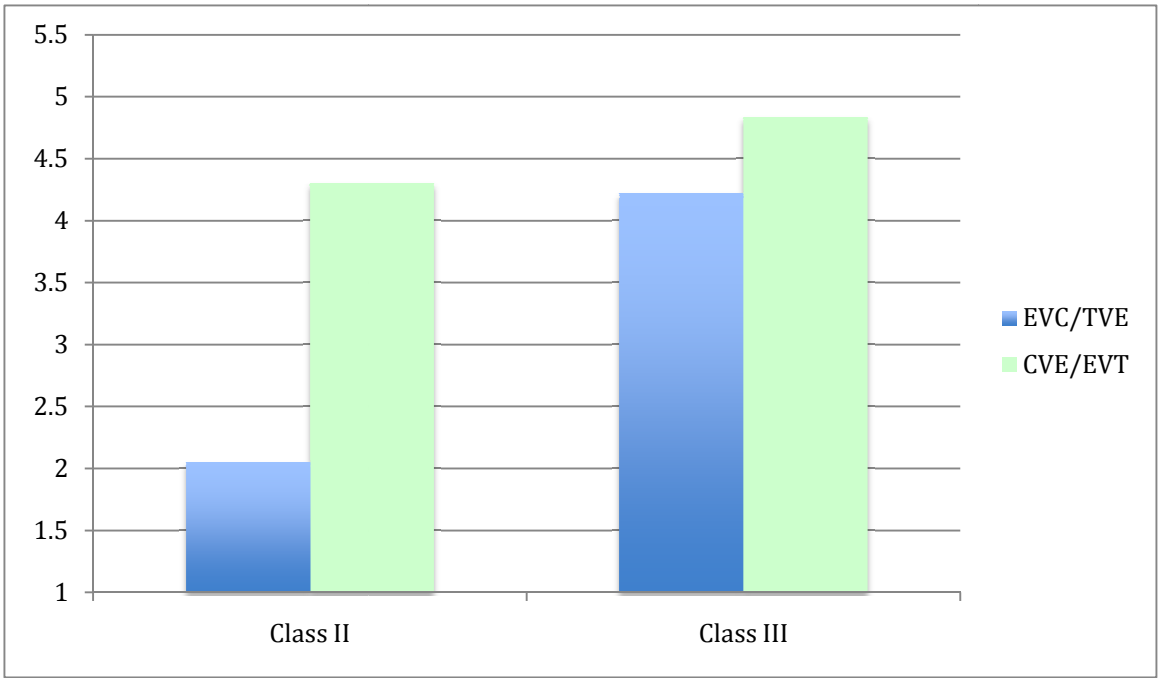


Figure 18. Response means for class by word order (Near-native group)

4.5.3 Results of the Advanced Group

The advanced group behaves in a very similar fashion to the other groups. The advanced speakers respected the word order patterns presented by classes II and III by rating TVE in Class III significantly higher than EVC in Class II (χ^2=72.49, p<.0001). CVE/EVT was scored equally high in both classes (χ^2=2.56, p=0.1096). This last result is different from near-natives and native speakers, who showed a preference for EVT order in Class III over CVE in Class II. However, since CVE/EVT order is grammatical in both classes, this result is in accordance with their syntactic behavior. Furthermore, the mean ratings in the control group, although statistically significant, were actually very close to each other.

Table 15. Response means for experiment 3A (Advanced group)

Analysis Variable : response			
Verb class	**Word order**	**N Obs**	**Mean R**
Class III	TVE	124	4.15
	EVT	124	4.46
Class II	EVC	120	2.99
	CVE	120	4.20

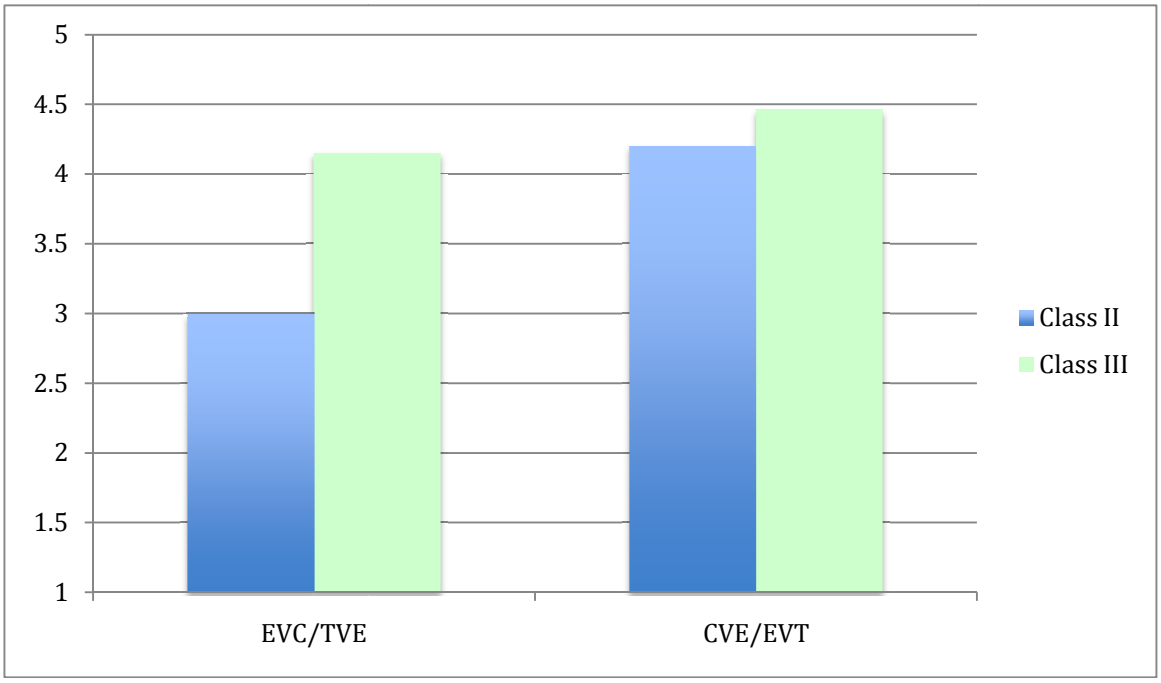


Figure 19. Response means for word order by class (Advanced group)

There was also a main effect of order with CVE/EVT being rated significantly higher across classes than EVC/TVE order (χ^2= 44.26 p<.0001). This effect is seen in each class respectively (Class II: χ^2=46.73, p<.0001; Class III: χ^2=7.41, p=0.0065).

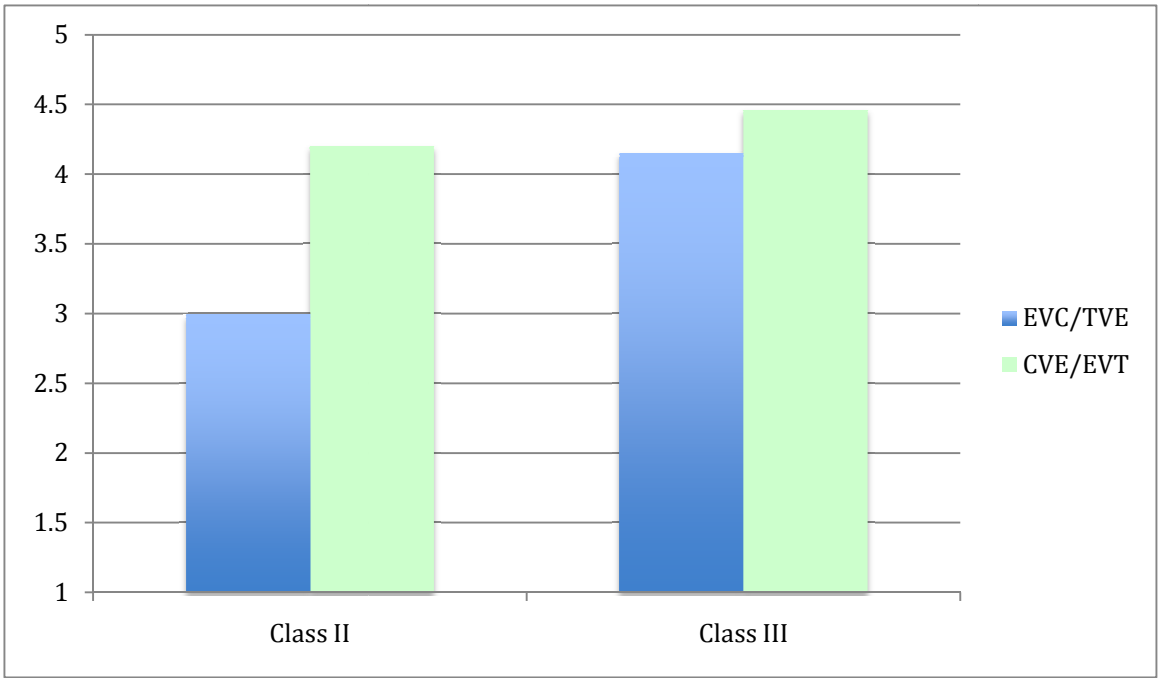


Figure 20. Response means for class by word order (Advanced group)

4.5.4 Results of the Intermediate Group

As was the case for the rest of the groups, intermediate speakers were able to recognize the word order patterns compatible with each class of psych-verbs. Thus, they gave a higher rating to TVE sentences with Class III verbs than EVC sentences with Class II verbs (χ^2=4.30, p=0.0382). The unmarked order (CVE/EVT) is given roughly equally ratings (χ^2=0.23, p=0.6321) in both classes.

Table 16. Response means for experiment 3A (Intermediate group)

Analysis Variable : response			
Verb class	**Word order**	**N Obs**	**Mean R**
Class III	TVE	96	3.65
	EVT	96	4.13
Class II	EVC	93	3.27
	CVE	93	4.22

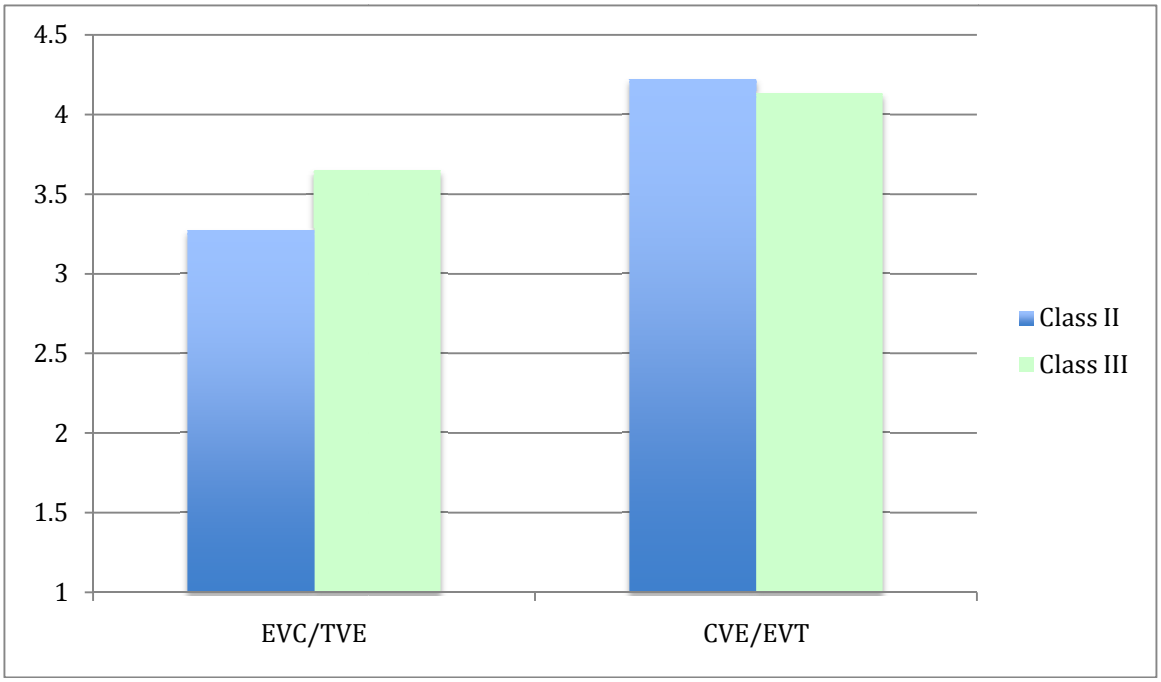


Figure 21. Response means for word order by class (Intermediate group)

We find again a main effect of order (χ^2=47.06, p<.0001), which is true for both Class III where EVT is rated significantly higher than TVE (χ^2=4.92, p=0.0266) and Class II where CVE is rated higher than EVC (χ^2=42.23, p<.0001).

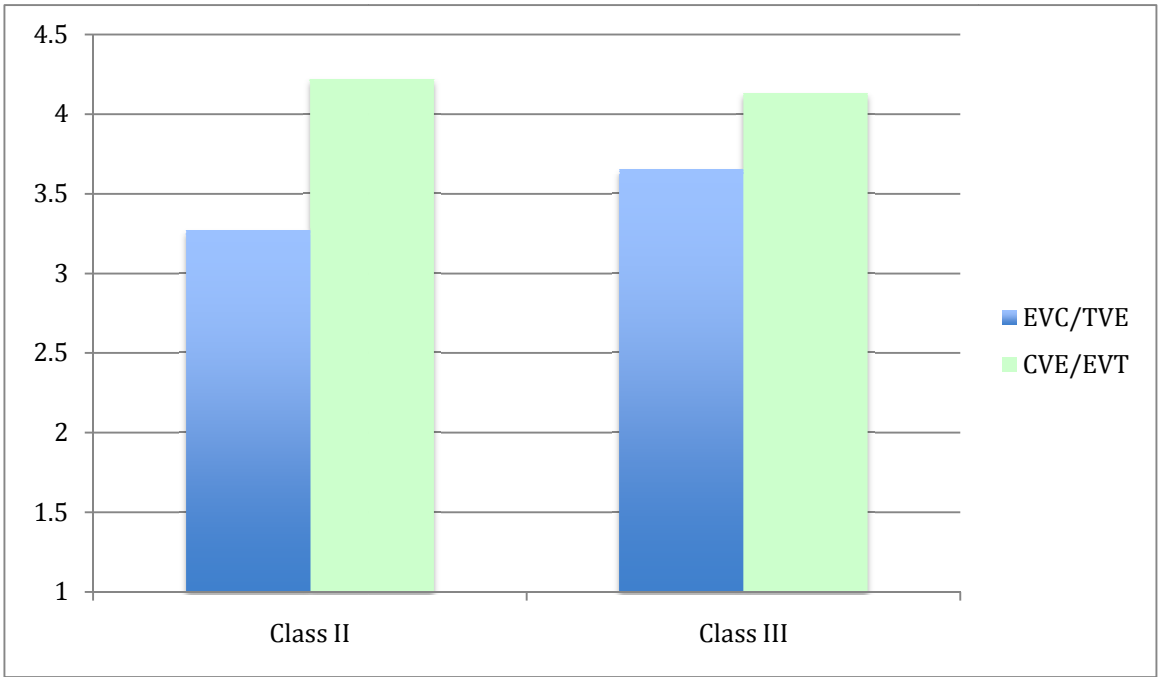


Figure 22. Response means for class by word order (Intermediate group)

4.5.5 Results of the Low-Proficiency Group

As was the case for the other groups, low-proficiency speakers understand the word order restrictions that apply to the different classes of psych-verbs. We see this in their significantly higher ratings of TVE order with Class III verbs when compared to EVC order in Class II (χ^2=25.80, p<.0001).

The neutral order gets higher ratings with Class II verbs than Class III verbs (χ^2=II 24.26, p<.0001). This is something particular to this group, since all other groups either showed a preference for the neutral order with Class III verbs or gave similar ratings with both Class II and III. This could be the result of influence from the SVO order, which is dominant in the L2ers' L1.

Table 17. Response means for experiment 3A (Low-proficiency group)

Analysis Variable : response			
Verb class	**Word order**	**N Obs**	**Mean R**
Class III	TVE	70	3.40
	EVT	70	3.81
Class II	EVC	66	2.57
	CVE	66	4.43

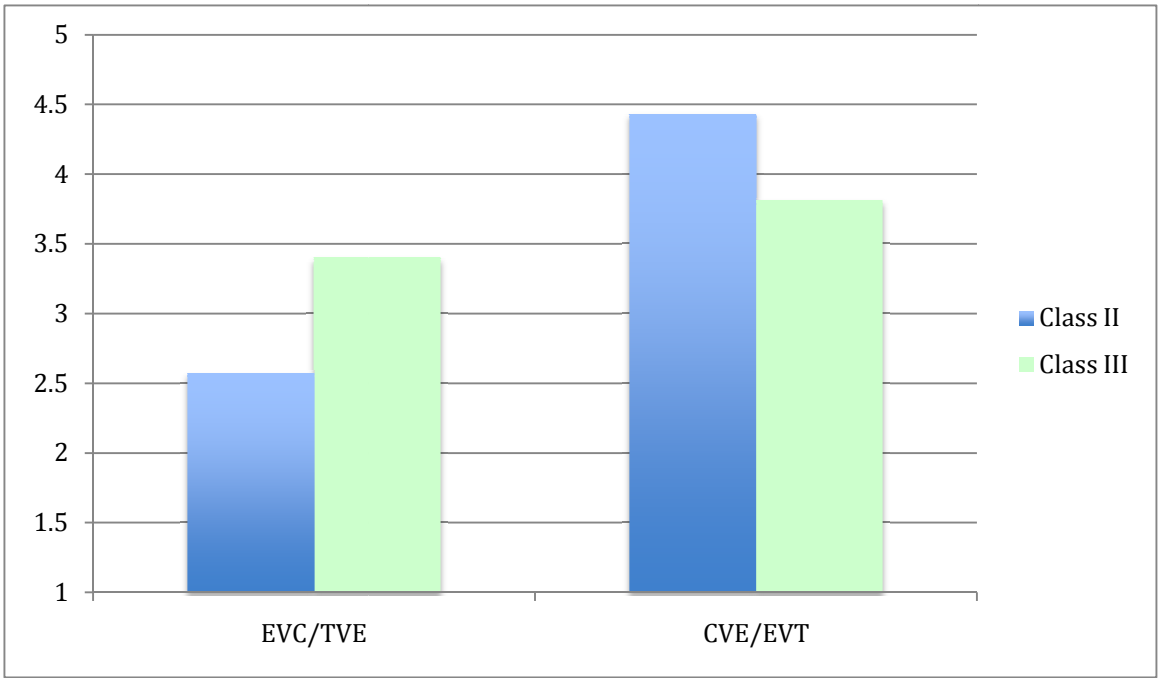


Figure 23. Response means for word order by class (Low-proficiency group)

There was a main effect for word order since CVE/EVT had significantly higher ratings than EVC/TVE (χ^2=41.81, p<.0001). Looking within each class, there is a significant effect of word order for Class II (χ^2=223.68, p<.0001) but not for Class III, where both orders received roughly equal ratings (χ^2=2.49, p=0.1146). This is not extremely surprising since both EVT and TVE are grammatical. However, the other groups show a preference towards the stylistically unmarked option. This group does too to a certain extent, but as we saw, the contrast does not reach significance.

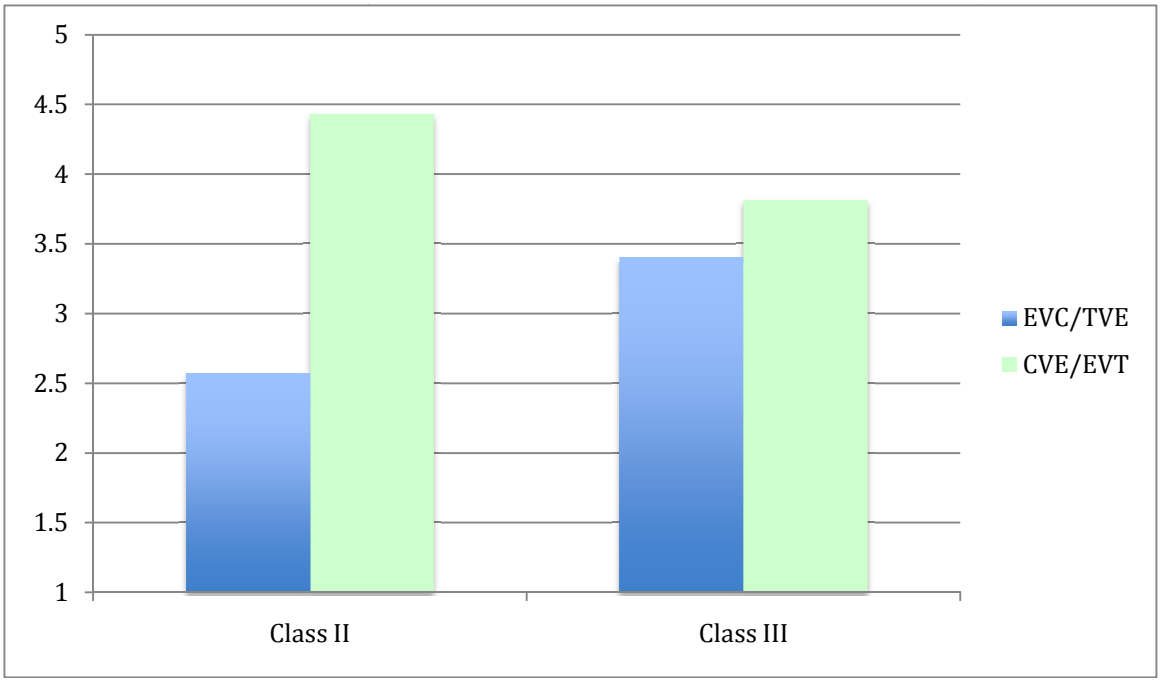


Figure 24. Response means for class by word order (Low-proficiency group)

4.6 Experiment 3A: Summary of Results

Below numbers (1-3) summarize the main findings in this experiment:

1) TVE with Class III verbs is always preferred over EVC with Class II verbs. This indicated that all groups were aware of the higher degree of grammaticality of TVE as compared to EVC. The means for EVC, however, are higher than predicted based on theoretical accounts for all groups including the native speakers. This could be related to a specific prosodic pattern, focus fronting, which turns the configuration grammatical.
2) The ratings of the unmarked order (CVE/EVT) were more variable: the native and near-native speakers showed a preference for the unmarked order with Class III (although the means are really close for the native controls), advanced and intermediate learners showed no preference and low-proficiency speakers showed a preference for this order with Class II verbs. As I pointed out in the results

section, this could be the result of three factors (i.e. Class III preference, *leísmo*, and contamination) that will be evaluated in the discussion section. The responses of the advanced and intermediate speakers might reflect a language system that is not sophisticated enough to be influenced by these factors. Finally, the preference shown by low-proficiency speakers for CVE order in Class II rather than EVT in Class III could be the result of an overreliance on English Subject-Verb-Object word order, which lines up with Class II Causer(nominative)-Verb-Theme(accusative) but not with Class III Experiencer(dative)-Verb-Theme(nominative) .

3) CVE/EVT consistently receives higher ratings than EVC/TVE in classes II and III, respectively, in all of the groups. This indicates that this is the unmarked order for these constructions. There is only one exception to this trend: low-proficiency speakers gave TVE and EVT orders roughly equal ratings in Class III. This is not completely unexpected since the two orders are grammatical with Class III verbs, although EVT is the unmarked order. However, it seems that low-proficiency speakers do distinguish between the stylistically unmarked and the marked orders but they do not do it to a level that reaches significance.

4.7 Experiment 3A: Contrasts among Groups

Figure 25 shows the contrasts among groups with respect to sentences with the marked/ungrammatical order (EVC/TVE) in classes II and III. It is clear that, even if all the groups distinguish between these two different types of sentences across classes, showing an understanding that TVE is more grammatical than EVC, the extent to which this distinction is made varies from group to group. We see a significant contrast between

the intermediate group and the control group (χ^2=15.28, p<.0001). As we can clearly see in the graph, the intermediate group's judgments are much less defined than the judgments of the native speaker group (or any of the other groups). Furthermore, we see another significant contrast between the control group and the near-native speaker group (χ^2=12.74, p=0.0004). This is because the near-native group actually has a more categorical distinction of classes. This results from the fact that the control group gave very low ratings to TVE sentences. An analysis of the response patterns of native speakers shows that 25% of the native speakers gave this type of sentence a rating of 1 or 2. It seems like these participants were using the scale in a slightly different way than the experimenter expected, since a rating of 1 meant completely ungrammatical and these sentences are not completely ungrammatical but simply marked.

The comparison between the control group and the advanced and the low-proficiency groups respectively rendered non-significant contrasts (control vs. advanced: χ^2=0.30, p=0.5854; control vs. low: χ^2=0.84, p=0.3582).

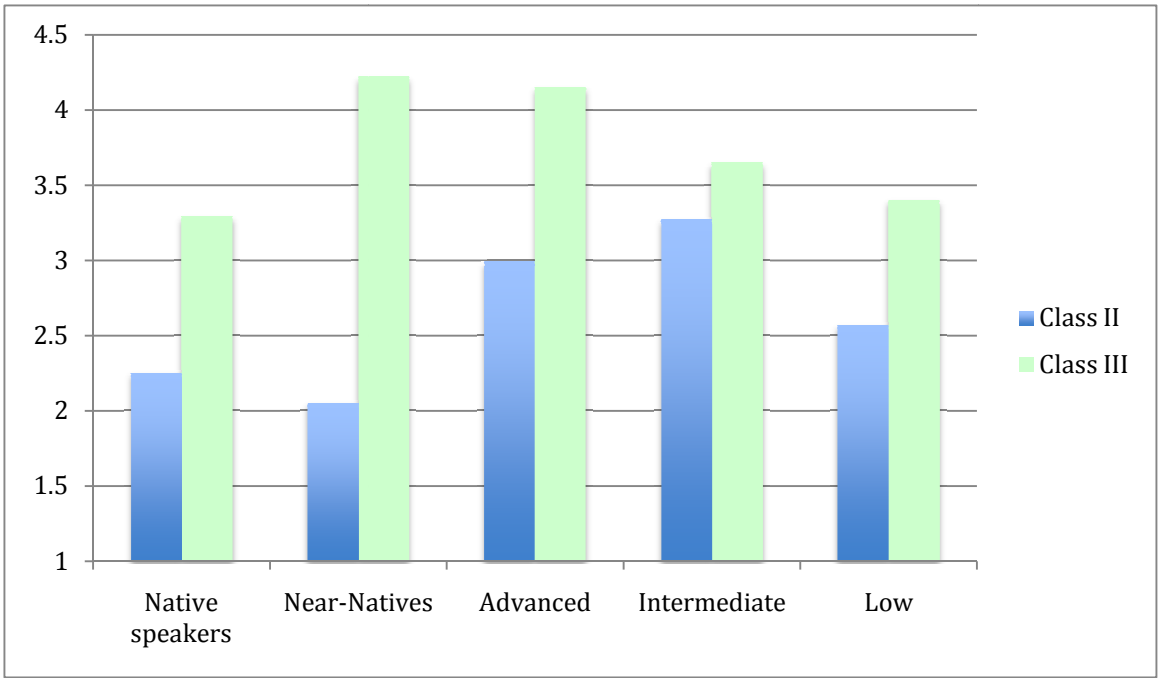


Figure 25. Response means for EVC/TVE sentences in experiment 3A (All groups)

Figure 26 shows the response means for sentences with unmarked order (CVE/EVT) across classes. This figure provides further evidence that the L2 learners understood the different word order patterns that are possible with both classes of psych-predicates. This is so because they are aware of the fact that CVE/EVT order is perfectly grammatical with Class II and IIi respectively. However, we still see some significant contrasts in the extent to which the different groups categorized this distinction. The native speaker group behaves significantly differently from the near-native group since the distinction between classes II and III is more definite for the latter (χ^2=4.96, p=0.0259). Furthermore, the low-proficiency group also behaves significantly differently than the native speakers since their trend is actually in the opposite direction from the control group (and all other groups) (χ^2=10.65, p=0.0011). They gave a higher rating to EVT sentences with Class II verbs. The behavior of the advanced and the intermediate

groups is not significantly different from the behavior of the native control (χ^2=0.24, p=6259; χ^2=1.83; p=0.1758).

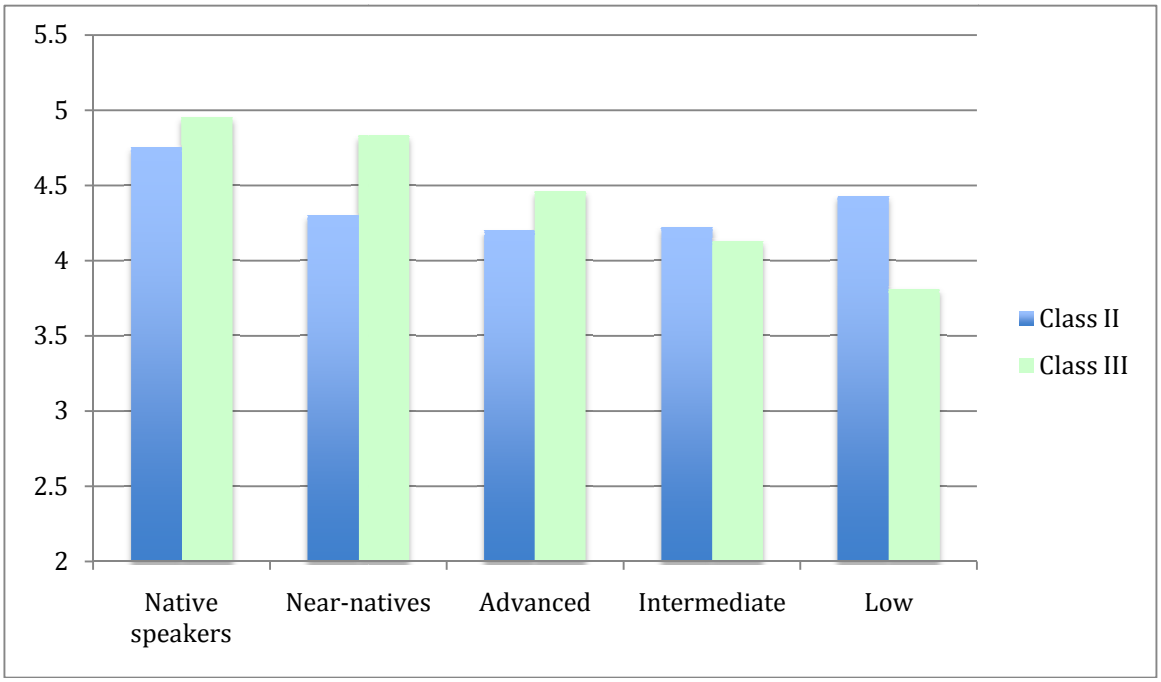


Figure 26. Response means for CVE/EVT sentences in experiment 3A(All groups)

4.8 Experiment 3A: Discussion

The goal of this experiment was to ascertain if L2 learners were able to categorize classes II and III of psych-verbs according to their aspectual properties, which correlate with certain morphosyntactic reflexes. In particular, I tested word order alternations in the current experiment. My predictions were based on syntactic theory (Parodi-Lewin, 1991; Franco & Huidobro 2003, 2007): native speakers and, possibly L2 learners, would show an understanding of the following patterns: EVT and TVE orders are possible with Class III (although EVT is certainly the unmarked order) but only CVE order is possible with Class II.

Looking at the experiment results with this fact in mind, we can say that, because of the similarities of the L2ers' behavior as compared to the control group, L2 learners

showed knowledge of the word order alternations available for the different classes of psych-predicates in Spanish. This indicates that this syntax-semantics interface property of psych-verbs does not seem to pose insuperable learnability problems for L2ers. This is consistent with the literature on interfaces, which, in general, claims that it is only external interfaces properties, those that require processing of both a linguistic module and cognitive module, that present residual optionality for advanced second language learners. In fact, the earlier version of the Interface Hypothesis (e.g. Sorace 2005, 2006) made a distinction between narrow syntax and interfaces, claiming that all interfaces were equally problematic in terms of acquisition. Conversely, the newest version (e.g. Sorace & Filiaci, 2006; Sorace & Serratrice, 2009; Tsimpli & Sorace, 2006) makes a more articulated distinction between external (e.g. syntax-pragmatics) and internal e.g. (syntax-semantics) interfaces. According to this version it is in the processing of external interfaces where problems remain at the highest level of language proficiency. The prediction that acquisition of internal interface properties is not insurmountable for L2ers is supported by the data presented in this experiment.

Next, I will discuss in more detail the results of the experiment and the implications of these results at the level of the L2ers' mental representations of the L2 linguistic system. All groups gave higher ratings to TVE sentences with Class III than EVC sentences with Class II, showing an understanding of the word order restrictions that characterize psych-verb constructions; namely, showing a higher degree of grammaticality for TVE sentences. However, as I pointed out before, EVC sentences were not categorically rejected as predicted by theoretical accounts. In general, we saw that EVC sentences, predicted to be fully ungrammatical, were rated higher than expected

by all groups including the native speaker group. This could have been the result of assigning this sentence a fronted-focus interpretation (*A NICO asustó Ana* 'Ana scared Nico') where the sentence without clitic would be actually grammatical. All of the sentences in the experiment were recorded with neutral intonation to avoid this phenomenon; however, I cannot be sure of what kind of prosodic interpretation the participants were assigning to the sentences. However, if I had included test items with both neutral and focus fronting intonation, this could have helped me confirm this hypothesis that focus fronting is the responsible of the high ratings of this type of test items.

I also wanted to make sure that participants did not reject EVC sentences because they were assigning these sentences an stative interpretation. That is, I wanted to make sure that a sentence like **A Nico asustó* Ana was not rejected because the subject had in mind a sentence like *A Nico le asustó Ana*, which would be the stative counterpart. In order to determine this, I had a task after the experiment in which participants who had assigned 3 or less to this type of test item had to correct the sentence. All of the participants changed the sentence from **A Nico asustó Ana* to *Ana asustó a Nico*. None of them change the sentence to *A Nico le asustó Ana*. This indicates that the eventive interpretation was clear and that participants were aware of the aspectual status of this sentence. With regard to how L2ers arrived at the right aspectual interpretation, I have to point out that there were several confounding factors: All of the stative sentences in this experiment were constructed with imperfect or present tense; on the other hand, eventive sentences were constructed with preterite. Participants could have used these clues to determine the aspectual status of the sentence or they could have used the preceding

context. Regardless of what factors were guiding them, we can say that they have a clear understanding of the aspectual conditions in the test items.

This behavior has direct implications for L2ers' mental representations: the fact that EVC is consistently given the lowest ratings out of all of the word order configurations presented in the experiment (i.e. EVT, TVE, CVE. EVC) is consistent with Parodi-Lewin's (1991) argument: since the eventive position projected for Class II verbs is filled when sentences have an eventive interpretation, the Experiencer cannot be hosted in that position, and as a result, it cannot raise. Alternatively, it is also consistent with Franco's proposal that the derivation of this type of sentence would crash due to the fact that the Experiencer cannot check its features in AgrIOP. Thus, the construction EVC is not completely licensed by the grammar of the native speakers or the L2 learners. Consequently, by analyzing the performance data of L2ers we can conclude that their mental representation of Class II and Class III psych-verbs is in fact different, which becomes evident in L2ers' understanding of the morphsyntactic reflexes of these two distinct aspectual classes.

With respect to EVT/CVE sentences, the more advanced groups show a preference towards EVT with Class III, which could be the result of several factors: (a) it could indicate a preference for verbs that do not alternate between different syntactic frames (i.e. Class III) as compared to Class II that present a hybrid nature; (b) a preference for eventive sentences to include a dative clitic, which is typical in *leísta* dialects (*Ana le asustó a Nico* instead of *Ana asustó a Nico* 'Ana scared Nico'); or (c) it could be the result of contamination from the other experiments since the configuration EVT was tested in all of the experiments, but EVC was only tested in the current task. On

the other hand, the fact that the low-proficiency group gave higher ratings to CVE (Class II) than EVT (Class III) shows this group's overreliance on their native language's SVO syntactic frame.

Finally, CVE/EVT were confirmed to be the unmarked orders in classes II and III respectively. This is seen in the consistently higher ratings that it gets as opposed to TVE/EVC order. The low proficiency group did not show a significant difference between TVE and EVT in Class III, which is still consistent with theoretical accounts since both configurations are grammatical, although TVE is the marked order. This could indicate that they are impervious to pragmatic factors (although these were not explicitly tested in this experiment and experiment 4 shows this is not the case). However, the fact that they do show a certain preference for EVT indicates that they are also aware of pragmatic conditions.

Next, I will analyze this data with respect to the Integrative Model of Bilingual Acquisition and discuss how the different factors involved in the L2 process (i.e. formal complexity, L2 input, L1 influence) could have influenced the response patterns that we see in the non-native speakers in this task. First of all, I want to underscore that neither the fact that psych-verbs can be classified into different classes according to their aspectual properties, nor the fact that these classes have distinct morphosyntactic characteristics is ever introduced in the L2 classroom. Thus, non-native speakers' understanding of the word order patterns compatible with different classes of psych-verbs is not the result of pedagogical intervention. Secondly, the restrictions that regulate word order in psych-verb constructions are quite complex, which make the L2 input fairly opaque. EVT and TVE are both grammatical with Class III predicates but they are so to

different degrees since EVT is the neutral order. An additional complicating factor is the fact that these orders are regulated by pragmatic factors (this issue will be studied in detail in chapter 5). Furthermore, Class II is supposed to have only one possible combination of arguments (Causer-Verb-Experiencer). However, the order Experiencer-Verb-Causer could be grammatical under a focus fronting interpretation. All these factors added together and the fine line that separates grammaticality and ungrammaticality in these constructions is not something the L2er can easily extract from the L2 input. In the third place, the L2 learners' L1 could guide them but only to a certain extent. English has the same stative/eventive alternation with psych-verbs, however the reflexes of this distinction are different in English and Spanish. In English, both classes II and III have only one possible order: CVE (*Ana scared Nico*) and TVE (*Shoes are pleasing to María*) respectively. The much more restricted word order possibilities in the participants' L1 will not provide them with enough information in order to understand the syntactic subtleties of these predicates. Finally, given the intricate network of factors that play a role in the acquisition process, the fact that all non-native groups behave very similarly to the native controls shows that there has to be some UG-mechanisms (e.g. universal linking rules, universal classes of predicates) helping them make use of the opaque L2 input in the most efficient way in order to produce/comprehend these configurations in the target language at the native speaker-level. This behavior is consistent with Pires and Rothman's model since this model has to be understood in a position of accessibility to UG and, as we have seen, access to universal principles is key in understanding the behavior of these L2ers. Additionally, the differences found in the behavior of L2ers

could be ascribed to the differences between the L1 and the L2, which is a factor this model takes into account.

Before this project, Rubio (2000, 2001) had been the only author who had dealt with the issue of the hybrid behavior of Class II psych-verbs, what he calls *preocupar*-A (accusative) class and *preocupar*-D (dative) class (i.e. Class II(a) and II(b) in this dissertation). Specifically, he studied this issue as related to instruction. His goal was to determine what type of instruction is more beneficial for acquiring the distinct morphosyntactic properties of psych-verbs. He compared a traditional pedagogical approach and a processing instruction approach (VanPatten, 1996). The traditional approach consisted of a grammatical explanation of the topic at hand, followed by activities that required the students to use the just-learned structures immediately. This is an output-focused approach. On the other hand, processing instruction is an input-focused approach in which the teacher's explanations are followed by activities set out to analyze and understand the L2 input at a deeper level. This type of instruction guides students in an analysis of the L2 input and corrects their default (L1) processing strategies, which are incompatible with the L2 grammar. This leads students to reach form-meaning connections that are appropriate in the L2. Not only did Rubio find an advantage of processing instruction over traditional instruction (that is, instruction focused on input) but he also found that processing instruction had beneficial results in both interpretation and production. Rubio (2001, p. 140) entertains a possibility consistent with Ellis's (1994) Weak Interface Hypothesis, namely, that subjects can access *learned* knowledge when processing input. However, this knowledge helps them notice specific features in

the input that will later turn into *acquired* knowledge.[29] Since Rubio's research focused on a specific aspect of this categorization problem (i.e. clitic case as a marker of lexical aspect), his pedagogical findings could be further evaluated with regard to the property tested in this experiment, that is, word order alternations.

In conclusion, in the current experiment, L2ers' capacity to categorize different classes of psych-verbs shows how aspectual properties of psych-verbs that influence syntactic structure are understood by second language learners. The fact that these issues are never discussed or presented in the L2 classroom provides strong evidence that L2 learners, constrained by UG, are able to project the right type of functional projections (e.g. eventive argument position, Parodi-Lewin, 1991) and check the features in the right projections (e.g. AgrIOP, Franco, 2000). This allows them to arrive at a UG-consistent configuration without the help of outside instruction. This supports the Interface Hypothesis claim that properties related to the syntax-semantics interface are not a locus of optionality at the highest level of second language proficiency but is also consistent with Pires & Rothman's (2011) model.

4.9 Experiment 3B: Goal and Research Questions

This experiment further analyzes the issue of psych-verb acquisition at the syntax-semantics interface. The goal of the present experiment, as it was for experiment 3A, is to establish if L2 learners are able to categorize psych-verbs into different classes with distinct semantic and syntactic properties. However, whereas experiment 3A focused on the word order restrictions of classes II and III, experiment 3B explores a different issue

[29] This is based on Krashen's (1985) division between *learned* and *acquired* knowledge. Learned knowledge is the product of formal instruction. It is conscious knowledge as, for instance, knowledge of a particular grammar rule. On the other hand, acquired knowledge is subconscious knowledge, obtained in a similar way in which children acquire knowledge of their first language.

of this categorization problem. In particular, I want to ascertain if non-native speakers understand the restrictions that apply to the use of antipassive *se* (Franco, 1990; Franco & Huidobro, 2003, 2007) with psychological predicates; namely, that while it can be used with eventive Class II predicates, it cannot be used with stative Class III predicates.

Antipassive *se* is a decausativizer/detransitivizer and as such, it can only co-occur with the causative class of psych-verbs, that is, Class II since this class involves a Causer argument and follows a transitive pattern.

(4) Carolina asustó a Enrique (*Carolina scared Enrique*)
CAUSER EXPERIENCER
Subject-Verb-Object

On the other hand, Class III lacks a Causer argument and does not have a transitive configuration since it lacks a direct object.

(5) A Ana le gusta el chocolate (*Chocolate is pleasing to Ana*)
EXPERIENCER THEME
IO-Verb-Subject

The effect of the antipassive morpheme is similar to passive morphology: it absorbs the case of the Causer/Theme (i.e. *sus padres* in (7)) and it depletes the verb of object clitic morphology (since the verb in (6) but not in (7) could include an object clitic[30]) (Jaeggli, 1986). As we can see in (7), the oblique argument is optional.

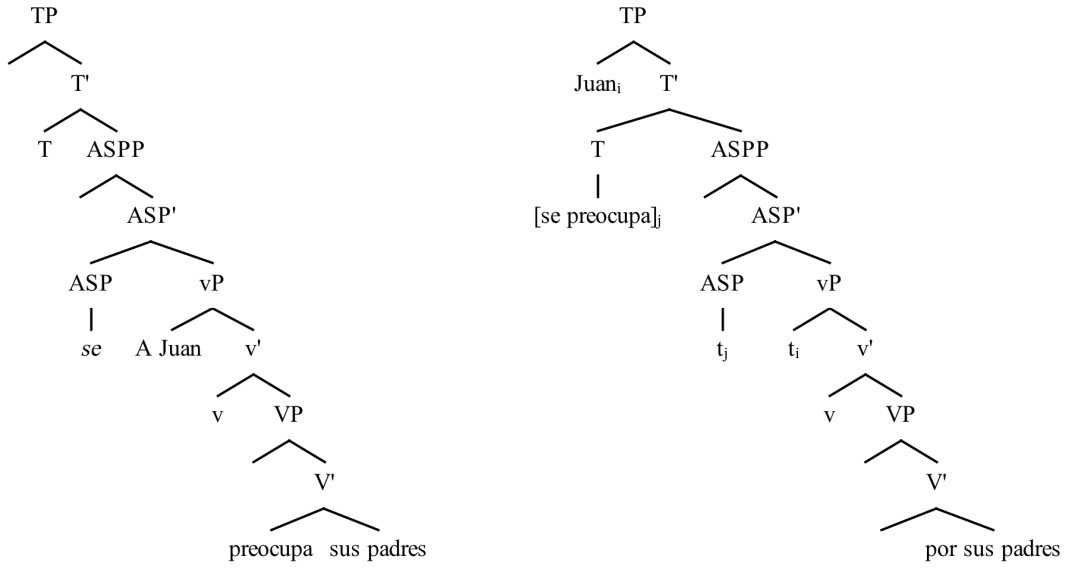
(6) Sus padres preocupan a Juan
His parents worry-3pl. to Juan-acc (dat. in leísta dialects)
His parents worry Juan

(7) Juan se preocupa (por sus padres)
Juan se worry-3sg. for his parents
Juan worries about his parents

[30] *Lo* in non-leísta dialects and *le* in leísta dialects.

Next, I present Franco & Huidobro's (2003) syntactic representation for *se* constructions with psych-verbs. The Experiencer needs to raise to spec TP to satisfy the EPP feature to check Case. Alternatively, *sus padres*, whose Case has been absorbed by the antipassive *se*, needs to check Case by the insertion of the preposition *por*.

(8-9)



So, this construction represents the interface between the semantics of these predicates (particularly, their aspectual properties: eventive/causative vs. stative/non-causative), and their syntactic structure[31] (i.e. the ability of Class II predicates to appear in the *se* construction with a decausitivizer morpheme).

[31] Although I will refer to this as a syntax-semantics interface property, morphology plays a role in this interface since antipassive *se* forms part of this construction: that is, the option with the antipassive *se* contains the *se* morpheme whereas the option without the antipassive se contains the dative clitic (e.g. *María se preocupa por sus padres* vs. *A María le preocupan sus padres* 'María worries about her parents'). However, syntax and morphology are most of the time so closely intertwined that we cannot fully detach one from the other. And, as I pointed out in chapter 3, complete isolation of certain properties is almost impossible since each sentence must be read off at the interfaces. So, from now on, it's my assumption that when we talk about the syntax-semantics interface, the role of morphology is implicitly understood.

Specifically, the questions I am trying to answer in this experiment with respect to non-native grammars are the following:

1) Is antipassive *se* preferred in Class II over Class III?
2) Is the option with the dative clitic (without antipassive *se*) preferred in one or the other class?
3) Within each class, is there a difference between the use of antipassive *se* and the absence of it?

4.10 Experiment 3B: Methodology

Forty-eight test sentences composed this experiment: 24 test items and 24 fillers. Each context was paired with two sentences. Half of the test items included Class II psych-verbs, which allow the *se*-construction. So, in (10) both options are grammatical. We have to underscore that (10a) will be grammatical with Class II(b) verbs (i.e. verbs that overlap with Class III) and (10b) is grammatical with Class II(a) (i.e. its eventive counterpart). This will be important when we analyze the response patterns to these test items. As far as I know, there are no claims in the literature over which of these structures (10a) or (10b) is preferred by native speakers so I cannot make clear predictions in this respect.

(10) Todos los departamentos de letras en las universidades están cerrando. Los chicos ya no quieren estudiar arte o literatura. Ahora todo el mundo estudia negocios.
All of the humanities departments at different universities are closing. Students don't want to study art or literature. Now, everyone studies business

a. A los jóvenes no les interesa la cultura
   To the young no les-dat cl interest-3sg the culture
   Young people are not interested in culture

b. Los jóvenes no se interesan por la cultura
   To the young no se-antipassive interest-3pl for the culture

Young people are not interested in culture

The other half of the test items consisted of sentences with Class III psych-verbs. This class yields ungrammatical sentences when the antipassive *se* is included. So in (11) only (11a), the construction with the dative clitic, is grammatical.

(11) En esta universidad todo el mundo quiere salir de fiesta pero nadie presta atención a las cosas importantes
At this university, everyone wants to go out but nobody pays attention to the important things

a. A nadie le importa la política
To nobody le-dat cl care the politics
Nobody cares about politics

b. *****Nadie se importa sobre la política
Nobody se-antipassive care about the politics
Nobody cares about politics

The fillers tested a different type of syntax-semantics interface property. In an effort to make the fillers as similar as possible to the test items, the *se* construction (particularly, anticausative *se*) was tested with unergatives and unaccusative verbs. Unergative verbs are ungrammatical with *se* but grammatical without it as we can see in (12). On the other hand, unaccusatives that have a transitive counterpart (i.e. change-of-state verbs or alternators) are grammatical with *se* and ungrammatical without it (Fernández Soriano, 1999; Sorace, 2000), which is illustrated in (13).

(12) María iba a casarse el domingo pero el novio nunca fue a la iglesia
María was going to get married on Sunday but the groom never showed up in the church

a. María lloró delante de todos
María cried in front of everyone
María cried in front of everyone

b. *María se lloró delante de todos
María se cried in front of everyone
María cried in front of everyone

(13) Olvidamos poner el hielo en el congelador
We forgot to put the ice in the freezer

a. *El hielo derritió
The ice melted
The ice melted

b. El hielo se derritió
The ice se melted
The ice melted

4.11 Experiment 3B: Results

4.11.1 Results of the Control Group

The results of this experiment confirm that the control group makes a clear distinction between classes II and III regarding the use of the *antipassive se*. First of all, if we look at the sentences with *se,* those containing Class III psych-verbs were rated significantly lower than the sentences containing Class II psych-verbs (χ^2=1799.7, p<.0001). Secondly, if we look at the sentences without *antipassive se*, that is, those sentences with the structure Experiencer(dat.)-Verb-Theme(nom.), both Class II[32] and Class III verbs got roughly the same scores (χ^2=3.54, p=0.0598). This indicates that the native speaker group respected the distribution of *se* with the different classes of psych verbs.

[32] This construction is only grammatical with Class II (b).

Table 18. Response means for experiment 3b (Control group)

Analysis Variable : response			
Verb class	**Antipassive se**	**N Obs**	**Mean R**
Class III	Se	216	1.23
	No se	216	4.80
Class II	Se	216	4.68
	No se	216	4.89

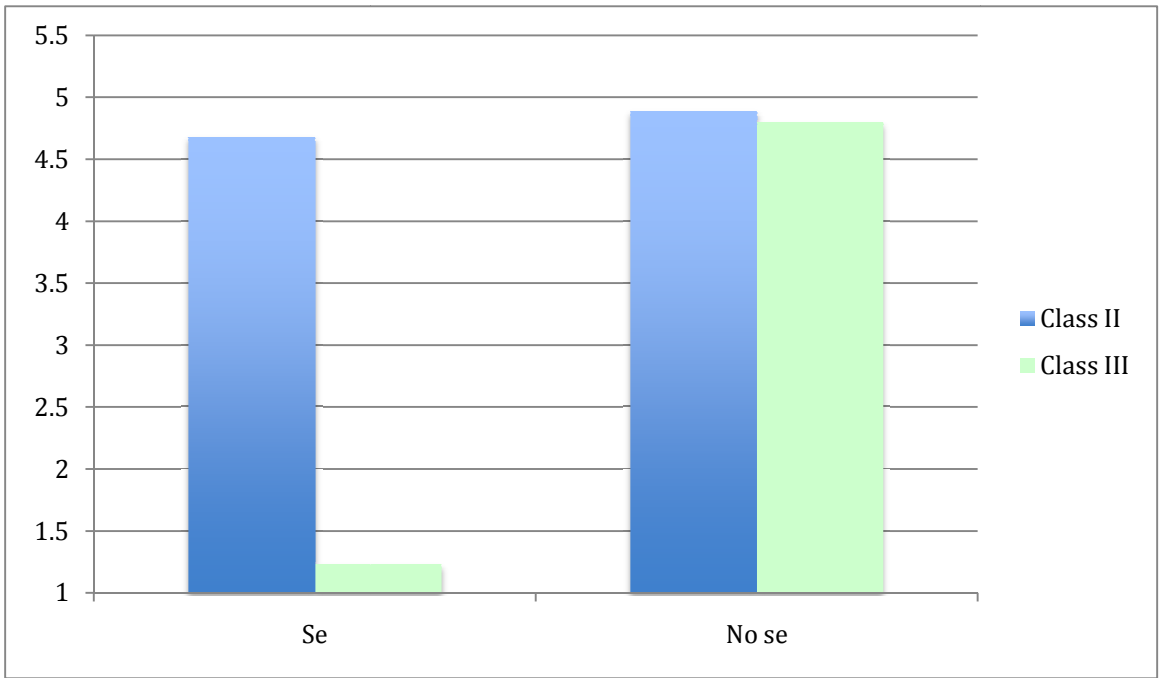


Figure 27. Response means for antipassive se by class (Control group)

In the third place, Figure 28 illustrates that there is a main effect for antipassive *se* (χ^2=1308.0, p<.0001). When comparing the antipassive *se* construction with the construction with the dative clitic within each class, we find that in Class III, the use of *se* is considered highly ungrammatical whereas the lack of *se* is considered clearly grammatical (χ^2=1972.7, p<.0001). On the other hand, in Class II, the presence and absence of *se* is rated as grammatical. It seems that the sentences with the dative clitic

received a significantly higher score than sentences with antipassive *se* (χ^2=10.51, p=0.0012). However, the difference in ratings is very small (*Se* means=4.68; *No se* means=4.89). The implications of this pattern will be discussed in section 4.14.

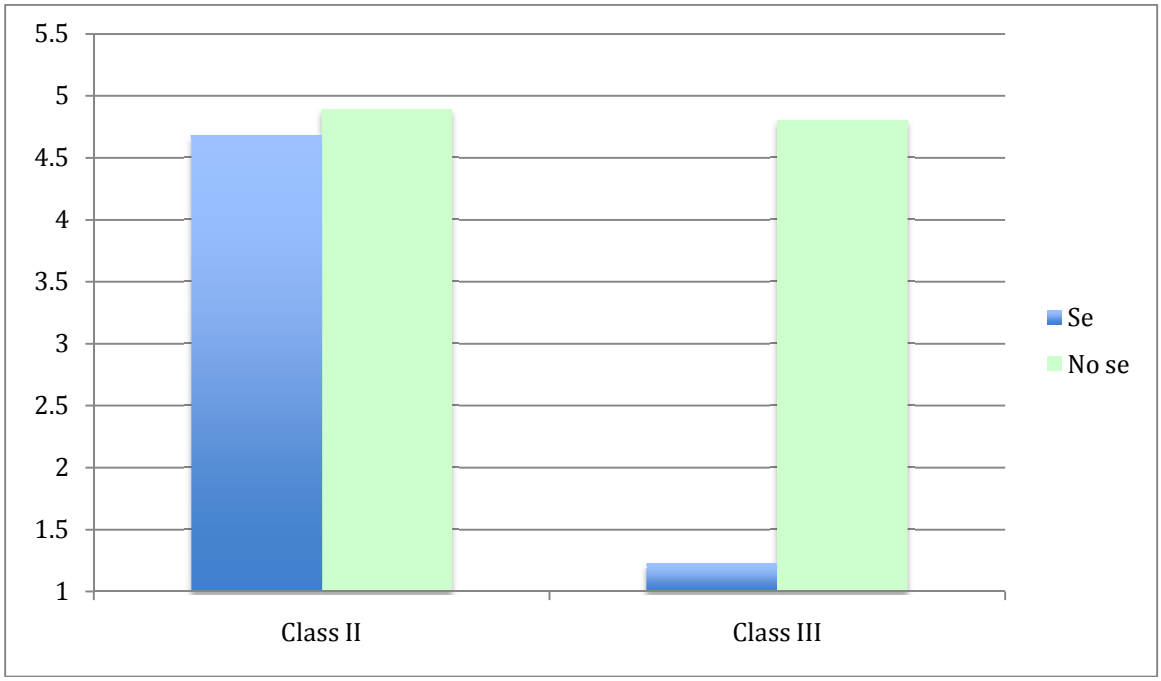


Figure 28. Response means for class by antipassive se (Control group)

4.11.2 Results of the Near-Native Group

The near-native speaker group was also sensitive to the use of the *antipassive se*. This morpheme received significantly higher ratings with Class II than with Class III psych-verbs (χ^2=172.89, p<.0001). The sentences without *se*, that is, those containing a dative clitic, were considered more natural when the sentence contained a Class III verb (χ^2=4.20, p=0.0404). This is different from the findings in the control group where sentences with a dative clitic were rated equally in both classes. I will discuss this finding in detail in the discussion section 4.14.

Table 19. Response means for experiment 3B (Near-native group)

Analysis Variable : response			
Verb class	**Antipassive se**	**N Obs**	**Mean R**
Class III	Se	96	1.22
	No se	96	4.81
Class II	Se	96	3.93
	No se	96	4.57

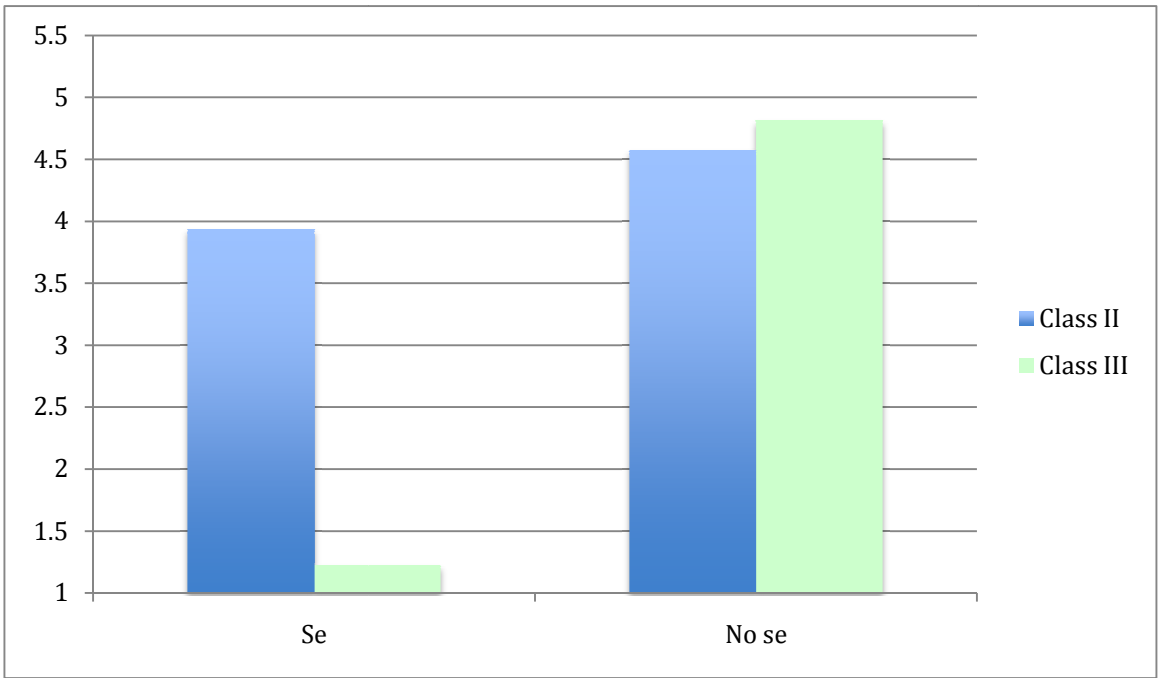


Figure 29. Response means for antipassive se by class (Near-native group)

Finally, if we compare the sentences with *antipassive se* with those that did not include the antipassive *se*, we see that there is main effect of the use of antipassive *se* (χ^2=241.41, p<.0001) (Figure 30). Within each individual class, we find that the sentences without *se* are rated significantly higher than sentences with antipassive *se* in both classes III and II (χ^2=778.53, p<.0001, χ^2=7.81, p=0.0052). This is similar to the behavior of the control group.

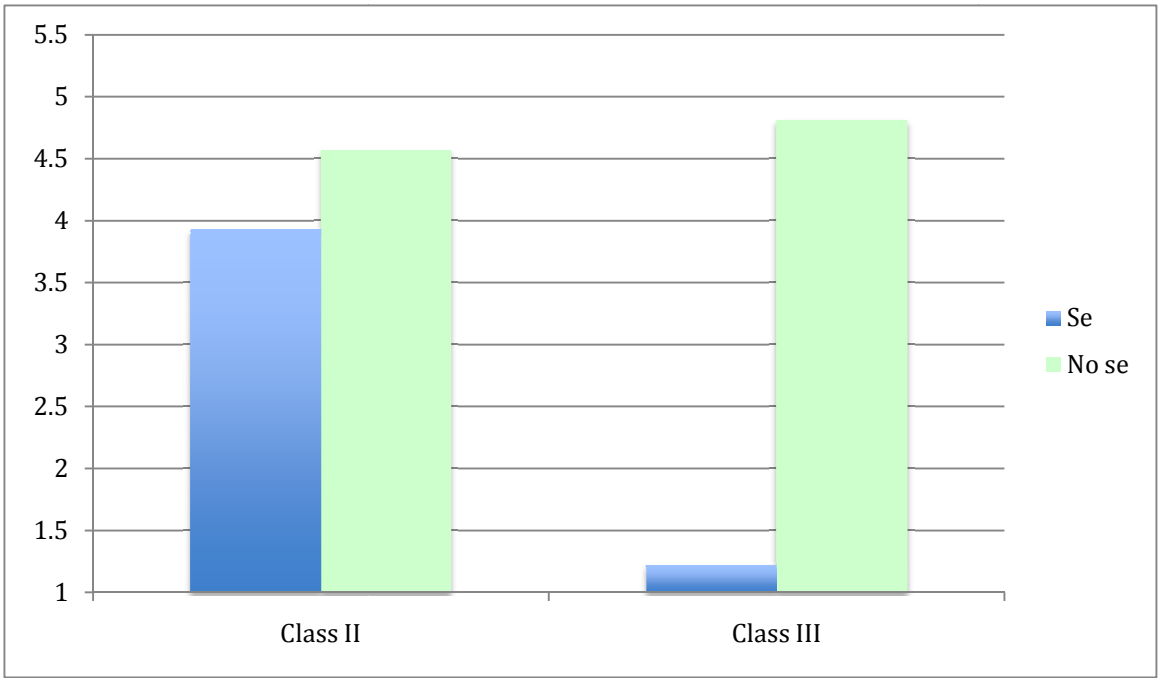


Figure 30. Response means for class by antipassive se (Near-native group)

4.11.3 Results of the Advanced Group

The advanced group was also aware of the distribution of *antipassive se* with the different classes of psych-verbs. They showed this by giving significantly higher ratings to the sentences with *antipassive se* that contained Class II verbs compared to those which contained Class III verbs (χ^2=192.10, p<.0001). With regard to the use of sentences that contained the dative clitic instead of the *antipassive se* in the different classes, subjects showed a significant preference for these sentences with Class III as opposed to Class II (χ^2=14.05, p=0.0002). This replicates the findings of the near-native group.

Table 20. Response means for experiment 3B (Advanced group)

Analysis Variable : response			
Verb class	**Antipassive se**	**N Obs**	**Mean R**
Class III	Se	121	1.93
	No se	121	4.63
Class II	Se	119	3.81
	No se	120	4.13

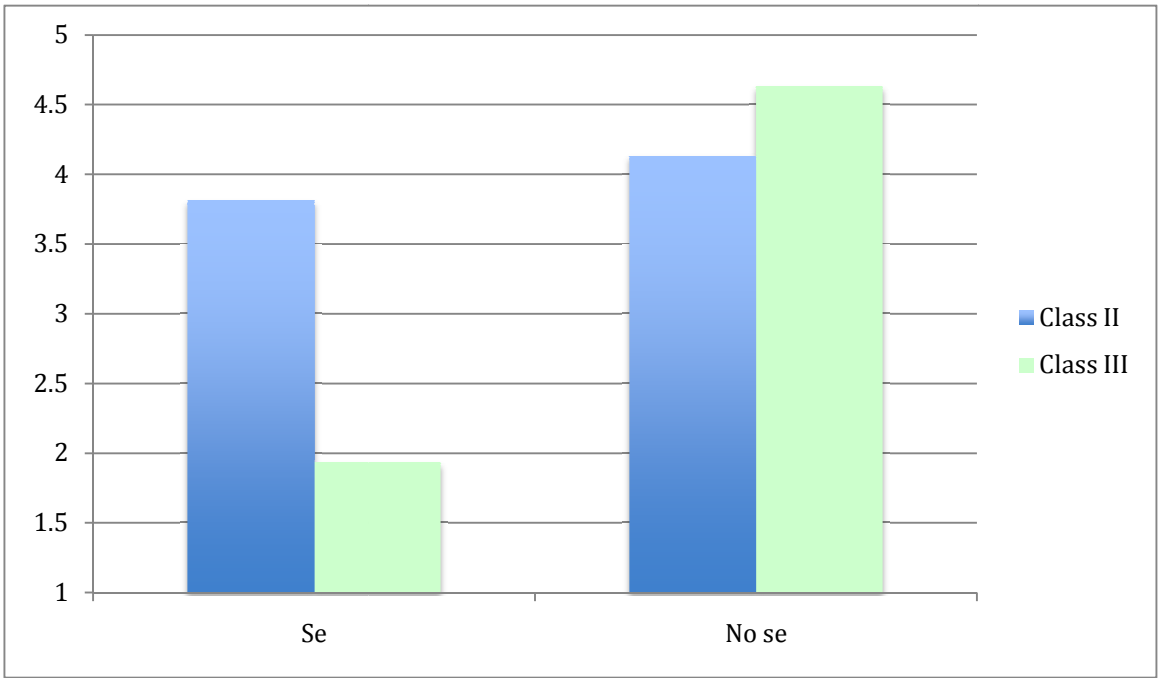


Figure 31. Response means for antipassive se by class (Advanced group)

In general, there is a main effect of antipassive *se* receiving lower ratings than sentences without *se* (χ^2=104.50, p<.0001). A comparison of sentences with *se* and sentences without *se* within each class shows a significant preference for sentences that lacked the *antipassive se* as compared to those with *se* with Class III predicates (χ^2=425.66, p<.0001). However, with verbs of Class II, both types of sentences received similar ratings (χ^2=2.39, p=0.122).

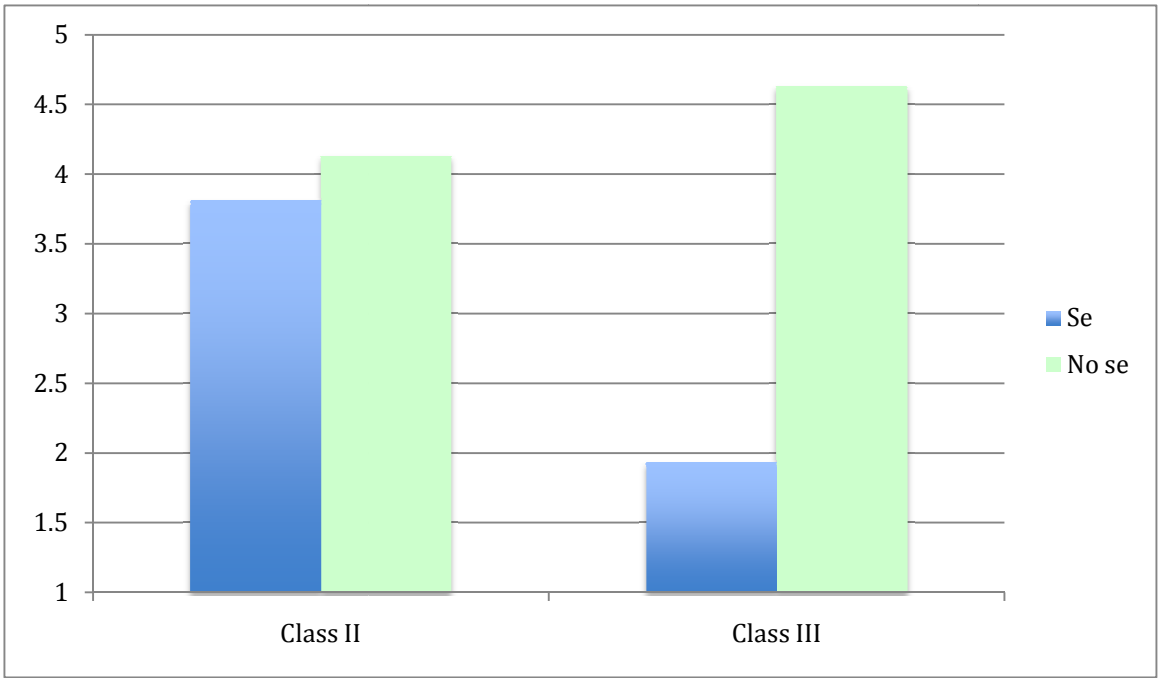


Figure 32. Response means for class by antipassive se (Advanced group)

4.11.4 Results of the Intermediate Group

The intermediate group also showed an understanding of the distribution of *antipassive se* with different classes of psych-verbs. They rated sentences with *antipassive se* significantly higher when the sentence included a Class II verb than when it included a Class III predicate. Sentences with a dative clitic, instead of a *se* pronoun, were scored similarly in the two classes (χ^2=0.49, p=0.4852). This was true for the native speakers but different from the near-native and the advanced groups in which there was a preference for Class III verbs to be embedded in the construction with the dative clitic. However, since this option (Experiencer-Verb-Theme) is grammatical with both classes of verbs, intermediate speakers do show an understanding of the possibilities available for the two classes of psych-verbs.

Table 21. Response means for experiment 3B (Intermediate group)

Analysis Variable : response			
Verb class	**Antipassive se**	**N Obs**	**Mean R**
Class III	Se	93	2.36
	No se	93	4.59
Class II	Se	91	3.15
	No se	91	4.49

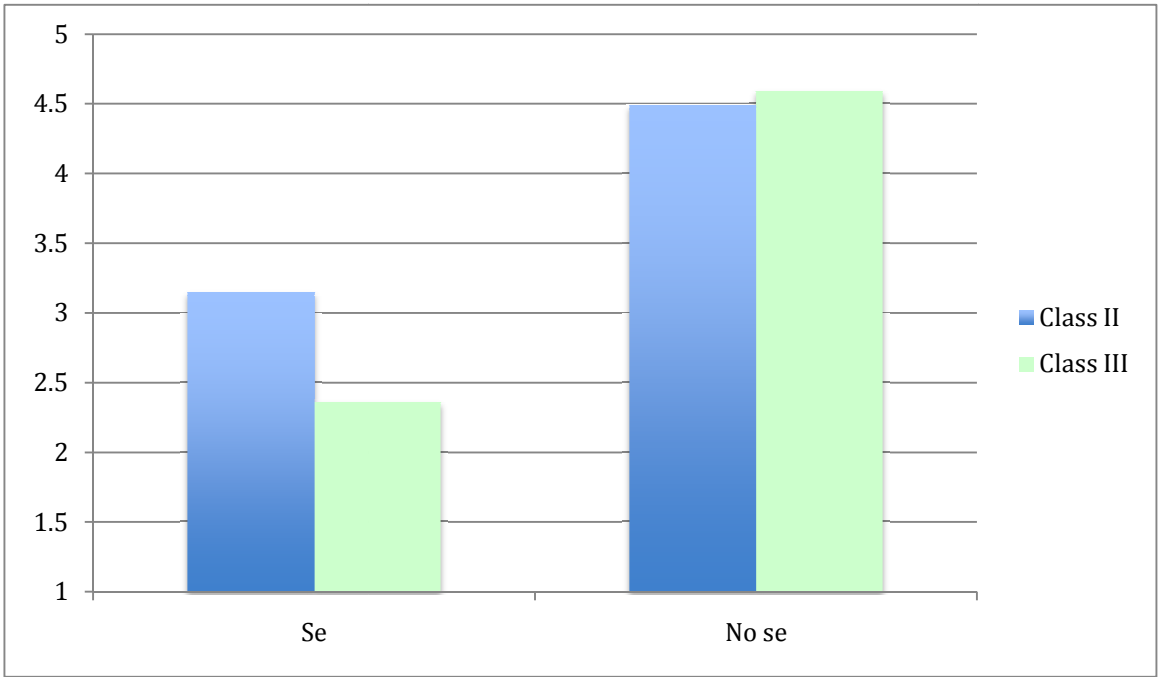


Figure 33. Response means for antipassive se by class (Intermediate group)

There is a main effect of antipassive *se*, which gets rated significantly lower than test items with the dative clitic (χ^2=21.18, p<.0001). A comparison between sentences with and without antipassive *se* within each class shows that sentences with the antipassive morpheme are rated significantly lower than the choice with the dative clitic

and this is the case in each individual class (Class III: χ^2=120.77, p<.0001; Class III: χ^2=42.79, p<.0001). This was also the case for native and near-native speakers.

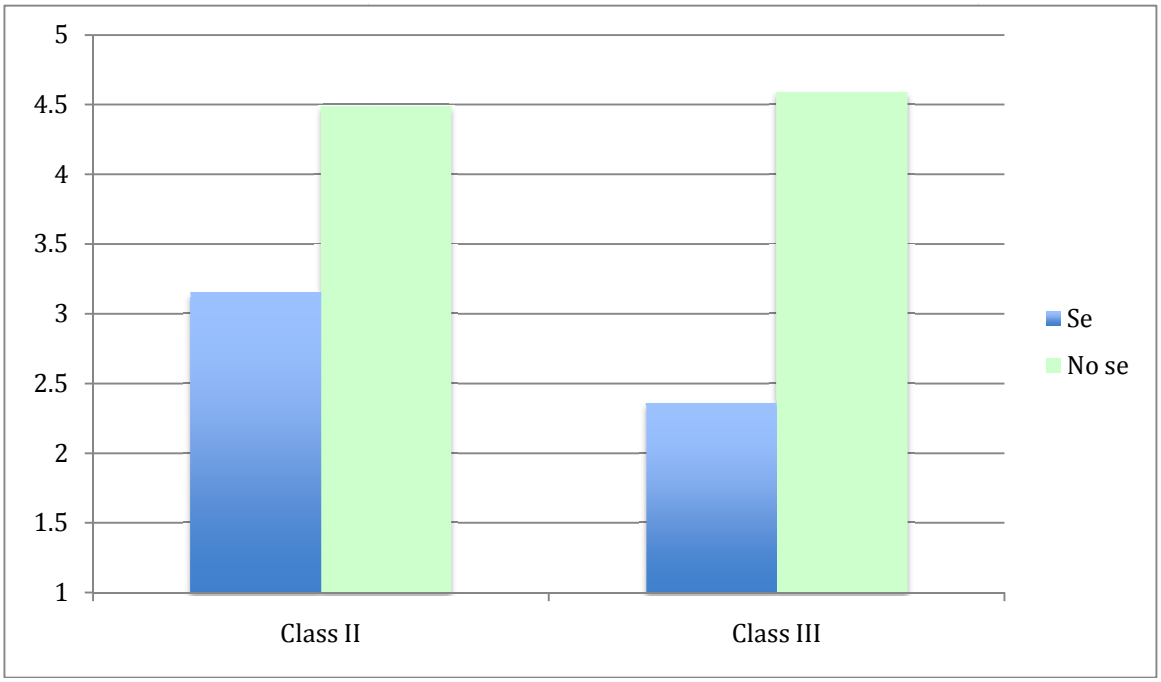


Figure 34. Response means for antipassive se by class (Intermediate group)

4.11.5 Results of the Low-Proficiency Group

The data for the low-proficiency group shows that they also recognize the distribution of *antipassive se* in the different classes of psych-verbs. In figure 35, we can see that they give significantly higher ratings to Class II verbs than Class III verbs in this construction (χ^2=11.85, p=0.0006). With regard to the sentences without *se*, the opposite pattern emerges: Class III verbs sound significantly better than Class II verbs with the dative clitic (χ^2=7.51, p=0.0061). This was also the pattern found for near-native and advanced participants.

Table 22. Response means for experiment 3B (Low-proficiency group)

Analysis Variable : response			
Verb class	**Antipassive se**	**N Obs**	**Mean R**
Class III	Se	69	2.82
	No se	69	4.24
Class II	Se	67	3.49
	No se	67	3.73

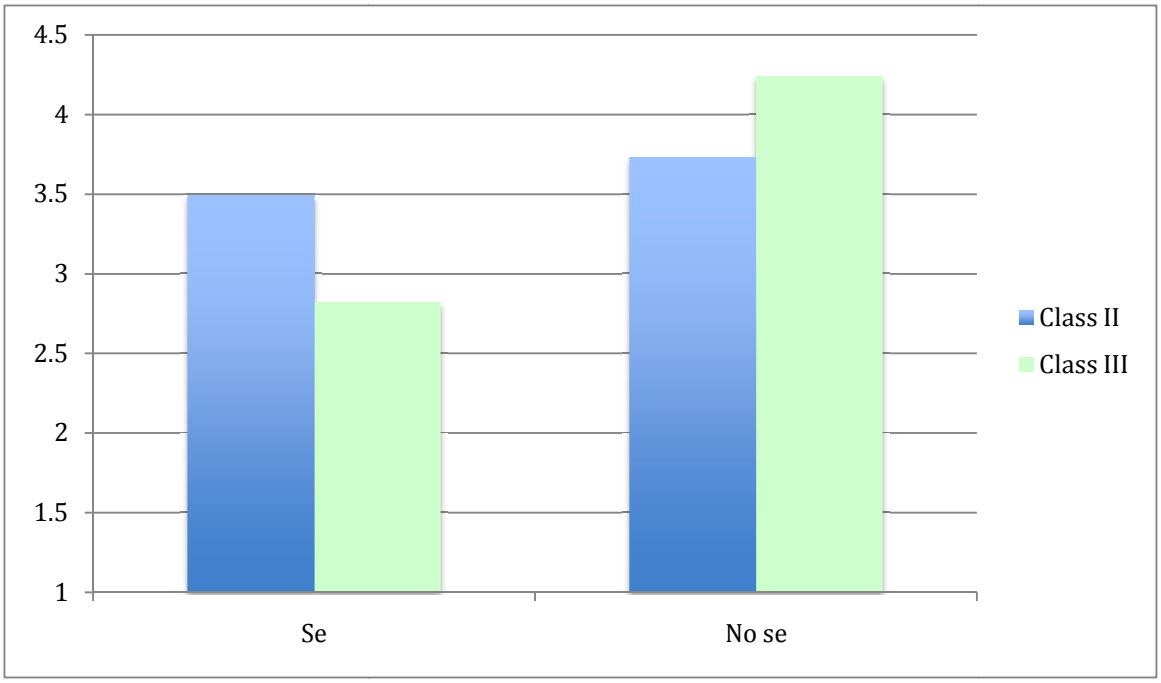


Figure 35. Response means for antipassive se by class (Low-proficiency group)

There is a main effect for antipassive *se* (χ^2=51.94, p<.0001). We see a general preference for sentences with a dative clitic as compared to those with antipassive *se* in Class III verbs where the option without *se* is rated significantly higher (χ^2=49.54, p<.0001). This is not the case with Class II predicates where both options are rated similarly (χ^2=2.11, p=0.1461). The roughly equal ratings of antipassive *se* and the

structure with the dative clitic in Class II was something that we also saw in the advanced group.

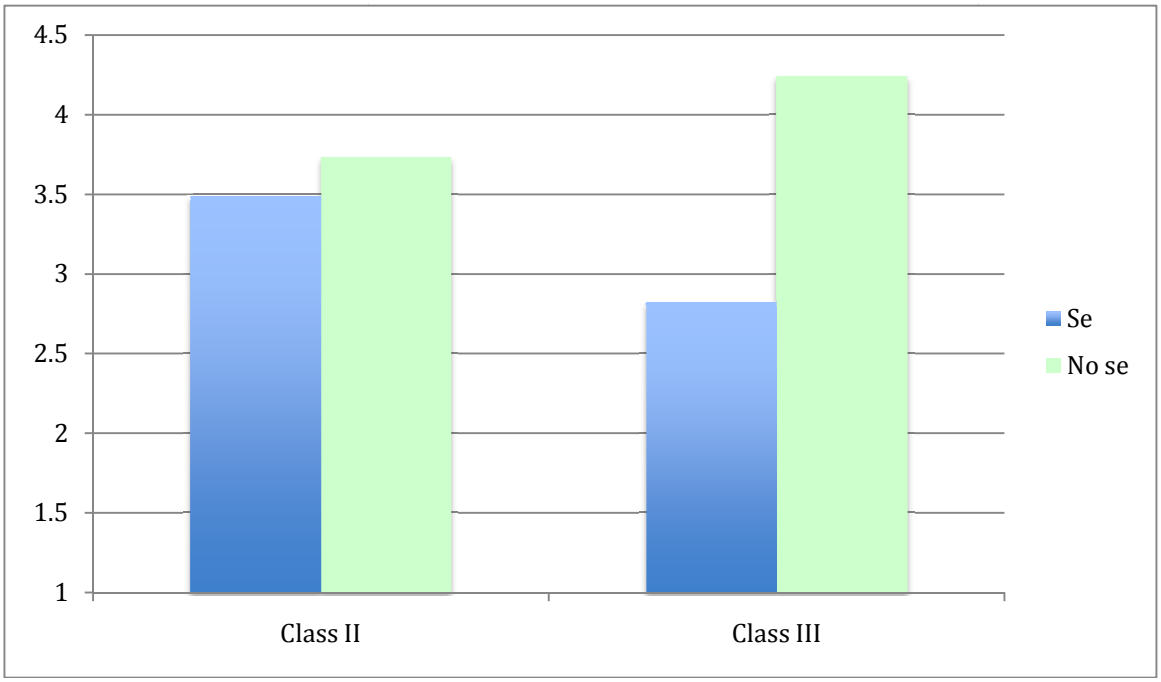


Figure 36. Response means for class by antipassive se (Low-proficiency group)

4.12 Experiment 3B: Summary of Results

The main patterns in this experiment are the following:

1) Sentences with *se* consistently received significantly higher ratings with Class II verbs than with Class III verbs in all of the groups. This implies that second language learners understand that *se* is a decausativizer morpheme that is used with causative verbs (i.e. Class II) and that it has the effect of decreasing the verb valency by one, which turns the Causer/Theme into an oblique argument. Thus, L2ers showed an understanding that this mechanism is not possible with Class III verbs, which are not causative in nature.
2) Sentences without *se*, that is, sentences that contain a dative clitic were generally given better ratings with Class III verbs (except in the control and the

intermediate group who rated them equally in both classes). The pattern found in the near-native, advanced and low-proficiency group could be explained by the fact that, given that Class III verbs do not alternate between multiple syntactic frames (i.e. construction with *se* and construction with the dative clitic), participants were able to give more definite ratings since they were not holding two possible competing (but grammatical) derivations in mind, which was the case for Class II verbs. Furthermore, the fact that the construction with the dative clitic is possible with Class II(b) verbs and the *se* construction is grammatical with Class II(a) verbs, requires participants to keep in mind that Class II verbs have a double nature (eventive or stative). Since Class III verbs are always stative, the choice is more transparent.

3) A comparison of sentences with and without *se* in Class III reveals that sentences without *se* are always rated higher in all of the groups. This is the expected result since Class III does not accept the use of antipassive *se*.

4) A comparison of sentences with and without *se* in Class II indicates that sentences without *se* are rated better than those with antipassive *se* by native speakers, near-native speakers and intermediate learners. In contrast, the advanced and low-proficiency groups gave them roughly equal ratings. The higher ratings of the construction with the dative clitic with Class II predicates could have been a result of contamination from the Class III test items where the sentence with the clitic was the only possible grammatical option or contamination of the battery of tests where the construction with the dative clitic was repeatedly tested.

4.13 Experiment 3B: Contrasts among Groups

First of all, I am going to focus on the analysis of sentences with antipassive *se* and how they are rated in both Class II and III (Figure 37). All of the contrasts between the control group and the other groups are significantly different from each other (control vs. near-native: χ^2=11.33, p=0.0008; control vs. advanced: χ^2=98.71, p<.0001; control vs. intermediate: χ^2=197.52, p<.0001; control vs. low: χ^2=176.17, p<.0001). So, even though all groups respect the distribution of the *se* morpheme in the different classes, and behave similarly at a descriptive level, their distinction among classes is significantly different from the control group. We can see that for the intermediate and low groups and, to a certain extent, the advanced group, the distinction is not as clear-cut as it is for the native speakers. The intermediate and low-proficiency learners rate sentences including Class III psych-verbs with antipassive *se* excessively high (means=2.36 and 2.82 respectively) taking into account that this construction is totally ungrammatical as we can see by looking at the means of the control group (mean=1.23).

On the other hand, although for the near-native speakers the distinction is clearly defined, their judgments of sentences with *antipassive se* with Class II psych-verbs are much lower than the native speakers' judgments. This factor makes the contrast significantly different from the control group.

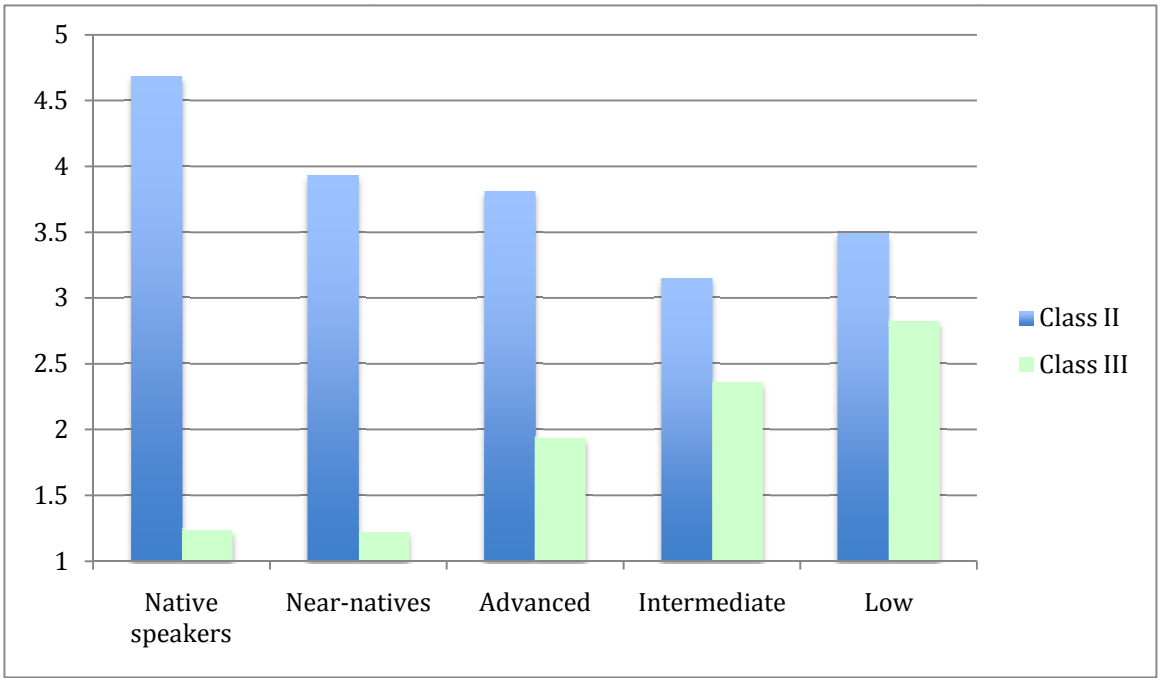


Figure 37. Response means for sentences with antipassive se in experiment 3B (All groups)

Below, Figure 38 presents the response for sentences that lack the *antipassive se*, that is, sentences with the structure Experiencer(dat.)-Clitic(dat.)-Verb-Theme(nom.). All of the contrasts between the control group and the other groups are significant except for the one with the intermediate group. Both the native speakers and the intermediate group give sentences with the dative clitic equal ratings with verbs of Classes II and III (control vs. intermediate: χ^2=1.66, p=0.1983). In contrast, the remaining L2 learner groups find this construction more natural with Class III verbs (control vs. near-native: χ^2=6.86, p=0.0088; control vs. advanced: χ^2=17.36, p<.0001; control vs. low: χ^2=9.79, p=<.0001).

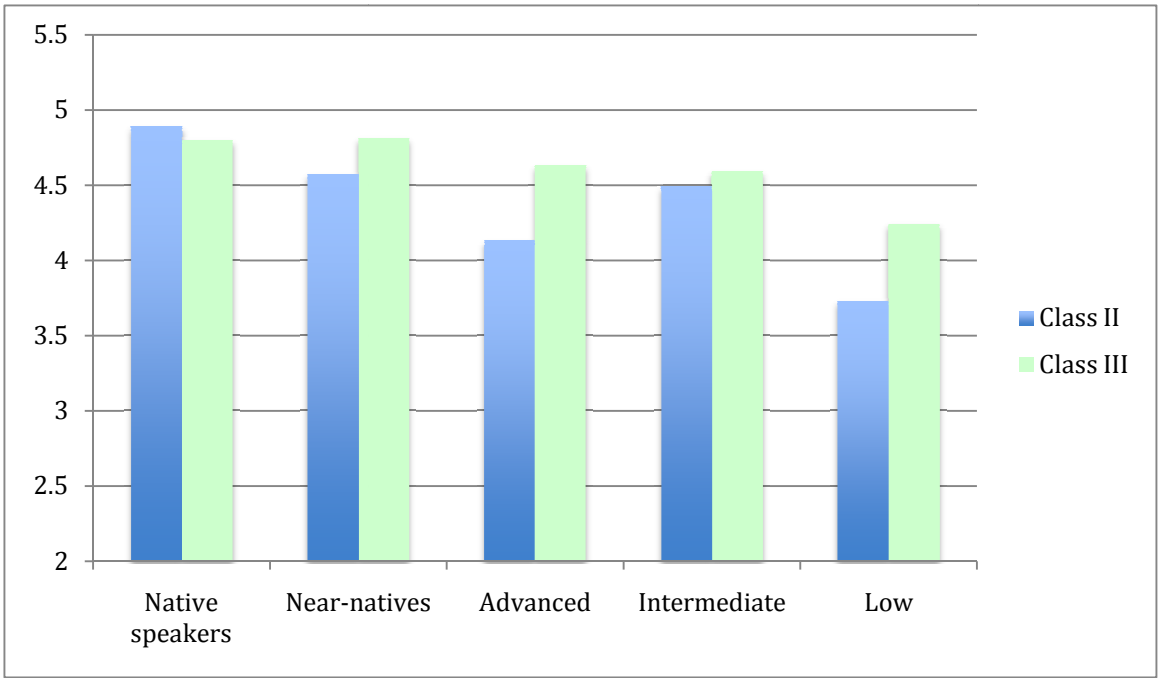


Figure 38. Response means for sentences without antipassive se in experiment 3B (All groups)

4.14 Experiment 3B: Discussion

Experiment 3B shows that L2 learners are aware of the restrictions related to the use of antipassive *se* with Spanish psych predicates: the antipassive construction is restricted to eventive psych-verbs; on the other hand, it is incompatible with stative psych-predicates. However, the lower proficiency groups experienced certain difficulty with inflectional morphology as connected with the multiple functions of the *se* pronoun. Despite this fact, I can say that this property that hinges on the syntax-semantics interface in general did not pose major problems for L2 learners. These findings, in conjunction with the findings of experiment 3A, point to the conclusion that syntax-semantic interface challenges are successfully resolved by L2 learners, at least at the levels tested in this experiment.

First of all, it is true that although in general L2ers complied with the native rules, they do deviate sometimes from the native patterns of response. In this section I will analyze where this deviance comes from and what it indicates about the way non-native speakers resolved this task. Overall, sentences with *antipassive se* received higher ratings with Class II verbs than with Class III. This finding shows that subjects have a solid understanding of the use of the decausativizer *se* and its restricted use with only causative Class II verbs. However, something that needs to be highlighted is the fact that, although intermediate and low-proficiency participants made a significant distinction between the use of antipassive *se* in Class II and III, their ratings for antipassive *se* with Class III verbs (**Juan se gusta con María* 'Juan likes María') are surprisingly high considering this construction is completely ungrammatical. Their rejection of this class is definitely not as categorical as it was for the other groups. I cannot confirm where their indeterminate judgments come from. However, a possible hypothesis is that they confused antipassive *se* and reflexive anaphoric *se*. This reading is possible because whereas antipassive *se* is only grammatical with Class II psych-verbs, the reflexive clitic is grammatical with classes II and III (Franco, 1990).

(14) Reflexive anaphoric construction

a. Class II: María se enfadó (consigo misma)
María reflexive *se* got angry-3sg. (with herself)
María got angry at herself

b. Class III: María se encanta (a sí misma)
María reflexive *se* loves-3sg. (to herself)
María loves herself

Nevertheless, it is hard to determine how plausible this hypothesis is. What is clear though is that the homophonous *se* constructions, which include antipassive *se*,

reflexive *se*, anticausative *se et cetera* might have been an additional factor that blurred the judgments of the two less proficient groups. I will discuss this issue more extensively below.

If we look at how sentences without antipassive *se* were rated across classes, we see that the control group and the intermediate group gave roughly the same ratings to sentences without antipassive *se* with Class II and Class III predicates. This was the expectation for all of the groups since the construction with the dative clitic is grammatical with both types of verbs (or more exactly with Class III verbs and Class II(b)). In contrast, sentences without the antipassive morpheme were rated higher with Class III verbs than with Class II verbs by the near-native, advanced and low-proficiency group. This could be an effect of the experimental design: whereas the two sentences presented with Class II verbs were grammatical, only one sentence out of each pair was grammatical with Class III verbs. Thus, the choice with Class III verbs is much more categorical and, consequently, easier to make. Additionally, with Class II we find two competing acceptable representations, which makes for a fuzzier choice. Furthermore, the fact that the construction with antipassive *se* is compatible with Class II(a) and the construction with the dative clitic is compatible with Class II(b) forces participants to entertain the two different interpretations for Class II verbs when making their judgments. This will make the choice with Class II verbs more complicated and requiring a more sophisticated grammatical knowledge. The fact that the intermediate speakers did not distinguish between classes might have been the result of their inability to understand the double nature of Class II verbs, which would equate Class II and Class III verbs with respect to level of acquisition difficulty.

Overall, there seems to be a substantial preference for sentences without the antipassive *se* over sentences with the antipassive *se*. This is seen in the subjects' ratings that are consistently higher for the sentences with a dative clitic for Class III and Class II (except the advanced and the low-proficiency group). This might have occurred as a result of contamination from the rest of test items in which the option with the dative clitic was the only grammatical choice; or even contamination from the other 4 experiments where the pattern Experience-Verb-Theme was continually tested. It can also be due to the intrinsic difficulty related to the use of the pronoun *se* in Spanish, which I explain below.

Secondly, having explained the patterns found in the non-native responses and why those patterns could have arisen, I will discuss how different factors in the acquisition process might have helped or hindered our non-native speakers in the current task. In particular, I will focus on the factors encompassed by the Integrative Model of Bilingual Acquisition: formal complexity, L2 input and L1 transfer. Apart from these factors I will also analyze how formal instruction and the role of UG might have shaped the learners' knowledge of these properties. First of all, with respect to instruction, as in the case of experiment 3A, the fact that non-native participants respected the restrictions imposed by antipassive *se* is remarkable since this issue (specifically, the restricted use of *se* with psych-verbs) is never presented or practiced in the L2 classroom. In addition, the antipassive construction involves quite a large degree of formal complexity since it requires understanding of syntax (i.e. the structure of the *se* construction that we saw in (8-9)), how this relate to semantics, specifically lexical aspect (i.e. eventiveness), and how this is encoded morphologically (i.e. *se* morpheme). The interaction between these

factors is complicated and renders the L2 input extremely confusing, so it would be hard for the learner to extract any patterns visible in the input. There are two main issues that make the input far from transparent: the first one is the fact that not all Class II psych-verbs allow the deletion of the oblique argument or at least not to the same degree as Franco (1990) points out. So, the distinction between the verbs that allow antipassive *se* and those that do not becomes more complicated since not all of the verbs which are compatible with *se* actually show a consistent behavior. In (15-16) we can see how the deletion of the oblique argument is perfectly grammatical with *preocupar* 'to worry' but, on the other hand, it is not very natural with a predicate like *interesar* 'to interest.' Although the test items in this experiment always included the *por*-phrase, it is not unreasonable to think that this issue could have added a layer of difficulty.

(15) a. María se preocupó
María se got worried
María got worried

b. María se preocupó por sus notas
María se got worried for her grades
María got worried about her grades

(16) a. ?Juan se interesó
Juan se got interested
Juan got interested

b. Juan se interesó por la política
Juan se got interested for the politics
Juan got interested in politics

The second and most relevant problem is connected with the multiplicity of meanings and functions that the pronoun *se* plays in Spanish grammar (Batchelor Batchelor & Pountain, 1992; Solé & Solé, 1987; Whitley, 1986). This morpheme, which is connected to argument structure, varies in meaning and function depending on the type

of predicate (e.g. unergative (e.g. *to talk*), unaccusative (e.g. *to arrive*), transitive (e.g. *to eat),* alternator (i.e. those which have a transitive and an anticausative interpretation, (e.g. *to break*)) and the number of arguments involved in a sentence as well as their thematic roles. In (16-21) I present some of the functions of *se* in Spanish as described by Toth (1997; 2000):

(16) Reflexive *se* (can be used with transitive verbs and alternators)
Ana se lava el pelo por la mañana
Ana se washes the hair for the morning
Ana washes her hair in the morning

(17) Reciprocal *se* (can be used with transitive verbs and alternators)
Ana y Sofía se saludaron durante el banquete
Ana and Sofía se greeted during the banquet
Ana and Sofía greeted each other during the banquet

(18) Passive *se* (can be used with transitive verbs and alternators)
Se alquilan apartamentos en la playa
Se rent-3pl. apartments in the beach
Apartments are rented at the beach

(19) Impersonal *se* (can be used with all types of verbs)
Se vive mejor en España
Se live-3sg. better in Spain
One lives better in Spain

(20) Anticausative *se* (can be used with alternators)
Se rompió el vaso
Se broke-3sg. the glass
The glass broke

(21) Verb of emotion se (Class II psych-verbs)
Marina se enfadó con su hermana
Marina se got mad with her sister
Marina got mad at her sister

The L2 learner will certainly need to develop sensitivity to the different classes of verbs (and their argument structure) and how these classes interact with the pronoun *se* in order to successfully acquire these constructions. Table 23 is a replication of Toth's

(1997, p. 25) Table 1, which illustrates how different types of *se* interact with different classes of verbs and their arguments taking into account also their thematic roles.

Table 23. The uses of se mapped across four major semantic classes

VERB CLASS and D-STRUTURE	Impersonal *se*	Passive *se*	Anticausative *se*	Reflexive/reciprocal *se*
Unergatives: *nadar* (to swim) [NP [$_{VP}$V]]	√ agent	*	*	*
Unaccusatives: *llegar* (to arrive) [*e* [$_{VP}$V NP]]	√ theme	*	*	*
Alternators: *romper* (to break) [*e* [$_{VP}$V NP]] or [NP [$_{VP}$V NP]]	√ agent	√ agent	√ agent	√ theme/benefactive
Accusatives *ver* (to see) [NP [$_{VP}$V NP]]	√ theme	√ agent	*	√ theme/benefactive

Furthermore, we have to consider the potential role of participants' L1 in aiding them to restrict their options in the current experiment. It is arguable that subjects could have transferred their knowledge from their L1 to complete this task since, in English, this phenomenon is also captured by an overt morpheme; namely, a *get* passive (Toth, 2000, p.180):

(22) √María se preocupó
√*María got worried*

(23) *María se gustó
**María got liked*

However, this transfer of knowledge is not as straightforward as it seems at first sight since the pronoun *se* in Spanish has multiple counterparts in English ranging from the *get* passive as we previously saw, to a zero morpheme in the case of anticausative *se*,

a reflexive pronoun (e.g. himself, herself) in the case of reflexive *se*, a reciprocal pronoun (e.g. each other) in the case of reciprocal *se*, and *be* passives in the case of passive *se*. So, since there is a one-to-many correspondence between Spanish and English with respect to the pronoun *se*, guidance from the L1 is not completely transparent: it would certainly require the learner to achieve a certain level of understanding of the antipassive construction as compared to other *se* constructions in Spanish before the L1 could provide any scaffolding.

Looking at all these different factors, it is obvious that the task of the L2 learner in this specific experiment would be daunting if he were not guided by some universal principles, particularly, regarding the grouping of predicates into semantic classes. Not only does the learner have to determine what type of *se* morpheme is being used in these specific sentences but also, it has to connect it to the aspectual properties of classes II and III of psych-verbs in order to achieve the right distribution of morphemes across psych-verb classes. Mainly, participants had to ascertain that the *se* morphemes presented in the experiment were examples of antipassive *se* as opposed to, for instance, reflexive *se*. Then, the next step would be to determine that it can only be used with Class II because Class II is the only one that has a causative interpretation. Since this is never explicitly taught in the L2 classroom and because the input is extremely ambiguous, we have to assume that learners are guided by some universal linking rules that restrict the number of options available to them by grouping predicates into semantic classes. Even the behavior of the less proficient groups, which gave excessively high ratings to sentences with *se* with Class III verbs is not an example of a wild grammar, that is a grammar unconstrained by UG or even a grammar deviant from the L2. Their grammars do seem

to be constrained by UG since Class III verbs can and, in fact, do interact with other types of *se* morphemes (e.g. reflexive *se*). Rather, the problem at the lower levels seems to be a mapping error related to morphology rather than the inability to categorize different classes of psych-verbs. In particular, these problems are related to the numerous functions of the pronoun *se* and not to a lack of understanding of the aspectual properties that characterized the different classes of psych-verbs.

As far as I am aware, although there are several studies on the acquisition of *se* (Toth, 1997, 2000; Montrul, 1999a, 1999b), there are no previous studies on the acquisition of *se* as it relates specifically to the different classes of psych-verbs and their aspectual nature. However, since this falls within the scope of characteristics that distinguishes classes II and III of psych-verbs, it would be interesting to see if Rubio's (2000, 2001) pedagogical discoveries with processing instruction (VanPatten, 1996) also apply to learners' understanding of this type of construction.

Finally, taken together, the positive findings of experiments 3A (word order) and 3B (antipassive *se*) lead us to assert that learners are able to categorize psych-verbs according to their aspectual properties and are sensitive to the syntactic restrictions that arise from this partition as far as word order and use of antipassive *se* are concerned (although the low-proficiency learners seem to have some problems with the mapping of inflectional morphology). Additionally, I can confidently state in light of these results that the syntax-semantics interface properties of psych-verbs (at least the ones tested in these experiments) do not pose insurmountable challenges to L2ers, and thus are not subject to fossilization. This is consistent with the Interface Hypothesis's tenet that

properties that belong to internal interfaces do not present variability or optionality at the highest level of attainment.

CHAPTER 5
PSYCH-VERBS AND THE SYNTAX-PRAGMATICS INTERFACE

Chapter 3 analyzed two different syntactic properties of psych-verbs (i.e. clitic use and clitic and verb agreement). Whereas clitic manipulations were acquired to an almost native-like level by all groups, agreement relations caused some difficulties for the least proficient participants. On the other hand, chapter 4 studied properties related to the syntax-semantics interface, which had to do with participants' ability to categorize psychological predicates into different classes according to their aspectual (i.e. eventive and stative) and morphosyntactic characteristics (e.g. word order and use of antipassive *se*). Both properties seemed to be acquired with relative ease by the participants of this study although the lower-proficiency participants experienced certain difficulties with morphology. In the current chapter I will evaluate a property that belongs to the syntax-pragmatics interface (or more accurately, syntax-discourse interface): specifically, pragmatically-derived word order. It will be determined whether acquisition of this aspect is as straightforward as some of the properties tested in the other chapters or whether it presents further challenges for my second language learners as has been claimed in the literature (Sorace & Filiaci, 2006; Sorace & Serratrice, 2009; Sorace, 2011). In general, my findings show that this experiment poses an additional burden on intermediate and advanced participants, who are unable to perform at the level of the control group. Why this is the case, and why the near-native speakers and the low-proficiency speakers were

able to attain the intricate patterns that derive from the influence of discourse elements on syntax, will be discussed in section 5.6.

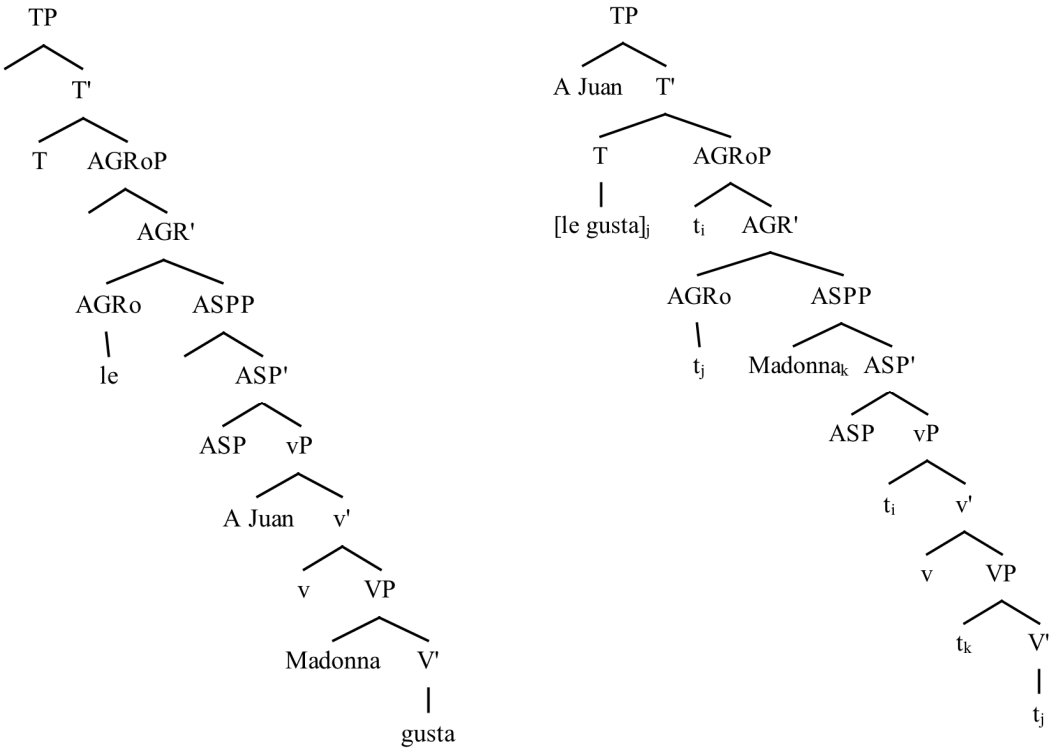
5.1 Experiment 4: Goal and Research Questions

The purpose of this experiment is to ascertain if L2 learners are able to acquire properties belonging to an external interface. In particular, the interface tested here is the syntax-pragmatics interface, and more specifically, the syntax-discourse interface. The connection between word order (i.e. syntax) and the pragmatic concept of topic (i.e. discourse) will be analyzed in detail in this task.

In experiment 3A, I explored the word order distribution that applies to psych-verbs belonging to Class II and Class III respectively. In particular, whereas Class II only allows one order of constituents (Causer-Verb-Experiencer (*El ruido asustó a Pablo* 'The noise scared Pablo')), Class III allows two different configurations (Experiencer-Verb-Theme (*A Javier le encantan las matemáticas* 'Javier loves Math') and Theme-Verb-Experiencer (*Las matemáticas le encantan a Javier* 'Javier loves Math')). In this experiment I will focus on the flexibility of word orders for Class III psych-verbs. The unmarked order in Spanish is the order Experiencer-Verb-Theme. Franco & Huidobro (2003, 2007) claim that the movement of the Experiencer is motivated by the EPP feature and Shortest move since the Experiencer is projected higher than the Theme. On the other hand, the order Theme-Verb-Experiencer is regulated by discourse factors. This order arises when the Theme is a salient topic in the discourse. Syntactically, this movement is motivated because the Theme has to check a salient topic feature in T. This analysis is based on Zubizarreta's (1998, p. 117) concept of T as 'a syncretic category with discourse features.' (1) represents the D-structure and S-structrure of the *gustar* class as

envisioned by Franco & Huidobro (2003; 2007). Specifically, this is an example of a sentence with neutral word order (EVT).

(1)



The fact that the Theme can occupy the pre-verbal position when it is a salient topic is not an isolated phenomenon related to psych-verbs. Rather, it is a more general tendency related to some basic tenets of pragmatic theory that have to do with the concept of *givenness*. In particular, this fact is connected with the given-before-new principle, (Arnold et al., 2000; Bock & Irwin, 1980; Bock & Warren, 1985; Bresnan et al., 2007; Clark & Haviland, 1977; *inter alia*) which states that old information is more likely than new information to occupy earlier positions in the sentence. Because when the Theme is a salient topic, it is considered to be old information, the fact that it occupies a preverbal position derives from the given-before-new principle. However, I have to

underscore here that this tendency can be overriden in constructions with Spanish psych-verbs because the unmarked order (Experiencer-Verb-Theme) can be used regardless of what participant is the salient topic in the discourse. This additional complicating factor makes the acquisition of psychological predicates' word order even less straightforward and the task of extracting this information from input far from evident.

With this background in mind, this experiment sets out to answer three different research questions with regard to L2ers' grammars:

1) What is the effect of discourse factors on psych-verb constructions' word order? This is a twofold question related to the concept of given vs. new information:

a) Are TVE sentences preferred in a context where the Theme is a salient topic (i.e. given information)?

b) Are sentences with EVT order preferred in a context in which the Experiencer is a salient topic (i.e. given information)?

2) Which order of constituents is the unmarked order for psych-verb constructions, EVT or TVE?

5.2 Experiment 4: Methodology

Differently from the rest of the experiments, this experiment is a pragmatic felicitousness task. That is, all of the stimuli are grammatically correct; however, one option within each pair is more felicitous than the other one in terms of discourse factors. Consequently, this is a much more nuanced distinction than those presented in the previous experiments because the subjects' choices do not run between 'grammatical' and 'ungrammatical', but between 'good' and 'better.' In this experiment, as in

experiment 3A, subjects not only read the sentences in the computer screen but also heard them. The sentences were recorded with neutral intonation in order to prevent subjects from assigning the sentences different prosodic patterns (e.g. focus fronting).[33]

Each subject saw a total of 64 sentences, half of which were fillers. The test items were classified into two different groups. In order to test L2ers' understanding of the pragmatic conditions that govern word order in Spanish psych-verbs, I presented the constructions embedded in different contexts that were pragmatically biased towards either Theme-Verb-Experiencer order or Experiencer-Verb-Theme order. So, in half of the contexts, the Theme was a salient topic (henceforth, T-context) and, thus, we expect it to appear in pre-verbal position more often than when the Theme is the focus of the sentence (Zubizarreta, 1998). The rest of the contexts highlighted the Experiencer as a topic (henceforth E-context) and thus, the expectation is that the order Experiencer-Verb-Theme would be preferred over Theme-Verb-Experiencer. As I pointed out earlier, EVT order is the unmarked order for these constructions. This means it is the preferred order when neither NP is salient, when the Experiencer is a salient topic or even when the Theme is the salient argument in the discourse. Hence, I predict that, although EVT order would always be rated higher than TVE, we would see an asymmetry in the ratings assigned to TVE order depending on the context in which the structures are embedded. So, we expect a higher rating of this order in those contexts in which the Theme appears as a salient topic in the discourse. In contrast, we expect EVT sentences to be given a

[33] The control group was tested on two different conditions in this experiment: one version had neutral intonation and the other one emphasized the contrastive focus by stressing the elements that form part of the contrast. The introduction of the intonation element seemed to confuse the native speakers rather than help them in their choices. For this reason, the latter condition was excluded from the stimuli presented to the L2 learners.

higher rating when they are preceded by a context that highlights the Experiencer as a salient topic as compared to a context in which the Theme is presented as a salient topic. (2) represents an example of a context in which the Experiencer *María* is the salient topic in the discourse.

(2) María es una miedica. ¿De qué tenía miedo de las arañas o de los ratones?
María is a coward. What was she scared about, spiders or mice?

a. A María le asustan los ratones no las arañas
María is scared of mice, not spiders

b. Los ratones le asustan a María, no las arañas
Mice scare María, not spiders

On the other hand, (3) illustrates a case in which the Theme is the topic of the previous discourse.

(3) La música clásica es aburridísima. ¿Quién odia la música clásica tu madre o tu padre?
Classical music is so boring. Who hates classical music, your mom or your dad?

c. A mi madre le aburre la música clásica, no a mi padre
My mom gets bored with classical music, not my dad

d. La música clásica le aburre a mi madre, no a mi padre
Classical music bores my mom, not my dad

The concept of topic is difficult to characterized and delimit. Topic can be defined as "what the sentence is about" (Reinhart, 1981) or "given/old information" (Gundel, 1985; Gundel, 1999). However, there is much controversy over how to define given vs. new information, whether topics really have to be old information and whether it is a syntactic or a pragmatic concept (Gundel & Thorstein, 2004). Furthermore, no test will allow us to pinpoint the topic of a sentence since pragmatic tests are not deterministic (Gundel & Thorstein, 2004). In addition, López (2009, p. 84) warns us about the dangers

of using the concept of topic as something more than "an informal, descriptive term" since it really represents an amalgam of features.

Because of the intrinsic difficulties of defining and delimiting the concept of topic, I made sure that the contexts clearly represented the desired topic (either the Theme or the Experience) by carrying out a survey among native speakers. When asked, "what is this sentence about?," native speakers were able to correctly identify the topic that I had had in mind. Twelve people filled out the questionnaire and their judgments on what the topic of the discourse was coincided with my own assumptions in all of the sentences except in one in which two speakers chose a different option.[34] Also, by introducing a contrastive focus element, I made sure that the topic salience was further emphasized. Thus, the native controls clearly identified the topic as the element about which a choice had to be made.

Regarding the fillers, I tested a similar interface property so that the type of judgments subjects had to make remained constant across the experiment. In particular, I analyzed word order in unergative and unaccusative verbs in both neutral and subject-focused contexts. The assumption is that in the neutral-context condition, unaccusatives would get higher ratings in the VS (Verb-Subject) order and the opposite would be true for unergatives (Contreras, 1976; Suñer, 1982). On the contrary, in subject-focused contexts, both unaccusatives and unergatives would receive higher ratings when the order is VS because focused elements appear in sentence final position in Spanish (Reinhart, 1995; Zubizarreta, 1998). However, as Hertel (2003) argues, this distinction is not as clear-cut as syntactic theory describes even for native speakers. The control group in her

[34] An analysis of this individual test item showed that responses were not significantly different from the other test items. For that reason, it was kept in the battery of sentences.

experiment produced less inversion with unaccusatives in neutral contexts and with unergatives and unaccusatives in subject-focused contexts than predicted by theoretical accounts. Nevertheless, because the predicted patterns were found in her experiment (even if to a lesser degree than expected) and because I wanted to take into account also the optionality of native speaker grammars, I decided to test these constructions.

(4) and (5) are examples of unaccusative and unergatives verbs in neutral contexts. On the other hand, (6) and (7) represent word order alternations of unaccusative and unergatives verbs in subject focused contexts.

(4) ¡Qué ruido!¿Qué ha pasado? (unaccusative-neutral context)
How noisy! What happened!
a. El jarrón se ha roto
b. Se ha roto el jarrón *(preferred choice)*
The vase broke

(5) ¿Qué hace la gente en los bares en Chapel Hill? (unergative-neutral context)
What do people doing the bars in Chapel Hill?
a. La gente baila hasta las 12 de la noche *(preferred choice)*
b. Baila la gente hasta las 12 de la noche
People dance all night long

(6) ¿Quién llegó ayer? (unaccusative-subject-focused context)
Who came yesterday?
a. Mi prima llegó
b. Llegó mi prima *(preferred choice)*
My cousin arrived

(7) ¿Quién habló en la conferencia? (unergative-subject-focused context)
Who spoke in the conference?
a. García Máquez habló
b. Habló García Márquez *(preferred choice)*
García Márquez spoke

5.3 Experiment 4: Results

5.3.1 Results of the Control Group

Our predictions were borne out for the native speaker group. First of all, the most interesting aspect of this experiment is to look at the asymmetries that arise when we cross the variables of context and order since they will enlighten the issue of discourse-influenced word order directly. The questions we set out to answer were: (a) Are TVE sentences preferred in a context where the Theme is a salient topic? And, (b) are sentences with EVT order preferred in contexts in which the Experiencer is the topic in the discourse?

Table 24. Response means for experiment 4 (Control group)

Analysis Variable : response			
Context	**Order**	**N Obs**	**Mean R**
Theme-salient context	TVE	288	4.14
	ETV	288	4.65
Experiencer-salient context	TVE	288	3.84
	ETV	288	4.78

In Figure 39, we can see that there is a significant interaction of context and word order: First of all, TVE sentences are rated significantly higher when the sentence is preceded by a context in which the Theme is a salient topic than when they are judged in conjunction with a context in which the Experiencer is highlighted as a topic (χ^2=11.80, p=0.0006). Secondly, we will look at the effect that discourse has on subject ratings' of EVT sentences. Sentences with an EVT configuration were preferred in contexts in which the Experiencer was constructed as a salient topic as opposed to contexts in which

the Theme was a salient topic (χ^2=5.38, p=0.0204); however, the difference seems to be pretty fairly small.

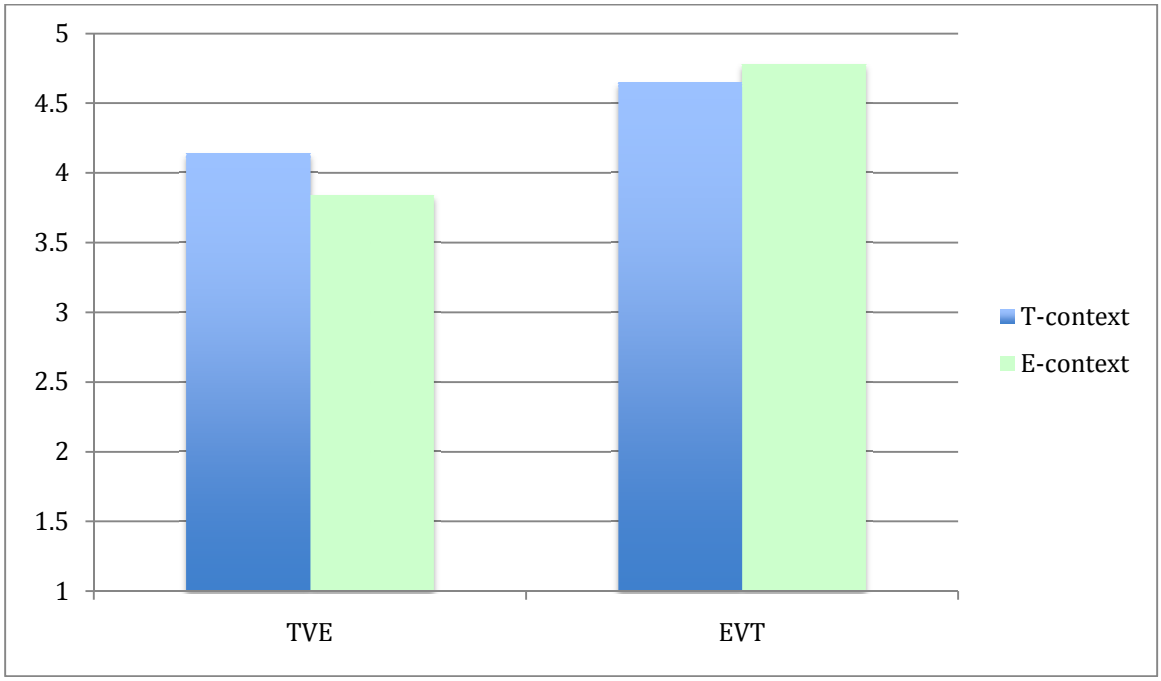


Figure 39. Response means for word order by context (Control group)

I evaluated which of the two orders (EVT or TVE) is the neutral order for psych-verb constructions. In general, we see a main effect of word order (χ^2=63.10, p<.0001) since EVT is generally preferred over TVE (Figure 40). As expected, EVT sentences were rated higher than TVE in both conditions (T-salient context: χ^2=30.93, p<.0001; E-salient context: χ^2=53.81, p<.0001).

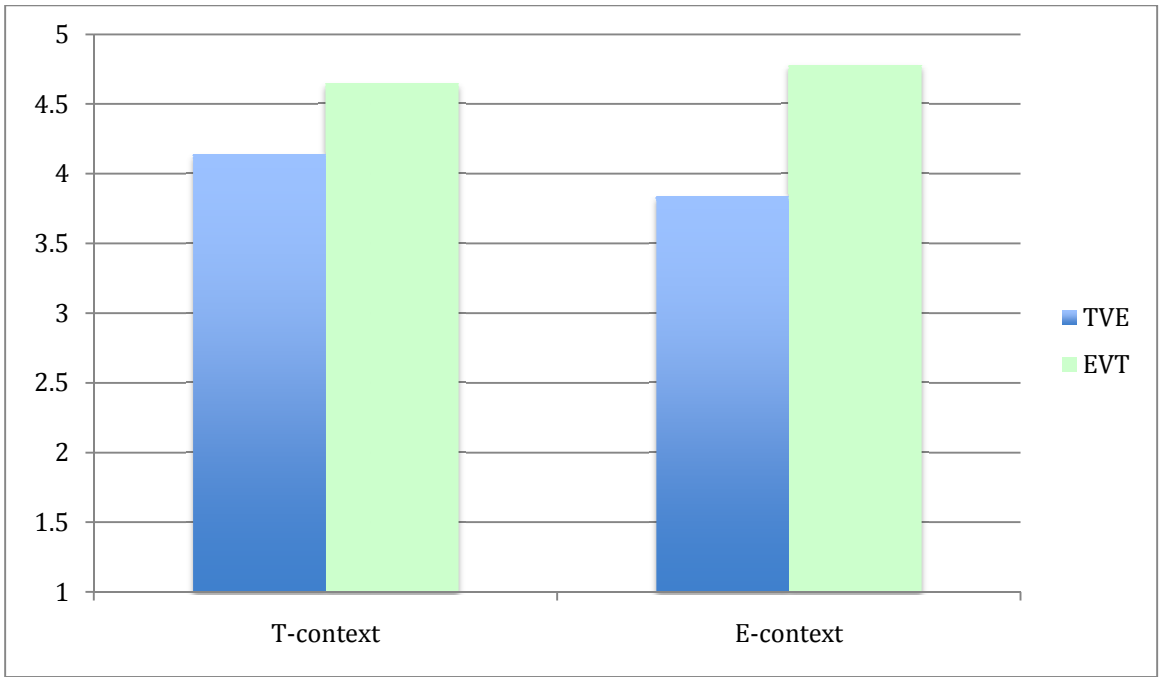


Figure 40. Response means for context by word order (Control group)

In summary, EVT order is always preferred regardless of context, that is, discourse conditions. However, contrasting the order of the construction (i.e. EVT or TVE) with the two possible contexts (E-salient or T-salient) reveals that TVE order is preferred in contexts where the Theme is a salient topic in the discourse. Conversely, EVT order is preferred in contexts where the Experiencer is the salient topic. This shows a clear influence of pragmatics over the syntactic structure of psychological predicates.

5.3.2 Results of the Near-Native Group

The results of the near-native speakers are remarkably similar to those of the control group, although they do deviate from the control pattern in one respect.

Table 25. Response means for experiment 4 (Near-native group)

Analysis Variable : response			
Context	**Word Order**	**N Obs**	**Mean R**
Theme-salient context	TVE	128	4.30
	EVT	128	4.32
Experiencer-salient context	TVE	128	3.80
	EVT	128	4.78

The near-native speakers, as the native speakers, display a clear relation between context (i.e. pragmatics) and word order (i.e. syntax) (see Figure 41). TVE sentences are rated significantly higher in T-contexts than in E-contexts (χ^2=4.67, p=0.0308) and EVT sentences are rated higher when judged in conjunction with an E-context (χ^2=13.52, p=0.0002). Interestingly, their categorizations are more defined than those of the native speaker group. I will come back to this issue in section 5.6.

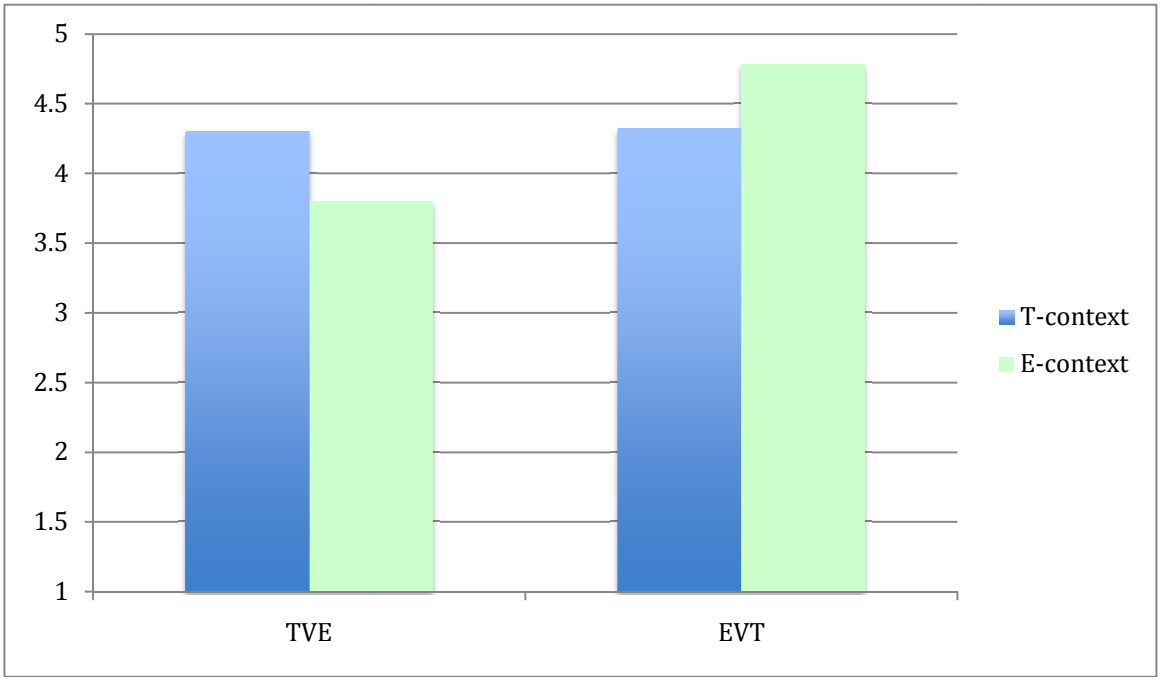


Figure 41. Response means for word order by context (Near-native group)

We do see again a main effect of word order (χ^2=21.15, p<.0001) (Figure 42). However, when comparing EVT and TVE within each individual context type the near-native participants behave differently from the control group: significantly higher ratings of the unmarked order are only observed in E-salient contexts (χ^2=23.70, p<.0001). In contexts where the Theme is the salient topic, the contrast between TVE and EVT sentences is not significant (χ^2=0.01, p=0.9106). This behavior also displays sensitivity to discourse factors since it shows that, because TVE receives higher ratings in T-contexts due to pragmatic factors related to topic saliency, the ratings between EVT and TVE become less distinguished. Nevertheless, it seems that, as for the control group, EVT is consistently the unmarked order regardless of discourse conditions. The implications of this finding will be evaluated in section 5.6.

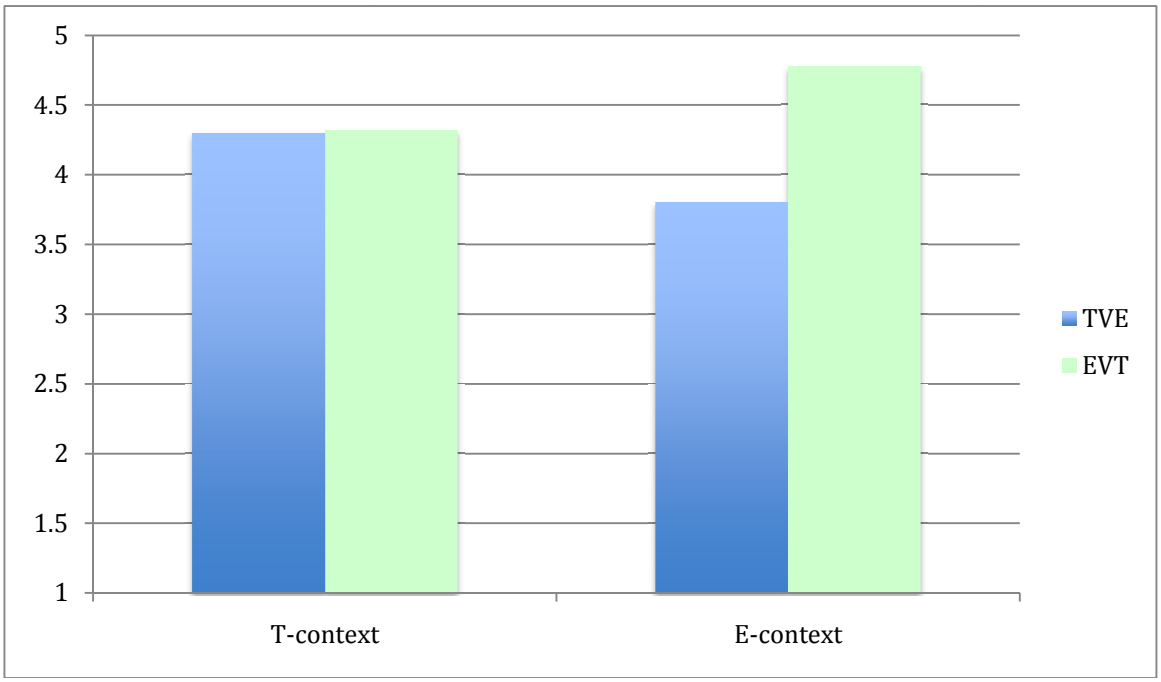


Figure 42. Response means for context by word order (Near-native group)

5.3.3 Results of the Advanced Group

Advanced speakers did not exhibit the distinctions that native and near-native speakers showed with regard to the effect of discourse on word order. Sentences with TVE order got roughly equal ratings independently from the type of context (i.e. E-context vs. T-context) in which the sentence is imbued (χ^2=0.49, p=0.4833). The same phenomenon took place with sentences with EVT order (χ^2= 0.32, p=0.5727). This indicates that, for the advanced group, unlike native and near-native speakers, type of context plays no role in the choice of word order. That is, these learners did not completely connect the choice of word order in psych-verbs with pragmatic factors. We have to point out, however, that the trends go in the right direction with TVE getting slightly higher ratings in T-contexts and EVT getting slightly higher ratings in E-contexts. Nevertheless, these distinctions are not distinct enough to reach significance.

Table 26. Response means for experiment 4 (Advanced group)

Analysis Variable : response			
Context	**Word Order**	**N Obs**	**Mean R**
Theme-salient context	TVE	155	4.01
	EVT	155	4.48
Experiencer-salient context	TVE	157	3.86
	EVT	157	4.61

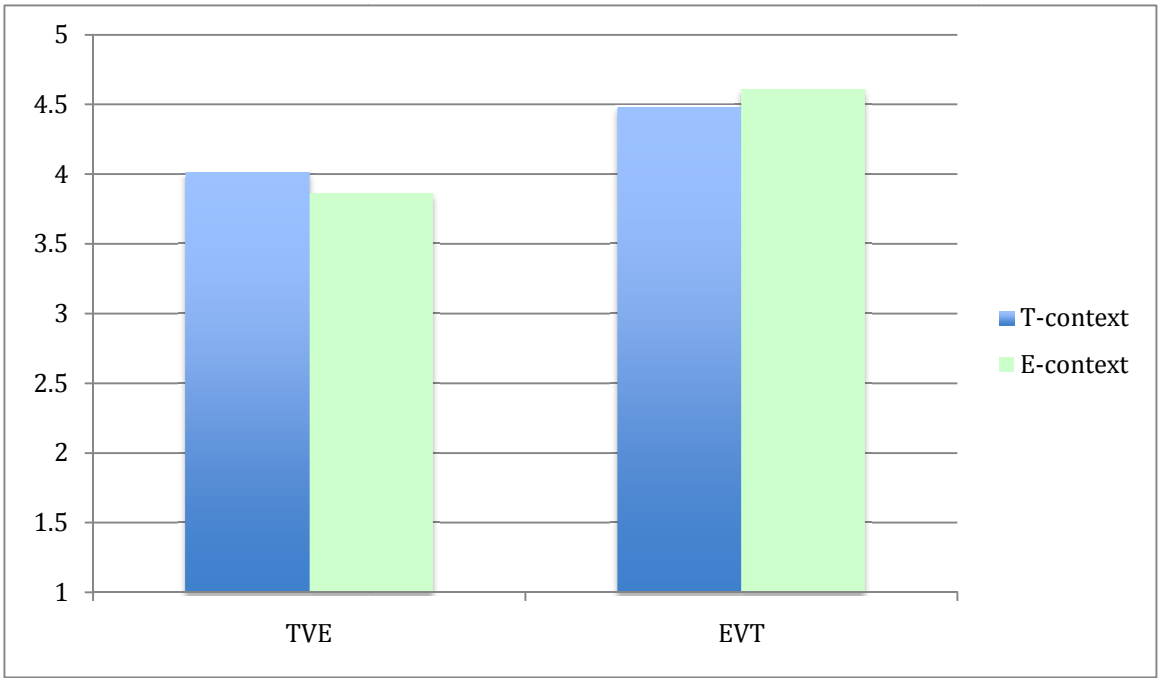


Figure 43. Response means for word order by context (Advanced group)

There is a main effect of word order (χ^2=26.01, p<.0001) with EVT always being preferred over TVE (Figure 44). In the advanced group, we see the same trend that we saw in the near-native group with regard to word order preferences within each individual type of context: in T-contexts there is not a significant difference between the two word orders: (χ^2=3.11, p=0.0777). In contrast, this difference is significant in E-salient contexts, where EVT was significantly higher rated than TVE (χ^2=10.21, p=0.0014). To a certain extent, there is some influence of pragmatic factors in their judgments since, EVT and TVE sentences are significantly different in E-salient contexts but not in T-salient contexts. So, at a certain level, they show an asymmetry between the categories and give preference to TVE sentences in T-salient contexts in the sense that they rate it approximately equally to EVT (i.e. TVE = EVT in T contexts) (see Figure 44). However, as I showed before, the comparison between TVE in T-contexts and TVE in E-context did not yield a significant contrast (Figure 43). So, even if they show some sensitivity to

pragmatic factors, they do not do it to the extent that the native or the near-native speakers do.

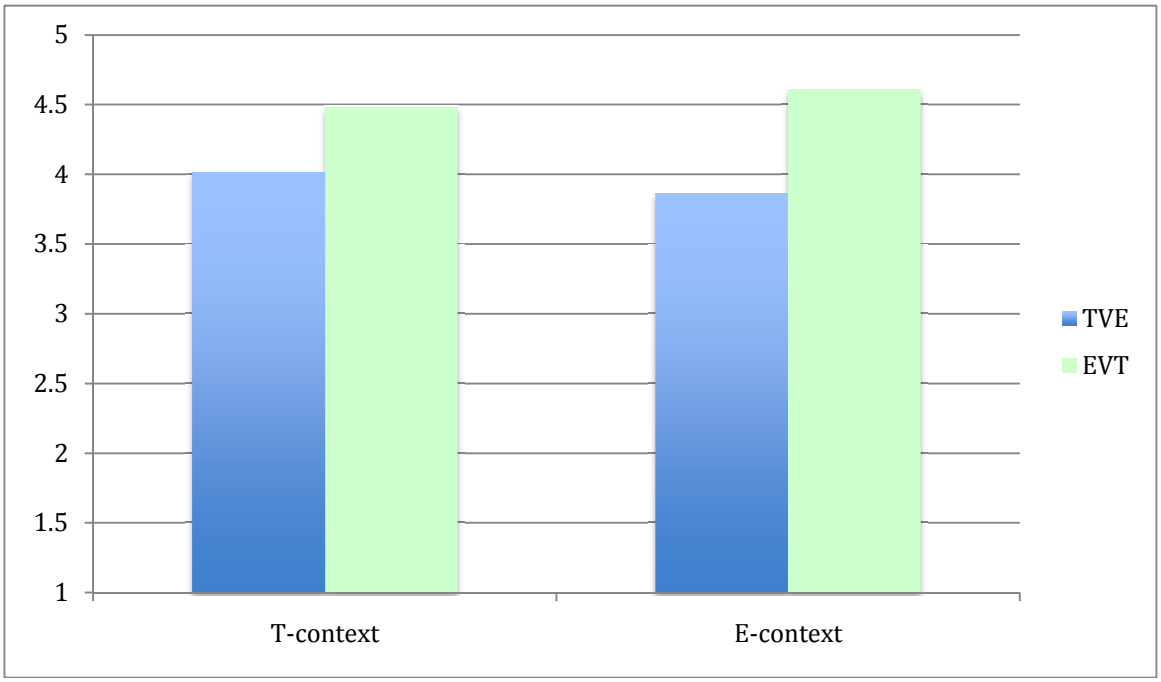


Figure 44. Response means for context by word order (Advanced group)

5.3.4 Results of the Intermediate Group

As was the case for the advanced group, we do not see an effect of type of context in the ratings that the test items are assigned. That is, regardless of the type of context in which the test items appear, they receive a similar rating (Figure 45). This is true for both EVT and TVE test items (TVE/E-context vs. TVE/T-context: χ^2=0.93, p=0.3344; EVT/E-context vs. EVT/T-context: χ^2=1.13, p=0.2878). Thus, intermediate learners are immune to the effect of pragmatic factors in the word order configurations of psych-verb constructions. This resembles the behavior of the advanced learners.

Table 27. Response means for experiment 4 (Intermediate group)

Analysis Variable : response			
Context	**Word Order**	**N Obs**	**Mean R**
Theme-salient context	TVE	123	3.30
	EVT	123	4.24
Experiencer-salient context	TVE	125	3.44
	EVT	125	4.10

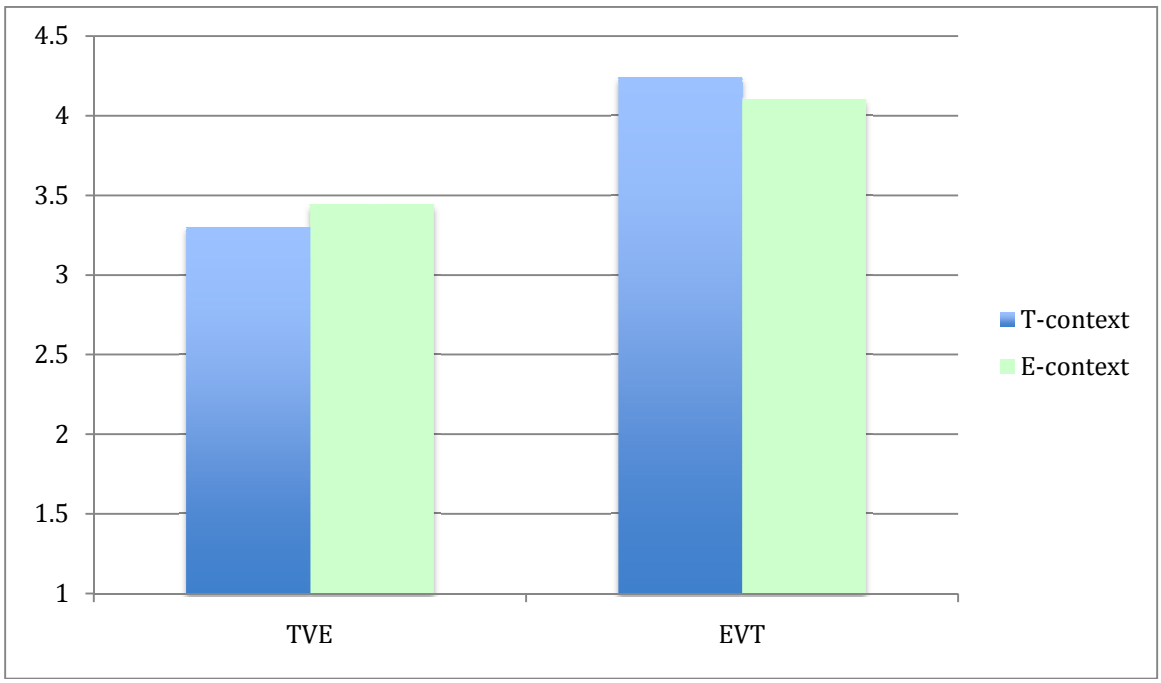


Figure 45. Response means for word order by context (Intermediate group)

For the intermediate group, EVT is clearly the unmarked order and this is manifested in the fact that it is the order that receives a higher rating in both conditions as we can see in Figure 46: (T-context: χ^2=13.58, p=0.0002; E-context: χ^2=6.81, p=0.0091). So, there is main effect of word order (χ^2=12.61, p=0.0004). Unlike the advanced group, which shows a certain degree of sensitivity to pragmatic factors in these contrasts, the intermediate participants show an overwhelming preference for the unmarked order

(EVT), which indicates an absolute lack of understanding of the pragmatic factors that regulate word order in psych-verb constructions.

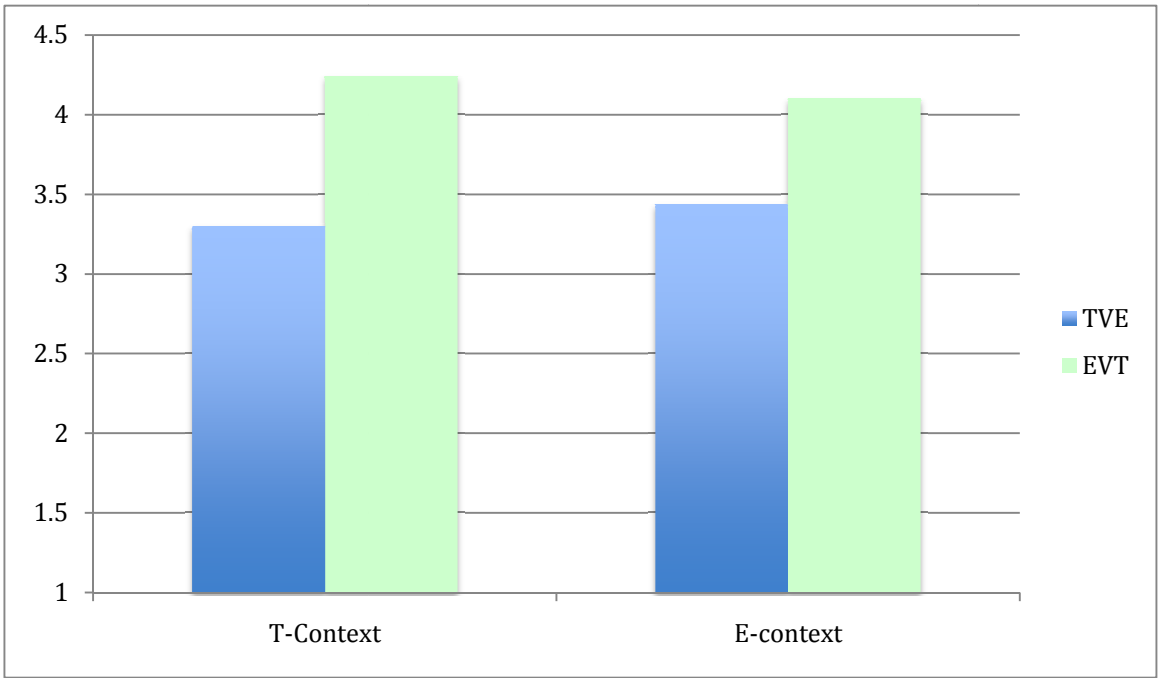


Figure 46. Response means for context by word order (Intermediate group)

5.3.5 Results of the Low-Proficiency Group

Surprisingly, the low proficiency group shows sensitivity to discourse factors (Figure 47): TVE order is rated significantly higher in T-contexts than in E-contexts (χ^2=5.97, p=0.0146). On the other hand, EVT gets rated significantly higher in E-contexts than in T-contexts (χ^2=10.56, p=0.0012). Interestingly, this is the pattern that we saw with native and near-native speakers. It seems like, for the low-proficiency speakers, the pragmatic context and, in particular, the topichood of the previous discourse has a clear effect on the word order combinations of psych-verb constructions.

Table 28. Response means experiment 4 (Low-proficiency group)

Analysis Variable : response			
Context	**Word Order**	**N Obs**	**Mean R**
Theme-salient context	TVE	91	3.58
	EVT	91	3.87
Experiencer-salient context	TVE	93	3.16
	EVT	93	4.40

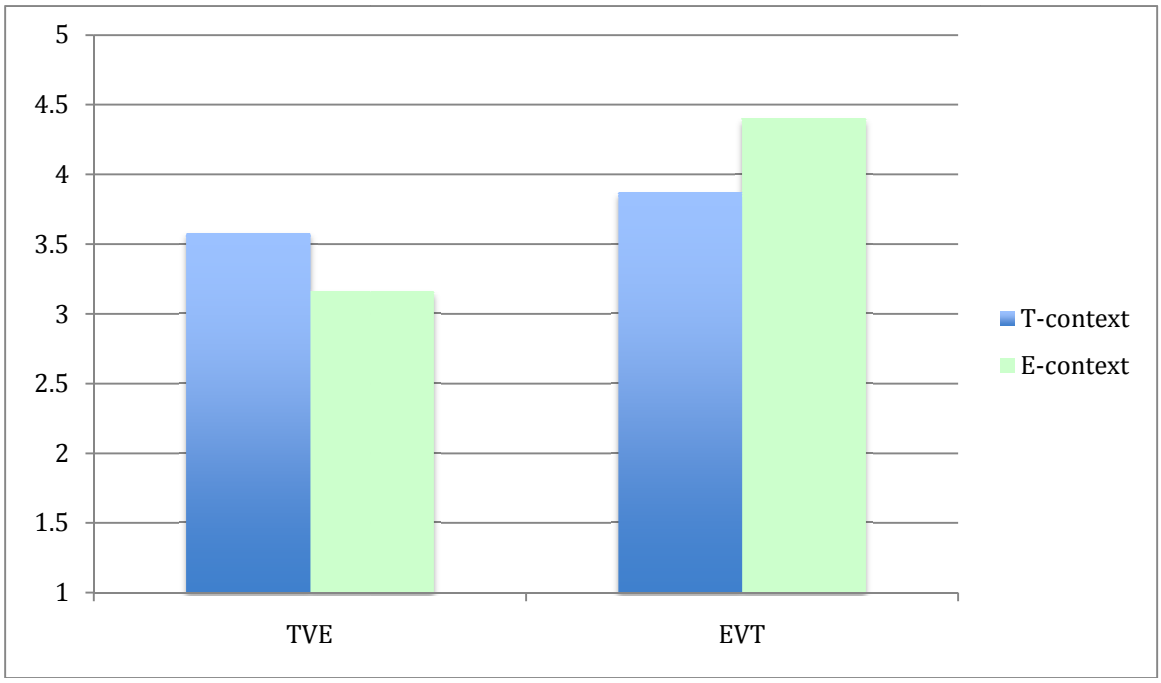


Figure 47. Response means for word order by context (Low-proficiency group)

In Figure 48, we see a main effect of word order (χ^2=9.16, p=0.0025). We can see that, for this group, EVT does not have such an unmarked status as it does for the native controls. The contrast between TVE and EVT test items in the contexts in which the Theme is a salient topic (T-contexts) is not significant (χ^2=0.69, p=0.4046). Nevertheless, this contrast is significant in E-contexts in which EVT items get a significantly higher rating (χ^2=29.9, p<.0001). This trend was also seen in the data of near-native speakers

and advanced learners. And, as stated before, this tendency actually shows that this group of learners is aware of pragmatic influence over word order. However, this trend differs from the control group's behavior, which actually considered EVT the unmarked choice regardless of context.

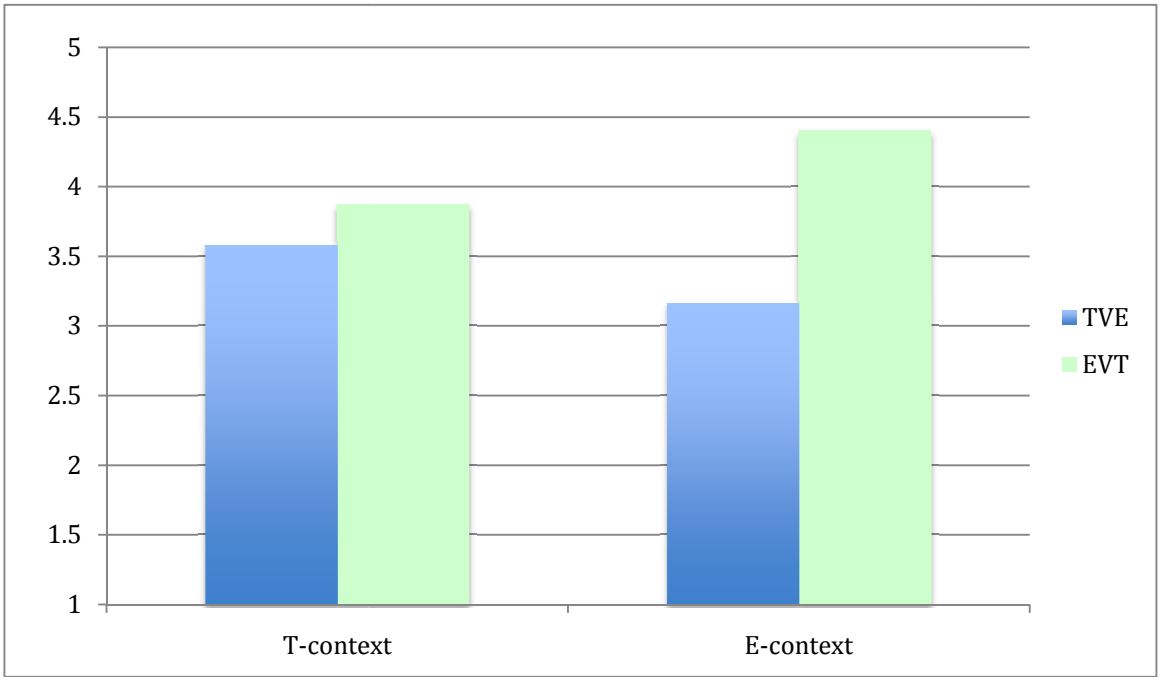


Figure 48. Response means for context by word order (Low-proficiency group)

5.4 Experiment 4: Summary of the Results

The main trends in experiment 4 are the following:

1) As predicted, TVE is rated more favorably in T-contexts than E-contexts. However, this was only true for the native and near-native speaker group and, surprisingly, the low-proficiency group. The advanced and intermediate group showed no significant contrast in this respect.
2) EVT sentences were given higher ratings in E-contexts than in T-contexts. This is true for the native speakers and the near-natives and also for the low-proficiency group. On the other hand, the advanced and the intermediate groups showed no

significant difference. This in conjunction with (1) shows that advanced and intermediate speakers are immune to the effects of pragmatics over word order in psych-verb constructions.

3) The unmarked order (EVT) gets significantly higher ratings than TVE order in E-contexts and T-contexts in the native speaker group and the intermediate group. In contrast, for the near-native, advanced and low-proficiency groups, this tendency is only significant in E-contexts. In T-contexts, EVT and TVE sentences are rated equally. As I pointed out before, the tendency followed by near-natives, advanced and low-proficiency participants shows a greater sensitivity to pragmatic conditions than the native controls since the word orders seem to have a different status in the two different types of contexts. Bearing this in mind, we can state that the advanced speakers seem to be more in tune with discourse factors than the intermediate speakers are. However, this is still different from the native trend that shows an overwhelming preference for EVT regardless of type of context.

5.5 Experiment 4: Contrasts among Groups

Figure 49 represents the response means for test items with TVE order in T-contexts and E-contexts. The contrasts between the control group, near-native speakers and the low-proficiency group were not significant since they all gave similarly higher ratings to TVE test items in T-contexts (control vs. near-native: χ^2=0.66, p=0.4154; control vs. low: χ^2=0.40, p=0.5257). The contrast with the advanced group is also not significant (control vs. advanced: χ^2=0.38, p=0.5360). However, we have to remember that, even if the advanced learners showed the right trend, their distinctions with regard to

word order and context did not reach significance, while they did for the native, near-native and low-proficiency speakers.

With respect to the comparison between the control group and the low-proficiency group, we need to point out that even if their response pattern is similar, the response means of the low proficiency group are much lower. This results in two significant contrasts when we compare the means of these two groups (TVE/Tcontext: χ^2=4.15, p=0.0417; TVE/E-context: χ^2=8.43, p=0.0037). As was the case in the other experiments, this results from the low-proficiency speakers not using the full range of ratings available in the Likert scale they were using to judge the sentences and restricting themselves to the middle of the scale (i.e. 2, 3 and 4).

The contrast between the control group and the intermediate group is significant because this group displays the opposite trend (i.e. intermediate speakers gave TVE higher ratings in E-contexts) and much lower means (control vs. intermediate: χ^2=6.77, p=0.0093).

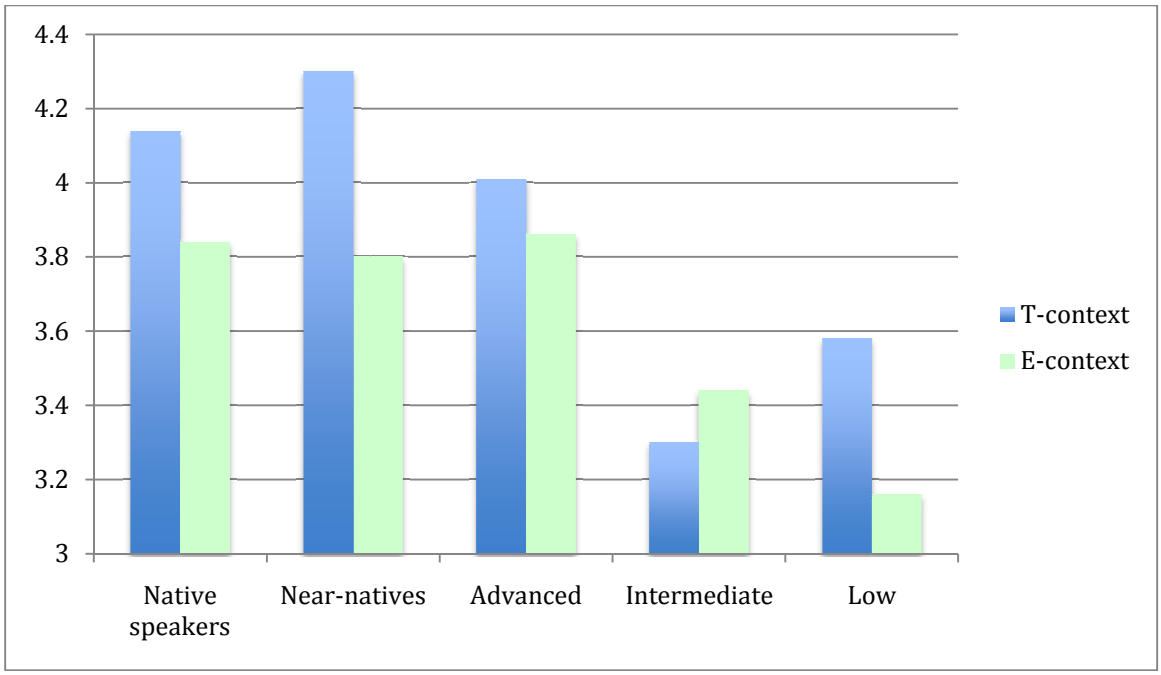


Figure 49. Response means for TVE sentences in experiment 4 (All groups)

Figure 50 presents the response means for sentences with EVT order in T- and E-contexts. The contrasts between the native speaker group and the near-native and the low-proficiency groups are significant (control vs. near-native: χ^2=5.54, p=0.0186; control vs. low: χ^2=5.18, p=0.0228). This is due to the fact that the distinction between the ratings in T-contexts and E-contexts is more clearly defined for these two groups than for the native speakers. Particularly, in the near-native group this more categorical distinction is the result of their lower rating of EVT in T-contexts as compared with the control group. The low-proficiency group, apart from having this more definite distinction, also has generally lower means. The contrast with the intermediate group is marginally significant (control vs. intermediate: χ^2=3.66, p=0.0559) since the intermediate group shows a tendency that is reversed with respect to the one the native speaker group presents (i.e. EVT sentences receive slightly higher ratings in T-contexts) and also has lower means. Finally, the contrast with the advanced group isn't significant (control vs. advanced:

χ^2=0.00, p=0.9733). However, I want to remind the reader at this point that whereas this distinction (EVT in E-contexts vs. EVT in T-contexts) was statistically significant for the control participants, the contrast did not reach significance for the advanced group.

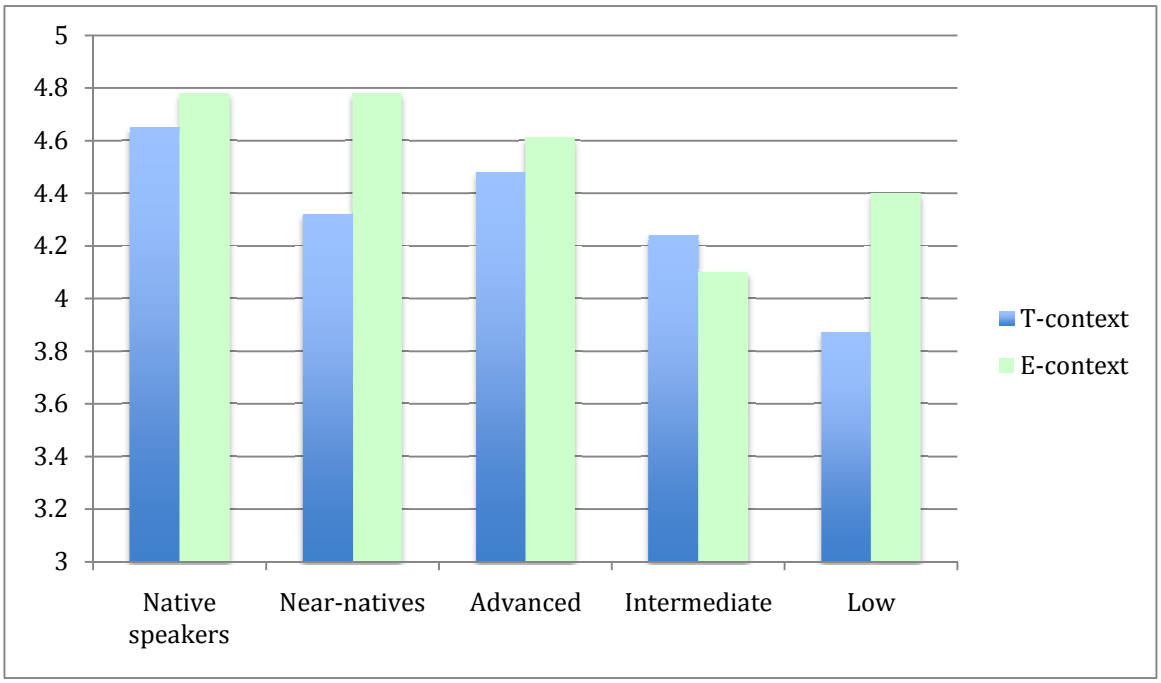


Figure 50. Response means for EVT sentences in experiment 4 (All groups)

5.6 Experiment 4: Discussion

This experiment was the last in a series of experiments that tried to determine if the Interface Hypothesis holds for areas of Spanish grammar that had not been studied under this framework before, namely, psychological predicates. In the previous chapters, I demonstrated empirically that properties related to the narrow syntax and the syntax-semantics interface of these predicates generally did not pose insuperable challenges for the more advanced second language learners. However, lower-proficiency speakers seem to struggle with agreement issues in particular and with morphology in general. The current chapter confirms that the syntax-discourse interface properties aggravate the

learnability problem connected with psych-verb acquisition for intermediate and advanced participants. In contrast, and contrary to all predictions, low-proficiency speakers perform to an almost native-like level. Here, I will determine what the sources of difficulty/ease were and what the learners' responses reveal about both their mastery and mental representation of syntax-discourse properties in L2 Spanish.

To start with, I will review the main issues at stake in this experiment and how they were resolved by L2 learners. Experiment 4 set out to test learners' ability to understand the nuanced effect of pragmatic factors on word order in psych-verb constructions word. In particular, EVT is the unmarked order, and thus the preferred order in all situations. However, because TVE order is derived from discourse factors, mainly, the necessity of the Theme to check a [+salient topic] feature in T, it was predicted that TVE would get higher ratings in contexts in which the Theme was a salient topic. So, even if EVT is generally the preferred order, comparing TVE order across different types of contexts (i.e. E-context and T-context), should have caused an asymmetry: TVE sentences should be preferred in T-contexts (contexts in which the Theme is highlighted as the salient topic) over E-contexts (contexts in which the Experiencer is the salient topic in the discourse). As a consequence, we also expect sentences with EVT order to be preferred in contexts where the Experiencer is the salient topic over those in which the Theme is the salient topic.

First of all, while all groups recognized EVT as the unmarked order (although to different degrees as we will see below), the asymetries that resulted from pragmatic effects in the word order configurations of these predicates were not fully understood by all L2 learner groups. The native speaker group and the near-native speaker group

behaved as predicted showing a preference for TVE order in T-contexts over E-contexts and the reverse pattern for EVT items. This indicates that, for these groups, the pragmatic conditions that affect word order are clearly understood. Actually, near-native speakers' distinction among contexts is even more defined than it is for the control group. The implications of this fact will be discussed below. Conversely, the advanced and intermediate groups gave similar ratings to TVE items in T- and E-contexts and the same lack of distinction was shown for EVT items that received equal ratings despite the different pragmatic conditions presented in the preceding context. This indicates that advanced and intermediate speakers, although able to master other aspects of psych-verbs related to syntax and syntax-semantics, are unable to detect the subtle effect of discourse conditions on these predicates. The findings for the advanced learners are consistent with the main tenet of the Interface Hypothesis, mainly that external interfaces can be subject to optionality even at the highest stages of second language development. The interesting and surprising result in this experiment is the behavior of the low-proficiency group. They do recognize the pragmatically-driven word order of these constructions in both TVE and EVT items. The only difference with respect to native and near-native speakers is that the means of this group are significantly lower. However, their contrasts show a sensitivity to discourse conditions.

Secondly, another issue I looked at in this experiment is the question of whether EVT is the unmarked order also for L2 learners. Native speakers show a preference for EVT in both E-contexts and T-contexts. This is also true for the intermediate group, which has a complete disregard for pragmatic properties and is just guided by the frequency patterns in Spanish (i.e. EVT as a much more frequent construction than TVE).

On the other hand, the near-native, advanced and low-proficiency group, only show a preference for EVT in E-contexts but not in T-contexts. This indicates that, for these learners, the unmarked order does not have such a privileged status as it does for the control group. So, these groups have not reached the completely native balance between preference for the umarked order and pragmatically-derived word order.

In section 5.1, I talked about how the word order of these predicates is regulated by the given-before-new principle: the understanding that old information tends to precede new information in a sentence. This principle has been shown to hold crosslinguistically (e.g., for English, Arnold et al. 2000; for Finnish, Kaiser & Trueswell, 2004; for Japanese, Ferreira & Yoshita, 2003; for Korean, Choi 2008, 2009; Jackson, 2008; Park (in prep.)). Furthermore, there is research that shows that L2 learners are able to transfer this principle when learning another language (for L1 Persian L2 English, (Marefat, 2005); for L1 Polish/German L2 English, (Callies & Szczesniak, 2008); for L1 Swedish L2 German, (Bohnacker & Rosén, 2008); for L1 German L2 Swedish, (Bohnacker, 2010); for L1 Korean L2 English, (Park, 2011; Park & Schwartz, *to appear*). So, to a certain extent, it is not surprising that L2 learners are able to transfer this principle from their L1 (English) to the L2 (Spanish) based on the findings of previous reseachers, especially if we assume a model such as Full Transfer/Full Access (Schwartz & Sprouse, 1996). However, there is a complicating factor that makes this acquisition process not as straightforward as it would appear at first glance. In section 5.1 I also pointed out that in Spanish, the given-before-new principle can be easily overridden since the unmarked order EVT can take precedence over TVE in spite of discourse conditions. So, this is something learners have to acquire through exposure to input. There also needs

to be explained why low-proficiency were able to transfer the given-before-new principle whereas intermediate and low-proficiency speakers were not.

Next, I will analyze the results of each individual group to determine what stage of acquisition they represent and how they balance the pragmatic factors (i.e. given vs. new information) with the frequency and unmarked nature of the EVT construction. First of all, the low proficiency speakers seem to comply with the pragmatic factors that regulate word order (i.e. TVE better in T- than E-context and EVT better in E- than T-contexts). However, they show a more marked difference than the native speakers with respect to their ratings of test items according to context and don't seem to give such a privileged status to the unmarked order. This indicates that the low-proficiency speakers are transfering the given-before-new principle from the L1. One plausible explanation for the behavior of this group is that they have not acquired the syntax of psych-verb constructions. If this is the case, they might be using a semantically driven syntax in which participants in the sentence are analyzed as chunks following English syntactic patterns (for instance: *Me gusta el chocolate* could be analyzed as Me gusta=I like and *el chocolate=chocolate*). If this is the analysis lower-proficiency participants are using, it is not surprising that they are able to perform successfully in this task since all they are doing is mapping an universal principle to an L1 syntactic template. In order to ascertain if the behavior if the low-proficiency group is truly connected with a lack of understanding of the syntactic patterns of Spanish psych-verbs, a follow-up experiment should be set up. This experiment should use lexical items unfamiliar to the participants so that they have to fully rely on the syntax. And, if I am on the right track, and they do

not have the L2 syntactic constructs, then they should not be able to perform appropriately in this type of experiment.

Then, as the learners become more proficient in the second language and they start acquiring the syntax of these constructions, the task of mapping the given-before-new principle to the new L2 grammar becomes a more complicated task than the one the low-proficiency learners were performing based on the L1 syntactic patterns. Furthermore, they realize that the given-before-new principle is violated in many cases. As a consequence, they stop relying on the L1 pragmatic conditions, which is illustrated by the fact that intermediate and advanced speakers do not make any connections between the different word orders and the type of contexts in which the sentences appear. Because they are unsure of what conditions regulate word order and how to map these pragmatic conditions onto the L2 syntax, they go adrift and enter a stage of indeterminacy. Intermediate participants, overwhelmed by the frequency of the unmarked construction are unable to make the connection with pragmatic principles and become too broad in accepting the unmarked order regardless of the pragmatic conditions that apply in the particular context in which the sentence is presented. On the other hand, the advanced learners start recovering from this stage of indeterminacy and start moving towards a more native-like performance. This is an indication that they are overcoming problems at the syntax level. Although they not show significant contrasts with regard to context and word order, they do seem to move into a direction in which pragmatic factors play a certain role (i.e. EVT is rated better than TVE in E-contexts but not in T-contexts, so the orders seem to have a different status in the different types of context). However, their judgments differ from the native controls in that their preference for EVT order is

not absolute. Eventually, the near-native speakers recover from this stage of indeterminacy. Once the syntax is stable in the endstate grammar, the pragmatic factors are understood to a practically native-level. They start understanding that, in spite of the overall preference for the unmarked EVT order, pragmatic factors do regulate Spanish psych-verb constructions to a certain extent. Their performance is not completely native-like in two ways: (a) their distinctions are greater than the native distinctions; (b) EVT unmarked status is restricted to E-contexts. This indicates that only when both the pragmatic factors and the frequency and unmarked nature of the EVT configuration are taken into account will L2 learners be able to behave like native speakers.

The development that we see in this experiment could be explained theoretically through Herschensohn's Constructionism (2000). Her model consists of three basic stages. In the first stage L2 learners rely on L1 parameters[35] (this stage is equivalent to Full Transfer/Full Access). We can see this in the low-proficiency group's reliance on L1 syntactic templates but their clear understanding of pragmatic factors, which are actually transferred from the given-before-new principle, which also holds in the L1. The second stage is characterized by variability because, although the L1 values for the parameter are unset, the L2 values are still not fully established. This is seen in intermediate and advanced learners' behavior, who start acquiring the syntax of the L2 and move away from the L1 pragmatic principles without fully understanding how to integrate the syntactic and the pragmatic side of this construction and unaware of the restrictions that apply in Spanish. The abandonment of the L1 parameter setting takes place when the input is incompatible with these values. In this case, it occurs when they realize that the

[35] In the case of this particular experiment we are not talking about parameters per se but about differences between the L1 and the L2 that do not necessarily have to be parameterized.

given-before-new principle is usually overridden and when they start parsing the sentences in a more target-like manner. However, a lack of understanding of the conditions and contexts that allow the principle to be overridden (only with EVT, due to its unmarked status) and the integration of syntax-discourse properties, causes L2ers' indeterminate and variable judgments. Finally, at the last stage, L2 learners should be able to reset the parameters to a native-like grammar when they are able to integrate both the syntax and the pragmatics of this construction. However, when a native-like grammar is not achieved at this stage, Herschensohn considers it to be the result of L2ers' use of general cognitive strategies to construct a target grammar. Our near-native speakers represent this final stage. They have definitely recovered from the variable judgments by successfully incorporating the syntax and the pragmatics of psych-verb constructions and by recognizing that the given-before-new principle also applies in their L2, although it can be overturned under specific conditions.

However, as I pointed out before, near-native judgments differ from native judgments in two respects: (a) their distinctions are greater than the native distinctions; (b) EVT unmarked status is restricted to E-contexts. So, we will discuss what this behavior tells us about the near-native speaker group's L2 linguistic system. In particular, there are two interesting questions that derive from these facts: (1) do they perform better than the native controls because they are a more faithful reflection of theoretical accounts? (2) does their divergent behavior (mainly (b)) indicate that the syntax-pragmatics interface is subject to fossilization?

Let's focus on the first question. Franco & Huidobro (2003, 2007) state that the order Theme-Verb-Experiencer in Spanish is pragmatically derived. Specifically, the

Theme has to raise to spec of TP to check a [+salient topic] feature. If we follow this theoretical proposal, we would expect that every time that the topic is a salient feature in the discourse, the order TVE would be derived. However, as we saw, this is not the case for the native speakers. The native speakers follow this pattern only to a certain extent, and it can always be disregarded when the unmarked order is chosen. Interestingly, the near-native speakers do show a stronger tendency in this direction (i.e. they behave closer to what is stated by the theory) giving more prominence to pragmatic factors in their word order choice than native controls. The question in Duffield's words is: Are near-native speakers more or less competent than native speakers? (2003, pp. 100-101).

In order to be able to answer this question, we need to take a step back and present Duffield's model of competent gradience (this model was introduced in Chapter 2), which will allow us to understand where the differences between native and near-native speakers stem from. First of all, Duffield rejects the idea of an idealized competence as a categorical property. Instead, he proposes that there are two types of competence: underlying competence (henceforth, UC) and, surface competence (henceforth, SC), each of which entails different characteristics and applies to different domains.

> UC is categorical and consists of formal (phonological and syntactic) principles, autonomous from the lexicon. It is plausible to think of UC as innate. SC, by contrast, is intimately determined by the interaction of contextual and specific lexical properties with the formal principles delivered by UC; as a consequence, SC generates gradient effects. SC is largely language-specific learned knowledge (Duffield, 2003, p.101).

Secondly, when we include this dual model of competence, the relationship between the native and the non-native speaker grammar becomes even more complicated than it was when competence was considered to be a unified concept. Duffield focuses on

the cases in which the non-native speakers have acquired the grammar but their judgments differ systematically from native speaker judgments in certain respects. He presents several alternatives: there are cases in which the native speakers' and L2ers' judgments completely converge and will be consistent with both UC and SC (Figure 51).

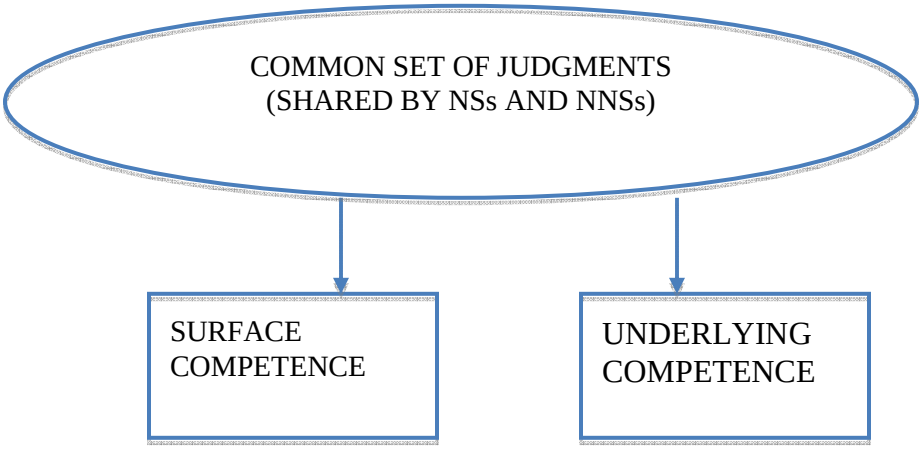


Figure 51. Full convergence (UC and SC generate the same set of grammatical sentences, NSs and NNSs converge on this set).

On the other hand, L1 and L2 judgments might reflect only one type of competence (i.e. convergence on SC only (Figures 52) or convergence on UC only (Figure 53)).

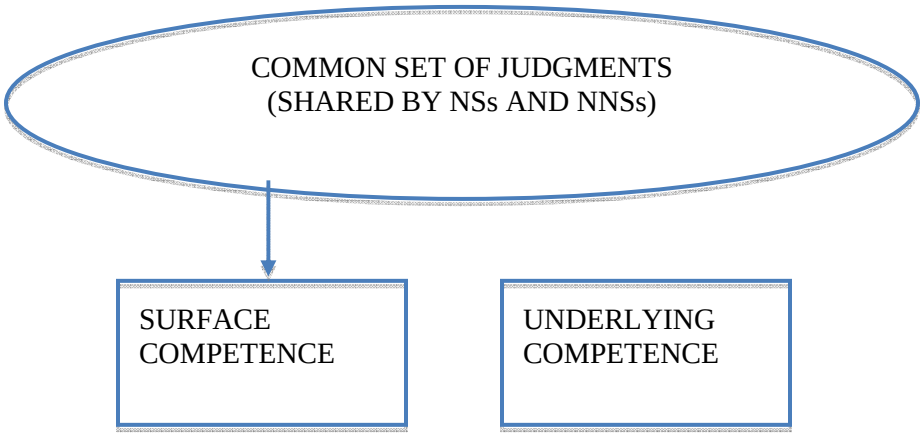


Figure 52. Convergence on SC only.

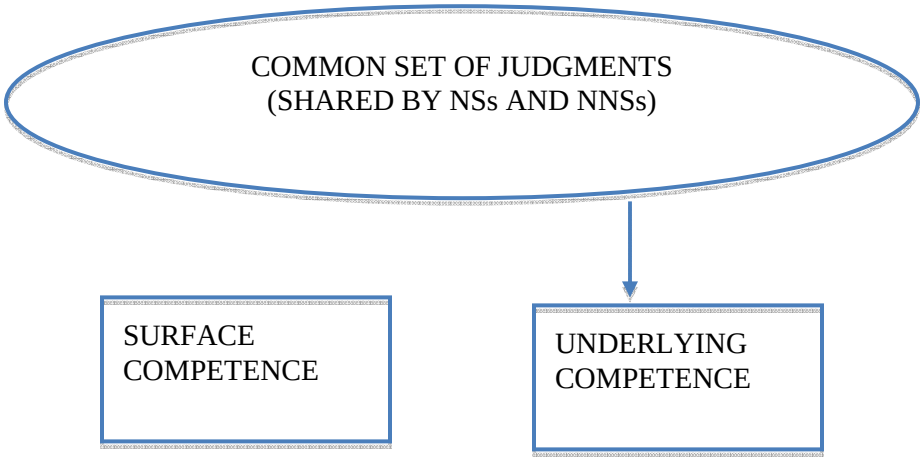


Figure 53. Full convergence on UC only.

Finally, the two last alternatives are what he calls parallel disjoint convergence Type 1 and Type 2. Parallel disjoint convergence Type 2 represents a scenario in which non-native speakers' judgments represent SC and native speakers' judgments represent UC. This is in line with the Fundamental Difference Hypothesis (Bley-Vroman, 1989, 1990), which argues that L2 acquisition is fundamentally different than L1 acquisition since L2ers do not have access to the same principles and mechanisms that they did when they were learning their first language. Parallel disjoint convergence Type 1 illustrates the opposite scenario in which native speakers' judgments represent SC and non-native speakers judgments represent UC (Figure 54). This is the case that concerns us right now since it illustrates the situations in which near-native speakers *seem* to outperform native speakers.

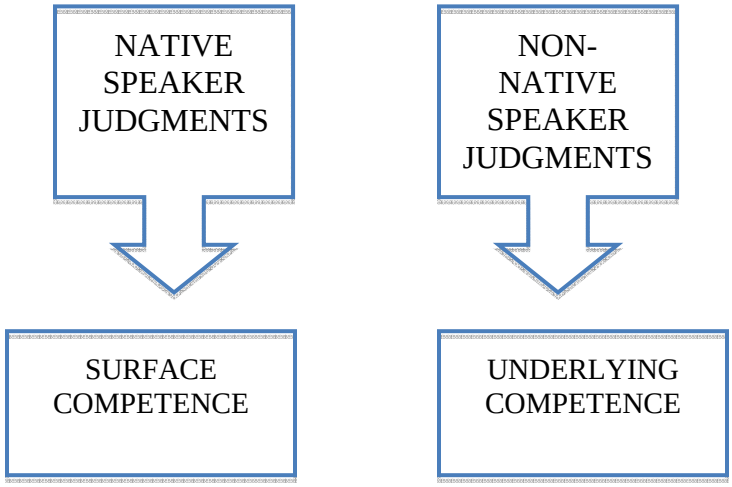


Figure 54. Parallel disjoint converge (Type 1: NSs converge on SC and NNs converge on UC.

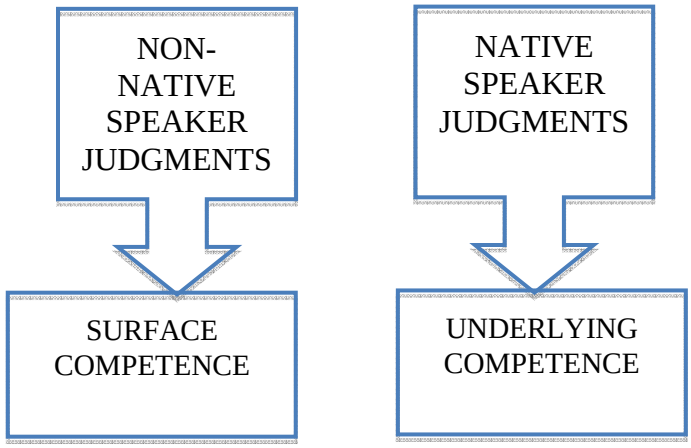


Figure 55. Parallel disjoint converge (Type 2: NNSs converge on SC and NNs converge on UC.

Next, I will argue that this parallel disjoint convergence (Type 1) actually enlightens the results of the current experiment. To recap, the near-native speakers showed a more marked distinction in the use of word orders across different types of contexts. This indicates that, for the near-native speakers, the given-before-new principle holds strongly in their grammar, which results in more categorical judgments. Additionally, because this principle holds crosslinguistically, we can claim that it is

derived from UG. Then, their judgments seem to be a reflection of their underlying competence. In contrast, the native speakers are more lenient with respect to their judgments in the sense that the given-before-new principle is not followed strictly. This results from the interaction of contextual factors (i.e. topic vs. focus/old vs. new information) and the overall preference for the unmarked order (EVT). This second factor is language-specific, so it cannot be derived from UG but, conversely, has to be acquired on the basis of input. The interaction of these factors make the native speaker judgments more gradient than the near-natives' and thus, they seem to reflect their surface competence. As a side note, I should underscore that the near-native judgments are not strictly categorical, they also show some measure of gradience although to a lesser extent. So, we cannot say that their judments are inconsistent with SC; however, they are more categorical than the control group's judgment. Their judgments are divergent from the control participants but they are so in a systematic way, namely, overreliance on pragmatic factors that inflate the ratings for the TVE word order. This will argue for near-natives being less competent than the native controls since they are less able to integrate the multiplicity of factors that play a role in the choice of word order for psych-verb constructions. Other researchers in the literature have applied Duffield's model to L2 acquisition, for instance, Slabakova, Rothman & Kempchinsky (2011) turned to this model of gradient competence to explain the behavior of their near-native participants with regard to the phenomenon of Clitic Right Dislocation in Spanish.

Having elucidated the behavior of the near-native speakers and what their performance judgments reflect about their competence, we will proceed to answer the second question: is the syntax-pragmatics interface a locus of fossilization? Even if the

near-native data is not completely consistent with native performance (i.e. they don't grant EVT a privileged status in T-contexts), their behavior differs in such a minimal way from the control group, that I believe it is fair to say that this specific syntax-discourse property has in fact been acquired and it is not subject to fossilization.

Next, I will describe the process of acquisition of these pragmatic properties taking into account the criteria established by the Integrative Model of Bilingual Acquisition but adding some remarks about the role played by instruction and universal principles. The fact that L2ers are able to master these properties is definitely noteworthy; not only because this is an external interface, and thus supposed to be difficult to acquire, but because there is a series of confounding factors that make the acquisition process an extremely challenging enterprise. First of all, as I pointed out, the input is extremely confusing since psych-verb construction word order is not simply regulated by the given-before-new principle, but this principle is usually overridden since EVT order, the unmarked order, is felicitous regardless of the pragmatic conditions that regulate the context in which a sentence is embedded. Secondly, because of this collection of factors (i.e. given vs. new information and unrestricted use of the unmarked construction) that influence psych-verb word order and because of the intricate relationship between these factors, the judgments of the native speakers are far from categorical (i.e. both TVE and EVT receive very similar ratings). So, even for the control group, this is an extremely nuanced distinction. In the third place, because the word order choices of psych-verb constructions are regulated by pragmatic factors, choosing the wrong word order is only infelicitous, not ungrammatical. Because of this, using the wrong word order will not hinder comprehensibility. This fact will make the task of recovering from this type of

error extremely challenging for the L2ers since there will never be any type of corrective feedback on these mistakes. And this leads us to the last confounding factor, which is the fact that pragmatic skills, especially those connected with information structure, are never part of instructed second language acquisition. Because of all of these factors, it is remarkable that L2ers master these properties as well as they do, even if they do not so in exactly the same way as native speakers. For me, this indicates that the syntax-pragmatics interface (at least this property) is not an inevitable locus of fossilization (contra Sorace, 2005; Sorace and Filiaci, 2006; Belletti et al., 2007; Valenzuela, 2006). In contrast, I can claim that these properties can be acquired at the highest level of attainment (Rotheman, 2009; Bohnacker, 2010). Not only that, they seem to be 'acquired' (i.e. transferred) also by low-proficiency speakers and, as I indicated before, this has to do with the accessibility to universal pragmatic principles like the given-before-new principle that are instantiated in both the L1 and the L2.

Finally, I would like to comment on some methodological problems that were discovered after the experiment was run. There are certain aspects of this experiment that were not taken into account when designing the test items, which might have influenced the response patterns. First of all, Bock & Warren (1985) present empirical evidence on how the hierarchy of grammatical relations (i.e. subject, direct object, indirect object) is connected to what they call the accessibility hierarchy (i.e. the higher an element is in the accessibility scale, the easier it is for a speaker to access it and retrieve it from memory). Consequently, the grammatical category subject should be easier to access than direct object, and direct object should be easier to access than indirect object. These hierarchies are also connected with word order, since the most accessible grammatical roles tend to

occupy earlier positions in the sentence (e.g. subject). This was something that was not controlled for in this experiment since the Theme and the Experiencer did not have a uniform grammatical function in the contexts in which they were presented: their functions ranged from subject to object. If subject is a more easily accessible category than object, this might have influenced the way participants rated the sentences that followed the context in the experiment (i.e. test items): for instance, a constituent could be easily recognized as the topic of discourse if it is the subject of the preceding context. Secondly, the animacy of the Experiencer and the Theme was not controlled for. This fact could have also influenced participants' responses since animate participants are considered to be more prominent and so are expected to appear in earlier positions in the sentence. Because of the shortcomings of the methodology of this experiment, these results should be taken with caution. I will work with these preliminary results until an updated version of this experiment is able to provide more reliable results once animacy and grammatical roles are taken into consideration in the experimental design. This will be a future undertaking.

In conclusion, the findings in this chapter show that properties related to the syntax-pragmatics interface pose challenging learnability problems for some L2ers. On the other hand, some second language learners are able to master these properties to an almost native-like level, which leads me to claim that the syntax-discourse interface is not an inevitable locus of fossilization. The surprising behavior of the low-proficiency group seems to be connected to the fact that these properties are derived from a crosslinguistic principle. These data are partially consistent with the proposals of the Interface Hypothesis, which claim that it is external interfaces the ones that *might* be subject to

variability and optionality (although they don't necessarily need to be) at the highest level of second language attainment. However, these results warn us about the necessity to analyze the acquisition process with a more articulated model that could allow us to understand the behavior of learners at different proficiency levels. This issue will be discussed in detail in the next chapter.

CHAPTER 6
A THEORETICAL ACCOUNT FOR PSYCH-VERB ACQUISITION

For the past two decades, numerous researchers have constructed their research programs around the idea that at least some learnability and/or performance challenges in SLA are connected with interface properties. Specifically, Sorace and colleagues (e.g. Sorace, 2005, 2006; Tsimpli & Sorace, 2006; among others) initiated this trend by putting forward the argument that there are some intrinsic characteristics of interface properties, which render them particularly vulnerable in L2 acquisition. Later, this theory evolved to include a more articulated dichotomy in relation to interfaces and their status in L2 acquisition. The most updated version of the Interface Hypothesis places the locus of residual optionality in near-native grammars in external interfaces; those in which language modules interact with cognitive modules. On the other hand, internal interfaces (i.e. interfaces between linguistic modules) are paired up with narrow syntax as areas that could be developmentally problematic but robust in near-native grammars.

An appealing aspect of this theory is that it represents an overarching model of bilingualism that encompasses second language acquisition (Belletti, Bennati & Sorace, 2007; Sorace & Filiaci, 2006), L1 attrition (Tsimpli, Sorace, Heycok & Filiaci, 2004) and, bilingual first language acquisition (Serratrice, Paoli & Sorace, 2004; Sorace, Serratrice, Filiaci & Baldo, 2009). In this way, it presents a more comprehensive analysis of the general phenomenon of bilingualism than other theories in the field, which tend to focus exclusively on one of these areas. Additionally, Sorace (2011) has made clear that

the Interface Hypothesis is not a theory about language development but a theory about end-state grammars. Thus, according to her, the claims of the IH do not concern low, intermediate, or even advanced speakers (although she does not deny its developmental implications). Rather, the main gist of this hypothesis, that is, that external interfaces *might* be the locus of variability and optionality refers exclusively to near-native speakers.

The reason for the inherent difficulty of external interfaces has been claimed to be related to the processing difficulties associated with properties that belong to interfaces that include connections between linguistic and cognitive modules. Thus, the IH makes two very clear predictions: (1) narrow syntax and internal interface properties should be less problematic than properties that belong to external interfaces; (2) external interface constructions should be harder to process than constructions that belong to the narrow syntax or internal interfaces. Unfortunately, the current project will not be able to confirm or disprove the second prediction.[36] Instead, I will focus on analyzing (1) and leave the analysis of (2) for future research.

As I pointed out, the IH is an attractive theoretical account because it attempts to combine observations of issues across a multitude of cases of bilingualism and offers a single solution based on complexities to processing that obtain equally and for the same reasons in all bilinguals. However, tempting as it might be to join the proponents of such an appealing theory, the empirical results of the present study cannot be straightforwardly

[36] As I pointed out in chapter 1, reaction time data was collected in this study in order to evaluate the claim that external interfaces are harder to process than internal interfaces/narrow syntax. However, because of some methodological flaws with the measurements of RT, these data had to be discarded. As a consequence, I can neither confirm not disprove this claim.

explained solely on the basis of what the IH claims. More accurately, it is not *uniquely* within interfaces where attested problems reside since there are certain aspects of the acquisition process than remain unexplained by appealing to the notion interface vulnerability alone.

Before I discuss how the findings in this study partially contradict the IH, I will explain how, analyzed independently, none of the experiments in this dissertation actually conflict with the IH's claims. At this point, I need to highlight that because of the way the IH is formulated, its tenets have become difficult to contradict. This has led the theory to a loss of predictive power. For instance, Sorace claims: "language structures involving an interface between syntax and other cognitive domains are less likely to be acquired completely than structures that do not involve this interface" (Sorace, 2011, p.1). So, if we look at this issue from the point of view of fossilization, the fact that external interfaces are *less likely* to be acquired doesn't mean that they cannot be acquired or that they necessarily have to fossilize. However, there is nothing in this statement that is inconsistent with fossilization of external interface structures; that is, the fact that external interface properties fossilize does not contradict Sorace's claim. Hence, there is not a clear stance on whether these structures will or will not fossilize. Furthermore, not all structures that involve interaction between language and cognition have been claimed to be equally problematic (see Rothman and Slabakova 2011; White 2011 for further discussion). As a consequence, empirical evidence that an external interface property is acquired/processed with ease is also not inconsistent with the IH since it might be the case that that particular property is actually not one of those that causes processing problems. Unfortunately, the IH to date has offered no calculus for

determining *a priori* which structures would and would not be subject to such vulnerability either in purely linguistic or processing terms. It would seem then that determining this only comes *a posteriori* after empirical investigation, which renders the entire claim cyclical at best and ad hoc at worst (see Rothman and Slabakova 2011). It is this cyclicity of argumentation that renders the ever changing face of the IH less and less strong in explanatory power. The fact that the IH can be easily confirmed, in the sense that most data can be said to have various levels of consistency with its vague claims, reveals that its predictions have become too broad to the point that its predictive power has become significantly reduced.

Bearing this in mind, I will review how each of the experiments of this study taken independently seem to be consistent with the IH. Experiment 1, an experiment testing narrow syntax is actually completed with ease by all non-native groups. This fits the predictions of the IH since narrow syntax is not considered to be particularly problematic for non-native learners. Experiment 2 also tests a narrow syntactic property (i.e. clitic and verb agreement). However, here the low-proficiency group is not able to make the right distinctions among the categories presented. Still, this would not go against the tenets of the IH, since, *technically*, its claims only apply to near-native grammars. Experiments 3A and 3B, which test syntax-semantics properties do not pose major difficulties for non-native participants. This is the expected behavior based on the fact that internal interface properties are considered to be less problematic than external interface properties in L2 acquisition. Finally, experiment 4 tests a syntax-discourse interface property (i.e. an external interface). The fact that some groups (particularly, the advanced group) did not behave exactly as the native controls is consistent with the claim

that external interfaces might be subject to variability at the highest levels of second language proficiency.

However, an interesting pattern arises with the low-proficiency group, which raises some interesting points of discussion related to the IH. Before discussing that, I will clarify how specific aspects of the IH are going to be interpreted following not necessarily Sorace's stance on these issues but the standpoint taken by many other researchers in the field of second language acquisition. Sorace (2011, p. 26) has clearly stated that the IH is not a theory about language development and, consequently, does not apply to lower levels of second language proficiency. In contrast, many researchers have opposed such an unequivocal claim (Lardiere, 2011; Montrul & Polinsky, 2011; White, 2011). White (2011) argues that, because the experiments supporting the IH are based on empirical data from near-natives and advanced L2ers, the concept of ultimate attainment is not clearly defined. The line between end-state grammars and developmental grammars is blurred within this framework. Another argument put forward by these researchers is that if external interfaces are challenging for near-native speakers, it is only reasonable to assume that they would also be especially problematic at lower levels of proficiency, even more so given that their mastery of the second language is less target-like. Accordingly, if there is an asymmetry between internal and external interfaces at the highest level of language proficiency, there is not an *a priori* reason to discard this asymmetry at lower levels of L2 development, as has been claimed to be shown in several studies, for example Rothman (2009). So, if external interfaces are the most problematic, we expect them to also be so at the lower levels. Understandably, lower-proficiency L2ers could have additional difficulty with internal interfaces or narrow

syntax depending on their mastery of the L2 at any given point in development. With this in mind, and, taking into consideration that Sorace could contradict our claims when not referring strictly to near-native speakers, I proceed to explain my argument based on the above assumptions.

Throughout the entire study low-proficiency learners consistently deviate from native judgments more abruptly than their more advanced counterparts, especially showing lower means and less categorical distinctions. Nevertheless, the interesting issue is the pattern that arises when we compare the behavior of the low-proficiency participants across experiments. Particularly revealing is the comparison between experiment 2 and experiment 4. Experiment 2 was a syntactic task that tested learners' understanding of clitic and verbal agreement issues in psych-verb constructions. Low proficiency speakers not only failed to perform at the native speaker level in experiment 2, but they also failed to make the appropriate distinctions between grammatical and ungrammatical items. In particular, they did not distinguish grammatical test items from those with clitic agreement violations and clitic and verb agreement violations in the 3sg. Experiencer-3pl. Theme condition. So, sentences like (1b) and (1d) receive ratings roughly equal to the grammatical test item (1a).

(1) María tiene 4 hijos y no tiene mucho tiempo libre pero necesita un trabajo
María has 4 children and does not have much free time but she needs a job.
    a. A María le convienen trabajos de media jornada
    b. *A María les convienen trabajos de media jornada
    c. *A María le conviene trabajos de media jornada
    d. *A María les conviene trabajos de media jornada
    Part-time jobs are convenient for María

This is an indication that the syntactic property presented in this experiment had not been mastered by this group of learners. As I mentioned in chapter 3, I cannot discard

the possibility of a mapping problem; however, it seems likely, specially in conjunction with the results of experiment 4, that there is a problem at the level of syntactic representations. On the other hand, experiment 4 tests a syntax-discourse interface property, that is, a property related to an external interface. In particular, the experiment sets out to test the influence of pragmatic factors on word order choices of Class III psych-verb constructions. The two possible word orders EVT and TVE are regulated by the salience of the topic in the preceding context, which establishes what the pre-verbal element is. That is, TVE sentences are more likely to follow contexts in which the Theme is a salient topic and EVT sentences are more common when the topic of the previous context is the Experiencer. However, an important caveat to these word order patterns is that EVT, as the unmarked order, can actually surface in any context regardless of the pragmatic conditions established in that specific context. Interestingly, low-proficiency speakers showed a striking resemblance to native speaker response patterns in this experiment. They were perfectly aware of the pragmatic conditions that regulate both TVE and EVT configurations with Spanish psych-verbs. Their only shortcoming was that their overreliance on pragmatic factors made them overlook the unmarked status of EVT in certain contexts (i.e. they rated TVE and EVT equally in T-contexts). This was actually also the case for the near-native speakers. However, as I explained in chapter 5, the behavior of the near-natives and the low-proficiency speakers differs with respect to their command of L2 syntactic patterns: whereas the near-native speakers seemed to have mastered the L2 syntactic patterns, the low-proficiency speakers mapped pragmatic notions onto a semantically-derived syntax based on L1 syntactic patterns.

It seems like low-proficiency participants' understanding of syntax-discourse conditions was more target-like than their understanding of agreement issues. Even if they have not completely been able to integrate the syntax and discourse side of the property tested, at least, their understanding of the L2 pragmatic properties is native-like in spite of their syntactic deficiencies. This is exactly the opposite of what we would expect based on the predictions of the IH, which claims that syntax-pragmatic properties should be intrinsically more challenging than syntactic (or internal interface) properties. As I previously discussed, if we expect structures dependent on external interfaces to be acquired later and less completely than those dependent on internal interfaces/narrow syntax at the near-native level, there is no reason to expect a different trend at lower levels of second language proficiency. The fact that this trend is completely reversed at the lowest proficiency level tested in this experiment indicates that there is something other than the assumed difficulty of external interfaces enhancing this group's linguistic choices. At least, I can say that, for this particular group of speakers, knowledge of pragmatics can, in fact, precede syntax like Lozano & Mendikoetxea (2010) claim in their study of postverbal subjects.

Consequently, the next step in our discussion is to ascertain what caused this trend in the low-proficiency learners, what this says in general about non-native grammars, and what theoretical models we should use in order to account for these patterns. In particular, I will argue that Pires & Rothman's (2011, p. 74) Integrative Model of Bilingual Acquisition is able to account for these patterns of behavior in a more accurate and sophisticated way than the IH. They acknowledge that external interfaces could be a source of difficulty for bilinguals. However, they believe that only a more articulated

model (2), which takes into account multiple factors in the acquisition process, will allow us to explain the subtle and intricate patterns of behavior that arise in this process.

(2) Pires & Rothman's (2011, p. 74) model postulates that L2 knowledge is determined by a series of factors:

    a. The complexity of multiple linguistic domains at stake, involving among others not only the syntax-pragmatics interface, but also internal interfaces (e.g. syntax-semantics);
    b. The nature of the parameter mapping between different L1s and L2s;
    c. The role played by processing factors among bilinguals; and
    d. The properties of the primary linguistic data (PLD).

First of all, I will discuss the findings of experiment 2 in the context of Pires & Rothman's model. This experiment tested knowledge of clitic and verb agreement in psych-verb constructions. These predicates show a reverse agreement relation. This is so because the verb agrees with the less prominent argument (i.e. the Theme) and, the clitic agrees with the more prominent argument (i.e. the Experiencer). This is the opposite pattern that we see in other types of predicates (e.g. transitive verbs) where the verb agrees with the more prominent thematic role (e.g. Agent, Causer, Experiencer). Thus, what we find in these predicates is a reversal of the mapping between thematic roles and syntactic positions. In (3) we have an example of a transitive sentence where the Agent maps to the subject and the Theme maps to the objects position. In (4) we have a Class I psych-verb construction where the Experiencer maps to the subject position and the Theme maps to the object position. Finally, (5) is an example of a Class III psych-verb

construction where the Experiencer maps to the indirect object position and the Theme maps to the subject position.

(3) María compró unos zapatos
María bought-3sg. some shoes
María bought some shoes
AGENT/SUBJECT THEME/OBJECT

(4) María adora los zapatos
María loves-3sg. the shoes
María loves shoes
EXPERIENCER/SUBJECT THEME/OBJECT

(5) A María le encantan los zapatos
To María le-dat. cl. love-3pl. the shoes
Shoes are pleasing to María/María loves shoes
EXPERIENCER/INDIRECT OBJECT THEME/SUBJECT

So, the agreement issue in psych-verb constructions is a very complex formal property in that it is connected with the misalignment of thematic roles to syntactic positions. Even if I am clamimg to test a narrow syntactic property (i.e. agreement as instantiated in feature checking) it is undeniable that both semantics and morphology play an important role in the functioning of the agreement system. So, the narrow syntactic aspect of agreement (i.e. feature checking) added to its intricate relation with morphology (i.e. the clitic and the inflectional morphemes in both the verb and the clitic) and semantics (i.e. the mapping of semantic roles to syntactic positions), make this an extremely complex property to acquire.

Furthermore, we have to take into account how this phenomenon is represented in the L1. Because the participants in this study were Anglophones, a further complication arises; namely, the fact that English lacks a clitic system. So, not only do L2 learners

have to learn the reverse agreement relations on psych verbs, but also they have to learn the issues related to the use of the clitic and what role it plays in the agreement relations. Furthermore, English is a language with a very poor agreement system as compared to Spanish; so agreement relationships are not easily transferable. Actually, very advanced learners (and heritage speakers) show problems with agreement in L2 Spanish (Montrul, Foote & Perpiñán, 2008). As for the reversal between semantic roles and syntactic positions, English Class III predicates present the same type of misalignment (e.g. *Shoes please María*). However, as we saw in chapter 2, Class III psych-verbs in English and Spanish do not fully overlap (e.g. fixed word order in English vs. free word order in Spanish, absence vs. presence of the clitic). Additionally, there is a confound here of the input as well, which is also highlighted by Pires and Rothman. If indeed there are productive Class III predicates in English, they are very infrequent if not an artifact of a formal register that no one actually speaks natively. *Gustar*, however, is an extremely productive verb. So, the possibility of transferring this knowledge is not completely evident.

Finally, with regard to the L2 input, I have to admit that this structure is fairly transparent and consistent with the rules just explained. Additionally, the issue of agreement in psych-verb constructions is consistently drilled in L2 classrooms. However, this does not appear to help our learners. On the other hand, it is also true that non-native speakers, constantly exposed to non-native L2 input (e.g. classmates, non-native instructors), are not guaranteed to hear only structures that are consistent with the native input (see Rothman & Guijarro Fuentes 2010 for discussion) and, even if they do, they also receive as much if not more target deviant input from their peers at the same

proficiency levels (e.g. during group work). However, this is certainly true of any construction, and this should be analyzed independently if we wanted to have a clear idea of the role that input plays in L2 acquisition. For now, we will just refer to PLD with regard to the ease or difficulty of extracting the appropriate patterns from the L2 input.

Secondly, I will proceed to discuss the results of experiment 4 in light of the Integrative Model of Bilingual Acquisition. Without a doubt, the syntax-pragmatics interface is the interface that has received the most attention from researchers working on the IH. This is so because it is the *prima facie* example of an external interface. And so, integration of information at this interface requires more cognitive resources that will delay the successful processing of its properties. However, since the specific property examined in this experiment was not particularly vulnerable at the lowest proficiency level that I tested, in the sense that these participants were able to find mechanisms to cope with the pragmatic side of the construction, we need to reevaluate this concept of syntax-pragmatics interface properties (and more generally external interface properties) as the pinnacle of the acquisition struggle. It is true that the syntax-pragmatics interface poses a challenge that has to do with the probabilistic nature of its properties (Carroll & Lambert, 2003; von Stutterheim, 2003; Rothman, 2009). In other words, neither of the sentences presented in experiment 4 were completely ungrammatical. They were actually placed on a scale of pragmatic felicitousness; that is, taking into account that all of the sentences (both EVT and TVE) were perfectly grammatical (i.e. with respect to their syntax, morphology and, semantics), the sentences could be more or less felicitous with regard to the context that preceded them. This probabilistic choice makes this experiment intrinsically more difficult than the rest. In contrast, I believe that the key aspect to

understanding the ease with which the low-proficiency learners dealt with this experiment is related to access to a specific universal pragmatic principle. The pragmatic factors that regulate the word order alternations in Spanish psych-verb constructions are connected to the given-before-new principle; that is, the tendency to place arguments that represent old/given information at the beginning of the sentence and those that represent new information at the end of the sentence. Being a principle, this holds crosslinguistically. Because this principle is also pervasive in English, it is not completely surprising that L2 learners are able to make use of this in L2 Spanish early on.[37] Also, as I discussed in chapter 5, the fact that this ability seems to be lost in the intermediate and advanced stages is connected with the fact that, unlike low-proficiency speakers, these more advanced participants are getting familiar with the L2 syntactic patterns and are struggling to map this universal principle into the actual L2 grammar.

Finally, I will evaluate the role that the primary linguistic data plays in this experiment. The L2 input is intricate mainly because there are two patterns that seem to contradict each other. Whereas it is true that EVT sentences are preferred in contexts where the Experiencer is a salient topic, and the opposite is true for TVE sentences, EVT sentences seem to overwhelmingly violate the pragmatic conditions that regulate its appearance. That is, EVT sentences actually override the given-before-new principle by surfacing in contexts in which the Theme, not the Experiencer is the salient topic. This idiosyncrasy of Spanish psych-verb constructions has to be acquired on the basis of input since there is no universal principle that stipulates that behavior. Rather, it is simply a peculiarity of the Spanish language system. It is actually this aspect of word order where

[37] It is also predicted that speakers of other languages where the given-before new principle holds will acquire this property with relative ease.

speakers show a slight deviance from the native behavior. Another important issue to highlight is that pragmatic conditions are rarely introduced in the L2 classroom. It is definitely the case that instruction of psych-verbs never includes any allusion to pragmatic conditions but is completely focused on agreement issues.

Table 29 summarizes the negative and positive factors that affect the acquisition of psych-verb constructions with regard to agreement relations and pragmatic-influenced word order. In particular, I included formal complexity, the status of the parameter mapping between the L1 and the L2, the PLD and finally, instruction. The Integrative Model of Bilingual Acquisition also incorporates the role of processing. However, this element cannot be evaluated with respect to the current study. Nevertheless, I have included another factor, instruction, which refers to the availability or not of explicit classroom teaching with regard to a particular property. Although instruction has been claimed not to affect underlying representations (Schwartz & Gubala-Ryzak, 1992), I can't discard the possibility that participants in this experiment were showing metalinguistic knowledge, which is why it is important to understand the role of instruction with regard to these particular constructions.

Table 29. Negative and positive factors that affect acquisition of Spanish psych-verbs

	Formal Complexity	Parameter mapping	Processing[38]	PLD	Classroom Instruction
Exp. 2: Clitic & vb. Agreement	_	_	?	+	+
Exp. 4: Pragmatically derived word order	_	+	?	_	_

[38] Processing factors will have to be addressed by future research.

In sum, in experiment 2 (clitic and verb agreement) we find a property that is formally complex and cannot be transferred from the L1. On the other hand, two positive factors that could have influenced the L2ers (but did not) were the transparency of the L2 input and the fact that these issues are studied and practiced in the L2 classroom. In contrast, in experiment 4 we have only one positive factor aiding the learners: reliance on L1 transfer (i.e. access to a universal pragmatic principle that is instantiated in the L1). On the other hand, we have a property that is complex, never explained in the L2 classroom and hard to decipher from the L2 input. Consequently, it seems that L1 knowledge is the most powerful tool these learners have available and this is what helps their acquisition of this specific syntax-pragmatic property. This indicates that pragmatics can come for free in L2 acquisition while the learner still struggles with the target syntactic templates.

These results point to the fact that the asymmetry between external and internal interfaces is not represented at lower levels of development since properties that belong to external interfaces were acquired *seemingly* more successfully (i.e. these properties were actually transferred from a universal principle but not fully acquired with all of its L2 reflexes) than properties that belong to internal interfaces. In my specific experiment, this external interface test was performed successfully because of L2ers' ability to rely on a principle also available L1 grammar. However, we could imagine other possible scenarios in which an external interface property is easily acquirable because of its lack of formal complexity or ease of processing.

The fact that the asymmetry between internal and external interfaces is inverted in these learners in the sense that knowledge of pragmatics precedes knowledge of syntax

forces us to reevaluate the validity of the division between internal and external interfaces in second language acquisition. In the same line of reasoning, O'Grady (2011) claims that a resource-based processing account could displace the IH. What this means is that constructions that are hard to process should be acquired later and less successfully than constructions that are easy to process. However, this does not have to overlap with external vs. internal interfaces. In other words, it does not always have to be the case that internal interface properties are easy to process and external interface properties are hard to process. So, the latter division does not help us make the right type of predictions. It would be interesting to confirm this claim with the present experiments. Particularly, if I found that the agreement test items posed a higher processing burden on the learners than the test items in the syntax-discourse experiment, this will favor an explanation based solely on processing. A methodology that includes different measures on processing resources (e.g. reaction time) will be necessary to confirm this hypothesis in the future.

These issues that emerged in the current study warn us about the tendency to overextend the challenges of a particular external interface property (e.g. null vs. overt subjects) to all of the properties that belong to that particular interface (e.g. syntax-pragmatics) or type of interface (i.e. external interfaces). Because there are many factors that influence the acquisition of a particular property, we could not predict its potential challenges until all of the factors have been properly evaluated. Sorace could contradict the results of experiment 4 in the current project by saying that this is one of the external interface properties that actually does not cause problems since she has not contended that all properties at this interface should be equally problematic. However, if that is the

case, we are back to a property-by-property (White, 2011) analysis, and the IH really loses any power of predictability and, consequently, its appeal as an acquisition theory.

My results highlight the fact that internal interfaces are not exempt from causing difficulty and, that external interfaces do not necessarily have to be more difficult to acquire than internal interfaces. In particular, my results are consistent with Slabakova's (2008, 2009) Bottleneck Hypothesis, which argues functional morphology to be the 'bottleneck' of acquisition since functional morphology is not only hard to acquire but also processed differently than syntax and semantics. Moreover, these effects could be lasting, and problems with functional morphology (mainly absence (omission) or replacement (commission)) have been claimed to occur at high stages of language proficiency (Lardiere, 1998; White, 2003; Prévost & White, 2000; Valenzuela, Kozlowska-MacGregor, & Leung, 2004). This contradicts the predictions of the IH since internal interfaces, and not exclusively external interfaces, show residual optionality at high levels of development and are prone to fossilization. I cannot state to directly support this claim with my research since the near-native speakers in my project did overcome the problems connected with morphology. However, as I just pointed out, the claims in the literature about fossilization of functional morphology are extensive and they put into question the validity of the internal/external interface divide as a measure of vulnerability in L2 acquisition.

There are different theoretical accounts that ascribe the difficulty with morphology to either a representational deficit (Representational Deficit Hypothesis; Bley-Vroman, 1990; Hawkins, 2005), an inability to retrieve specific lexical items in real-time processing (Missing Surface Inflection Hypothesis; Prévost & White, 2000) or

the inability to disassemble the features of the L1 and assemble them in a way that is compatible with the L2 grammar (Feature Re-Assembly Hypothesis; Lardiere, 2008). In my particular experiments, it was impossible to state with complete certainty what type of problems underlay the morphological errors. I argued for a representational problem due to the patterns of behavior that arose in experiment 4. However, further testing is needed to confirm this claim.

I have questioned the predictions of the IH based on the empirical results of this study. However, there are multiple problems with this proposal at the level of the theoretical constructs it uses, which need to be reconsidered before the IH can be used as a sound and testable theory. The first problem, and one that came up as soon as I started designing the experimental tasks, has to do with the concept of narrow syntax. The concept of narrow syntax is highly controversial, mainly because it is questionable if there is really such a thing as narrow syntax (Gurtel, 2011; Montrul, 2011), in other words: are there operations that exclusively depend on syntax with complete disregard for morphology, semantics or any other linguistic or extralinguistic module? Although there are certainly some movements motivated by purely syntactic reasons that have no morphological reflex, much of what has been claimed to be narrow syntax is not since at least morphology and/or the lexicon is at play. The question is not only relevant in itself but it also leads us to another question: can we really classify properties as belonging to a specific interface (e.g. syntax-pragmatics, syntax-semantics)? As we saw in the different experiments of this study, it is difficult to classify agreement as a narrow syntactic property without looking at how it interfaces with morphology or semantics. It was also difficult to talk about syntax-semantic properties without alluding to their relation with

morphology and pragmatics. This is not only a problem at a theoretical level but also one that might render the IH untestable if there are no clear limits regarding the definition of narrow syntax, internal and external interfaces and the properties that should be classified within each of these. As Bohnacker (2010, p. 135) claims, the way we classify structures into different interfaces is intimately connected with the specific model of the language faculty to which each researcher subscribes. Thus, the conclusions of these researchers will be evaluated within those particular models. Some authors would represent pragmatic categories in the form of features and functional projections within the syntax proper (Belletti at al., 2007), while others will vouch for a computational system free of discourse categories and will place these categories outside of the grammar (Prince, 1998; Neeleman & de Koot, 2008). Even without mentioning the empirical challenges to the external vs. internal interface division, there seems to be a problem stemming from the multiplicity of models of the language architecture available and how this division is envisioned in each of them. Another of the main issues that have been raised as a criticism of the IH is the problem of circularity (Duffield, 2011; Gurtel, 2011; Pérez-Leroux, 2011 among others). That is, because the IH does not have clear and well-defined criteria that allow us to define what an interface is, what the specific difference is between internal and external interfaces, and why some interfaces are *a priori* more difficult to acquire than others, external interfaces could simply be equated with learner difficulty and *vice versa*.

As we have seen in this study, certain external interface properties are not insurmountable in L2 acquisition while the reverse can be true for internal interface properties. This was true in this study, to a certain extent, for low-proficiency

participants. Since the empirical evidence is contradictory on the issue of the problematicity posed this internal/external interface division and there seems to be no *a priori* reason to claim that external interfaces should be more prone to optionality than internal interfaces or narrow syntax; I can state that the IH alone is unable to capture the patterns found in this project. As we have seen, there are other properties having to do with the formal complexity of a construction, crosslinguistic transfer, and input, which would actually help us predict more accurately the degree of learnability/ease of processing of certain areas of the L2 grammar (Pires & Rothman, 2011; Pérez-Leroux, 2011). These facts put into question the theoretical foundations on which the IH lies (e.g. the division between internal and external interfaces) and warns about the predictive power of this otherwise very appealing hypothesis.

Having established that the results of the present study cannot be accommodated by the tenets of the IH but by a more comprehensive model of second language acquisition (Pires & Rothman, 2011), I will proceed to entertain some of the main theoretical questions that drive any study of second language acquisition grounded in the generative paradigm:

1) Do the findings in these experiments show evidence of second language learners' ability to access to UG?
2) What is the structure of non-native grammars as compared to native ones?
3) How do native grammars develop?
4) How can we characterize the state of ultimate attainment?

Neither the Interface Hypothesis nor the Integrative Model of Bilingual Acquisition take a stance on the issue of access to UG. Actually, the Interface Hypothesis

claims to be "agnostic on the 'access to UG' question" (Sorace, 2011, p. 25). On the other hand, the Integrative Model of Bilingual Acquisition does not refer to the role of UG into the acquisition process.[39] Mainly, these models focus on areas of divergence that do not need to lie within the realm of UG. Regardless, I will approach this issue with respect to my research since the question of access has been a main driving force in second language acquisition research from its advent.

Two major (and opposing) theoretical accounts have been proposed about the issue of access to UG, the Representational Deficit Approach (Bley-Vroman, 1990; Hawkins & Chan, 1997; Tsimpli & Dimitrakopulou, 2007) and the Full Transfer/Full Access (Schwartz & Sprouse, 1994, 1996). The Representational Deficit Approach states that second language learners (specifically those that have learned the second language postpuberty) are not able to acquire grammatical features that are not instantiated in their L1. Particularly, for the proponents of the Interpretability Hypothesis (Hawkins, 2005; Tsimpli & Dimitrakopulou, 2007), it is uninterpretable features that are inaccessible to the L2 learner post-critical period. With regard to non-native representations, they argue that non-native speakers' representations of properties contingent on new L2 uninterpretable features will not be native-like. On the other hand, the Full Transfer/Full Access position argues that second language learners have full access to the features of UG. The proponents of this account believe that at the initial state of L2, learners are strictly guided by their L1. However, this does not imply that they cannot acquire features

[39] The Integrative Model of Bilingual Acquisition needs to be understood in the context of an assumption that UG is accessible. The model is intended to explain the observations of differences outside of the confines of UG accessibility proper since, even if UG is accessible, we must still explain the asymmetries between native and non-native speakers (Rothman, *personal communication*).

that are not instantiated in the L1. Otherwise, native-like representations are claimed to be attainable for L2ers even in the case of features that are completely absent in their native language.

The results of the present experiment lead me to assert that these participants were able to rely on UG principles in their acquisition of Spanish psych-verbs. Given the complexity of the structures tested and, in some cases, the absence of certain structures in the L1, participants had to be constrained by some universal principles, which helped them restrict their available options. Furthermore, L2ers in this study seem to be able to access functional categories and features of the L2 that are not instantiated in their L1. In experiment 1, non-native speakers showed an understanding of dative clitics in psych-verb constructions. In particular, they showed familiarity with the obligatory nature of the clitic, its case restrictions, and its position. In experiment 2, they showed an understanding of the reverse agreement relations of psych-verbs with respect to clitic and verb agreement. This is another property that is not manifested in the L1. In experiments 3A and 3B, non-native speakers showed their ability to categorize different classes of psych verbs according to their aspectual properties and their morphosyntactic behavior. Although the specific morphosyntactic reflexes of these classes have to be learned on the basis of input, UG could have aided these participants in their categorization of different semantic classes of predicates. Finally, in experiment 4, L2ers seem to rely on the given-before-new principle, which is not only a principle that holds in their L1 and their L2, but also crosslinguistically.

Thus, the L2 learners in this study show knowledge of functional categories and features that are not instantiated in the L1, particularly those related to the clitic. Even in

the cases where they deviate from the native rule, their grammars show evidence of being constrained by UG (e.g. problems with the clitic in experiment 2 or high ratings of sentences with antipassive *se* with Class III predicates). Their mistakes, I argue, are caused by an overreliance on the L1, which is also consistent with the Full Transfer/Full Access Hypothesis.

The next question has to do with the development of non-native grammars. I believe that Herschensohn's (2000) model, Constructionism, gives an accurate portrayal of the patterns found in the current study and how these patterns develop over time. In the first stage, participants seem to be relying on their L1. This can be seen in the lowest-proficiency group's difficulty with clitic agreement. Since clitic agreement is not present in their L1 (English), these participants seem not to have completely acquired this property of the L2. This stage is actually equivalent to the Full Transfer/Full Access Hypothesis and makes the same predictions: starting point based on L1 features and parameters. Then, in the intermediate stage there is some optionality. This is illustrated by the intermediate and advanced group who approach the native performance while still showing some variability in their judgments (e.g. difficulty with discourse properties). Finally, the near-native speakers really seem to have acquired the L2 constructions and the pragmatic conditions that regulate them and show a grammar that converges with the native speaker grammmar.

This takes us to the next question, the issue of ultimate attainment. With respect to end state grammars, Valenzuela argues that "an end state grammar is one that had reached the final stage in development regardless of proficiency and is not necessarily a near-native grammar" (2006, p. 284). Identifying an end state grammar is a complicated

task. However, several criteria can help us make this task as objective as possible: “length of residency in a country where the L2 is spoken, frequency of use of the L2, proficiency level, or degree or native-like performance” (White 2003, p. 244). On the other hand, White (2003) asserts that longitudinal data of the type collected by Lardiere (1998), in which the subject was recorded nine years after the first recording, is probably the most accurate measure in order to identify a fossilized grammar.

Since longitudinal data was not available in these experiments, the main measure I used to classify participants into groups was a proficiency test (DELE), which shows L2ers’ mastery of L2 vocabulary and grammar. Thus, my non-native participants were classified into 4 groups: near-native, advanced, intermediate and low-proficiency. However, I believe that although I have considered the near-native group as the participants with a grammar that represents ultimate attainment, there is reason to believe that certain participants in the advanced group might actually also illustrate that final stage. If we take into account that these are university instructors whose careers are dedicated to both the teaching and the research of the Spanish language and its literary and cultural manifestations and, bearing in mind that some of them have been doing these for over 20 years, it is very unlikely that their grammars will evolve at this point. Since these participants varied considerably according to the other criteria that have been mentioned before (i.e length of residency in a country where the L2 is spoken, frequency of use of the L2, proficiency level, or degree of native-like performance), I cannot put forward the claim that the advanced group as a whole had reached an end state grammar. However, it is something to take into account for future research. A model that incorporates several of the criteria necessary to evaluate participants whose grammars

have reached an end state will allow us to have more uniform groups and make stronger claims about ultimate attainment.

For the time being, I will restrict my claims about ultimate attainment to the near-native speaker group. The fact that their behavior in all of the tasks is so remarkably similar to the native speakers leads me to conclude that their grammars converge with native grammars. That means that their grammars represent the same functional categories and features, and that parameters have been reset to the L2 setting. However, it is clear that performance is not always a reflection of speakers' competence. Additionally, Duffield (2003) proposed that performance could expose two types of competence: underlying competence, which is categorical, and surface competence, which is gradient. As I argued in chapter 5, the judgments of the near-native speakers, particularly because near-native speakers' distinctions tend to be more categorical than those of the native controls, are a reflection of their underlying competence (see also Slabakova, Rothman and Kempchinsky, 2011). On the other hand, native participants' judgments, which are more diffused, reflect their surface competence. All in all, I can say that the near-native speakers have not only reached an end state grammar but one that is convergent with native rules. This shows that L2 grammars are not always inevitably prone to fossilization, not even with respect to structures that depend on the syntax-pragmatics interface and, by extension, external interfaces.

Up to this point I have been discussing the issue of variability in non-native speakers and I have entertained several possibilities that could account for this variability (e.g. L1 transfer). But optionality also takes place in native speakers, which is an issue Prévost (2011) warns us about. Some studies that have actually found this phenomenon

are Hertel (2003) and Lozano (2006), who found relatively high acceptance and production rates of SV order with focused subjects by native speakers. In this study, I found a similar phenomenon in experiment 3A, where native speakers showed surprisingly high ratings for Experiencer-Verb-Causer sentences with Class II verbs (*A Nico asustó Ana* 'Ana scared Nico'), which are assumed to be ungrammatical according to theoretical accounts (Parodi-Lewin, 1990; Franco, 2000; Franco & Huidobro, 2003, 2007). I claimed that the reason for this could have been a coerced focus fronting interpretation (*A NICO asustó Ana* 'Ana scared Nico') in which the sentence would actually be grammatical. However, this hypothesis couldn't really be confirmed in the current study. The interesting thing is that non-native speakers also showed higher ratings than expected for these constructions. If judged in isolation, it could have been claimed that they had not mastered this property. However, in reality, when comparing L2ers' responses to the native controls', we realize that there is something special about this type of construction that causes unexpected responses even for the native speaker group. The methodology of the experiment tried to take this into account by recording the sentences with neutral intonation; however, this was not enough to disambiguate these test items. If, additionally, I had also recorded the sentences with focus fronting intonation, I could have really ascertained if this was the key issue, which was causing variability both at the native and non-native level. These facts warn us about the importance of analyzing carefully the behavior of native controls, acknowledging the possibility of variability and deviance from theoretical proposals, finding an explanation for it, designing experimental tasks in ways that account for this variability, and judging non-native behavior in accordance with native optionality.

Another issue that I want to address before concluding is how the claims put forward in this dissertation relate to the previous research on L2 acquisition of psych predicates and also, in particular, to the acquisition of Spanish psych predicates. In general, I confirmed the main claim in the literature that problems with psych-verbs stemmed from an incomplete understanding of the morphology of these predicates (White et al., 1998; Montrul 1998, 2001). We saw this in the problems learners experienced with the morphological reflexes of agreement in experiment 2 and the multiplicity of *se* morphemes in experiment 3B. This is intimately related to the concept of crosslinguistic variation in the Minimalism Program, which lies in morphology and the lexicon and outside of the syntax proper. Furthermore, the L1 was claimed to play an exceptional role in the acquisition of these predicates in these studies (Juffs, 1996; White et al., 1998; Montrul 1998, 2001). This was also replicated in the current project. One aspect of L2 acquisition of psych-verbs that this project intended to address was the categorization problem that arises from the need to classify psych predicates into different aspectual classes with distinct morphosyntactic properties. Although one aspect of this issue (i.e. clitic case) had been studied by Rubio (2000, 2001) from a pedagogical perspective, I expanded our knowledge of this categorization process by studying two different constructions (i.e. word order and antipassive *se*), which help us understand this phenomenon from a broader perspective. Particularly because the property tested by Rubio was subject to dialect variation, I decided to test two properties that were standard across dialects. L2 learners' responses showed their ability to classify verbs according to their semantic, morphological and syntactic properties. The issue of whether the acquisition of these properties is also enhanced by processing instruction (VanPatten,

1996), the pedagogical method used by Rubio in his experiments, remains to be determined by future research.

Another issue this dissertation wanted to settle was the different findings with respect to the invariable *gusta* (dePrada Pérez & Pascual y Cabo, 2011) and invariable *le* proposals (Toribio & Nye, 2006). Actually, the issue remains unsettled since the findings of this dissertation support neither of those proposals in the L2 population. This might have resulted from the fact that the previous authors tested heritage speakers but it might also indicate that more research is needed in order to find a unified reason for these phenomena. Finally, I will compare the findings of my study with Toribio & Nye's (2006) data on heritage speaker acquisition of psych-verbs since this study is also couched in terms of the Interface Hypothesis. They found problems with both syntax-semantics and syntax-pragmatics. My findings actually diverge from their findings. First of all, the syntax-semantics interface property they allude to has to do with the restructuring of the argument structure of psych-verbs towards a more direct mapping of thematic roles to syntactic positions. This restructuring of argument structure did not take place as a general phenomenon in the current project (neither it did in the data presented by dePrada Pérez & Pascual y Cabo, 2011). On the other hand, the difficulty with the syntax-pragmatics interface was only partially replicated in the current experiment since the near-native speakers and, to a certain extent, low-proficiency participants were sensitive to pragmatic factors. However, as I pointed out in chapters 2 and 5, their experimental design does not seem to really capture participants' understanding of discourse properties. Since my own experiment counts with several methodological problems as I explained in chapter 5, these conclusions need to be revised after the

appropriate adjustments have been made to the experiment. It is possible that the differences between my project and Toribio & Nye's (2006) lie in the different methodologies used, or in the different nature of the acquisition process by L2ers and heritage speakers. This question will have to be ascertained by future research.

The results of this study lead me to conclude that the developmental problems related with the acquisition of psych predicates cannot be fully explained through the principles of Sorace's Interface Hypothesis. On the contrary, only when we evaluate these facts within a framework that encompasses different acquisition factors (e.g. formal complexity, parameter setting in the L1 and the L2), are we able to explain the patterns found in the experimental phase. Unfortunately, this study does not provide empirical evidence on processing. Thus, I am unable to completely evaluate the proposal that external interfaces are more vulnerable than internal interfaces due to the higher processing load required to integrate material coming from linguistic and cognitive modules in real time. Future research should undertake this endeavor because it not only would allow us to fully assess the validity of the IH, but also it would allow us to make use of Pires & Rothman's (2011) overarching model of acquisition in its full potential.

In order to have a complete analysis of processing, the experimenter would need to measure reaction time with the appropriate methodology. Additionally, since the claim is that non-native speakers' problems with external interfaces stem from a cognitive overload that hinders processing of these structures in real time, it is important to test L2ers under situations that tax their cognitive load. This can be done, for instance, by having the participants hold digits in their memory while carrying out the task, which places additional burden on participants' processing resources. Obtaining an independent

measure of other factors that affect processing such as working memory would be strongly encouraged in order to have a more general idea of the processing resources used by an independent subject and how that affects his processing of linguistic constructions.

To conclude, the empirical results of these experiments are not consistent with the main tenets of the IH, namely, that external interfaces properties are less likely to be acquired than internal interfaces properties. On the other hand, the IH has highlighted the importance of using psycholinguistic techniques in second language research and, collaborating with other disciplines (e.g. psychology, cognitive science) in order to achieve a more sophisticated understanding on how second language processing takes place. These new models will allow us to address not only issues of representation and access to UG, but also issues of how language is used in real time. I believe that Sorace has certainly opened the door to the future of second language acquisition research.

CHAPTER 7
CONCLUSION

This dissertation provides a detailed account on how acquisition of different linguistic properties related to Spanish psych-predicates take place across four different proficiency levels. Furthermore, it allows us to predict the learnability conditions of these different properties by looking at a model, the Integrative Model of Bilingual Acquisition, which encompasses several criteria to describe the acquisition process: formal complexity, L1 transfer, processing resources and L2 input.

In particular, it needs to be underscored that, in spite of the intricacy posed by the tasks in this study, L2 learners (especially near-native speakers) performed remarkably similar to the control group. This led me to argue that L2 learners' performance was in fact a reflection of their competence, which was UG-constrained. This claim is not extremely controversial since most researchers (although certainly not all) contend that UG is accessible in part (Partial Accessibility theories such as the Interpretability Hypothesis, Tsimpli & Dimitrakopulou, 2007) or entirely (Full Aceesibility Theories, Schwartz and Sprouse, 1996). This means, if I am on the right track, that the explanation to the ubiquitous differences between native and non-native speakers should rest outside UG access. The Interface Hypothesis made an appealing case for bilinguals' variability at the level of ultimate attainment, which ultimately responds to this need to find an underlying source for variability that does not stem from accessibility vs. lack of accessibility to UG. Particularly, the IH proposes that residual optionality at the near-native level, when present, will be connected with properties related to external

interfaces. This has been claimed to be the result from the higher cognitive load that is required to integrate material from linguistic and cognitive modules successfully in real time processing.

The current study did not find empirical evidence for the arguments of the IH. On the contrary, I claimed in chapter 6 that the division between external and internal interfaces lacks both explanatory adequacy and predictive power. In fact, my findings point to a reversal in the challenges posed by this interfaces with internal interfaces proving to be more problematic than external interfaces and knowledge of pragmatics preceding syntactic knowledge. Consequently, we need to assume that there is something different from the predicted processing conditions of this divide that is driving L2ers' acquisition process. Specifically, the claim put forward in this study is that, even if there is evidence to believe that external interfaces cause some intrinsic processing difficulties for second language learners, this criterion alone will not help us provide an accurate account of the acquisition process, at least not of the acquisition of Spanish psych-predicates. Only when a more sophisticated model (which takes into account the influence of several other factors: formal complexity, L1 transfer, L2 input, processing resources) is considered, will we be able to depict a comprehensive account of L2 acquisition phenomena. This will lead us to uncover the underlying reasons for non-native deviance from native behaviors at different levels of L2 proficiency. Because the different factors that underlie the acquisition task interact in complex ways, their presence and interplay needs to be evaluated thoroughly before making conclusions about the acquisition process.

Specifically, the findings in this dissertation show that the area of psych-verb acquisition that turned out to be more problematic is clitic and verb agreement. On the other hand, understanding the restrictions in the use of the clitic *per se*, categorizing different classes of psych-verbs according to their semantic and morphosyntactic characteristics, and, to a certain extent, respecting the discourse conditions that regulate word order in psych-verb constructions; was successfully achieved by most non-native groups (to different degrees according to proficiency).

The interesting fact is that the question of psych-verb agreement, although complicated because it is influenced by an argument structure that challenges the canonical mapping from thematic roles to syntactic positions, it is continually presented and drilled in L2 classrooms and, it follows consistent patterns that are represented faithfully in the L2 input. In contrast, some of the other properties (e.g. discourse-conditioned word order) tested were subtler in the sense that they were neither easily extracted from the input nor supported by L2 instruction. Consequently, the claim is that the acquisition of the latter properties is rendered less opaque because the learners were guided by some universal principles that they were able to access presumably through their L1. In contrast, the inability to resort to the L1 (e.g. lack of a clitic system in the L1) as a scaffold to the L2 properties caused these second language learners to struggle particularly hard with agreement issues.

These findings connect to the earlier literature on L2 psych-verb acquisition (e.g. Juffs, 1996; Montrul 1998; White et al., 1998, 1999) that coincided that, in one way or another, morphology was what was hindering the acquisition of these predicates. As I said in chapter 6, this is consistent with Slabakova's (2008, 2009) Bottleneck Hypothesis

and her idea that functional morphology is actually the 'bottleneck' of acquisition. We saw this clearly in the low-proficiency group, who had not mastered the agreement relations in psych-verb constructions. This is remarkable because this group, although labeled 'low' proficiency group, was actually not at the beginner level since these students were in their sixth semester of Spanish and, most of them, had travelled abroad by the time of the experiment. Then, it is fair to say that the problems with agreement are quite persistent and also, resistant to instruction. However, since my more advanced participants were able to perform at the native-speaker level, I can argue that these properties do not necessarily have to fossilize.

In conclusion, this dissertation has helped us advance our understanding of the acquisition of Spanish psych-verb constructions by testing a wide array of properties related to these predicates with participants at four different proficiency levels. I have extended the past literature by addressing some questions that had been unexplored or had been left unanswered such as the L2ers' ability to categorize different classes of psych-verbs or the adequacy of the Interface Hypothesis to explain the acquisition patterns found by L2 Spanish L1 English learners. Because of the vagueness of some of the theoretical constructs of the IH and because the findings of these experiments are inconsistent with its main tenets, I have raised awareness about the explanatory adequacy of the IH as theory of language acquisition. In turn, I have proposed that a more articulated model that takes into account the interaction of different factors (formal complexity, L1 transfer, L2 input, and processing resources) (Pires & Rothman, 2011) is a more adequate tool in order to uncover the reasons that underlie the process of acquiring a second language. Finally, this project did not address the question of

processing resources and how they influence bilingual acquisition, which was a central matter for the IH argument and also part of the Integrative Model of Bilingual Acquisition. Certainly, an analysis of processing resources is the next logical step for the current line of research, not only because it would allow us to fully assess the validity of the IH but because it will allow us to provide a more in-depth analysis of the acquisition of psych-verb properties. Finally, it will allow us to confirm O'Grady's interesting proposal that the external vs. internal interface divide does not necessarily overlap with difficulty vs. ease of processing. The door is open for future research.

APPENDIX A
TEST ITEMS

EXPERIMENT 1

Test Items

1. Tenemos que elegir dónde vamos de vacaciones este año. Tengo que ponerme de acuerdo con mi hermana porque yo quiero ir a las montañas pero…
   We have to choose where we are going on vacation this year. I have to discuss it with my sister because I want to go to the mountains but…
   a. La playa le encanta a mi hermana
   b. *La playa la encanta a mi hermana
   c. *La playa encanta a mi hermana
   d. *La playa encantale a mi hermana
   My sister loves the beach

2. Mercedes acaba de volverse vegetariana. Así que no come nada de carne pero no es una vegetariana estricta
   Mercedes just became a vegetarian. So, she does not eat meat but she is not vegan
   a. A Mercedes le gusta el pescado
   b. *A Mercedes la gusta el pescado
   c. *A Mercedes gusta el pescado
   d. *A Mercedes gustale el pescado
   Mercedes likes fish

3. Daniel tiene un examen el viernes. Su carrera profesional depende de su nota. Lleva tres meses estudiando
   Daniel has an exam on Friday. His career depends on his grade. He has been studying for 3 months.
   a. A Daniel le importa el examen del viernes
   b. *A Daniel lo importa el examen del viernes
   c. *A Daniel importa el examen del viernes
   d. *A Daniel importale el examen del viernes
   Daniel cares about the test on Friday

4. Jaime se lleva bien con todos sus compañeros menos con uno.
   Jaime gets along with all of his colleagues except for one
   a. Manuel le cae mal a Jaime
   b. * Manuel lo cae mal a Jaime
   c. * Manuel cae mal a Jaime
   d. * Manuel caele mal a Jaime
   Jaime does not get along with Manuel

Fillers

5. Ana estaba muy agradecida por todo lo que Marcos había hecho por ella
   Ana was very grateful for everything Marcos had done for her
   a. Ana le dio un regalo a Marcos
   b. *Ana lo dio un regalo a Marcos
   c. Ana dio un regalo a Marcos
   d. *Ana diole un regalo a Marcos
   Ana gave Marcos a present

6. El profesor de María estaba preocupado por ella. No había venido a clase desde hacía una semana y ninguno de sus compañeros sabía nada de ella
   María's teacher was worried about her. She had not come to class in a week and none of her classmates knew anything about her
   a. A María le mandó un email el profesor
   b. *A María lo mandó un email el profesor
   c. *A María mandó un email el profesor
   d. *A María mandole un email el profesor
   The teacher sent an email to María

7. La universidad se comprometió a recaudar fondos para el hospital infantile
   The university undertook to raise money for the children's hospital
   a. La universidad le donó 900 dólares al hospital infantil
   b. *La universidad lo donó 900 dólares al hospital infantil
   c. La universidad donó 900 dólares al hospital infantil
   d. *La universidad donole 900 dólares al hospital infantil
   The university donated $900 to the children's hospital

8. Nico estaba en el Caribe y se acordó de su amiga Rocío
   Nico was in the Caribbean and thought of his friend Rocío
   a. A Rocío le escribió una postal Nico
   b. *A Rocío la escribió una postal Nico
   c. *A Rocío escribió una postal Nico
   d. A Rocío escribiole una postal Nico
   Nico wrote a postcard to Nico

EXPERIMENT 2

Test items

1. Marta está buscando formas de aliviar su estrés. Le he recomendado que vaya a la piscina porque…[40]
   María is looking for ways to releve her stress. I recommended her to go swimming because…

[40] Items 1, 2, 7 and 8 were eliminated from the analysis since there was not a number mismatch between Experiencer and Theme

a. A Marta le relaja la piscina
b. *A Marta les relaja la piscina
c. *A Marta le relajan la piscina
d. *A Marta les relajan la piscina
The pool relaxes Martha

2. Juan tiene que intentar tener una dieta más equilibrada porque come demasiado fuera de casa
Juan has to try to have a more balanced diet because he eats out too much
a. La comida rápida le encanta a Juan
b. *La comida rápida les encanta a Juan
c. *La comida rápida le encantan a Juan
d. *La comida rápida les encantan a Juan
Juan loves fast food

3. María tiene 4 hijos y no tiene mucho tiempo libre pero necesita un trabajo
María has 4 children and not a lot of time but she needs a job
a. A María le convienen trabajos de media jornada
b. *A María les convienen trabajos de media jornada
c. *A María le conviene trabajos de media jornada
d. *A María les conviene trabajos de media jornada
Temporary jobs are convenient for María

4. Claudia suele ir a un bar bar cubano porque tienen bebidas típicas de la isla
Claudia usually goes to a Cuban bar because they have drinks from the island
a. Los daiquiris le gustan a Claudia
b. *Los daiquiris les gustan a Claudia
c. *Los daiquiris le gusta Claudia
d. *Los daiquiris les gusta a Claudia
Claudia likes daiquiris

5. Los estudiantes creen que la clase de español es la mejor porque la profesora es muy divertida
The students believe that Spanish class is the best because their teacher is very fun
a. A los estudiantes les cae bien la profesora de español
b. *A los estudiantes le cae bien la profesora de español
c. *A los estudiantes les caen bien la profesora de español
d. *A los estudiantes le caen bien la profesora de español
Students get along with the Spanish teacher

6. Están haciendo obras justo fuera de mi clase
There is construction right outside my class
a. El ruido les molesta a mis alumnos
b. *El ruido le molesta a mis alumnos
c. *El ruido les molestan a mis alumnos

d. *El ruido le molestan a mis alumnos
Noise bothers my students

7. *Los estudiantes están obsesionados con cuál será su nota media cuando terminen la universidad. En todas partes…*
Students are obsessed with which will be their final grade when they finish school. Everywhere…
   a. A los alumnos les preocupan las notas
   b. *A los alumnos le preocupan las notas
   c. *A los alumnos les preocupa las notas
   d. *A los alumnos le preocupa las notas
   Students worry about grades
8. *Ha habido muchísimas tormentas de verano últimamente*
There have been a lot of storms lately
   a. Las tormentas les asustan a los niños
   b. *Las tormentas le asustan a los niños
   c. *Las tormentas les asusta a los niños
   d. *Las tormentas le asusta a los niños
   Storms scare children

Fillers

9. Tengo que decidir que vestido llevaré a la fiesta el verde
I have to decide which dress I will wear to the party
   a. o el rojo
   b. o las roja
   c. o los rojos
   d. o las rojas
   or the red one

10. Cristina vio la película de Almodóvar
Cristina saw Almodóvar's movie
   a. y Palma la de Woody Allen
   b. y Palma el de Woody Allen
   c. y Palma los de Woody Allen
   d. y Palma las de Woody Allen
   and Palma the ones by Woody Allen

11. María Rosa leyó los libros que le recomendé
María Rosa read the books I that I recommended
   a. Y Belén leyó los que le recomendó Pablo
   b. Y Belén leyó el que le recomendó Pablo
   c. Y Belén leyó la que le recomendó Pablo
   d. Y Belén leyó las que le recomendó Pablo
   And Belén read the ones Pablo recommended

12. María se va de viaje una semana. No sabe si llevarse la maleta pequeña

María is going on vacation for a week. She does not know if she should take the small suitcase

a. O llevarse la grande
b. O llevarse el grande
c. O llevarse los grandes
d. O llevarse las grandes
Or the big one

13. No sé si empezar a hacer los deberes de física
I am not sure if I should start my Physics homework

a. o los de matemáticas
b. o el de matemáticas
c. o la de matemáticas
d. o las de matemáticas
or the Chemistry one

14. Mi novio y yo estamos redecorando salon. Él eligió unas cortinas verdes
My boyfriend and I are re-decorating the living room. He chose some green curtains

a. y yo unas rojas
b. y yo un rojo
c. y yo una roja
d. y yo unos rojos
and I chose red ones

15. Tengo que escribir un trabajo de francés
I have to write a French essay

a. Y María uno de economía
b. Y María una de economía
c. Y María unos de economía
d. Y María unas de economía
And María a Economics one

16. El fin de semana pasado vimos una obra que tenía buenas críticas
Last weekend we saw a play that had good criticisms

a. Y otra que nadie conocía
b. Y otro que nadie conocía
c. Y otros que nadie conocía
d. Y otras que nadie conocía
And another one nobody knew

EXPERIMENT 3A

Test items

Class II: Eventive psych-verbs

1. Nico estaba estudiando silenciosamente cuando de repente Ana entró en la habitación
   Nico was studying quietly when, all of a sudden, Ana come into the room
   a. Ana asustó a Nico
   b. *A Nico asustó Ana
      Ana scared Nico

2. María preparó una fiesta sorpresa para su hermano. Cuando él abrió la puerta: ¡Sorpresa! Todos sus amigos estaban allí
   María is prepared a surprise party for her brother. When he opened the door: Surprise! All of his friends were there
   a. María sorprendió a su hermano
   b. *A su hermano sorprendió María
      María surprised her brother

3. Irene le dijo a Nacho que no había sido aceptado en la Facultad de Medicina. Nacho empezó a pensar que haría ahora con su vida
   Irene told Nacho he had not been accepted in Med School. Nacho started wondering what he was going to do with his life
   a. Irene preocupó a Nacho
   b. A Nacho preocupó Irene
      Irene worried Nacho

4. Pedrito tenía que practicar para su examen de flauta. Tocó la flauta para su madre durante dos horas seguidas
   Pedrito had to practice for his flute exam. He played the flute for two entire hours
   a. Pedrito aburrió a su madre
   b. *A su madre aburrió Pedrito
      Pedrito got her mother bored

5. Después de estar en una clínica durante un año, Claudia perdió 50kilos. Cuando sus amigos la vieron no podían creer lo delgada que estaba
   After being in a clinic for a year, Claudia lost 50 kilos. When her friends saw her, they could not belive how skinny she was
   a. Claudia impresionó a sus amigos
   b. *A sus amigos impresionó Claudia
      Claudia impress her friends

6. Manuel le dijo a Ana que había suspendidó el examen de conducir
   Manuel told Ana she had failed her driving test

a. Manuel disgustó a Ana
b. *A Ana disgustó Manuel
Manuel made Ana sad

Class III: Stative psych-verbs

7. Durante toda su infancia, Nico le tenía miedo a la profesora de Matemáticas
During her whole childhood, Nico was scared of the Math teacher
    a. A Nico le asustaba la profesora de Matemáticas
    b. La profesora de matemáticas le asustaba a Nico
    The Math teacher scared Nico

8. En la universidad Ana estaba muy agobiada y se apuntó a un grupo de terapia.
In college, Ana was very stressed out and she signed up for a therapy group
    a. A Ana le relajaba el grupo de terapia
    b. El grupo de terapia le relajaba a Ana
    The therapy group relaxed Ana

9. Victoria cree que a su hermano le pasa algo. No está haciendo los deberes y está faltando a clase. Eso es muy raro en él porque siempre ha sido un chico muy responsible.
Victoria thinks that something is going on with her brother. He is not doing his homework and he is missing class. It is very weird because he has always been a very responsible boy
    a. Su hermano le preocupa a Victoria
    b. A Victoria le preocupa su hermano
    Her brother worried Victoria

10. Desde que su vecino se mudó a la casa de al lado, Ana siempre ha estado enamorada de él
Since her neighbor moved to the house next door, Ana has always been in love with him
    a. A Ana le encantaba su vecino
    b. Su vecino le encantaba a Ana
    Ana loved her neighbor

11. Cristina necesita aprender ingles rapidamente porque va a empezar a trabajar para una empresa americana
Cristina needs to learn English quickly because she is going to start working for an American company
    a. A Cristina le conviene un profesor de inglés
    b. Un profesor de inglés le conviene a Cristina
    An English teacher is convenient for Cristina

12. Alberto tiene un nuevo compañero de piso, Rodrigo, y parecen llevarse bien. Van a clase juntos y juegan al fútbol por la tarde en el mismo equipo

Alberto has a new roommate, Rodrigo, and they seem to get along. They go to class together and they play soccer in the evening in the same team

a. A Alberto le cae bien Rodrigo
b. Rodrigo le cae bien a Alberto
   Alberto gets along with Rodrigo

Fillers

13. Irene se ha perdido yendo a una fiesta y está dando vueltas con el coche como loca
    Irene got lost going to a partu and she is driving around
    a. *Irene está buscando a la casa de María
    b. Irene está buscando la casa de María
       Irene is looking for María's house

14. Eduardo ha terminado las clases y tiene mucho tiempo libre
    Eduardo has finished classes and has a lot of free time
    a. *Eduardo vio a una película ayer
    b. Eduardo vio una película ayer
       Eduardo watched a movie yesterday

15. Últimamente me paso horas hablando por teléfono
    Lately I spent hours talking on the phone
    a. Ayer llamé a mi hermana durante 1 hora
    b. *Ayer llamé mi hermana durante 1 hora
       I called my sister yesterday for an hour

16. Mi jefe es muy agradable y es fácil trabajar con él
    My boss is very nice and very easy to work with
    a. *Mi jefe está buscando a una nueva secretaria
    b. Mi jefe está buscando una nueva secretaria
       He is looking for a new secretary

17. Mi coche lleva estropeado una semana. Por fin…
    My car has been broken for a week
    a. *Ayer arreglé a mi coche
    b. Ayer arreglé mi coche
       Yesterday I fixed my car

18. Me mudo a una nueva casa y…
    I am moving to a new house
    a. *Tengo que comprar a un sofá nuevo
    b. Tengo que comprar un sofá nuevo
       I have to buy a new Couch

19. Voy a volver a casa durante el verano porque…
    I am going back home for the summer because

a. Adoro a mi familia
b. *Adoro mi familia
I love my family

20. Estoy cansadísima con tanto trabajo
I am exhausted with so much work
a. *Necesito a una niñera
b. Necesito una niñera
I need a babysitter

21. No puedo dormir porque hay mucha luz en mi habitación por las mañanas
I can't work at night because there's too much light in my room in the morning
a. *Tengo que comprar a unas cortinas para el cuarto
b. Tengo que comprar unas cortinas para el cuarto
I have to buy curtains for the room

22. Tengo que ir de compras hoy
I have to go shopping now
a. *Necesito a un ordenador
c. Necesito un ordenador
I need a computer

23. No puedo decidir qué cocinar para la fiesta de mañana
I can't decide what to cook for tomorrow
a. Necesito a mi madre
b. *Necesito mi madre
I need my mom

24. Carlos ha decidido apuntarse a e-harmony
Carlos decided to join e-harmony
a. *Carlos está buscando a una novia
b. Carlos está buscando novia
Carlos is looking for a girlfriend

EXPERIMENT 3B

Test items

Class II psych-verbs

1. Los padres de María de están haciendo mayores. Se les olvidan las cosas y María teme que tengan Alzheimer
María's parents are becoming old. They forget things and María is afraid they have Alzheimer
a. A María le preocupan sus padres
b. María se preocupa por sus padres

María worries about her parents

2. Últimamente Roberto está de lo más insoportable. Siempre está enfadado. No sé que le pasa.
   Roberto is being unbearable lately. He is always mad. I don't know what happens to him.
   a. A Roberto le molesta cualquier cosa
   b. Roberto se molesta por cualquier cosa
      Everything bothers Roberto

3. Tenemos que elegir una película para ver esta noche pero recordad que Rocío es una miedica
   We have to choose a movie for tonight but remember that Rocío is a coward
   a. A Rocío le asustan las películas de miedo
   b. Rocío se asusta con las películas de miedo
      Scary movies frighten Rocío

4. Todos los departamentos de letras en las universidades están cerrando. Los chicos ya no quieren estudiar arte o literatura. Ahora todo el mundo estudia negocios
   All of the humanities departments are closing in every university. Studnets don't want to study art or literature. Now, everyone Studies business
   a. A los jóvenes no les interesa la cultura
   b. Los jóvenes no se interesan por la cultura
      Young people are not interested in culture

5. Joaquín tiene muchas aficiones pero lo que más disfruta del mundo es el fútbol
   Joaquín has many hobbies but he specially enjoys soccer
   a. A Joaquín le divierten los partidos de fútbol
   b. Joaquín se divierte con los partidos de fútbol
      Soccer games amuse Joaquín

6. Estábamos pensando ir a la ópera el sábado pero creo que vamos a tener que pensar en otra cosa porque Clara va a odiar este plan
   We are thinking of going to the opera on Saturday but I think we are going to have to think of something else because Clara is going to hate that plan
   a. A Clara le aburre la música clásica
   b. Clara se aburre con la música clásica
      Classical music bores Clara

Class III psych-verbs

7. Jorge se va a vivir a Estados Unidos el mes que viene y necesita aprender inglés cuanto antes
   Jorge is moving to the US next month and he needs to learn English as soon as possible
   a. A Jorge le conviene un profesor nativo

b. *Jorge se conviene con un profesor nativo
A native teacher is conveniente for Juan

8. Juan ha conocido a una chica en su trabajo y está loco por ella
Juan has met a girl at work and he is crazy about her
   a. A Juan le gusta María
   b. *Juan se gusta con María
   Juan likes María

9. En esta universidad todo el mundo quiere salir de fiesta pero nadie presta atención a las cosas importantes
In this school everyone wants to go party but nobody ever pays attention to the important issues
   a. A nadie le importa la política
   b. *****Nadie se importa sobre la política
   Nobody cares about politics

10. Pepe trabaja 12 horas al día y no tiene mucho tiempo para descansar. Por eso, su parte favorita del día es la siesta
Pepe works 12 hours a day and he does not a lot of time to rest. Because of that, his favorite part of the day is siesta
   a. A Pepe le agradan las siestas
   b. *Pepe se agrada por las siestas
   Pepe likes naps

11. Macarena acaba de empezar a trabajar en un colegio nuevo
Macarena just started working in a new school
   a. A Macarena le caen bien sus compañeras de trabajo
   b. *Macarena se cae bien con sus compañeras de trabajo
   Macarena gets along with her colleagues

12. Alicia siempre ha tenido muy mala suerte con sus vecinos. Sin embargo, la familia que se ha mudado al lado de su casa es un encanto. Son muy educados y nunca hacen ruido.
Alicia has always been very unlucky with her neighbors. However, the family just move in the house next door is great. They are very polite and never noisy
   a. A Alicia le encanta sus vecinos
   b. *Alicia se encanta con sus vecinos
   Alicia loves his neighbors

Fillers

Change-of state unaccusatives

13. Mi hijo estaba jugando al fútbol en el jardín. Cuando tiró la pelota a la pared, vi la pelota yendo directamente a la ventana

My son was playing soccer in the back yeard. When he threw the ball to the wall, I saw the ball going straight to the window

c. *La ventana rompió
d. La ventana se rompió
   The windows broke

14. Ya estaba lista para ir a la fiesta. Iba a comer un trozo de pizza antes de salir de casa. Pero la pizza se me cayó encima del vestido. Así que tuve que cambiarme rápidamente.
    I was ready to go out. I had to get a slice of pizza before going out of the house. But he pizza fell into my dress. So, I had to change quickly
    a. *El vestido ensució
    b. El vestido se ensució
       The dress got dirty

15. Enrique no había corrido una maratón en cinco años. Cuando terminó, estaba muerto
    Enrique had not r n a marathon in 5 years. When he finished, he was dead
    a. *Enrique cansó
    b. Enrique se cansó
       Enrique got tired

16. Olvidamos poner el hielo en el congelador
    We forgot to put the ice in the freezer
    a. *El hielo derritió
    b. El hielo se derritió
       The ice melted

17. Gonzalo odiaba hablar francés. El día que tuvo que hacer una presentación de una hora…
    Gonzalo hated speaking French. The day he had to do a presentation for an hour…
    a. *Gonzalo puso rojo
    b. Gonzalo se puso rojo
       Gonzalo got red

18. Ernesto sabía que tenía que aprobar el próximo examen o no podría graduarse. Dejó de mirar su Facebook y decidió ponerse a estudiar
    Ernesto had to pass the next test or he could not graduate. He stopped looking at Facebook and decided to start studying
    a. *Ernesto concentró
    b. Ernesto se concentró
       Ernesto got focused

Unergatives

19. María iba a casarse el domingo pero el novio nunca fue a la iglesia
    María was going to marry on Sunday but the groom never went to the church
    a. María lloró delante de todos
    b. *María se lloró delante de todos
       María cried in front of everyone

20. La semana pasada Ana batió su propio record de natación
    Last week Ana broke her own record in swimming
    a. Ana nadó 500 metros
    b. *Ana se nadó 500 metros
       Ana swam 500 meters

21. Rosario no esaba contenta con la nota de su examen así que fue a la oficina de su profesor
    Rosario was not happy with the grade of her test so she went to her professor's office
    a. Rosario habló con su profesor
    b. *Rosario se habló con su profesor
       Rosario talked to her professor

Unaccusatives

22. Iba a recoger a mi amiga a la estación de tren pero los trenes no funcionan muy bien últimamente así que cuando llegué, el tren todavía no estaba allí
    I was going to pick up my friend at the train station but the trains did not work very well lately so when I got there, the train was still not there
    a. El tren llegó tarde
    b. *El tren se llegó tarde
       The train arrived late

23. Alhunos piensan que Jesús es una personaje ficticio y otros que es un personaje histórico. Yo personalmente creo que…
    Some people think that jJesu
    a. Jesús existió
    b. *Jesús se existió
       Jesus existed

24. Creía que el examen terminaría a las cinco pero era mucho más largo de lo que esperabe
    I thought the exam would finish at 5 but it was a lot Langer than I expected
    a. El examen duró 3 horas
    b. *El examen se duró 3 horas
       The exam lasted 3 hours

EXPERIMENT 4

Test items

E-contexts

1. En los tiempos que corren, ¿de qué se preocupan los bancos del dinero o del cliente?
   Nowadays, what do banks care about, money or clients?
   a. A los bancos les importa el dinero no el cliente
   b. El dinero les importa a los bancos, no el cliente
      Banks care about money, not the client

2. Mi hermana no quería que invitara a una chica a la boda, ¿era Lola o Sara?
   My sister did not want that I invited one girl to the wedding, was it Lola or Sara?
   a. A mi hermana le cae mal Sara, no Lola
   b. Sara le cae mal a tu hermana, no Lola
      My sister does not get along with Sara, not Lola

3. ¿Te acuerdas que Sofía estaba loca por ese chico de la clase? ¿Quién era Sergio o Mateo?
   Do you remember Sofía was crazy from that guy in our class? Who was he Sergio or Mateo?
   a. A Sofía le gustaba Mateo, no Sergio
   b. Mateo le gustaba a Sofía, no Sergio

4. Tengo que hacerle un regalo a tu madre. ¿Qué le compro flores o bombones?
   I have to buy a present for your mom. What should I buy flowers or chocolate?
   a. A mi madre le encantan los bombones, no las flores
   b. Los bombones le encantan a mi madre, no las flores
      My mom loves chocolate not flowers

5. Mañana voy al cine con Pablo, ¿Qué crees que le preferirá, una comedia o una de ciencia ficción?
   Tomorrow I am going to the movies with Pablo. What do you think he will prefer a comedy or sience fiction?
   a. A Pablo le divierten las comedias, no la ciencia ficción
   b. Las comedias le divierten a Pablo, no la ciencia ficción
      Comedies amuse Pablo, not science fiction

6. María es una miedica. ¿De qué tenía miedo de las arañas o de los ratones?
   María is a coward. What was she scared of spiders or mice?
   a. A María le asustan los ratones no las arañas
   b. Los ratones le asustan a María, no las arañas
      Mice scare María, not spiders

7. Tengo que saber cuáles son los intereses de Catalina cuanto antes ¿Qué prefiere ella el cine o el teatro?
   I have to know what are Catalina's hobbies immediately. What does she prefer the movies or the theatre?
   a. A Catalina le interesa el cine, no el teatro
   b. El cine le interesa a Catalina, no el teatro
      Movies interest Catalina, not theatre

8. Juan parece preocupado últimamente, ¿cuál es el problema su trabajo o su familia?
   Juan looks worried lately, what's the problem his work or his family?
   a. A Juan le preocupa mucho el trabajo, no su familia
   b. El trabajo le preocupa mucho a Juan, no su familia
      His family worries Juan, not his family

T-contexts

9. Las cosas americanas están de moda ¿quiénes tienen una fascinación con las cosas americanas los franceses o los españoles?
   American things are in vogue. Who has a fascination for American things the French or the Spanish?
   a. A los españoles les fascinan las cosas americanas, no a los franceses
   b. Las cosas americanas les fascinan a los españoles, no a los franceses
      The Spanish love American things, not the French

10. La profesora de biología tiene muy buena fama ¿Quién adora a la profesora de biología Alejandro o Marta?
    The Biology teacher has a good reputation. Who likes the Biology teacher Alejandro or Marta?
    a. A Alejandro le cae bien la profesora de bilogía, no a Marta
    b. La profesora de biología le cae bien a Alejandro, no a Marta
       Alejandro likes the biology teacher, not Marta

11. He oído que necesitas un profesor de física para uno de tus hijos. ¿Quién necesita el profesor Carmen o Juan?
    I have heard you need a Physics tutor for one of your children. Who needs the professor Carmen or Juan?
    a. A Juan le conviene un profesor particular, no a Carmen
    b. Un profesor particular le conviene Juan, no a Carmen
       A tutor is convenient for Juan, not Carmen

12. La música clásica es aburridísima ¿Quién odia la música clásica tu madre o tu padre?

Classical music is really boring. Who hates classical music your mom or your dad?

a. A mi madre le aburre la música clásica, no a mi padre
b. La música clásica le aburre a mi madre, no a mi padre
My mom hates classical music not my dad

13. Si María viene a mi casa tengo que encerrar a mis perros en el jardín porque es alérgica y además le dan miedo. Espera, ¿o era su hermana Claudia la que tenía miedo de los perros?
If María comes to my house I have to put the dogs in the garden because she is allergic and also is scared of dogs. Wait, or was it her sister Claudia who was scared of dogs?
    a. A Claudia le asustan los perros, no a María
    b. Los perros le asustan a Claudia, no a María
    Dogs scare Claudia, not María

14. Podríamos jugar a algún deporte porque Carlos viene este fin de semana. ¿Era Carlos o Pablo el que adoraba los deportes?
We could okay some sports this weekend since Carlos is coming, was it Carlos or Panblo who loved sports?
    a. A Pablo le divierten los deportes, no a Carlos
    b. Los deportes le divierten a Pablo, no a Carlos
    Sports amuse Carlos, not Pablo

15. Hay una vacante en Zara. Puedes decirselo a tus amigas. ¿Quién adora la moda Isa o Paula?
There is a job opening in Zara. You can tell your friends, who loves fashion Isa or Paula?
    a. A Paula le encanta la moda, no a Isa
    b. La moda le encanta a Paula, no a Isa
    Paula loves fashion, not Isa

16. Necesitamos a alguien más para nuestro equipo de fútbol, ¿quién juega al fútbol, Juan o Pedro?
We need someone else for our soccer team, who plays soccer Juan or Pedro?
    a. A Pedro le gusta el fútbol, no a Juan
    b. El fútbol le gusta a Pedro, no a Juan
    Pedro likes soccer not Juan
    Pedro likes soccer, not Juan

Fillers

Unaccusatives in neutral contexts

25. En esta casa hay ladrones
There are thieves in this house
    a. El dinero desaparece

b. Desaparece el dinero
Money disappears

26. ¿Cuánto dura la película?[41]
How long is the movie?
    a. 5 horas dura
    b. Dura 5 horas
    It lasts 5 hours

27. ¡Qué ruido!¿Qué ha pasado?
So noisy! What happened?
    a. El jarrón se ha roto
    b. Se ha roto el jarrón
    The vase broke

28. ¿Qué pasó ayer?
What happened yesterday?
    a. Antonio se fue
    b. Se fue Antonio
    Antonio left

Unaccusatives in subject-focused contexts

29. ¿Alguien sobrevivió al accidente?
Who survived the accident?
    a. 5 personas sobrevivieron
    b. Sobrevivieron 5 personas
    5 people survived

30. ¿Quién llegó ayer?
My cousin arrived yesterday
    a. Mi prima llegó
    b. Llegó mi prima
    My cousin arrived

31. ¿Qué se derritió?
What melted?
    a. El helado se derritió
    b. Se derritió el helado
    The ice melted

32. ¿Quién vino ayer a la fiesta?
Who came to the party?

[41] This item is actually does not represent S-V combination but S-O. So, it will be eliminated from analysis

a. Natalia vino
b. Vino Natalia
Natalia came

Unergatives in neutral contexts

33. Javi es muy deportista
Javi is very athletic
a. Javi juega al baloncesto
b. Juega al baloncesto Javi
Javi plays basketball

34. ¿Qué hace la gente en los bares en Chapel Hill?
What do people do in Chapel Hill?
a. La gente baila hasta las 12 de la noche
b. Baila la gente toda la noche
People dance all night long

35. Hay mucha gente en esta universidad que estudia derecho
There are lots of people in this university that study law
a. Pablo estudia derecho
b. Estudia derecho Pablo
Pablo studies law

36. Hacía tanto frío cuando subimos a la cima de la montaña que…
It was so cold when we got to the top of the mountain that…
a. María estaba temblando
b. Estaba temblando María
María was shaking

Unergatives in subject-focused contexts

37. ¿Quién estornudó en medio del examen?
Who sneezed in the middle of the test?
a. María estornudó
b. Estornudó María
María sneezed

38. ¿Quién habló en la conferencia?
Who spoke during the lecture?
a. García Máquez habló
b. Habló García Márquez
García Márquez habló

39. ¿Quién mintió en el juicio?
Who lied in court?

a. El abogado mintió
b. Mintió el abogado
The lawyer lied

40. ¿Quién corre todas las mañanas?
Who runs every morning?
a. Mi hermana corre
b. Corre mi hermana
My sister runs

APPENDIX B
ADDITIONAL CALCULATIONS FOR EXPERIMENTS 1 AND 2

EXPERIMENT 1

Control group

Contrast	Mean Diff.	Std Err	Chi-Square	Pr > ChiSq
WRONG: TVE vs. ETV	-0.0417	0.0533	0.61	0.4347
DAT: TVE vs. ETV	-0.1944	0.0816	5.67	0.0172
ACC: TVE vs. ETV	0.1250	0.1152	1.18	0.2777
NO: TVE vs. ETV	0.9167	0.1382	44.00	<.0001

Near-native group

Contrast	Mean Diff.	Std Err	Chi-Square	Pr > ChiSq
WRONG: TVE vs. ETV	-0.1563	0.1228	1.62	0.2032
DAT: TVE vs. ETV	-0.4688	0.2479	3.57	0.0587
ACC: TVE vs. ETV	-0.1250	0.1499	0.70	0.4042
NO: TVE vs. ETV	0.4688	0.2595	3.26	0.0708

Advanced group

Contrast	Mean Diff.	Std Err	Chi-Square	Pr > ChiSq
WRONG: TVE vs. ETV	-0.1190	0.1162	1.05	0.3055
DAT: TVE vs. ETV	-0.6667	0.2267	8.65	0.0033
ACC: TVE vs. ETV	0.0714	0.1026	0.48	0.4863
NO: TVE vs. ETV	0.2857	0.1371	4.34	0.0371

Intermediate group

Contrast	Mean Diff.	Std Err	Chi-Square	Pr > ChiSq
WRONG: TVE vs. ETV	0.1176	0.1838	0.41	0.5222
DAT: TVE vs. ETV	-0.9118	0.2572	12.57	0.0004
ACC: TVE vs. ETV	-0.2353	0.1819	1.67	0.1957
NO: TVE vs. ETV	0.3235	0.2238	2.09	0.1482

Low-proficiency group

Contrast	Mean Diff.	Std Err	Chi-Square	Pr > ChiSq
WRONG: TVE vs. ETV	0.0833	0.1649	0.26	0.6134
DAT: TVE vs. ETV	-0.7917	0.3088	6.57	0.0104
ACC: TVE vs. ETV	-0.2500	0.3200	0.61	0.4347
NO: TVE vs. ETV	0.1250	0.2643	0.22	0.6363

EXPERIMENT 2

Control group

Contrast	Mean Diff.	Std Err	Chi-Square	Pr > ChiSq
*CL+VB: TVE vs. ETV	0.0208	0.0830	0.06	0.8017
RIGHT: TVE vs. ETV	-0.5903	0.1077	30.07	<.0001
*CL: TVE vs. ETV	0.5764	0.1132	25.93	<.0001
*VB: TVE vs. ETV	-0.6181	0.1366	20.47	<.0001

Near-native group

Contrast	Mean Diff.	Std Err	Chi-Square	Pr > ChiSq
*CL+VB: TVE vs. ETV	0.0645	0.0738	0.76	0.3822
RIGHT: TVE vs. ETV	-0.0968	0.1246	0.60	0.4372
*CL: TVE vs. ETV	0.0000	0.1185	0.00	1.0000
*VB: TVE vs. ETV	-0.2258	0.1198	3.55	0.0594

Advanced group

Contrast	Mean Diff.	Std Err	Chi-Square	Pr > ChiSq
*CL+VB: TVE vs. ETV	0.0610	0.0958	0.40	0.5246
RIGHT: TVE vs. ETV	-0.0488	0.1397	0.12	0.7269
*CL: TVE vs. ETV	0.0244	0.0453	0.29	0.5903
*VB: TVE vs. ETV	-0.0122	0.1164	0.01	0.9166

Intermediate group

Contrast	Mean Diff.	Std Err	Chi-Square	Pr > ChiSq
*CL+VB: TVE vs. ETV	-0.4091	0.1152	12.62	0.0004
RIGHT: TVE vs. ETV	0.1212	0.2080	0.34	0.5602
*CL: TVE vs. ETV	-0.1364	0.1056	1.67	0.1965
*VB: TVE vs. ETV	-0.5303	0.1528	12.04	0.0005

Low-proficiency group

Contrast	Mean Diff.	Std Err	Chi-Square	Pr > ChiSq
*CL+VB: TVE vs. ETV	0.1522	0.2458	0.38	0.5359
RIGHT: TVE vs. ETV	-0.1304	0.3577	0.13	0.7154
*CL: TVE vs. ETV	-0.1957	0.1726	1.29	0.2569
*VB: TVE vs. ETV	-0.3696	0.2552	2.10	0.1476

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