THE ACCEPTABILITY AND COMPREHENSIBILITY OF *GUSTAR*-TYPE PSYCHOLOGICAL VERBS BY ENGLISH-SPEAKING LEARNERS OF SPANISH

by

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(Under the Direction of Margaret Quesada)

ABSTRACT

Spanish *gustar*-type psychological verbs continue to be one of the most difficult constructions for English-speaking language learners to acquire, as this indirect structure is quite different from its direct, transitive counterpart in English. Further, many elements of the structure need to be mastered, including the use of the dative *a*, indirect object clitic pronoun agreement governed by the experiencer and verb-theme agreement.

The present study compares how native speakers in Querétaro, Mexico, and non-native speakers in the United States evaluate both prescriptively correct and incorrect psychological verb-containing sentences. Participants assigned a score to the sentences based on comprehensibility and acceptability and their reading time was also measured in each case.

More advanced non-native speakers were able to approximate the judgments and reading times of native speakers, although the former tended to judge sentences in a more rigidly prescriptive manner. Less advanced non-native participants showed a much more incomplete knowledge of these structures, illustrating the difficulties associated with their acquisition.

INDEX WORDS: Spanish second language acquisition, psychological verbs, *gustar*, dative case, clitic pronouns, verb-theme agreement

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B.A., The University of Richmond, 2001

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

MASTER OF ARTS

ATHENS, GEORGIA

2009

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ACKNOWLEDGEMENTS

I would like to thank my wonderfully supportive and caring family, friends and faculty, without whom none of this would have been possible or worthwhile.

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CHAPTER 1

INTRODUCTION

1.1 Problem to be Studied

This study examines the acquisition of Spanish *gustar*-type psychological verbs by native speakers of English. Salient categories analyzed include the dative-marking *a*, verb-theme agreement, and indirect object clitic pronoun-experiencer agreement.

Due to various factors, including the differences that exist between syntactic structures favored by Spanish and those by English, English-speaking learners of Spanish as a second language have great difficulties with the acquisition of *gustar*-type psychological verbs (Toth 2003, Quesada 2008, Toribio and Nye 2006, and Montrul 1997a and 1997b). For instance, in English, these constructions are transitive and direct (SVO), as can be seen in statements such as, "I like the pizza," whereas the corresponding sentence in Spanish is intransitive and reverse (OVS), as in "*Me gusta la pizza*," which would literally translate to "The pizza is pleasing to me." The acquisition of this phenomenon has been studied by many authors, but they all have one thing in common: they note that psychological verbs are very problematic for learners of Spanish.

1.2 Justification (Brief Review of the Literature)

As will be seen in the Literature Review (Chapter Two), it is essential to be familiar with the treatment of psychological verb constructions by traditional grammarians, theoretical studies, and second language acquisition studies. Each of these types of works approaches such

constructions from a different angle, but they all contribute to our understanding of these structures thus far.

Much of what learners are taught in the formal class setting is the result of what has been written in traditional grammars. Language teachers often consult grammars when presenting specific structures in class and have learned the structures as students from similar sources themselves.

Overall, it will be shown that the grammars are inconsistent in their treatment of psychological verbs, as no grammar appears to provide a comprehensive list of them, nor do they necessarily specify and explain the differences between what Whitley (1998) calls "true *gustar*-like verbs" and "transitive psych verbs," as can be seen in Section 2.3. In fact, it seems that many grammars do not truly consider the uniqueness of these constructions and automatically assume that native speakers fully comprehend their use.

Theoretical studies about psychological verbs go into further depth than traditional grammars, which due to the nature of their purposes tend to merely describe the constructions. As will be seen, these theory-based works detail the historical evolution of the forms, changes in their use that have occurred, differences between true *gustar*-like verbs and transitive psych verbs, and analyses of dative and accusative constructions in general.

In sum, theoretical studies, which attempt to explain the linguistic properties of structures, provide much more depth and breadth in their treatment of psychological verbs. In general, they point to the privileged status that datives have obtained over accusatives in Spanish, which has not necessarily occurred in English, and which, in turn, raises some interesting points of departure for acquisition-based studies. Further, the fact that psych verb constructions have taken exact opposite routes historically in the two languages helps to predict not only the

potential difficulties that learners may face but also the stages of acquisition through which they may move, as will be seen in the second language acquisition studies.

While theoretical studies are important in our knowledge of the behavior of psychological verb constructions, it is through second language acquisition studies that we can take a closer look at which components of these structures are most problematic for learners. Further, now that we know why English and Spanish differ so greatly with regard to these constructions and how dative and accusative structures behave in Spanish, it is interesting to see the direct role that these complexities play in the acquisition process. Through the use of different methodologies, SLA studies have shown how successfully (or not) learners are able to acquire psych verb structures and through which phases they move during this process.

As a whole, recent second language acquisition studies have greatly increased our knowledge of psych verb structure acquisition at the present time. While these studies may differ in their findings, methodologies, and emphases, it is clear that these structures continue to be quite difficult for learners, although there is positive evidence for acquisition over time.

For instance, these studies include participants from the beginner (Toth 2003), intermediate-low (Montrul 1997b), and intermediate levels (Montrul 1997a), in addition to those that contain multiple levels (Quesada 2008) and heritage speakers (Toribio and Nye 2006), which can make direct comparisons between the studies difficult at times. Further, methodological differences are also quite apparent, as Toth (2003) includes a production task and grammaticality judgment task, Montrul (1997a) implements grammaticality judgment and preference tasks, Montrul (1997b) utilizes a sentence interpretation task, Quesada (2008) uses four different oral production tasks, and Toribio and Nye (2006) implement grammaticality judgment and word order preference tasks.

It is worth noting that psych verb constructions can be described in terms of syntax, in which case the subject and the indirect object are discussed, or in terms of semantic roles, in which case the theme and experiencer are the relevant terms. In this study, the latter set of terms is utilized.

More importantly, final conclusions differ among the researchers, as Toth (2003) stresses that learners go through a prolonged initial stage in which they do not use clitic pronouns; Montrul (1997a) also notes stages of acquisition, but emphasizes that dative clitics act as triggers for the acquisition of the dative case; and Montrul (1997b) states that learners first incorrectly identify experiencers as syntactic subjects but ultimately are able to acquire this structure that is so different from that of L1. Quesada (2008), like Montrul (1997b), notes that learners first erroneously associate experiencers with the subject role and that during later stages experiencers may co-exist in both subject and object functions. She also finds that all groups of learners tend to use clitic pronouns quite correctly, in contrast to what Toth (2003) found, but that problems most often occur with the dative *a* and verb-theme agreement. Toribio and Nye (2006) note a preference for experiencer-verb-theme order, which is based on traditional SVO, because the experiencer erroneously acts as the subject for the speakers at the beginning. They also find use of no clitic at times (like Toth 2003 found), use of invariable *le* (which Quesada 2008 also noted), and the ability of the experiencer to control verbal agreement (like Montrul 1997b and Quesada 2008 encountered), which caused for frequent errors in V-T agreement.

Due to the different results that these studies have yielded, it is important to look specifically at each element of psych verb constructions in order to see which are the most difficult to acquire by native English speakers. Also, by using a native speaker control group, I set out to determine whether native speakers and language learners accept or reject to the same

degree constructions that stray from the prescriptive and whether they have similar difficulties with constructions that present grammatical errors. Lastly, none of the aforementioned studies has included an analysis of the reading time of native speakers and learners, and differences in rate of comprehension could also be an important cog in our knowledge of these structures.

1.3 Research Questions and Hypotheses

Due to the fact that researchers have encountered somewhat different findings when looking at the behavior of Spanish learners' reactions to *gustar*-type psychological verbs, my first research question is: *Do L2 Spanish learners have more difficulty with certain elements of sentences containing* gustar-*type psychological verbs than others?* In other words, are any of the elements of such sentences (such as the dative a, the clitic pronouns, theme-verb agreement, etc.) more problematic for learners than others? Based on Quesada's 2008 article, the dative *a* and verb-theme agreement were by far the most difficult for learners, so I will test whether this is also the case for my participants, which brings me to my second research question. My hypothesis is that, in a written task, learners will continue to have more difficulties with some elements than others and that the dative *a* will be among the most problematic, due to the fact that English does not require such a marker for its transitive, direct psych verb constructions and the fact that English speakers use word order to determine the agent and patient in a sentence more so than dative marking.

Additionally, *Are the elements that have been found most difficult for L2 Spanish learners via oral production tasks equally difficult for them in a written grammatical judgment task or do other elements become more problematic?* In other words, will a written grammaticality judgment task affect the participants' interpretation of the elements, causing new elements to replace the dative *a* and theme-verb agreement as the most problematic characteristic

of the construction? My hypothesis is that verb-theme agreement will no longer be the most problematic element because the learners will be able to view the verbs in a written, already conjugated form, and that that will be easier for them to match up with the theme than having to produce a correctly conjugated verb on their own in spoken form.

My final research question is: *Will elements within the sentence interact to make certain situations more problematic for learners than others?* In other words, will learners have greater difficulty when the experiencer is singular but the theme is plural (and vice versa) or when the clitic is singular but the experiencer is plural (and vice versa)? I hypothesize that this will be the case because in these cases, students do not have to fully understand the role of each element in order to see the grammaticality (or lack thereof) of a sentence. Further, for such sentences that contain both plural and singular items, I predict that those which are plural instead of singular will be less acceptable than those which are singular instead of plural, because the former requires an additional element to be added and because both native speakers and learners hear "*le gusta*" and "*me gusta*" so much more frequently due to their use with singular NP's, infinitives and demonstratives, such as "*eso*," etc.

1.4 Overview of Methodology

The participants consisted of three different groups of students: a control group of 20 native speakers from Querétaro, Mexico, a low-intermediate group of 24 English-speaking learners of Spanish, and a higher-intermediate group of 24 English-speaking learners of Spanish. To separate the non-native speaking students into the two groups, the Dele Grammar and Vocabulary Test (http://manila.cervantes.es/) was administered prior to the completion of the actual research study.

A grammatical judgment test was created with 99 sentences, divided into three equal sections of 33 sentences, which was administered via the psycholinguistic testing software "E-Prime." The directions created within the program explained to the students that they would be rating the sentences on a five-point scale, in which "5" corresponded to acceptable and understandable (in other words, that the sentence was completely acceptable and understandable); "4" to somewhat acceptable and understandable (a sentence that was slightly less acceptable but still easily understood); '3' to less acceptable and understandable (a sentence that was even less acceptable, but still able to be understood); "2" to unacceptable, but still understandable (a sentence that was viewed as quite flawed but comprehensibility was not lost); and "1" to unacceptable and not understandable (a sentence that was so poorly constructed that intended meaning had been lost).

The variables in the sentences were inclusion or omission of dative *a* (such as "**Él le encanta ese programa de televisión*."), agreement or lack of agreement between the theme and the verb (e.g. "*A Vicente y a Juanita les importa las opiniones de otras personas."), inclusion or omission of the clitic pronoun (as in "**A los niños importan mucho sus padres.*"), use of a singular clitic pronoun in place of a plural one (and vice versa) (such as "**A las uruguayas le encantan los centros comerciales*."), the use of the direct object pronoun *lo* in place of the indirect object clitic pronoun (as in "**A Mauricio lo encantan los gatos*."), and the treatment of the verbs as "standard" transitive reflexive ones (such as "**Te encantas este crucero caribeño.*") The number of errors per sentence was limited to one so that I would be able to isolate to what exactly the participants were reacting.

1.5 Expected Results and Conclusions

I expect to be able to answer my research questions (1. *Do L2 Spanish learners have more difficulty with certain elements of sentences containing* gustar*-type psychological verbs than others? 2. Are the elements that have been found most difficult for L2 Spanish learners via oral production tasks equally difficult for them in a written grammatical judgment task or do other elements become more problematic?* and 3. *Will elements within the sentence interact to make certain situations more problematic for learners than others?*) based both upon the amount of sentences that I have created and the number of participants in the study. Further, I would expect that my hypotheses (1. that learners will continue to have more difficulties with some elements than others and that the dative *a* will be among the most problematic, as Quesada (2008) found; 2. that verb-theme agreement will no longer be the most problematic element because in a written judgment test, the learners do not have to produce correctly conjugated verb forms and must only recognize them; and 3. that sentences that have both singular and plural items will be more problematic than those which are completely singular or plural because the latter enable students to not have to understand fully the role of each element in order to see the grammaticality (or lack thereof) of a sentence) will be upheld based on the work of previous researchers and instincts toward the behavior of English-speaking learners of Spanish.

I would expect that native speakers will have the greatest difficulty in comprehension for sentences that do not contain the dative *a*, due to the importance of this marker in signaling the experiencer. Sentences that do not contain this marker will require much greater effort as the native speakers attempt to figure out which entity is acting as the theme and which as the experiencer. More flexible word order in Spanish and a need to always mark the dative with *a* make this marker much more important than its English counterpart, as “to” is often admitted in

English dative constructions and English word order is much more inflexible, giving interlocutors greater knowledge about semantic roles simply based on the ordering of the sentence.

1.6 Structure of Thesis

In the next chapter, you will find the literature review, which examines some of the traditional Spanish grammars, theoretical works on psych verbs, and current literature in second language acquisition studies.

In chapter three, the methodology is presented where I describe the procedure used to collect the data, a description of the subjects, the instruments, the data collection, the research questions and hypotheses, and an explanation of how the data are organized and analyzed and the statistical tests used.

Chapter four includes a detailed examination of the results of the study: first I present the general results for all groups, then the specific results for each type of error, and finally a summary of the findings.

The final chapter is the conclusion and includes a discussion of the answers to the research questions, a description of the significance of findings, and suggested avenues for future research.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Due to various factors, including the differences that exist between the structure of Spanish and that of English, English-speaking learners of Spanish as a second language have had great difficulties with the acquisition of *gustar*-type psychological verbs. As previous works have noted, some studies have reported different findings, but they all have one thing in common: they note that psychological verbs are very problematic for learners of Spanish (Toth 2003, Quesada 2008, Toribio and Nye 2006, and Montrul 1997a and 1997b).

The literature review has been divided into three subsections according to our knowledge of psychological verbs in terms of traditional grammars (Section 2.2), theoretical studies of psych verbs (Section 2.3), and second language acquisition studies (Section 2.4). With knowledge of how these verbs are explained in grammar books, how they have evolved over time and behave today, and how they are understood by learners during the acquisition process, we can better comprehend these structures as a whole and be better prepared to both conduct and interpret future studies.

2.2 Traditional Grammars

Much of what learners are taught in the formal class setting is the result of what has been written in traditional grammars. Language teachers often consult grammars when presenting specific structures in class and often learned the structures as students from similar sources themselves.

Solé and Solé (1977) do not devote much attention to *gustar*-type verbs in their syntax of Spanish, but they do offer a few guidelines. First, they mention that "in Spanish, indirect object pronouns are also used to signal the subject of a sentence in… [certain] cases" and later specify some of these cases to be "sentences with verbs of the *gustar* class, such as *parecer*, *interesar*, *importar*, *convenir*, *preocupar*, *faltar*, and *tocar*" (30). They add that "the indirect object forms signal the logical subject of the sentence – as opposed to the grammatical subject – and tend to occur in subject position" (31).

The authors' only other mention of these structures occurs later on in the syntax, when they describe the use of psychological verbs in constructions that require the subjunctive mood and note that "the grammatical subjects in sentences with *gustar*-like verbs do not assume subject but object positions" in sentences such as, "*Me preocupa que no puedas venir a la reunión*" (169).

The Colombian grammarian, Bello (1891), defines intransitive sentences as those that "*carece de complemento acusativo*" (211). He specifies that there are two types of dative constructions, as "*el dativo… se presenta bajo dos formas, la de una cosa complementario dativo*… [*y*] *la de un complemento con la preposición* a" (212). He also lists the dative pronouns as *me (a mí), te (a ti), le (a él), nos (a nosotros), os (a vosotros),* and *les (a ellos)*. Interestingly, he adds that clitic pronoun use with structures such as those utilized by *gustar*-type verbs is somewhat varied and uncertain, as "*absolutamente repugna a la lengua que se diga 'A mí parece' en lugar de 'me' o 'a mí me.' Pero otras veces no es tan escrupulosa: se puede decir 'Conviene a vosotros,' 'A ellos importa', sin necesidad del 'os' o el 'les'. En esta parte no conozco otra regla que el uso*" (263).

He compares clitic pronoun use between accusative and dative constructions and lists the following rules: *el acusativo o dativo se expresa primero por el del nombre indeclinable* [*y*] *se repite por el caso complementario: 'A los desertores los han indultado de la pena de muerte.' [y] 'A su hermano de usted le han concedido el empleo'"* (263). More specifically, he states that word order is significant in such constructions: *'si precede un complementario dativo, es aceptable la repetición por el dativo del nombre indeclinable: 'Le dieron a la señora el primer asiento'"* (263). However, Bello provides the following warning regarding accusative constructions: "*Pero si precede el acusativo complementario, la duplicación por medio del nombre indeclinable produciría muy mal efecto: 'Los empleaba los tesoros en sus gustos'"* (264). In short, use of dative clitic pronouns (e.g. *le*) is acceptable both before and after the indirect object noun phrases to which these clitics refer, but use of accusative clitics (e.g. *lo*) is only acceptable before the corresponding direct object noun phrases (as in "*Los tesoros los empleaba"*), whereas post-posed use of such clitics is viewed as stigmatized by Bello.

In the *Real Academia Española* (1999) grammar, Campos and Gutiérrez Ordóñez discuss these constructions. Campos mentions that:

> *la capacidad de un verbo de aparecer con un complemento indirecto está determinada léxicamente. Además, un sintagma nominal en función de complemento indirecto puede aparecer tanto con un verbo transitivo como con uno intransitivo y generalmente aparecerá precedido de la preposición 'a.' En la mayoría de los casos este complemento indirecto estará reduplicado por un pronombre clítico dativo* (1546).

One can see that these rules are not overly specific and that it is not very easy to ascertain when to use the preposition *a* and when to duplicate the clitic pronoun. Campos then provides a list of

dative constructions in Spanish and includes datives of reception, interest, separation, sufficiency, possession, ethics, and relation. Interestingly, for his examples of sufficiency and relation, he includes *faltar* and *parecer*, verbs listed by Solé and Solé (1977) as *gustar*-type: "*A Kiko le falta un millón de pesos para construirse la piscina"* y "*A Choche le pareció buenísima la idea de Ximena*." (1547).

In describing the location of the indirect object noun phrase in a sentence, Campos notes that *"hay un grupo de verbos, generalmente denominados 'verbos de actitud afectiva' o 'de afección' (y también 'verbos psicológicos'), en los cuales el complemento indirecto suele preceder al verbo*: '*A Michel le gustan los deportes*'" (1559). He describes this as the "*orden natural"* of this construction, but adds that "*cuando el sujeto precede al verbo en estas construcciones, el sujeto parece focalizado: 'Los idiomas le encantan a Pablo'"* (1560). However, pragmaticists may also argue the opposite – that placing the subject at the end of the sentence would grater emphasize it, due to the emphatic nature of sentence-final position in Spanish.

Campos adds that in sentences such as "'*A Lucy le gustaba Ronny antes de conocer a Otto,' aunque Lucy es el complemento indirecto, tiene el comportamiento típico de un sujeto*" (1560), a feature of the construction that Montrul (1997b) tests with non-native speakers. Thus, the subject-like quality of the indirect object of *gustar*-type constructions is further highlighted. Campos differentiates *gustar*-type verbs from other similar verbs in stating that *"los verbos como 'gustar' o 'encantar' aparecen generalmente con un pronombre clítico dativo. Hay una segunda clase de verbos de actitud afectiva que pueden aparecer tanto con acusativo como con dativo*: '*Kiko la asusta' [y] 'Kiko le asusta'"* (1560-1561). He explains the difference between these two examples in the following way:

> *Cuando se usa el acusativo nos concentramos en lo que causa el sujeto sobre el complemento directo. En este caso el complemento directo se interpreta como 'afectado' y el sujeto claramente tiene intención de efectuar la acción del verbo. Cuando se usa el dativo, el complemento dativo se interpreta como un 'sensor,' o sea, como el argumento que experimenta lo que enuncia el verbo. Con el dativo expresamos la reacción o efecto del complemento indirecto al sujeto* (1561).

Thus, accusative objects have more of a physical reaction to the verb and are more strongly affected, whereas datives have more of a psychological one and the verb is viewed as less intentional in its effects.

Towards the end of his discussion of verbs, Campos provides a list of what he considers "*verbos seudo-impersonales: bastar, caber, convenir, disgustar, divertir, encantar, faltar, gustar, importar, impresionar, interesar, molestar, ocurrir, ofender, parecer, pasar [y] sobrar. Con estos verbos el sujeto generalmente es inanimado y aparecen con un complemento indirecto: 'Nos faltó dinero'"* (1564). Interestingly, Campos leaves *tocar* and *preocupar* (which Solé and Solé (1977) included in their list) off of this list, but he does provide some that they did not include.

In the RAE's same 1999 grammar, Gutiérrez Ordóñez provides some more information about such structures. He notes that "*la aparición del pronombre de dativo es obligatoria cuando el constituyente prepositivo le precede en el orden: 'A Lucas no le interesan nuestros asuntos'"* (1871). He also states that the dative clitic pronoun is obligatory "*cuando dicho constituyente prepositivo contiene un pronombre tónico*: '*Le gusta a ella mucho más'"* (1872). Here, the use of the tonic pronoun *ella* makes obligatory the presence of the dative clitic *le*.

Gutiérrez Ordóñez further discusses the dichotomy between what he calls *"la oposición 'voluntario'/'involuntario"[que crea] un significado distinto del mismo verbo: 'María alcanzó a sus primas.' 'El dinero no le alcanzaba'"* (1881). Here, the second example, which includes the dative clitic pronoun *le*, creates the "involuntary" or non-physical interpretation, whereas the first example results in a physical, "voluntary" interpretation. The author goes into further detail, noting that *"con verbos como 'agradar, alegrar, convencer, desagradar, disgustar, distraer, entretener, estorbar, fascinar, halagar, inquietar, intrigar, molestar, preocupar [y] sorprender' la lengua siempre encuentra matices de significación que opongan ambos esquemas*: '*El hada la encantó (a Cenicienta)' [y] 'El hada le encantó'"* (1882). In the first example, which contains the accusative *la* a physical reaction is described, as a spell is put upon Cinderella, while in the second, which contains the dative, a more emotional or psychological event occurs, as she greatly likes the fairy godmother.

Overall, one can see that the grammars are not in total agreement in their treatment of psychological verbs, as no grammar appears to provide a comprehensive list of them, nor do they necessarily specify and explain the differences between what Whitley (1998) will call "true *gustar*-like verbs" and "transitive psych verbs," as can be seen in the next section (2.3). In fact, it seems that many grammars do not truly consider the complexity of these constructions and overly assume that native speakers fully comprehend their use.

2.3 Theoretical Studies

Theoretical studies on psychological verbs go into further depth than traditional grammars, which tend to merely describe the constructions. As will be seen, these theory-based works detail the historical evolution of the forms, changes in their use that have occurred,

differences between true *gustar*-like verbs and transitive psych verbs and analyses of dative and accusative constructions in general.

Whitley (1998) identifies the structure and the uses of psychological verbs in modern Spanish by means of a historical analysis that illustrates the changes that have occurred because of semantic, pragmatic and syntactic factors. He shows that throughout history Spanish has an increasing tendency toward intransitivity (of the type *me gusta*) and, on the other hand, English has one toward direct constructions (of the type *I like it*). He explains that these different changes are due to two instigators: lexico-semantic factors and morpho-syntactic factors. Lexico-semantic factors include changes in the meanings of psychological verbs themselves, along with metaphor (the treatment of causes and experiencers as figurative agents and patients, respectively, as with the verb *irritar*), analogy (the solutions that work for some verbs are applied to others, as *disgustar* followed the lead of *gustar*, for example) and gradual transitivity (treating transitivity as something with different degrees, as occurred with *sorprender* and the different levels of affectedness associated with *la sorprendí*, *le sorprendí*, and *se sorprendió*).

Morpho-syntactic factors involve the distinction of cases (as Spanish evolved and the case system was lost), the revitalization and amplification of middle voice (as use of the middle *se* increased) and the restriction of passive voice in Spanish (as *ser* + past participle became more limited in scope) that resulted in the increase of intransitivity, and the loss of the middle voice and case distinction and the extension of passive voice in English that resulted in a tendency toward direct constructions.

The following table includes Whitley's (1998) summary and examples of the four types of psych verbs originally identified by Belletti and Rizzi (1988) that developed as a result of these processes:

Table 2.0: Four Types of Psych Verbs

	Direct Construction: Experiencer = Subject	Reverse Construction: Experiencer = Object
Transitive	Type 1: direct transitive "*Prefiero la filosofía*."	Type 4: reverse transitive "*Me fascina la filosofía*."
Intransitive	Type 2: direct intransitive "*Confío en la filosofía*."	Type 3: reverse intransitive "*Me gusta la filosofía*."

These stages of change can be noted in the following two examples (Whitley 1998):

1) Gusto la sopa. > Gusto de la sopa. > Me gusta la sopa.

2) It liketh me. > I liketh of it. > I like it.

In Spanish, the first stage utilizes a transitive and direct construction (*gusto*), type one of Belletti and Rizzi (1988). Later, there is an intransitive and direct construction (*gusto de*), type two according to the authors, and, finally, there is an intransitive and reverse (*me gusta*), or type three construction. English undergoes a process that is exactly the opposite of that of Spanish: it goes from type three (*it liketh)* to type two (*I liketh of*) to type one (*I like*). Due to these differences, learners of modern Spanish that have English as their L1 have problems with the acquisition of type three verbs, such as *gustar*, because their mother language uses type one in these constructions. The end result is also that Spanish favors OVS because the object is normally the most topical and human for *gustar*-type verbs and thus receives the privileged initial position.

González (1998) attempts to argue against the traditional definition of transitivity in terms of case, which states that a construction is transitive if it has an accusative object. He instead defines transitivity in terms of thematic roles; namely, that a transitive predicate is one with a VERBER and a VERBED. For instance, in the sentence "*Juan escribió una carta*," *Juan* is the VERBER, while *carta* is the VERBED. The author uses three factors as the backbone of

his analysis: thematic roles, direct and reverse alignment, and animacy. Underlying this analysis is the rule that he calls "Dative Overriding of the Accusative," which similar to the analyses of Company (2001) and Ortiz Ciscomani (2005), states that "more animate (direct) objects tend to receive dative marking instead of accusative" (138). González also isolates three specific problems with equating transitivity with the accusative case: 1) the nonpassivization of some accusative objects ("**son tenidos"*), 2) the passivization of dative objects ("*son lisonjeados"*), and 3) the existence of verbs with a single object that alternate between the accusative and dative ("*le/lo preocupa"*).

He illustrates that verbs like *gustar* have the dative marker that is really the reduplication of the object, a dative clitic. Overall, if there is a [+human] participant, this participant tends to be the semantic agent and the less animated participant tends to be the patient, as in "*Prefiero los tacos."* However, when the [+human] participant is the object and the subject is a less animated participant, the [+human] patient tends to be placed in the preverbal initial position, as in "*A Marcos le gustan los tacos*." Direct objects tend to be marked with the dative and not with the accusative in order to indicate that the [+human] participant is the semantic agent, not the patient, particularly when the latter is in the preverbal position, as in "*A María le irritaron los comentarios del presidente*." The use of an indirect object pronoun (the dative marker) shows that the preverbal [+human] participant is not the semantic agent. In other words, it can be said that a human object that is placed in a higher position in the [±animacy] hierarchy than its subject tends to be marked with the dative instead of the accusative and to result in a psychological, not physical, effect (González 1998:161). Due to the privileged status of [+human] elements in the syntactic hierarchy, when the agent is more animate than the patient, the result is a direct construction in Spanish, whereas when the patient is the more animate

element, the result is an inverse alignment. Thus, González says that learners should recognize that the sentences in Spanish that have a [+human] object and a [-human] subject almost always can reduplicate the object with an indirect object pronoun and that the preferred word order will be OVS, as in "*A las niñas les sorprendió la noticia*" (160).

The author adds that *gustar*-type verbs do not have a VERBED, and instead have a VERBEE, the entity that benefits from the verb (typically an IO). According to his definition, this lack of a VERBED means that they are not transitive structures and causes them to mark the dative case. He adds that whenever a VERBEE is present, it must be reduplicated with an IO clitic pronoun, which is the indicator of the dative case in Spanish. The author concludes that "dative marking" in Spanish can be summed up as the reduplication of the object with a dative clitic pronoun.

It is worth noting that both González (1998) and Whitley (1998) distinguish between true dative verbs, such as *gustar* and *faltar*, and accusative verbs that have the ability to take a single dative object, such as *molestar* and *encantar*. González (1998) notes that "transitive psych verbs" (Type IV of Belletti and Rizzi, such as *encantar*) and true "*gustar*-like verbs" (Type III of Belletti and Rizzi, such as *gustar*) are "similar in that both classes mark with dative their single [+human] object in preverbal position" (158). Nevertheless, "they are different in that some psych verbs can mark their object with accusative case (such as *molestar*) but true *gustar*-like verbs (such as *faltar*) never assign accusative case" (158). However, while these differences are important, for the purposes of my study, since these two sets of verbs are typically taught identically in Spanish classes, I will not distinguish between them, as can be seen in common textbooks used (*Dos Mundos*, *Atando Cabos*).

Company (2001) discusses the status of dative constructions in Spanish and how they have come to acquire a somewhat privileged status over their accusative counterparts. She mentions that there are two general types of languages with respect to the treatment of transitive structures: on the one hand, there are Direct Object- Indirect Object languages (DO-IO), which treat datives like indirect objects, placing them below the accusative direct objects in terms of saliency, whereas Primary Object-Secondary Object languages (PO-SO) treat the dative of a ditransitive clause the same way as the accusative of a monotransitive clause: as the "primary object" of the construction. In constructions that have two objects, the patient is referred to as the "secondary object." In other words, for DO-IO languages, datives are considered indirect objects, whereas for PO-SO dialects, they would be considered primary objects.

The author explains how Spanish has acquired primary object properties via seven changes that have occurred in the language (and thus having datives as primary objects explains the relevance that they now occupy in Spanish): (1) dative marking overtaking the use of accusative direct objects, as in *se lo* constructions the *se*, which originally replaced the dative object *le*, comes to replace the accusative object *lo/la*, as in "*El cesto se les he regalado a unos chicos"* (instead of *se lo*, in some varieties*)*; (2) the generalization of dative direct objects, also known as *leísmo*, as in "*Le vi ayer*."); (3) consistent marking of datives with the preposition *a*, which began as a locative function with the use of the Latin locative directive preposition *ad* and then, via analogy, spread to mark a dative entity which is affected by the verbal action for ditransitive verbs (verbs that have direct and indirect objects), such as *"Envió un regalo a su hija."*; (4) the duplication of the dative indirect object, as in "*Juan me dio a mí el libro."*; (5) the depronominalization of dative clitics, such as a plural dative NP may be duplicated with a singular dative clitic, such as "*Póngale las carpetas azules a los sillones*."; (6) the spreading of

datives as the cause of causative constructions, as in "*Le hizo comerse todo el pastel"* instead of "*Lo hizo comerse todo el pastel."*; and(7) the common word order verb-dative-accusative, which can be seen in "*Proporcionó a la tímida adolescente un hogar cordial*" (14-28). As Company mentions, each of these changes illustrates the prominence of dative marking in Spanish and the same general grammaticization pattern of shifting toward the use of datives as the main objects of transitive and ditransitive sentences. Further, for each change the dative somehow outranks the accusative and whenever they are in syntactic competition, the dative "wins" and is the chosen form.

Thus, the dative progressively replaces the accusative in many situations. For instance, in the phenomenon of *leísmo*, the dative is used in place of the accusative to mark the direct object, whereas the inverse, *loísmo/laísmo*, in which the accusative appears in lieu of the dative, is much rarer, occurs later historically, and has much more restricted uses. The prepositional marking of the accusative, use of the so-called *a personal*, results originally from dative prepositional marking with *a*, as *a* spread via analogy from the dative domain to that of the accusative, but only in instances in which there is no dative in the same verbal phrase. As Company explains, accusative marking of constructions such as *se los*, also illustrates the use of a dative overtaking a previous domain of the accusative, the lower hierarchy case.

For Company, the semantics of the two cases and the hierarchical relations between them work together to result in the privileged status of datives. Due to the favoring of animacy in syntactic hierarchical relations, the dative, which often is used to refer to human beings, is viewed as more prominent or salient than the accusative, which typically refers to inanimate objects which are helplessly affected by the action of the verb. Therefore, in PO-SO languages, there is a tendency to assign the role of primary object to the element that has greater semantic

and pragmatic weight – in this case, the dative. Further, high animacy cases, such as the dative, are able to extend their functional roles and may then fill those of lower animacy cases, such as the accusative, whereas the inverse is nearly never true.

Ortiz Ciscomani (2005) discusses the two types of ditransitive constructions that exist for direct and indirect objects with respect to the *a personal*: the typical unmarked direct object paired with an indirect object marked with *a (“Rolandi dirigió una turbia mirada a su matador”),* and the atypical construction in which both direct and indirect objects are marked with *a,* which only occurs when both objects are human (*“Enviamos a ellos al honrado padre Doctor en Decretos…”)* (195-199). For the typical construction, the most asymmetric pairing (and also the most common) that exists is that of a human indirect object paired with a concrete “thing” as direct object, such as “*A ti ofrezco mi vida”* (195). In the middle of the continuum of asymmetry would be a human IO paired with an abstract DO, as in “*Manifesté mis dudas a don Pablo”* (194). At the other end of the continuum, there are completely symmetric constructions in which both objects are either inanimate or animate, such as *“La muerte del padre puso término a sus estudios clásicos*” (194).

Ortiz Ciscomani explains that instances of the *a personal* that accompany a human DO in ditransitive constructions along with a human IO are indicative of the higher level of esteem and value that are placed upon human objects, whereas human DO’s that occur without the *a personal* in such constructions are viewed as more controlled by the verb acting upon them and, in a sense, lose part of their animacy. When explaining constructions with two inanimate objects, she adds that structures such as *tener lugar* emerge after being reinterpreted as “nominal verb” chunks. This semantic and structural unification results in constructions that are actually viewed as monotransitive (i.e. having only one object) that now only contain an IO, as the

original DO (*lugar* in this case) is re-processed as part of the verb (*tener*). The DO thus loses its syntactic flexibility and now must be collocated directly next to the verb.

Like Company (2001), Ortiz Ciscomani (2005) reasons that the lack of diachronic extension of the *a personal* from the IO to the DO in monotransitive constructions illustrates the privileged, higher position of the IO in the syntactic hierarchy in comparison to that of the DO. Also like Company, she explains that the IO can be summed up as more animate, more topical and more prominent than the DO. Overall, she concludes that ditransitive Spanish constructions occur along a hierarchical continuum, in which the prototypical constructions (such as inanimate DO's paired with animate IO's, as in *"Rolandi dirigió una turbia mirada a su matador"*) are situated toward the center, while their more atypical counterparts (e.g. animate DO's paired with animate IO's, such as (*"Enviamos a ellos al honrado padre Doctor en Decretos…"*) are located along the periphery and show a minimal occurrence of use throughout history that never surpasses 5% of the total use of ditransitive structures and occurs fewer than 1.5% of the time following the 14th Century.

Lastly, the author concludes that constructions that contain an abstract DO and an animate IO can become "monotransitivized," as one of the objects becomes subsumed by the verb, as the structure is reinterpreted from a ditransitive V-O-O to a monotransitive VO-O. In such cases, the IO actually becomes the DO and the DO becomes part of the verb itself, which can be seen in, "*Una puerta estrecha da entrada a esas construcciones,*" where Ortiz Ciscomani argues that *"esas construcciones"* is now the DO (instead of the IO) and "*entrada"* is now part of the verb (instead of the DO).

Overall, these theoretical studies provide much more depth and breadth in their treatment of psychological verbs. In general, they point to the privileged status that datives have obtained

over accusatives in Spanish, which has not necessarily occurred in English. This raises some interesting points of departure for acquisition-based studies. Furthermore, the fact that these constructions have taken exact opposite routes historically in the two languages helps to predict not only the potential difficulties that learners may face but also the stages of acquisition through which they may move, as will be seen in the following section.

2.4 Second Language Acquisition Studies

While theoretical studies are extremely important in our knowledge of the behavior of psychological verb constructions, it is through second language acquisition studies that we can take a specific look at which components of these structures are most problematic for L2 learners. Additionally, now that we know why English and Spanish differ so greatly with regard to these constructions and how dative and accusative structures behave in Spanish, it is interesting to see the direct role that these complexities play in the acquisition process. Through the use of different methodologies, in detail, we will be able to see how successfully (or not) learners are able to acquire psych verb structures and through which phases they move during this process.

Toth (2003), who studies this phenomenon from a Universal Grammar (UG) perspective, finds that formal instruction has a positive role in the teaching of the morpho-syntax of psychological verbs and that the thematic hierarchy and the movement of themes from subject position reflect properties of UG. He, like González (1998), explains that when there is not an agent, the experiencer is the most important element and, because of this, should appear first in the sentence and take a higher position in the hierarchy of the syntactic tree.

He used a methodology of three different groups of beginner level participants enrolled in an intermediate Spanish course in which one group received only input, while another

participated in question and answer sessions following each lesson, while still another performed task based activities in each class session. Each of the three groups completed a production task and a grammatical judgment test at three different times: as a pre-test prior to any instruction, a post-test and a delayed post-test, twenty four days after the last day of instruction. His study included two types of psychological verbs: 1) Belletti and Rizzi's Type 1 (transitive and direct, where the experiencer is the subject): *"Juan teme el perro."* and 2) Belletti and Rizzi's Type 4 (transitive and inverse, where the experiencer is the object): "*El perro asusta a Juan."* In sentences such as the latter, once again, the experience-object is the most important element since there is no agent. These verbs were used in five different categories: as intransitives ("**Juan enojó*"), intransitives + *se* ("*Juan se enojó"),* transitives ("*La situación enojó a Juan*"), transitives + *se* ("**La situación se enojó Juan*") and passives ("*Juan está enojado*") (479).

Overall, the researcher wanted to see the effect of different forms of instruction. He noticed that learners pass through various stages: first, they did not use the clitic pronoun *se* at all. Next, they suffered from an overgeneralization and thought that all uses of *se* were the "get" passives of English, such as *se enfermó "got sick."* Lastly, they were able to understand the more nuanced and differentiated uses of *se* in Spanish, highlighting the positive role of formal instruction on the acquisition of specific linguistic features, as the task-based group routinely performed in the most native-like way, followed by the question and answer group, followed by the input only group. The researcher also noted that the learners did depend on the hierarchy of syntactic positions, which, along with the movement of themes to subject position, he views as evidence of UG.

Montrul (1997a) set out to compare the interlanguage grammars of native English- and French-speakers acquiring Spanish with the diachronic changes that have occurred to *gustar*-type

psychological constructions throughout history. Specifically, for these intermediate level speakers, she investigated the comparison of the loss of the dative case in English with the acquisition of this case by these English-speaking learners of Spanish in order to see whether dative pronouns were the trigger for the acquisition of the dative case in Spanish. The researcher used two types of testing: 1) a grammaticality judgment task that included double object constructions ("**Juan dio María un regalo."),* preposition stranding ("**¿Qué es el libro sobre?"*), prepositional passives ("**Esta cama fue dormida en."),* indirect passives ("**María fue dada un regalo."*) and exceptional case marking (ECM) constructions (*"*María cree Juan ser un buen amigo*.") along with 2) a preference task that included clitic doubling with verbs with indirect objects ("*Juan (le) escribió a María.")* and with dative subjects ("*A Juan le gusta la música*.") According to Montrul, clitic doubling is optional with indirect objects, as in the first instance, but is obligatory with dative subjects, as in the second.

Montrul found that learners are 1) initially constrained but that they 2) proceed to a stage of optionality with some structures and that later they 3) arrive at the correct mental representations. Overall, the syntactic diachrony of this structure helps to explain this progression, as the dative case was lost in English and double object constructions and the indirect passive emerged, English does not allow clitic doubling, and French maintains the dative case but does not have clitic doubling. Further, she found significant differences between French and English speakers and that effects of transfer were explainable by the stages of diachronic change. She concluded that dative clitic pronouns are the triggers of the dative case for English speakers, but that this parameter still had not been completely reset for all speakers. Also, English's development of historical changes is replicated here: preposition stranding was de-acquired before indirect passives and double objects persisted to a later stage. Specifically, there

is a great rejection of dative clitics with IO's (although less so by the French speakers) and the French speakers accepted dative clitics more frequently with experiencers than with IO's, which is congruent with the parameters of the French language.

In another study, Montrul (1997b) wanted to see whether learners were able to acquire the properties of the target language that are not obvious with respect to the input and that are very different from the explanations provided by formal instruction which, according to the author, would provide evidence that adult learners have access to innate properties of language (UG). The highest argument of the sentence, the experiencer, is marked with the dative case but exhibits some behaviors similar to those of the subject. However, textbooks treat them like typical indirect objects, without commenting on their subject-like properties. The author postulated that if Spanish learners observed prominence relations with agentive verbs and if they interpreted dative experiencers as more prominent than themes independently of morphology, then they would have access to UG. She used three groups: one of 19 English speakers, another of 17 French speakers and a third of 18 native Spanish speakers. The two groups of learners were intermediate-low level and had to interpret sentences with a principal clause that contained two animate arguments and an adjunct infinitival clause, which can be seen in the following example:

3) A Juan le gusta María sin saber por qué.

Here, in theory, the adjunct clause could refer to either of the two arguments of the principal clause, but the subject of the adjunct clause is controlled by the dative experiencer *a Juan* and not by *María*, the theme. The author was attempting to see whether learners could identify the subject correctly or if there was confusion. She found that learners had more difficulty with psychological verbs than with agentive verbs and that the pattern of errors that

occurred with psychological verbs was similar for the two groups of learners, who thought that the experiencers were the subjects. However, she noted that the learners whose L1 was English were improving over time with respect to the interpretation of dative experiencers as the highest argument when they acquired the dative morphology of Spanish. She concludes that learners can react to L2 input and at the end construct representations that are not based on L1, which she sees as evidence of UG.

Quesada (2008), like Montrul, noted that Spanish codifies emotions with a greater number of intransitive psychological verbs than English, which causes great problems for English speakers who learn Spanish as a second language (56). She set out to answer whether English-speaking learners, in their acquisition of Spanish, followed the same diachronic route of transitive and direct constructions to intransitive and direct ones and lastly to intransitive and inverse. Also, she questioned which characteristics of psychological verb constructions change during the development of L2 (Spanish). Thirty English speakers from the University of California, Davis, from three different levels (10 first year students, 10 second year and 10 from the third or fourth year) participated in her study, in addition to 10 native Spanish speakers from Querétaro, México. The participants completed four oral exercises: 1) the narration of a silent film, 2) a personal narrative 3) a personal description and 4) a description of their plans for the future.

Overall, Quesada found that the first and second year learners used psychological verbs correctly only in 51% and 54% of the time, respectively, that the most advanced group used them correctly in 76% of the cases and that the native speakers did so 96% of the time. With respect to the use of clitics, she found that the first two groups achieved correct usage 82% of the time and that the advanced and native speakers had correct usage in 94% and 99% of the instances,

respectively. However, there were many more problems with the use of dative *a*, which the first year learners used correctly only 8% of the time, the second group just 35%, the third 44% and the native speakers 90% of the time. Also, there were problems with verb-theme agreement with plural themes and the first group only had agreement in 10% of the cases, the second and third group in just 40% and 50%, respectively, and the native speakers in 88% of the cases. Further, the first group depended on inverse ordering for the construction, while the other groups utilized different word orders.

Quesada concludes, like Montrul, that beginners erroneously associate the first argument with the subject role and not with the dative, although the former actually finds that learners consider the experiencer to be both the subject and the dative object at the same time while the two systems (transitive/direct and intransitive/inverse) co-exist during the process of acquisition. She also found that, in response to her research questions, English speakers do progress from transitive and direct constructions to those that are intransitive and inverse, as happened historically in the history of the Spanish language, although learners skipped the intransitive and direct phase through which the language passed. In terms of which characteristics changed during the learners' acquisition process, she noted that learners acquired the use of clitic pronouns rather early, and at much later stages did they acquire the dative *a* and verb-theme agreement.

Toribio and Nye (2006) found patterns similar to those of Quesada in their study of the use of non-native lexical-semantic properties by heritage speakers of Spanish in the United States. They attempted to answer whether there was a tendency toward the reduction and resolution of the indirect properties of psychological constructions and, if so, whether this non-target behavior occurred where the core syntax interfaced with the lexical-semantic and

discourse-pragmatic modules. The researchers predicted that heritage speakers would attempt to "reconcile the attributes of the psychological predicates" and that they would "favor transparency in thematic mapping and syntactic licensing" (266).

The authors used two test instruments: 1) a test in which participants were required to answer questions with either the theme or the experiencer in initial position and 2) a grammatical judgment test that contained sentences with the experiencer, the theme or the clitic pronoun in initial position and which considered verbal agreement, clitic agreement, and the use or absence of the dative *a*. They noted that learners preferred canonical word order (SVO or, in this case, agent/experiencer-verb-theme), that at times they did not include the clitic, that some only used the singular clitic, and that many times there was a lack of agreement between the subject and the verb (most often when there was a preverbal animate theme) (Toribio and Nye 2006: 268-9).

For the grammatical judgment tests, the authors noted that learners only accepted 78% of grammatical sentences that contained verbs with *gustar* and only rejected 35% of ungrammatical ones. They concluded that these errors are due to the very high acceptance of construction that have experiencers in initial position without looking at verbal agreement (due to English interference) and the very low rejection of clitics that do not agree with experiencers because many learners see them as an invariable form (*le*). Overall, they concluded that learners had an indeterminate or incomplete knowledge of the properties associated with psychological verb constructions. They surmised that learners use two principle strategies to deal with these constructions: either 1) direct mapping for *gustar*, in which the animate argument is considered the subject and the inanimate the object or 2) "fixing" the construction to match traditional SVO order by placing the subject in preverbal position. The result for the first strategy is that the experiencer often lacked the dative *a* and often controlled verbal agreement (instead of the

theme), and that the theme could act as the DO (instead of the subject). For the second strategy, subjects preferred having a pre-verbal experiencer and provided fewer word order options than typically available to native speakers.

Overall, these second language acquisition studies shed a great deal of light on our knowledge of psych verb structure acquisition at the present time because they show that learners are aware of different aspects of the structure at different stages. While these studies may differ in their findings, methodologies, and emphases, it is clear that these structures continue to be quite difficult for learners, although there is positive evidence for acquisition over time.

For instance, these studies include participants from the beginner (Toth 2003), intermediate-low (Montrul 1997b), and intermediate levels (Montrul 1997a), in addition to those that contain multiple levels (Quesada 2008) and heritage speakers (Toribio and Nye 2006), which can make direct comparisons between the studies difficult at times. Further, methodological differences are also quite apparent, as Toth (2003) includes a production task and grammaticality judgment task, Montrul (1997a) implements grammaticality judgment and preference tasks, Montrul (1997b) utilizes a sentence interpretation task, Quesada (2008) uses four different oral production tasks and Toribio and Nye (2006) implement grammaticality judgment and word order preference tasks.

More importantly, final conclusions differ among the researchers, as Toth (2003) stresses that learners go through a prolonged initial stage in which they do not use clitic pronouns. Montrul (1997a) also notes stages of acquisition, but emphasizes that dative clitics act as triggers for the acquisition of the dative case, and Montrul (1997b) states that learners first incorrectly identify experiencers as syntactic subjects but ultimately are able to acquire this structure that is so different from that of L1. Quesada (2008), like Montrul (1997b), notes that learners first

erroneously associate experiencers with the subject role and that during later stages experiencers may co-exist in both subject and object functions. She also finds that all groups of learners tend to quite correctly use clitic pronouns, in contrast to Toth (2003) found, but that problems most often occur with the dative *a* and verb-theme agreement. Toribio and Nye (2006) note a preference for experiencer-verb-theme order, which is based on traditional SVO, because the experiencer erroneously acts as the subject for the speakers at the beginning. They also find use of no clitic at times (like Toth (2003) found) , use of invariable *le* (which Quesada (2008) also noted), the ability of the experiencer to control verbal agreement (like Montrul (1997b) and Quesada (2008) encountered), which caused for frequent errors in V-T agreement.

Due to the different results that these studies have yielded, the present study was designed to look specifically at several elements of psych verb constructions in order to see which were the most difficult to acquire, and, more specifically, whether the dative *a*, verb-theme agreement or clitic pronoun usage were indeed the most difficult to acquire for the intermediate group of learners who participated in the study. Also, by using a native speaker control group, I set out to determine whether native speakers and language learners were equally critical of constructions that strayed from the prescriptive and whether they had similar difficulties with constructions that presented grammatical errors. Lastly, none of the aforementioned studies has included an analysis of the reaction time of native speakers and learners, and differences in rate of comprehension could also be an important part of our knowledge regarding these structures.

CHAPTER 3

METHODOLOGY

3.1 Introduction

The present research methodology was designed in order to examine the specific elements of Spanish psych verb constructions that cause difficulties for English-speaking learners. In addition, because it has been shown that different types of errors can affect how we process sentences, an analysis of the reading time of both native speakers and learners is included (Toribio and Nye 2006).

3.2 Procedure

3.2.1 Subjects

The participants consisted of three different groups of students: a control group of 20 native speakers from Querétaro, Mexico, a low-intermediate group of 24 English-speaking learners of Spanish and a higher-intermediate group of 24 English-speaking learners of Spanish. Data were collected from the 20 native speakers in Querétaro during the summer of 2008 and their ages ranged from 19-21 years. (There was an additional 21st speaker who was not a traditional student and due to her not fitting in the age range and taking by far the longest amount of time to complete the task due to a lack of comfort with computers, her data has been excluded.) All were second year students, Spanish majors enrolled in the undergraduate program in modern languages at the Universidad Autónoma de Querétaro (UAQ). The two English-speaking groups consisted of 48 University of Georgia undergraduates whose ages ranged from 19-25 years. (A total of 50 UGA students participated, but two had their data excluded because

one student was not properly on task and another was forced to leave testing before finishing due to a medical appointment.) All students were members of a 4000 level course (SPAN4651: Advanced Spanish Grammar), which means that they had completed the requirements for beginning and intermediate level Spanish courses at the university (1000 and 2000 level courses), along with SPAN3050: Introduction to Spanish Linguistics. It is apparent that the non-native speakers' are quite experienced with formal Spanish education, which is summarized in the following tables:

Table 3.0: Non-Native Speakers' High School Spanish Education Experience

Years of High School Courses	**Number of Students**
0-2 Years	10
3-4 Years	38

Table 3.1: Non-Native Speakers' College Spanish Education Experience

Number of College Courses	**Number of Students**
1-5 Courses	9
6-10 Courses	39

To separate the non-native speaking students into the two groups, the Dele Intermediate Grammar and Vocabulary Test was administered prior to the completion of the actual research study. The Dele Test (http://manila.cervantes.es/) is the official test for Spanish as a foreign language, is to Spanish what the TOEFL is for English, and its intermediate version is used to test students who are able to use Spanish in daily situations and have a good background knowledge of Spanish grammar as a whole. In order to pass the official Dele exam, test takers

have to receive a grade of at least 60% on each section, which means that they would need a score at least 36 on the Grammar and Vocabulary section, which, you will see, is quite close to the score that was used to divide the participants.

Completion of the E-Prime experiment required between twenty and thirty-five minutes for the native speakers and for the non-native speakers it required slightly more time, thirty to forty minutes. Both the native and non-native speakers took the test in very similar environments, coming into a classroom full of computers and taking the test all at once, as I provided directions in their native languages and circulated around the room to ensure that they stayed on task. Each participant also completed a background questionnaire of biographical data, along with a consent form to participate in the study. The biographical data included the length of time spent studying Spanish and any other languages, what language(s) one spoke at home, whether one had lived or studied abroad in a Spanish-speaking country or elsewhere abroad, the number of university Spanish and other language courses taken and whether one also spoke other additional languages.

IRB approval was granted prior to all data collection and participants were informed that participation was optional and that they could stop participating at any time according to their own wishes.

3.2.2 Instruments

A grammatical judgment test was created with 99 sentences, divided into three equal sections of 33 sentences, which was administered via the computer program "E-Prime" (the 99 sentences in their entirety can be found in Appendix A). E-Prime is a computer program that enables researchers to input certain stimuli that participants are then able to view and react to in a very controlled environment. It was a desirable instrument to use because it not only records the

participants' responses but also captures the "reading time" for each response (in other words, the amount of elapsed time between the appearance of each sentence on the screen and the numerical response of the participant). Sentence length was controlled to the extent that all sentences were limited to one line of text.

The directions created within the program explained to the students that they would be rating the sentences on a five-point scale, in which "5" corresponded to acceptable and understandable; "4" to somewhat acceptable and understandable; '3' to less acceptable and understandable; "2" to unacceptable, but still understandable; and "1" to unacceptable and not understandable. The students then used the corresponding keys on the keyboard to mark their rating for each sentence. The directions also notified the students to respond as quickly as possible, but to read each sentence carefully. In addition, they reiterated that each sentence was completely unrelated to the others in terms of content.

Within the 99 sentences, 51 were distracters and 48 were the actual test sentences, with 17 distracters and 16 test in each section of 33 sentences. Among the test sentences, there were 12 correct sentences overall, which subdivided into 4 in each section, leaving 36 incorrect sentences, or 12 in each section. The four psych verbs that were used in the test sentences were based on those found to be most commonly occurring in the research: *gustar*, *encantar*, *importar* and *interesar*.

The variables in the sentences were inclusion or omission of dative *a* (such as "**Él le encanta ese programa de televisión*."), agreement or lack of agreement between the theme and the verb (e.g. "*A Vicente y a Juanita les importa las opiniones de otras personas."), inclusion or omission of the clitic pronoun (as in "**A los niños importan mucho sus padres.*"), use of a singular clitic pronoun in place of a plural one (and vice versa) (such as "**A las uruguayas le*

encantan los centros comerciales."), the use of the direct object pronoun *lo* in place of the indirect object clitic pronoun (as in "**A Mauricio lo encantan los gatos*."), and the treatment of the verbs as "standard" transitive reflexive ones (such as "**Te encantas este crucero caribeño.*")

Each of these variables was used with each of the four verbs (thus, there were four versions of each error) and their usage was spread throughout the three different sections equally. Further, singularity and plurality of themes, experiencers and verbs were considered, so that each of the variables occurred in all possible contexts in terms of number. Therefore, there were four sentences that were incorrect due to the lack of dative *a* (among which, two contained singular verbs and two contained plural verbs, while among those two contained singular clitics and two included plurals), four which were incorrect due to missing the clitic pronoun (two with plural verbs and two with singular, alongside two with singular experiencers and two with plural), four which contained *lo* (two with a singular verb and two with a plural, two with emphatic *a* + experiencer and two without), four with plural clitics incorrectly used with singular experiencers (two with plural themes and two with singular), four with singular clitics used with plural experiencers (two with plural themes and two with singular), four with incorrect reflexive verb-type constructions without the emphatic *a* + experiencer (two with plural themes and two with singular), four with reflexive verb-type constructions with *a* + experiencer (two with plural themes and two with singular), four incorrect sentences with a singular verb and a plural theme (two with empathic *a* + experiencer, two without, and two with singular clitics and two with plural), and four that included plural verbs with singular themes (two with empathic *a* + experiencer, two without, and two with singular clitics and two with plural). (An in-depth, further sub-divided analysis of each variable is provided in the results and discussion section.)

After enabling the participants to use five practice sentences in order to become acclimated to the rating system, the three test sections began. Three different versions of the test were created so that the sections would be equally represented in different orders so as to eliminate the possibility that participants were selecting answers based on carelessness toward the end of the test. Within each version, sentences were not presented in random order in order to ensure that a large number of test sentences would occur consecutively without distracters. Additionally, the aforementioned Dele Grammar and Vocabulary Test was used as a standardizing mechanism to eliminate outlying non-native speakers and to divide the remaining non-natives into two groups.

3.2.3 Data Collection

Additionally, the test was piloted by multiple native Spanish speakers in Querétaro, Mexico. First, a Master's student completed the test and notified me when grammar or lexical items seemed unnatural or confusing. After I adopted the suggested changes made by the graduate student, I had two Mexican native speakers, not experts in language, participate in a pilot study of the test and both notified me that each sentence was natural in terms of serving the research purposes. All three native speakers were easily able to understand the directions, use the rating system and navigate their way through the E-Prime program in accordance with the directions.

It is worth noting that for the two UGA groups, one group participated in the study following in-class formal instruction about *gustar*-type verbs, while the other group performed the task prior to such instruction.

3.2.4 Research Questions and Hypotheses

Due to the fact that researchers have encountered somewhat different findings when looking at the behavior of Spanish learners' reactions to *gustar*-type psychological verbs, my first research question is: *Do L2 Spanish learners have more difficulty with certain elements of sentences containing* gustar-*type psychological verbs than others?* In other words, are any of the elements of such sentences (such as the dative a, the clitic pronouns, theme-verb agreement, etc.) more problematic for learners than others. Based on Quesada's 2008 article, the dative *a* and verb-theme agreement were by far the most difficult for learners, so I will test whether this is also the case for my participants. My hypothesis is that, in a written task, learners will continue to have more difficulties with some elements than others and that the dative *a* will be among the most problematic, due to the fact that English does not require such a marker for its transitive, direct psych verb constructions and the fact that English speakers use word order to determine the agent and patient in a sentence more so than dative marking.

Additionally, *Are the elements that have been found most difficult for L2 Spanish learners via oral production tasks equally difficult for them in a written grammatical judgment task or do other elements become more problematic?* In other words, will the type of task affect the participants' use of and interpretation of the elements, causing new elements to replace the dative *a* and theme-verb agreement as the most problematic. My hypothesis is that verb-theme agreement will no longer be the most problematic element because the learners will be able to view the verbs in a written, already conjugated form, and that that will be easier for them to match up with the theme than having to produce a correctly conjugated verb on their own in spoken form.

My final research question is: *Will elements within the sentence interact to make certain situations more problematic for learners than others?* In other words, will learners have greater difficulty when the experiencer is singular but the theme is plural (and vice versa), when the clitic is singular but the experiencer is plural (and vice versa), etc.? I hypothesize that sentences that have both singular and plural items will be more problematic than those which are completely singular or plural because the latter enable students to not have to fully understand the role of each element in order to see the grammaticality (or lack thereof) of a sentence. Further, for such sentences that contain both plural and singular items, I predict that those which are plural instead of singular will be less acceptable than those which are singular instead of plural, because the former requires an additional element to be added and because both native speakers and learners hear "*le gusta*" and "*me gusta*" so much more frequently due to their use with singular NP's, infinitives and demonstratives, such as "*eso*," etc.

3.3 Summary of Data and Statistical Analyses

Of the 48 non-native speakers, the average score on the Dele test was 38.33. The highest score was 52, while the lowest was 25. The standard deviation was 7.05. Given this information, the University of Georgia Statistic Consulting Center advised me to the separate the two groups based on the average score, with all scores less than or equal to 38 in the lower group (n=24) and all scores greater than or equal to 39 in the higher group (n=24). After separating the non-native speakers in this way, I ended up having three different groups (native speakers, higher proficiency non-native speakers and lower proficiency non-native speakers) along with a fourth grouping that combined the two non-native groups for the sake of comparison. After data collection was completed, I then merged all of the participant responses, based on the group to which they had been assigned, into one file each using E-Merge and I subsequently referred to

the statistical analysis component of E-Prime, E-Data Aid, to view the rating that the students applied to each sentence, in addition to the average reading time for each sentence. E-Data Aid also enabled me to create certain filters, which then made it possible to assemble each group's responses to sentences that met specific criteria (e.g. sentences that did not include the dative *a*.)

To continue with further statistical analysis, I used Microsoft Excel to obtain the mean and standard deviation for all test sentences for each of the four groupings. I eliminated as outliers all reading times that did not fall within 1.5 standard deviations of the mean for each grouping, along with the scores that accompanied those reading times. For the native speaker group, the mean reading time was 5816.954 milliseconds and the standard deviation was 3164.43, so outliers were all times greater than 10,561ms and less than 1071ms. For the higher non-native group, the mean was 6633.59ms and the SD was 3854.52, so all reading times lower than 851ms and higher than 12,415ms were discarded. For the lower non-native group, the mean was 8066.938ms and the SD was 4858.08, so the outlier included times less than 779ms and greater than 15,354ms. For the combined non-native grouping, the mean was 7350.26ms and the SD was 4442.37, so all reading times lower than 686ms and higher than 14,013ms were discarded.

After removing all outliers, I then used R, a statistical computing program, to perform paired t-tests to test for significant differences (at the $p<.05$ level) between the means of not only one group versus another within a specific category but also to compare different categories within the same speaker groups. This enabled me to be able to rate and rank the amount of difficulty that the students had with each element in the sentences.

I also used R to run Pearson's product moment correlations in order to see whether scores and reading times had a significant correlation (at the $p<.05$ level) for each group within each

category. The average numerical score response for each sentence is the primary data analyzed, but average “reading time,” the time that it takes each participant to read and rate the sentence, is also analyzed.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

In this chapter, I describe the results of the study and compare them to those of previous researchers. I will first provide general results for all groups (Section 4.2), followed by more specific results across each category (Section 4.3), according to type of error. I will then summarize my findings and attempt to compare them to those of the SLA studies included in the literature review (Section 4.4)

Overall, you will note that there were significant (at the .05 level) differences in scoring for correct versus incorrect sentences for all groupings. Also, the native speakers (NS's) gave the highest scores to correct sentences, followed by the high non-natives (high NNS's) and then the low non-natives (low NNS's). Further, the higher non-native speaker group tended to assign lower scores to incorrect sentences than the native speakers, while the lower non-native speaker group usually gave the highest scores to incorrect constructions, possibly due to a lack of awareness that these structures were even incorrect.

More specifically, NS's found incorrect sentences that were missing the dative *a* (as in "*Él le encanta ese programa de televisión.*") and those that used direct object clitic pronouns in place of indirect object ones (such as "*A Mauricio lo encantan los gatos*.") to be the least acceptable. High NNS's also found the "DO" constructions to be among the least acceptable along with those in which the IO clitic pronoun was missing (as in "*A los niños importan mucho sus padres*.") and those that incorrectly used reflexive verb type constructions (such as "*Te*

encantas este crucero caribeño.") Low NNS's provided their lowest scores for "DO" construction as well and also for structures missing the IO pronoun.

High NNS's scored constructions with incorrect verbal agreement significantly lower than both NS's and low NNS's. On the other hand, unlike the NNS's, NS's find sentences that are incorrect due to their lack of the mandatory dative *a* to be more unacceptable than those that contain verb-theme (V-T) agreement errors and thus distribute much lower scores to such constructions that omit *a* than do high and low NNS's.

4.2 General Results For All Groups

4.2.1 All Correct Test Sentences

In the following table (Table 4.0), you can see the scores that the four groupings have given to all of the correct test sentences (green indicates the highest score given; red the lowest). The groupings refer to the native speakers as a whole, the group of higher proficiency non-native speakers, the group of lower proficiency non-native speakers and also the collective grouping of both groups of non-native speakers as a whole. At the .05 level, the differences between the scores for the native speaker (NS) group and the low non-native speaker (NNS) group are statistically significant, as are those between the NS and combined NNS grouping. The NS's, as one might expect, were more certain when sentences were correct and thus gave such constructions the highest scores (4.78). Predictably, the higher NNS group more consistently judged these sentences higher on the scale than the lower NNS group, (4.68 compared to 4.56), but this difference was not statistically significant.

Table 4.0: Correct Test Sentence Scores

On a Scale of 1-5	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Correctness				
Correct Test Sentence Score	4.78	4.62	4.68	4.56

In terms of the reading time in the same category, there are statistically significant differences among all four groups (Table 4.1). As expected, the NS group most quickly read the sentences, clocking in on average at 4511.87 milliseconds, followed by the higher NNS's at 5389.33ms, and the lower learners, at 6856.53ms, on average, approximately 2345 milliseconds slower than the NS's.

Table 4.1: Correct Test Sentence Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Correctness				
Correct Test Sentence Reading Time (in milliseconds)	4511.87	6164.79	5389.33	6856.53

Further, with respect to correct test sentences, there was a statistically significant ($p<.05$) negative Pearson correlation between scoring and reading time for all four groups, which means that for each group, higher scores were associated with lower reading times, as was expected.

4.2.2 All Incorrect Test Sentences

Regarding the incorrect test sentences, there were significant differences in terms of scoring between the NS and low NNS, NS and high NNS groups and low NNS versus high NNS groups (Table 4.2). Overall, as was expected, the high NNS group rated sentences that deviated from the prescriptive norm lower, and thus gave incorrect sentences the lowest average score of the four groups (2.60). This may be due to the fact that more proficient learners know the prescriptive rules and are the most demanding and least tolerant of deviant sentences in any form. The NS's, in general, gave such sentences a higher score (2.89), perhaps because they have more exposure to Spanish beyond the classroom, are more accustomed to hearing variation, and are somewhat more tolerant of deviations from the prescriptive rule. The lower group of

NNS's gave these sentences the highest score (3.17), but this was likely due to their not knowing exactly whether such sentences contained errors or not. The differences between the combined NNS group and the NS's was not significant, since the average of higher score providing low NNS's and lower score providing high NNS's approximated that of the more middle scoring NS group.

Table 4.2: Incorrect Test Sentence Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Correctness				
Incorrect Test Sentence Score	2.89	2.88	2.60	3.17

In terms of reading times, once again NS's most quickly read such sentences, followed by high NNS's and then low NNS's (Table 4.3). The differences among all four groups were significant. As expected, the NS's read incorrect sentences most quickly (5379.91ms), followed by the high NNS's (5993.04ms) and low NNS's (7040.72ms). Clearly, the high NNS's were closer to the NS's than they were to the low NNS's.

Table 4.3: Incorrect Test Sentence Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Correctness				
Incorrect Test Sentence RT	5379.91	6499.51	5993.04	7040.72

There was a significant, negative correlation between the score and reading time for the native speaker group, but not for any of the other groups. This, once again, means that the higher the native speakers rated an incorrect sentence as acceptable and comprehensible, the more quickly they responded. This correlation was not significant for the non-native groupings, which could possibly be due to greater uncertainty among non-native speakers as to when sentences are

incorrect or, more likely, that the non-native speakers were harsher judges of grammaticality and less tolerant of sentences that strayed from the prescriptive rule.

4.2.3. Comparison of Correct and Incorrect Test Sentences

A comparison of correct test sentences to incorrect ones within the groups reveals further significant findings. Within all four groupings, as could be expected, there were statistically significant differences between the scores given to correct and incorrect test sentences (Table 4.4).

Table 4.4: Comparison of Correct and Incorrect Test Sentence Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Correctness				
Correct Test Sent. Score	4.78	4.62	4.68	4.56
Incorrect Test Sent. Score	2.89	2.88	2.60	3.17
Difference Between Scores	1.89	1.74	2.08	1.39

Also, for three of the four groupings (all except for the low NNS's), reading times for correct sentences were significantly less than for incorrect ones (Table 4.5). This difference is not statistically significant for the low NNS's, but does suggest that this, once again, is a result of their not always fully knowing which sentences were correct or incorrect.

Table 4.5: Comparison of Correct and Incorrect Test Sentence Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Correctness				
Correct Test Sent. RT	4511.87	6164.79	5389.33	6856.53
Incorrect Test Sent. RT	5379.91	6499.51	5993.04	7040.72
Difference Between RT's	868.04	334.72	603.71	184.19

In sum, the NS's generally rated correct sentences higher than NNS's, but also rated incorrect sentences higher than the more advanced NNS group. There was a larger gap in the

ratings of correct and incorrect sentences among the more proficient NNS group (2.08), and the least amount of differentiation for the lower proficiency group (1.39), although all groups clearly identified incorrect sentences as "incorrect." In terms of response times, all groups responded more quickly to the correct sentences, but the lower proficiency NNS group responded at almost the same speed to both types of sentences, whereas the higher proficiency NNS group and the NS's took more time to process the incorrect sentences. This may suggest that, although they recognize incorrect sentences, the lower proficiency NNS group does not believe that the errors hinder comprehension; or it could suggest that they are less sure of which sentences are correct and which are incorrect. The latter is more likely.

In the following section, I examine the participants' reactions to more specific types of errors in the psych verb sentences.

4.3 Specific Results for Each Category

4.3.1 The Dative *a*

Correct Sentences that Contain the Dative *a*

For correct sentences that contained the dative *a*, there were significant differences between the NS and low NNS groups, the low and high NNS's, and the NS's in comparison with the combined NNS grouping (Table 4.6). The only pairing that did not have significant differences were the NS's with the high NNS's, which can be interpreted as a positive sign that these more advanced learners are patterning more like NS's. Once again, the NS group gave the highest score to these correct sentences (4.81), illustrating their greater certainty and confidence that the sentences were indeed correct, followed by the high NNS group (4.73) and the low NNS group (4.45), which was the most conservative in its scoring. You will note that these scores are different from those of the other correct sentence categories because the inclusion of the *a* +

experiencer phrase is emphatic in Spanish and, thus, is not always required when the experiencer's identity is already known.

Table 4.6: Correct Sentences with Dative *a* Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Dative *a*				
A Correct Score	4.81	4.59	4.73	4.45

In terms of reading time for correct sentences with *a*, there were significant differences between all four groups (Table 4.7). Once again, the NS's most quickly assessed the sentences, followed by the high NNS's, with the low NNS's taking the longest.

Table 4.7: Correct Sentences with Dative *a* Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Dative *a*				
A Correct RT	4893.40	6718.55	5718.64	7481.39

There was a significant, negative correlation between the scoring and reading times for three of the four groupings regarding correct sentences with the dative *a*. Interestingly, for all of the NNS groupings the correlations were significant, while the correlation was not significant for the NS group. This means not only that the higher the NNS's evaluated these sentences the more quickly they did so, but also that NS's do not potentially place as much value on the dative *a* in their judgments of grammaticality, whereas the NNS's, who have repeatedly been trained to look for this dative marker, do so. However, this tendency is in line with the treatment of correct sentences in general, as lower proficiency learners take longer to evaluate sentences regardless of the specific feature being analyzed.

Incorrect Sentences Due to Lack of Dative *a*

For sentences that were incorrect due to their lack of the dative *a* when the experiencer is mentioned, such as "**Él le encanta ese programa de televisión*," there was a significant difference in the scoring of all four groupings (Table 4.8). This proved to be a particularly difficult category for NNS's, who scored such sentences much higher than NS's, who more easily recognized the prescriptive error of the lack of *a*. For such structures, NS's provided an average score of just 2.66, compared to 4.16 for low NNS's, who did not appear to note this error, 3.69 for NNS's as a whole and 3.18 for high NNS's, who were more aware of the error, but did not indicate that it hindered comprehension. A possible explanation for the high scores given by the NNS's, especially the low group, to these sentences is that due to the phonetically minimal nature of the *a*, it is often times not easily perceived by non-native speakers in conversation, and thus they may not be fully aware of its occurrence with this structure in the oral input that they have received. Further, such an object marker is not necessary in English, as the experiencer plays the syntactic role of subject, not object.

Table 4.8: Scores for Incorrect Sentences Due to Lack of Dative *a*

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Dative *a*				
No *a* Incorrect Score	2.66	3.69	3.18	4.16

In terms of reading times for incorrect sentences without *a*, all four groups once again had significant differences, with the NS's most quickly reading these constructions, followed by the high NNS's and the low NNS's, in that order (Table 4.9).

Table 4.9: Reading Times for Incorrect Sentences Due to Lack of Dative *a*

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Dative *a*				
No *a* Incorrect RT	5586.74	7060.59	6537.21	7514.40

There was a negative, significant correlation between the score and reading time for all three non-native groupings within this category, but not for the NS group. This means that for NS's, a quick reading of a construction that was lacking an obligatory dative *a* could result in a low score, which may mean that NS's are so accustomed to seeing the dative *a* (which typically begins the sentence and thus is in a salient, noteworthy position) that they are instantly able to identify that it is missing and will accordingly provide a low score to such sentences.

Comparison: Correct Sentences with Dative *a* v. Incorrect due to no Dative *a*

In a comparison of correct sentences that contained the dative *a* with those that are incorrect due to their lack of this feature, three of the four groupings scored these contrasting sentences significantly differently (Table 4.10). Only the low NNS group, which, once again, did not appear to be as aware of the obligatory status of the dative *a* when the experiencer is mentioned failed to score such constructions significantly lower than their correct counterparts that did contain the *a*.

Table 4.10: Comparison of Scores for Correct Sentences with Dative *a* and Incorrect without Dative *a*

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Dative *a*				
A Correct Score	4.81	4.59	4.73	4.45
No *a* Incorrect Score	2.66	3.69	3.18	4.16
Difference Between Scores	2.15	.90	1.55	.29

In terms of reading times, both the NS's and the high NNS's read the correct constructions significantly faster than the incorrect ones lacking the *a* (Table 4.11). This is interesting because while the inclusion of *a* makes the sentence longer and adds an extra word to it, it still enables these two groups to process the sentence more quickly. The lower NNS group, once again did not show a significant difference, likely due to a lack of awareness of the structure. This lack of awareness was strong enough to prevent the average of the combined NNS grouping for these incorrect structures from being significantly lower than their correct counterparts.

Table 4.11: Comparison of Reading Times for Correct Sentences with Dative *a* and Incorrect without Dative *a*

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Dative *a*				
A Correct RT	4893.40	6718.55	5718.64	7481.39
No *a* Incorrect RT	5586.74	7060.59	6537.21	7514.40
Difference Between RT's	693.34	342.04	818.57	33.01

Correct Sentences that Lacked *a*

Since it is not mandatory to include the emphatic *a* + experiencer phrase when the speaker knows the person to which the speaker is referring, such sentences that do not contain *a* + experiencer are perfectly acceptable, as in "*Me gustan las personas tranquilas*." Interestingly, there was not a significant difference among the scoring of these correct sentences by any of the groups, which all hovered in the 4.63 – 4.76 range (Table 4.12). This shows positive evidence that both groups of NNS's recognize that the emphatic prepositional phrase with *a* is, in fact, not necessary in such constructions. Indeed, only the lower proficiency group rated these correct sentences higher than the ones with the prepositional phrases.

Table 4.12: Correct Sentences without Dative *a* Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Dative *a*				
No *a* Correct Score	4.76	4.65	4.63	4.67

The reading times for such structures were, once again, significantly different among all four groups (Table 4.13). The order was predictable based on the other categories that have been seen so far.

Table 4.13: Correct Sentences without Dative *a* Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Dative *a*				
No *a* Correct RT	4136.91	5617.16	5084.07	6236.30

There was a significant, negative correlation between the reading times and scores for the NS group, the low NNS's and the combined NNS's. The high NNS's correlation was not significant, as, perhaps due to their knowledge of the prescriptive rule for marking overt dative noun phrases with *a*, they more negatively viewed these constructions than the lower group. In fact, this was one of very few categories for which the non-native high group failed to give a higher score to a correct construction than the low group.

4.3.2 Verb-Theme Agreement

Correct Sentences with Verb-Theme Agreement

Since all correct test sentences, by necessity, had to contain verb-theme (V-T) agreement, the following table, Table 4.14, is the same as Table 4.0. Here you can again observe the scores that the four groups have given to correct sentences (with V-T agreement). To recap, at the .05 level, the differences between the scores for the NS group and the low NNS group are

statistically significant, as are those between the NS and combined NNS grouping. The NS's, as one might expect, were more certain when sentences were correct and thus gave such constructions the highest scores (4.78). Predictably, the higher NNS group was more confident and knowledgeable than the lower, which is evident in their higher scores (4.68 compared to 4.56), but this difference was not statistically significant.

Table 4.14: Correct Verb-Theme Agreement Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
Correct Verb-Theme Agreement Score	4.78	4.62	4.68	4.56

In terms of the reading time in the same category, there are statistically significant differences among all four groups (see Table 4.1). Again, the NS group most quickly read the sentences, followed by the higher and the lower NNS's. Further, with respect to correct sentences with V-T agreement, there was a statistically significant ($p<.05$) negative correlation between scoring and reading time for all four groups, which means that for each group, higher scores were associated with lower reading times, as was expected. Now we will turn to the incorrect sentences due to lack of V-T agreement and their comparison with the correct sentences.

Incorrect Sentences Due to the Lack of Verb-Theme Agreement

For sentences that were incorrect due to a lack of agreement between the verb and theme, such as "**A Vicente y a Juanita les importa las opiniones de otras personas,*" there were significant differences in scoring between the NS group and the high NNS group and between the high and low NNS groups (Table 4.15). Unlike the ratings for the incorrect sentences due to the lack of the preposition *a,* where the NS's gave the lowest rating for acceptability and

comprehensibility, for these sentences with errors in agreement, the high NNS group assigns the lowest score (2.55), while the NS group assigns a higher score of (2.97), and the low NNS group is not entirely sure that an error has occurred and assigns the highest score (3.11), (although not as high as for the incorrect sentences lacking the *a*).

4.15: Incorrect Due to Lack of Verb-Theme Agreement Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
No Verb Agreement Incorrect Score	2.97	2.81	2.55	3.11

For these constructions, there was a significant difference between all four groupings in terms of reading time (Table 4.16). As with the other constructions that have been heretofore discussed, the predictable order of NS's, high NNS's, low NNS's occurred in ranking the groups from fastest to slowest.

4.16: Incorrect Due to Lack of Verb-Theme Agreement Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
No Verb Agree Incorrect RT	5319.02	6324.29	5721.58	7022.65

The NS group was the only one that had a significant (negative) correlation between scoring and reading time for this category. This could likely be due to some uncertainty among the NNS groups as to whether it was the theme or the experiencer that controlled verbal agreement in psychological verb constructions.

Comparison of Correct and Incorrect Verbal Agreement Constructions

For all four groupings, there was a significant difference in scoring between sentences that had correct V-T agreement and those that were incorrect due to a lack of V-T agreement

(Table 4.17). Thus, all groupings were able to recognize that sentences in which the theme controlled verbal agreement sounded "better" than those where the experiencer or some other component did so.

Table 4.17: Comparison of Correct and Incorrect Verbal Agreement Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
Correct Verb-Theme Agreement Score	4.78	4.62	4.68	4.56
No Verb Agree Incorrect Score	2.97	2.81	2.55	3.11
Difference Between Scores	1.81	1.81	2.13	1.45

For reading times, only the NS group read such correct structures significantly faster than their incorrect counterparts (Table 4.18). The NNS groupings followed the same pattern of reading these correct constructions more quickly, but the difference was not statistically significant. This could perhaps be due to a native grammaticality judgment that enables more certainty upon reading a correct sentence, whereas non-natives may require more time to ensure that a construction is correct, since grammaticality judgments are not intuitive for them. Again, the lower proficiency NNS's displayed the least difference between responding to correct and incorrect sentences, probably due to their lesser knowledge regarding the rules for V-T agreement.

4.18 Comparison of Correct and Incorrect Verbal Agreement Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
Verbal Agreement Correct RT	4511.87	6164.79	5389.33	6856.53
No Verb Agree Incorrect RT	5319.02	6324.29	5721.58	7022.65
Difference Between RT's	807.15	159.5	332.25	166.12

A More Specific Look at Verbal Agreement Errors

When verb agreement number errors did occur, causing a sentence to be incorrect, it was interesting to see how the various groups reacted to such errors. In general, it is apparent that errors in which a plural element was substituted for a singular element were more strongly rejected than the cases in which the opposite occurred (Table 4.19, correct sentences are included for the sake of comparison). Accordingly, for sentences with a verbal agreement error, the NS group assigned their highest score (3.30) to structures that contained verbs that were singular instead of plural and that contained a plural IO clitic pronoun, such as "**A Vicente y a Juanita les importa las opiniones de otras personas*." Similarly, both the high NNS's (2.70) and low NNS's (3.20) assigned their highest score to constructions that included verbs that were singular in place of plural and that contained a singular IO clitic pronoun, such as "**A Pedro le encanta los parques.*"

The groups also agreed in terms of what were the least acceptable sentences, as all three gave the lowest scores to sentences whose verbs were plural instead of singular and which a singular IO clitic, as in "*Al presidente le importan la economía*." For this incorrect structure, NS's provided a score of 2.71, compared to a 2.86 for low NNS's, who were again somewhat less certain of the error, and 2.48 for high NNS's, who were again slightly more rigid in their scoring. Here, use of the plural verb "*importan"* likely stands out due to the use of the singular theme "*la economía*," and in the event that NNS's were pondering whether the experiencer could control verb agreement, the use of the singular "*al presidente*" did not provide for an acceptable alternative to justify plurality. Overall, as singular psych verb forms occur much more frequently in the language (as they are used with singular NP's, infinitives, etc.) and are the less marked version, they are viewed as much more acceptable. Further, leaving an element out is

less offensive than inserting an element that does not belong, as occurs with pluralizing what should be a singular verb.

In a comparison within speaker groups, no groups provided significant score differences for verbs that were singular instead of being plural that contained a singular IO clitic pronoun in comparison to those that contained a plural IO clitic pronoun. Similarly, there were no significant scoring differences for sentences with verbs that were plural instead of singular that contained a singular clitic in comparison to those that included a plural one.

Table 4.19: Various Types of Incorrect Verbal Number Agreement Constructions Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
Correct Verb-Theme Agreement Score	4.78	4.62	4.68	4.56
Verb S Not PL Le Score	3.20	2.95	2.70	3.20
Verb S Not PL Les Score	3.30	2.79	2.58	3.05
Verb PL Not S Les Score	3.08	2.84	2.55	3.18
Verb PL Not S Le Score	2.71	2.66	2.48	2.86

In terms of reading times (Table 4.20), in accordance with the greater ease with which sentences that contained singular items were navigated, both the NS's (5205.17ms) and low NNS's (6860.66) most quickly responded to structures that were singular in place of plural and that contained a singular IO clitic pronoun, again such as "**A Pedro le encanta los parques.*" The high NNS group actually provided their quickest reading time (5127.40ms) for constructions that were plural instead of singular, with a singular IO clitic, as in "*Al presidente le importan la economía*." However, they obtained very similar reading times for the former construction (5127.40ms) which were not statistically significantly higher than the latter (5048.20ms).

Table 4.20: Various Types of Incorrect Verbal Number Agreement Constructions Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
Verb-Theme Agree RT	4511.87	6164.79	5389.33	6856.53
Verb S Not PL Le RT	5205.17	6038.73	5127.40	6860.66
Verb S Not PL Les RT	6327.85	7271.80	7039.27	7302.30
Verb PL Not S Les RT	6006.67	6163.75	6034.32	6887.39
Verb PL Not S Le RT	5758.74	6227.06	5048.20	7212.12

Further Analysis of Verb-Theme Agreement with Respect to Number

With specific respect to correct sentences that contained proper verb-theme agreement, there are some notable differences between groups when singularity and plurality are considered. For instance, for correct sentences that contained a singular theme (and therefore verb) and a plural experiencer, such as "*Les importa la inflación,*" there were significant scoring differences between the NS's and low NNS's and between the NS's and combined NNS grouping (Table 4.21). The NS group, recognizing that these sentences were correct, provided a rather high score of 4.71, compared to the low NNS's score of 4.13, the combined NNS grouping's 4.30 and the high NNS's 4.44, which was not significantly different from the NS's.

In making a comparison within groups, none of the groupings showed significant differences in their treatment of correct sentences that contained plural verbs with plural experiencers (such as, "*A los profesores les interesan los documentales históricos*.") in comparison to correct sentences that contained plural verbs with singular experiencers (as in, "*A ti te importan las notas*.") There were, however, significant differences for three of the four groupings when comparing correct sentences that contained singular verbs with singular experiencers (such as, "*Le encanta este postre*.") to those that utilized singular verbs with plural experiencers (as in, "*Les importa la inflación*."), with the three non-native groupings

significantly favoring the former. This preference for sentences that contain only singular elements could again be evidence of there being some doubt about whether the theme or the experiencer controls verbal agreement.

Table 4.21: Comparison of Correct Verbal Agreement Constructions Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
Verb Agree S Verb S Exp Score	4.90	4.70	4.72	4.68
Verb Agree PL Verb PL Exp Score	4.69	4.71	4.79	4.69
Verb Agree S Verb PL Exp Score	4.71	4.30	4.44	4.13
Verb Agree PL Verb S Exp Score	4.83	4.73	4.70	4.70

In terms of reading times, for correct sentences that contained a singular verb with a plural experiencer, there were significant differences when comparing three of the four groupings – the NS's with the low NNS's, the high and low NNS's and the NS's with the combined NNS grouping (Table 4.22). Interestingly, the native speakers did not read these sentences significantly faster than the high NNS group.

Within groups, the low NNS's and the combined NNS grouping both read constructions with singular verbs and singular experiencers significantly faster than those with singular verbs and plural experiencers. This was not the case for the NS's and high NNS's, which could suggest less of a dependence on homogeneity of number due to a greater awareness of what actually controls verbal agreement (the theme). When comparing constructions with plural verbs and plural experiencers to those with plural verbs and singular experiencers, the NS's, low NNS's and combined NNS grouping all read the former significantly faster. The high NNS's did not demonstrate a significantly faster reading time for the former in this case.

Table 4.22: Comparison of Correct Verbal Agreement Constructions Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
Verb Agree S Verb S Exp RT	4409.92	5736.99	5233.06	6283.78
Verb Agree PL Verb PL Exp RT	5192.02	6694.30	5855.35	7637.05
Verb Agree S Verb PL Exp RT	4581.00	6696.36	5291.98	7419.68
Verb Agree PL Verb S Exp RT	3901.47	5756.68	5594.40	6303.16

Verb-Theme Agreement Errors and Presence/Absence of *a* + NP

It is interesting to note that incorrect sentences that contained verb-theme agreement errors often received higher scores when accompanied by an emphatic *a* + experiencer phrase (Table 4.23). In fact, for the NS group, sentences such as "**A Vicente y a Juanita les importa las opiniones de otras personas,*" (those with singular verbs, plural themes, plural IO clitics and *a*) received significantly higher scores (3.72) than ones like "**Les interesa los negocios internacionales*" (singular verbs, plural themes, plural IO clitics and no *a*), which received a 2.80. This could suggest that although NS's may notice the verbal agreement error in a sentence like the former, they still are able to capture the meaning of the sentence and thus award it a higher score than one such as the latter, where the lack of an *a* + experiencer phrase may make comprehension more difficult. The NNS groups, which may not have such intuitions, do not rate such sentences in a significantly different way, perhaps due to the fact that they notice the verbal agreement error in the sentences and are thus immediately thrown off by the sentence.

Table 4.23: Incorrect Verbal Number Agreement Constructions With and Without *a* Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Lack of Verbal Agreement				
Verb S Not PL Le No A Score	3.18	2.84	2.65	3.05
Verb S Not PL Le A Score	3.22	3.04	2.75	3.35
Verb S Not PL Les No A Score	2.80	2.70	2.42	3.00
Verb S Not PL Les A Score	**3.72**	2.90	2.76	3.11
Verb PL Not S Le No A Score	**2.61**	2.47	2.36	2.60
Verb PL Not S Le A Score	2.80	2.84	2.59	3.09
Verb PL Not S Les No A Score	3.12	2.79	2.48	3.18
Verb PL Not S Les A Score	3.05	2.88	2.61	3.18

With respect to reading times (Table 4.24), within the speaker groups difference were not significant for incorrect verbal agreement sentences that did not or did contain the *a* + experiencer phrase. While they were not statistically significant, likely due to their only being one such sentence that met each of these very specific qualifications, it is interesting to note how much more quickly sentences that contained the *a* phrase were often read by NNS's. For example, low NNS's read constructions that contained singular verbs, plural themes, singular IO clitics and *a* in just 6152.96ms, as compared to 7635.76ms for such sentences that did not contain *a*. Findings were similar for native speakers who read structures with plural verbs, singular themes, singular clitics and *a* in just 5422.10ms, as opposed to such structures without *a*, which required a much longer reading time of 6132.78ms. Once again, even though adding the *a* + experiencer phrase to a sentence creates a longer sentence, such sentences are often processed faster than those that lack the *a* phrase, perhaps due to the additional information that they provide.

However, adding this phrase does not equate to cutting down reading time across all categories, as all four groupings actually read structures with plural verbs, singular themes, plural

IO clitics and no *a* faster than those that did contain the *a*. This may be somewhat misleading, however, because for all groupings there were a great deal of outliers in this category who took so long to read such sentences that their data had to be thrown out. It is evident that for all groupings and across all of the categories, that had outliers not been thrown out, a significantly longer reading time for such constructions that did not contain the *a* would have emerged in comparison with those that did contain the *a*.

Table 4.24: Incorrect Verbal Number Agreement Constructions With and Without *a* Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Lack of Verbal Agreement				
Verb S Not PL Le No A RT	5016.24	6463.82	5122.39	7635.76
Verb S Not PL Le A RT	5383.61	5631.72	5132.21	6152.96
Verb S Not PL Les No A RT	6247.07	7433.37	7510.08	7349.68
Verb S Not PL Les A RT	6395.17	7090.54	6501.19	7244.39
Verb PL Not S Le No A RT	6132.78	6259.91	5251.27	7163.00
Verb PL Not S Le A RT	5422.10	6195.67	4845.14	7256.77
Verb PL Not S Les No A RT	5551.24	5679.53	5239.81	6112.27
Verb PL Not S Les A RT	6414.16	6659.50	6759.74	7662.50

Incorrect Sentences with "Reflexive Verb-Type" Constructions

Another sort of incorrect verb agreement occurred when "reflexive verb-type" constructions were erroneously used, as in "**Te encantas este crucero caribeño*." Scores for such sentences were significantly different for NS's in comparison to high NNS's and for high NNS's compared to low NNS's (Table 4.25). By assigning a 2.51 to these sentences, the high NNS's illustrated their knowledge that these constructions were incorrect. The NS score of 2.85 was again higher and less rigid in comparison, and the low NNS score of 3.15 was once again the highest, illustrating perhaps a lack of awareness that these structures are not supposed to be

reflexive. It is also apparent that all speaker groups tended to treat these flawed constructions similarly to those that had number agreement issues in general.

Table 4.25: Incorrect Sentences with Reflexive Verb Constructions Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
Correct Verb-Theme Agreement Score	4.78	4.62	4.68	4.56
No Verb Agree Incorrect Score	2.97	2.81	2.55	3.11
Incorrect Reflexive Verb Constructions Score	2.85	2.82	2.51	3.15

When the presence or absence of the *a* + experiencer phrase is considered, NNS's gave such reflexive constructions that included the *a* phrase (such as, "**A ti te gustas la tecnología*.) Higher (but not significantly so) scores than those that did not (as in, "**Te encantas este crucero caribeño*.") (Table 4.26). This is likely due to the fact that the emphatic phrase with *a* aids in the comprehension of these non-traditional forms, but again, this was not statistically significant, likely due to the fact that only one sentence met these very specific criteria for each speaker. For the NNS groups, differences were also not significant, although they, too showed a preference for the inclusion of the *a* phrase, although they showed less of a difference.

Table 4.26: Incorrect Sentences with Reflexive Verb Constructions With and Without *a* Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
Correct Verb-Theme Agreement Score	4.78	4.62	4.68	4.56
Incorrect Reflexive Verb Constructions Score (in general)	2.85	2.82	2.51	3.15
Incorrect Reflexive Verb Constructions with *a* Score	3.05	2.90	2.61	3.21
Incorrect Reflexive Verb Constructions without *a* Score	2.64	2.73	2.42	3.08

With respect to reading times, these "reflexive verb-type" constructions required significantly different times for all of the four groupings when compared to each other (Table 4.27). This was not surprising in light of the fact that all groupings also had significantly different times for sentences that contained verb-theme number agreement errors. Looking at the individual groups, times were quite similar (and thus not statistically significantly different) for each group when comparing their reaction to sentences with reflexive constructions and those with verb-theme number agreement errors.

Table 4.27: Incorrect Sentences with Reflexive Verb Constructions Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
Correct Verb-Theme Agreement RT	4511.87	6164.79	5389.33	6856.53
No Verb Agree Incorrect RT	5319.02	6324.29	5721.58	7022.65
Incorrect Reflexive Verb Constructions RT	5043.17	6228.09	5634.01	6988.77

When considering the inclusion or lack thereof of the *a* + experiencer phrase, differences, as with scoring, were not statistically significant for any of the groups (Table 4.28). As expected, the NS's processed these faulty reflexive constructions more quickly when they contained the *a* phrase, since they were likely not very accustomed to seeing them and the additional phrase added semantic information that aided comprehension. Interestingly, each NNS grouping took less time to process those that did not include the *a* phrase, but this is again somewhat misleading because some of them took so long to process those without *a* that their data had to be classified as outliers and therefore excluded.

Table 4.28: Incorrect Sentences with Reflexive Verb Constructions With and Without *a* Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
Correct Verb-Theme Agreement RT	4511.87	6164.79	5389.33	6856.53
Incorrect Reflexive Verb Constructions (in general) RT	5043.17	6228.09	5634.01	6988.77
Incorrect Reflexive Verb Constructions w/ *a* RT	4795.03	6326.77	5651.15	7131.55
Incorrect Reflexive Verb Constructions No *a* RT	5301.65	6128.84	5616.67	6847.57

Next we examine the grammaticality and comprehensibility judgments and reading times for correct and incorrect sentences in terms of the use of the dative clitic pronouns.

4.3.3 Indirect Object Pronoun Agreement

Correct Sentences with IO Clitic Pronoun Agreement

In the following table (Table 4.29), one can see the scores that the four groupings have given to correct sentences whose indirect object clitic pronouns agree with the experiencers to which they refer. This table coincides with Table 4.0 because correct clitic pronoun usage is a prerequisite for a sentence to be correct. At the .05 level, the differences between the scores for the NS group and the low NNS group are statistically significant, as are those between the NS's and combined NNS grouping. The NS's, as one might expect, were more certain when sentences were correct and thus gave such constructions the highest scores (4.78). Predictably, the higher NNS group was more confident and knowledgeable than the lower, which is evident in their higher scores (4.68 compared to 4.56), but this difference was not statistically significant.

Table 4.29: Correct Sentences with IO Clitic Pronoun Agreement Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO Correct	4.78	4.62	4.68	4.56

In terms of the reading time in the same category, there are statistically significant differences among all four groupings. As could be expected, the NS group most quickly read the sentences, followed by the higher and the lower NNS's.

Further, with respect to correct sentences with indirect object clitic pronoun agreement, there was a statistically significant ($p<.05$) negative correlation between scoring and reading time for all four groupings, which means that for each grouping, higher scores were associated with lower reading times, as was expected.

Incorrect Sentences Due to Faulty IO Clitic Pronoun Agreement

For sentences that were incorrect due to a number agreement problem between the experiencer and the IO clitic pronoun, such as "**A Marcos les interesan los deportes*," there were significant differences between the NS and high NNS groups and the high and low NNS groups (Table 4.30). This category was similar to the verbal agreement error section, as high NNS's rated these sentences the lowest (2.68), followed by the natives (3.07), followed by the low NNS's (3.21), who were more accepting of incorrect sentences with IO clitic pronoun errors, although not as much so as they were with those lacking the preposition *a*.

Table 4.30: Incorrect Sentences Due to Faulty Clitic Pronoun Agreement Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO No Number Agree Score	3.07	2.93	2.68	3.21

With respect to reading times, there were once again significant differences among all four groupings (Table 4.31). The ordering of reading speed once again followed the predictable pattern we have seen thus far.

Table 4.31: Incorrect Sentences Due to Faulty IO Clitic Pronoun Agreement Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO No Number Agree RT	5313.36	6741.87	6293.89	7260.00

There was significant, negative correlation between score and reading time for only the low NNS group in this category. This is likely due to the fact that the low NNS's reading times were not that much larger for these constructions than for their correct counterparts, whereas there was a sizeable spike in reading time for the other groups, who found sentences with IO clitic pronoun number agreement issues to be less pleasing and more striking.

Comparison of Correct IO Pronoun Agreement and Incorrect IO Pronoun Agreement

In comparing correct sentences with IO clitic pronoun-experiencer agreement to incorrect ones lacking that agreement, all four groupings tallied correct constructions significantly higher (Table 4.32). This illustrates an awareness by the NNS's of when something is amiss in the IO clitic pronoun slot.

Table 4.32: Comparison of Correct IO Pronoun Agreement and Incorrect IO Pronoun Agreement Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO Correct Score	4.78	4.62	4.68	4.56
IO No Number Agree Score	3.07	2.93	2.68	3.21
Difference Between Scores	1.71	1.69	2.00	1.35

Reading times were significantly lower for correct such constructions in comparison to their incorrect alternatives for three groupings—all except for the low NNS group (Table 4.23). This, again, could be due to the fact that the low NNS's tended to take a long time to judge each sentence whether it was correct or not.

Table 4.33: Comparison of Correct IO Pronoun Agreement and Incorrect IO Pronoun Agreement Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO Correct RT	4511.87	6164.79	5389.33	6856.53
IO No Number Agree RT	5313.36	6741.87	6293.89	7260.00
Difference Between RT's	801.49	577.08	904.56	403.47

More Specific Analysis of IO Agreement Errors with Respect to Number

IO clitic pronoun errors in which singular clitics were erroneously used with plural experiencers (as in "**A las uruguayas le encantan los centros comerciales.*") received significantly different scores from the NS's in comparison with the high NNS's and the high NNS's compared to the low NNS's, both of which were also the case with IO clitic pronoun agreement errors in general, as may be recalled. For sentences with clitics that were plural when they should have been singular (such as "*A Natalia les gusta este gato, pero normalmente prefiere los perros*."), there was a significant difference only between the high and low NNS groups (Table 4.34).

Within the speaker groups, only native speakers showed a significant preference, as they greatly preferred constructions that contained singular IO clitics instead of plural ones to those that used plural IO clitics instead of singular ones, as they greatly favored the former, giving it an average score of 3.27 as compared to a 2.88 for the latter.

Table 4.34: Number Errors with IO Clitic Pronouns Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO Correct	4.78	4.62	4.68	4.56
IO No Number Agree Score (in general)	3.07	2.93	2.68	3.21
IO S Instead of PL Score	3.27	3.00	2.73	3.29
IO PL Instead of S Score	2.88	2.87	2.63	3.12

Reading times differed significantly for NS's in comparison with the three other non-native groupings for incorrect constructions that contained singular IO clitics with plural experiencers (Table 4.35). The high NNS group did not significantly differ from the low group. For sentences that had plural IO clitics with singular experiencers, there were significant differences when all four groupings were compared.

Within the speaker groups, no group responded to one category significantly faster than another category.

Table 4.35: Number Errors with IO Clitic Pronouns Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO Correct RT	4511.87	6164.79	5389.33	6856.53
IO No Agree RT	5313.36	6741.87	6293.89	7260.00
IO S Instead of PL RT	5509.23	6904.93	6624.13	7485.99
IO PL Instead of S RT	5133.81	6577.88	5952.40	7023.12

Relationship Between Clitics and Themes in Terms of Number

Going into even further depth in the discussion of the number of the IO clitic pronoun used, the number of the theme was also considered, in the event that non-native speakers erroneously thought that the theme controlled the number of the clitic (instead of the experiencer

doing so). Accordingly, there were two types of constructions in which the IO clitic pronoun was singular instead of plural – one that included a singular theme (as in, "**A los estudiantes le gusta dormir*.") and another that included a plural theme (such as, "**A las uruguayas le encantan los centros comerciales*.") Across groups, there was significant difference in scoring for the high NNS's in comparison to the low NNS's for such constructions with singular themes, as the former scored them much lower (2.73) than the latter (3.19) (Table 4.36). The data may suggest, once again, that the low NNS's are unsure whether the experiencer or the theme actually controls the IO clitic pronoun and thus they find this flawed structure more acceptable since both the theme and clitic are singular. For these structures that contained plural themes, there were significant differences between both the NS's (3.47) and high NNS's (2.72) and between the high (2.72) and low NNS's (3.39). Here we find another instance of low NNS's not being as aware as high NNS's that an error has occurred and high NNS's being more stringent in their scoring than NS's.

When comparisons are made within groups in terms of singular versus plural themes in these constructions, no group showed a significant preference for one structure over the other.

Table 4.36: IO Clitics that Are Singular Instead of Plural with Singular and Plural Themes Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO S Instead of PL (in general) Score	3.27	3.00	2.73	3.29
IO S Instead of PL - PL Theme Score	3.47	3.03	2.72	3.39
IO S Instead of PL - S Theme Score	3.09	2.97	2.73	3.19

In terms of reading times, the NS group read such constructions (where the IO clitic is singular instead of plural) with singular themes (4766.96ms) significantly faster than those with plural themes (6297.88ms) (Table 4.37). The high NNS group and the combined NNS grouping also showed the same significant preference, with singular themes requiring reading times of 5601.02ms and 6248.53ms, respectively, as compared to plural themes, which required 7625.00ms and 7539.20ms, respectively. This could perhaps be due to the fact that the former constructions contain more plural elements, which may take longer to process. The low NNS group did not show a significant difference in reading time between the two.

Table 4.37: IO Clitics that Are Singular Instead of Plural with Singular and Plural Themes Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO S Not PL (in general) RT	5509.23	6904.93	6624.13	7485.99
IO S Instead of PL - PL Theme RT	6297.88	7539.20	7625.00	7609.16
IO S Instead of PL - S Theme RT	4766.97	6248.53	5601.02	7359.95

There were also two types of constructions in which the IO clitic pronoun was plural instead of singular – one that included a singular theme (as in, "**A Natalia les gusta este gato, pero normalmente prefiere los perros*.") and another that included a plural theme (such as, "**A Marcos les interesan los deportes*.") Across groups, there were no significant differences in scoring for these structures with singular themes (Table 4.38, with the previous section's errors included for comparison). However, for such structures with plural themes, the NS's provided significantly lower scores (2.86) than the low NNS's (3.47), while the high NNS's (2.78) significantly followed suit in comparison with the low NNS's (3.47). Here again, the inflated

scores that the low NNS's tallied could be evidence that they view the theme as controlling the IO clitic pronoun.

Within groups, the low NNS's showed a significant preference for these constructions (with plural instead of singular IO clitics) that contained plural themes (3.47), as opposed to those with singular themes (2.75). The combined non-native grouping showed the same significant preference (3.11 compared to 2.61). Thus, the data may suggest that low NNS's erroneously feel that the plural "*los deportes*" could control the IO clitic "*les*" and thus give that construction a significantly higher score than the singular "*este gato*" which to them would not be able to correctly control "*les*."

Table 4.38: IO Clitic Number Errors with Singular and Plural Themes Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO PL Instead of S - S Theme Score	2.89	2.61	2.47	2.75
IO PL Instead of S - PL Theme Score	2.86	3.11	2.78	3.47
IO S Instead of PL - PL Theme Score	3.47	3.03	2.72	3.39
IO S Instead of PL - S Theme Score	3.09	2.97	2.73	3.19

With respect to reading times, none of the groups read either of the constructions significantly faster than the other construction (Table 4.39, includes the previous section's times for comparison).

Table 4.39: IO Clitic Number Errors with Singular and Plural Themes Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO PL Instead of S - S Theme RT	4894.03	6549.78	5827.95	7027.48
IO PL Instead of S - PL Theme RT	5360.62	6604.72	6071.31	7019.07
IO S Instead of PL - PL Theme RT	6297.88	7539.20	7625.00	7609.16
IO S Instead of PL - S Theme RT	4766.97	6248.53	5601.02	7359.95

Incorrect Sentences Due to Empty IO Clitic Pronoun Slot

In addition to errors in the IO clitic pronoun slot that were due to a lack of number agreement, there were also sentences that contained errors due to an empty IO clitic slot, such as *"*A los niños importan mucho sus padres.*" The results for these constructions were similar to those which contained clitic pronoun number agreement errors, and, like them, gave rise to significant differences between the NS and high NNS groups and the high and low NNS groups (Table 4.40). As with the faulty IO agreement category, the low NNS's provided the highest score (2.93), followed by the NS's (2.84) and the high NNS's (2.51).

Table 4.40: Incorrect Sentences Due to Empty IO Slot Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO Empty Incorrect Score	2.84	2.72	2.51	2.93

With respect to reading times, the NS's read these constructions significantly faster than the low NNS's and than the combined NNS grouping, but there were not significant differences between the high and low NNS groups or the NS and high NNS groups (Table 4.41).

Table 4.41: Incorrect Sentences Due to Empty IO Slot Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO Empty Incorrect RT	5395.19	6447.45	6101.63	6719.33

The correlation between score and reading time was not significant for any of the four groupings for sentences that contained a null IO clitic pronoun.

Comparison of Empty IO Slot and Correct Constructions

A comparison of constructions that were missing the IO clitic pronoun completely and those that were correct sheds further light on the participants' treatment of this category. As can be seen in Table 4.42, scores given to constructions with a null IO clitic pronoun differed markedly from those that were correct (and were roughly equivalent to those that lacked number agreement, as was shown in Table 4.22). In fact, as has been mentioned, the scoring differences were significant for the high NNS group in comparison to the low NNS and for the NS versus high NNS group for both types of errors.

Table 4.42: Comparison Between Correct and Empty IO Clitic Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO Correct	4.78	4.62	4.68	4.56
IO Empty Incorrect Score	2.84	2.72	2.51	2.93
Difference Between Scores	1.94	1.90	2.17	1.62

Comparing the reading times for sentences with correct IO pronouns to those who were missing the IO clitic was similar to comparing the former to those that had clitic pronoun number agreement errors in that differences were significant for both the NS group and the high NNS group (Table 4.43). However, the differences for the combined NNS grouping were not

significant for the empty IO clitic category, even though they were so for the clitic number agreement error one. Also, it is interesting to note that the low NNS's actually processed incorrect sentences more quickly than correct ones in this case, which may once again suggest an uncertainty as to which sentences were actually correct, which would also be supported by their having the smallest difference in scoring between correct and incorrect sentences in this category.

Table 4.43: Comparison Between Correct and Empty IO Clitic Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO Correct RT	4511.87	6164.79	5389.33	6856.53
IO Empty Incorrect RT	5395.19	6447.45	6101.63	6719.33
Difference Between RT's	883.32	282.66	712.30	137.20

Direct Object Clitic Pronoun in the IO Clitic Slot

Another type of indirect object clitic pronoun error that was included among the test sentences was one in which the direct object pronoun "*lo*" was used in place of the IO clitic pronoun "*le*," as in, "**A Mauricio lo encantan los gatos*." All of the four groupings scored this type of error in quite a low manner, and thus there were not significant differences when comparing any of the groupings to each other, as the NS's provided a 2.59, the high NNS's a 2.29 and the low NNS's a 2.60 (Table 4.44, with the other types of general clitic errors included for comparison). It is interesting that this is one of the few categories in which low NNS's displayed native-like behavior. Once again, high NNS's provided a lower score than NS's when errors occurred, although in this case the difference was not significant. It is also noteworthy that all grouping found the use of the DO to be a more egregious error than a clitic number agreement error or the absence of the clitic pronoun. In fact, all four groupings gave

significantly lower scores to the DO sentences than to those with faulty clitic number agreement (and, logically, to correct sentences, as well). The low NNS's and the combined NNS grouping also gave significantly lower scores to the DO sentences than to those missing the IO clitic pronoun.

Table 4.44: IO Clitic Pronoun Slot Errors Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO DO Incorrect Score	2.59	2.44	2.29	2.60
IO Number Agreement Error Incorrect Score	2.88	2.75	2.54	2.98
IO Empty Incorrect Score	2.84	2.72	2.51	2.93
IO Correct Score	4.78	4.62	4.68	4.56

In terms of reading times across categories, there were not significant differences times in the time that it took each grouping to read sentences that used DO pronouns in comparison with those that had faulty IO number agreement, an empty IO clitic or correct constructions (Table 4.45).

Table 4.45: IO Clitic Pronoun Slot Errors Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO DO Incorrect RT	5118.22	6251.03	5880.42	6563.61
IO Number Agreement Error Incorrect RT	5283.28	6541.29	6140.48	6942.34
IO Empty Incorrect RT	5395.19	6447.45	6101.63	6719.33
IO Correct RT	4511.87	6164.79	5389.33	6856.53

Intersection of the Dative *a* with the Direct Object Clitic Pronoun in the IO Clitic Slot

When the presence or absence of the *a* + experiencer phrase is considered, NS's gave such DO pronoun-using constructions that included the *a* phrase (such as, "**A Mauricio lo*

encantan los gatos.") significantly higher scores (2.97) than those that did not (2.21) (as in, "**Lo interesan los actores colombianos.*") (Table 4.46). This is likely due to the fact that the emphatic phrase with *a* aids in the comprehension of these non-traditional forms. Once again, the information that the *a* + experiencer phrase enables the NS's to better capture the sentence's intended meaning, whereas the NNS's seem to focus more on the fact that there are errors for both versions of the DO sentence. For the NNS groups, differences were not significant, although they, too showed a preference for the inclusion of the *a* phrase.

Table 4.46: Use of DO Clitic Pronoun With and Without *a* + Experiencer Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO DO (in general) Score	2.59	2.44	2.29	2.60
IO DO No *a* Score	2.21	2.35	2.18	2.52
IO DO w/ *a* Score	2.97	2.53	2.40	2.67

The NS's were also the only grouping that demonstrated a significant difference in reading times for one version of the DO constructions over the other (Table 4.47), as they read the construction without the *a* + experiencer phrase significantly faster (4541.13ms) than those that did contain it (5695.32ms). This could suggest that these constructions are initially quite unacceptable, as when they are unaccompanied by the *a* phrase, but when the phrase is added, native speakers take extra time to then be able to understand the sentence and, in turn, give it a higher score (than the version that lacks the emphatic phrase).

Table 4.47: Use of DO Clitic Pronoun With and Without *a* + Experiencer Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO DO (in general) RT	5118.22	6251.03	5880.42	6563.61
IO DO No *a* RT	4541.13	6231.04	5929.89	6388.78
IO DO w/ *a* RT	5695.32	6271.46	5833.06	6750.63

Finally, we will look at the type of psych verb used to see if NS's and learners rate correct and incorrect sentences with these kinds of verbs differently.

4.3.4 Psychological Verb Used

Incorrect Sentences with *Gustar* that Suffer From Lack of Verbal Agreement

Interestingly, there were significant differences among three of the groups in the scoring of sentences that contained the verb *gustar* and that were incorrect due to a lack of verbal agreement, such as "*Le gusta los refrescos fríos*." Differences were significant between the NS's and high NNS's, high and low NNS's and between the combined NNS grouping and the NS group (Table 4.48). Surprisingly, the low NNS group (3.13) and NS group (3.24) scored these prescriptively incorrect sentences very closely, whereas the more inflexible high NNS's scored them a very low 2.53. However, the reasons for the NS's and low NNS's to offer similar scores were likely quite disparate, as the NS's are accustomed to greater variation and are therefore more flexible, whereas the low NNS's likely were not aware of the errors that were occurring or have received a comparatively large amount of input with the common verb *gustar* in their classes and thus tend to accept it more than other psych verbs, which will be seen.

Table 4.48: Incorrect Sentences with *Gustar* with Verbal Agreement Errors Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verb				
Gustar No Verb Agree. Score	3.24	2.81	2.53	3.13

Reading times were significantly different when three of the four groupings were compared, as the NS versus low NNS, high versus low NNS, and combined NNS grouping versus NS groups all showed significant differences (Table 4.49). Interestingly, the NS group and high NNS group required nearly identical reading times (5074.88ms and 5095.47ms, respectively). Since their scores were so disparate, this likely could be interpreted as the NS's knowledge that these sentences are common enough to be acceptable, while the high NNS's pretty quickly note the prescriptive errors present.

Table 4.49: Incorrect Sentences with *Gustar* with Verbal Agreement Errors Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verb				
Gustar No VA RT	5074.88	5958.39	5095.47	6782.07

A significant, negative correlation existed only for the NS group within this category. As has been explained, it appears that the high NNS group assigned their low scores in a relatively short amount of time, which goes against the usual trend here of high scores being assigned quickly.

A Comparison of Incorrect Sentences with *Gustar* and *Interesar*

As has been mentioned in the previous section, NS's tended to treat constructions with *gustar* differently from those with other psychological verbs, while NNS's did not. This is apparent when doing a comparison between sentences that contain a verbal agreement error with

gustar and those that do so with *interesar*, such as *"*Les interesa los negocios internacionales*." NS's scored such sentences with *gustar* significantly higher (3.24) than those that contained errors with *interesar* (2.81), *importar* (2.85) or *encantar* (2.83) (Table 4.50). NNS's, on the other hand, scored such errors more consistently and evenly, regardless of the actual verb used. This perhaps reflects a difference in input, as NS's have so much exposure to *gustar* that perhaps they begin to be very accepting of it, whether prescriptively conjugated or not, due to its high frequency of use.

Table 4.50: Comparison of Verbal Agreement Errors According to Verb Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verb				
Gustar No Verb Agree. Score	3.24	2.81	2.53	3.13
Encantar No Verb Agree. Score	2.83	2.83	2.61	3.09
Importar No Verb Agree. Score	2.85	2.84	2.55	3.16
Interesar No Verb Agree. Score	2.81	2.78	2.51	3.08

In comparing the reading times of incorrect sentences with *gustar* as opposed to *interesar*, both the high NNS group and combined NNS grouping showed significant differences in times, likely due to the fact that they are much more accustomed to sentences with *gustar* (Table 4.51). NS's did not show a significant difference, since for them, *interesar* is not all that uncommon. Low NNS's frankly required a good deal of reading time for both, due to their level of proficiency at the time.

Table 4.51: Comparison of Verbal Agreement Errors According to Verb Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verb				
Gustar No Verb Agree. RT	5074.88	5958.39	5095.47	6782.07
Encantar No Verb Agree. RT	5267.53	6225.74	5536.20	6849.74
Importar No Verb Agree. RT	5712.53	6550.42	5808.48	7159.23
Interesar No Verb Agree. RT	5784.97	6734.02	6636.18	7394.20

Now I will summarize the findings presented in this chapter and explain some of their implications.

4.4 Summary of Findings

Overall, the NS group and the high and low NNS groups showed specific preferences for certain structures over others and statistically significant differences among scoring and reading times emerged not only across groups (when comparing the same category) but also within groups (when comparing one category to another). In terms of scoring (Table 4.52), all groupings provided significantly higher (at the .05 level) scores to correct test sentences than to incorrect ones, illustrating a general knowledge of prescriptive errors for even the low NNS group, which overall proved to be the group least certain of correctness, providing the lowest score (4.56) for correct sentences and the highest (3.17) for incorrect ones. The high NNS group, on the other hand, gave the lowest score to incorrect constructions (2.60), which appears to be evidence that they are less accepting of variation from the prescriptive, to which NS's would generally be more accustomed in everyday life. The NS group provided the highest score for correct sentences (4.78), which was evidence of their greater certainty as to when sentences are constructed without error.

In terms of more specific types of errors, NS's found incorrect sentences that were missing the dative *a* (as in "*Él le encanta ese programa de televisión*.") and those that used direct object clitic pronouns in place of indirect object ones (such as "*A Mauricio lo encantan los gatos*.") to be the least acceptable and provided them scores of 2.66 and 2.59, respectively. High NNS's also found the "DO" constructions to be among the least acceptable (2.29), along with those in which the IO clitic pronoun was missing (2.51) (as in "*A los niños importan mucho sus padres*.") and those that incorrectly used reflexive verb type constructions (also 2.51) (such as "*Te encantas este crucero caribeño*.") Low NNS's provided their lowest scores for "DO" construction as well (2.60) and also for structures missing the IO pronoun (2.93).

It is also worth noting that high NNS's scored constructions with incorrect verbal agreement (2.55) significantly lower than both NS's (2.97) and low NNS's (3.11). This could perhaps be due to the emphasis placed on verb conjugations and subject-verb agreement in the classes to which high NNS's have clearly paid a great deal of attention. NS's, meanwhile, are either more able to capture meaning when verb-theme conjugation fails or, more generally, are simply more accustomed to variation beyond the prescriptive. On the other hand, unlike the NNS's, NS's find sentences that are incorrect due to their lack of the mandatory dative *a* to be more unacceptable than those that contain V-T agreement errors and thus distribute much lower scores (2.66) to such constructions that omit *a* than do high (3.18) and low (4.16) NNS's. As has been mentioned, this could be due to the importance of the dative *a* in Spanish for NS's due to the language's greater ability to vary in word order. Accordingly, since English speakers often take their cues about syntactic roles from a more rigid word order, they may simply associate the first entity in the sentence as the experiencer, regardless of whether the *a* is present or not.

Table 4.52: Summary of Correct and Incorrect Scores

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Correctness				
Correct Test Sentence Score	4.78	4.62	4.68	4.56
Incorrect Test Sentence Score	2.89	2.88	2.60	3.17
Dative *a*				
A Correct Score	4.81	4.59	4.73	4.45
No *a* Incorrect Score	2.66	3.69	3.18	4.16
Verbal Agreement				
Correct V-T Agreement Score	4.78	4.62	4.68	4.56
No Verb Agree Incorrect Score	2.97	2.81	2.55	3.11
Reflexive Verb Incorrect Score	2.85	2.82	2.51	3.15
I.O. Slot				
IO Correct Score	4.78	4.62	4.68	4.56
IO Empty Incorrect Score	2.84	2.72	2.51	2.93
IO Number Agreement Error Incorrect Score	3.07	2.93	2.68	3.21
IO DO Pronoun Incorrect Score	2.59	2.44	2.29	2.60

With respect to reading times (Table 4.53), NS's predictably read all general categories faster than high NNS's, who, in turn, read such structures faster than low NNS's. More importantly, NS's and high NNS's read correct sentences significantly faster than they did incorrect ones. Low NNS's, who were more uncertain about which sentences were actually correct, did read correct sentences faster than incorrect ones, but not to a significant degree.

For NS's, the longest sentences to process were those that lacked the dative *a* (5586.74ms), which although shorter in length than those that contained the *a*, required more time to process, likely due to the aforementioned important role that this marker has played in Spanish since the loss of the case system. Similarly, sentences that were missing the IO clitic pronoun were the second longest to process for NS's (5395.19ms), as, once again, a structure

that omitted a mandatory element took longer to process than, for example, one in which number agreement was askew.

High NNS's, like NS's, found sentences that did not contain the dative *a* to be the most time-consuming to process (6537.21ms), even though they scored such constructions much more highly than NS's. High NNS's also took a large amount of time to read sentences that contained an error in IO clitic pronoun-experiencer agreement (6293.89ms), which is logical given the vast difference between these structures and those of English (and given the fact that, for them, both the theme and the experiencer are potentially competing to control clitic agreement).

Low NNS's also recorded their longest reading time for sentences that did not contain the dative *a* (7514.40ms), but for them the second most time-consuming structure was surprisingly those which correctly contain the *a* (7481.39ms). This is noteworthy because neither the NS's or high NNS's have correct constructions among their most time-consuming and it is likely due to the fact that low NNS's are really forced to think about whether it is the theme or the experiencer that is being affected psychologically by the verb.

Table 4.53: Summary of Correct and Incorrect Reading Times

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Correctness				
Correct Test Sentence RT	4511.87	6164.79	5389.33	6856.53
Incorrect Test Sentence RT	5379.91	6499.51	5993.04	7040.72
Dative A				
A Correct RT	4893.40	6718.55	5718.64	7481.39
No *a* Incorrect RT	5586.74	7060.59	6537.21	7514.40
Verbal Agreement				
Correct V-T Agreement RT	4511.87	6164.79	5389.33	6856.53
No Verb Agree Incorrect RT	5319.02	6324.29	5721.58	7022.65
Reflexive Verb Incorrect RT	5043.17	6228.09	5634.01	6988.77
I.O. Slot				
IO Correct RT	4511.87	6164.79	5389.33	6856.53
IO Empty Incorrect RT	5395.19	6447.45	6101.63	6719.33
IO Number Agreement Error Incorrect RT	5313.36	6741.87	6293.89	7260.00
IO DO Pronoun Incorrect RT	5118.22	6251.03	5880.42	6563.61

Correlations were significant and negative for all four groupings for correct test sentences, meaning that the faster the participants responded, the more likely they were to provide a higher score. Negative correlations between score and reading time occurred across many categories, although they were not always statistically significant.

CHAPTER 5

CONCLUSION

5.1 Answers to Original Research Questions

5.1.1 *"Do L2 Spanish learners have more difficulty with certain elements of sentences containing* gustar*-type psychological verbs than others?"*

The data suggest that, yes, non-native speakers proved to act quite differently from native speakers in certain categories. A general pattern of higher level NNS's viewing sentences in a more prescriptively critical way than NS's was apparent throughout the data. Also, one of lower level NNS's being more accepting of errors, likely due to a lack of knowledge that such constructions were indeed incorrect, was also apparent throughout.

In terms of specifics, sentences that were incorrect due to their lack of the dative *a* were consistently among the most time-consuming for all groups to process, illustrating how important this marker is to comprehension at the sentence level. Interestingly, however, while NS's rated errors in such constructions, on the average, lower (2.66) than for other errors, both lower (4.16) and higher proficiency (3.18) NNS's gave them relatively high scores, indicating that they still have not fully learned the obligatory status of this marker for overt dative noun phrases and thus it could be said that at their present stages of acquisition are having difficulty in recognizing its necessity. This is fully in line with Quesada's (2008) and Toth's (2003) findings that the dative *a* is among the most difficult elements for non-native speakers to acquire with respect to psych verb constructions, as it developed historically with the loss of Latin's case system in order to show that the experiencer was syntactically the object and not the subject of the sentence (Penny 2002). Further, starting a sentence with, for example, *"A Juan"* primes the

native reader for a psych verb construction and the *a* is extremely important for marking the dative and is thus very salient. English does not have such a marker for these constructions, and thus more attention is paid to word order, enabling learners to disregard the lack of *a* and focus solely on word order, so that high scores still end up being given to such sentences.

Higher proficiency NNS's scored constructions with incorrect verbal agreement (2.55) significantly lower than both NS's (2.97) and low NNS's (3.11), indicating the great level of attention that they pay to verb-theme agreement. In other words, higher level NNS's are quite aware that the theme determines the conjugation of the verb and thus they correctly give low scores to sentences that do not heed this rule.

Also, sentences that contained the direct object pronoun *lo* instead of an indirect object pronoun were rather uniformly rejected by not only NS's (2.59), but also high (2.29) and low (2.60) NNS's, illustrating that NNS's are indeed aware that the dative, and not the accusative, is required here. While NS's most rejected sentences that did not contain *a*, lower NNS's highly rejected sentences containing *lo* and those that were missing the clitic pronoun, while higher NNS's rejected *lo*, missing clitics and reflexive verb-type constructions quite strongly. Because these two NNS groups are rejecting *lo* and missing clitics, they seem to have an overall awareness that clitic pronouns must be used and that they are dative, not accusative. The higher NNS's rejection of reflexive-type constructions illustrates that they recognize the difference between reflexive structures, which require that the verb and the clitic pronoun be of the same person and number, and psych verb structures, which require that the verb agree with the theme and the clitic pronoun with the experiencer. The fact that NS's were more accepting of sentences that did not contain the clitic pronoun further illustrates why Bello felt the need to explicitly mention the necessity of including it, as it is apparent that both a century ago when he was

writing his grammar and during the present time, there are native speakers who leave the clitic pronoun out of psych verb structures and who find such omissions acceptable.

5.1.2 *Are the elements that have been found most difficult for L2 Spanish learners via oral tasks equally difficult for them in a written task or do other elements become more problematic?*

The answer to this research question would be mixed. On the positive side, as has just been shown with respect to the treatment of the dative *a*, which was found to be extremely different between native and non-native speakers in studies that collected oral data, such as Quesada (2008), and which once again illustrates a broad gap between these two groups in the written data of the present study.

However, Montrul's (1997b), Toribio and Nye's (2006) and Quesada's (20008) findings that verb-theme agreement was quite problematic for NNS's is confirmed by the lower NNS group in the present study (who give such structures a high score of 3.11, whereas the higher NNS group seems quite aware of the need for the theme to control verbal agreement and bestows a quite low score of 2.55 upon such structures. It bears mentioning, however, that being able to identify an error in a sentence is quite different from being able to produce such sentences in an error-free manner. It is possible that the higher NNS group is still at a stage in which they are able to do the former, but have not yet mastered the latter, which would, in fact, place them more in line with the learners of Montrul (1997a and 1997b), Toth (2003), Toribio and Nye (2006) and Quesada (2008), who all reported specific stages of acquisition.

5.1.3 ***Will elements within the sentence interact to make certain situations more problematic for learners than others?***

"Yes" is the answer to this question for a number of reasons. First, sentences that contained *a* + experiencer were routinely read more quickly than those that did not contain that combination. As has been mentioned, this is somewhat interesting, since more content is added to the sentence in the case of the former, which in theory could mean that because there is more information to process in the sentence, the sentence would take longer to read. This, however, is not the case and that extra information enables a quicker, smoother reading.

Further, concepts of plurality and singularity interact within various sentence constructions and, for example, sentences that included an IO clitic pronoun that was plural when it should have been singular but that utilized a plural theme, such as "**A Marcos les interesan los deportes*" were scored significantly more highly by lower NNS's and the combined NNS grouping than those that were plural instead of singular but that included a singular theme, as in "**A Natalia les gusta este gato, pero normalmente prefiere los perros.*." In fact, the lower NNS group gave the former sentence an average score of 3.47, compared to a score of just 2.75 for the latter. This is possible evidence that the lower NNS's still do not know whether the theme (in this case, "*los deportes*") controls agreement with the IO clitic pronoun *les* (which it does not) or whether the experiencer (*Marcos*) does (which is, in fact, the case). Thus, incorrectly using a plural IO clitic pronoun (*les*) in a sentence with a singular experiencer (*Natalia),* verb (*gusta*) and theme (*este gato*) results in a much lower score than using *les* in a sentence with a plural verb (*interesan*) and theme (*los deportes*).

Another way in which plurality and singularity compete for various interpretations of correctness is that for NS's errors that contain a form that is plural when it should be singular

appear to be much more stigmatized and lower scored than those in which a form that should be plural appear in the singular, but this was not generally the case for NNS's, who do not have the same intuition. This is perhaps due to the fact that to make a lexical item plural, an element must be added (usually an *s* or an *n*), whereas to make an item singular, that element would need to be omitted, and thus the error may not be as striking or noteworthy in a grammatical judgment reading task for an NS. Thus, as was mentioned, erroneous sentences in which the IO clitic pronoun is singular instead of plural, such as "**A las uruguayas le encantan los centros comerciales*," received a much higher score than those in which the clitic was plural instead of singular, as in "*A Marcos les interesan los deportes*." While the differences in scoring were not statistically significant, they, too, did give higher scores to the errors that used singular clitics, illustrating that for both NS's and NNS's, *le* is typically more acceptable than *les* because adding an element is more noticeable and also because learners often view "*le gusta*" and "*me gusta*" as a chunk, learning the clitic as part of the verb, not as a separate element. Thus, they may check for verb-theme agreement in such constructions, but do not necessarily think to check for clitic-experiencer agreement, as they mistakenly view the clitic as being somehow connected to the verb. The fact that much more emphasis in classrooms tends to be placed on subject-verb agreement and that testing of psych verb structures often focuses on ensuring that the theme and verb agree mean that learners are usually much more attuned to verbal agreement than the use of the dative a or even clitic agreement.

Further, the view of "*le gusta*" as a chunk and the high acceptance of sentences without *a*, most noticeably by the low NNS's, illustrates that lower proficiency learners view psych verb structures in a transitive way. In other words, they see *le* as part of the verb and do not note the need for the dative *a* at the beginning of the sentence, and, for them, structures such as "**Él le*

encanta ese programa de televisión" as acceptable, as, in their minds, "*él*" is the subject (and thus no dative *a* is needed before it) and "*le*" is simply an element that accompanies "*encanta*" in the "*le encanta*" chunk. Thus, these structures are given a transitive reading, which supports the SVO behavior reported by Toribio and Nye (2006), Montrul (1997b) and Quesada (2008).

5.2 Significance of Findings

In response to my original research questions, I had some expected and unexpected results. I found that non-native speakers proved to act quite differently from native speakers in certain categories, specifically in their reaction to sentences that did not contain the dative *a*, those that had V-T agreement errors and those that had IO clitic pronoun errors. Generally, higher level NNS's viewed sentences in a more prescriptively critical way than NS's across categories. Lower level NNS's tended to be more accepting of errors, suggesting perhaps a lack of awareness that such constructions were incorrect.

In terms of more specific types of errors, NS's found incorrect sentences that were missing the dative *a* (as in "*Él le encanta ese programa de televisión.*") and those that used direct object clitic pronouns in place of indirect object ones (such as "*A Mauricio lo encantan los gatos*.") to be the least acceptable. High NNS's also found the "DO" constructions to be among the least acceptable along with those in which the IO clitic pronoun was missing (as in "*A los niños importan mucho sus padres*.") and those that incorrectly used reflexive verb type constructions (such as "*Te encantas este crucero caribeño*.") Low NNS's provided their lowest scores for "DO" construction as well and also for structures missing the IO pronoun.

High NNS's scored constructions with incorrect verbal agreement significantly lower than both NS's and low NNS's. This could perhaps be due to the emphasis placed on verb conjugations and subject-verb agreement in the classroom for the higher proficiency group.

Thus, for the high NNS group, learners appear to have mastered the concept that the theme, and not the experiencer, controls verbal agreement. This separates them from the learners of Toribio and Nye (2006) ,Quesada (2008) and Montrul (1997b), who all struggled to master this structure. The lower NNS group, with its inability to recognize such errors, would, however, support the findings of these authors regarding V-T agreement difficulties. NS's, meanwhile, are either more able to capture meaning when verb-theme conjugation fails or, more generally, are simply more accustomed to variation.

On the other hand, unlike the NNS's, NS's find sentences that are incorrect due to their lack of the mandatory dative *a* to be more unacceptable than those that contain V-T agreement errors and thus distribute much lower scores to such constructions that omit *a* than do high and low NNS's. This could be due to the importance of the dative *a* in Spanish for NS's due to the language's greater ability to vary in word order and its historical development from the Latin case system. These high scores provided by NNS's indicate a continued difficulty in the acquisition of the dative *a*, which echoes the findings of Quesada (2008) and Toribio and Nye (2006).

Further, sentences that contained the emphatic *a* + experiencer were routinely read more quickly than those that did not contain that combination. As has been mentioned, this is somewhat interesting, since more content is added to the sentence in the case of the former, which in theory could mean that because there is more information to process in the sentence, the sentence would take longer to read. This, however, is not the case and that extra information enables a quicker, smoother reading.

5.3 Avenues for Future Research

While I found there to be great value in being able to control for many variables by creating a grammatical judgment task that measured score and reading time, I feel that supplementing such a study with a production task would be ideal. Enabling native and non-native speakers to produce psychological verb constructions would answer some of the assumptions that have been made in this analysis. Specifically, we would be able to see whether learners struggle to produce the dative *a* as much as they struggle to comprehend sentences that exclude it, whether they make statements in which they mistakenly equate the experiencer as controlling verbal agreement instead of the theme, as they accept many such constructions, and whether they show a preference in production for *gustar* as opposed to *encantar*, *interesar* and *importar*, as native speakers rated the former verb higher than the others.

Further, it would be interesting to see whether studying abroad in an immersion environment has any sort of effect on not only student judgment tasks but also on their subsequent production of psych verb constructions.

Lastly, viewing the results of formal classroom education specific to psychological verb structures would also be of value in order to see whether a specific emphasis aids in acquisition or not.

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APPENDIX A

SENTENCES EVALUATED VIA "E-PRIME"

1) Prefiero ir al parque cuando hace sol.
2) Me gustan las personas tranquilas.
3) Hablando en español es muy difícil para algunas personas.
4) A Marcos les interesan los deportes.
5) En el futuro, quiero estar médico.
6) Él le encanta ese programa de televisión.
7) Comer y dormir son mis pasatiempos favoritos.
8) A los niños importan mucho sus padres.
9) Tú y yo vamos a los partidos de fútbol todos los martes.
10) A Rodolfo y a Cristina les encanta el arte moderno.
11) No quiero que la gasolina es tan cara.
12) Lo importa lo básico.
13) Mi vecino es en su casa.
14) A Marcos y a Carolina les interesan la política.
15) El presidente vive muy lejos de aquí.
16) A las uruguayas le encantan los centros comerciales.
17) Es triste que no puedas asistir a la fiesta.
18) A ti te importan las calificaciones.
19) Salma Hayek es mi actriz preferida.
20) Te interesas las novelas argentinas.
21) La contaminación ambiental es una problema grave en algunos países.

22) A mí me gusto mucho vivir en esta parte del mundo.

23) Cecilia está maestra.

24) Los maestros les importa la educación.

25) Evito a los turistas durante el verano.

26) A Pedro le encanta los parques.

27) Mi padre es comprando la comida para la navidad.

28) Me gusta pensar.

29) Mi abuelo puede leer y hablar a la vez.

30) Nos importamos los problemas sociales.

31) Mis mejores amigos van recibir regalos.

32) Viniste mañana.

33) A Natalia les gusta este gato, pero normalmente prefiere los perros.

34) Juan y José hacen las mismas cosas todos los días sin saber por qué.

35) Cuando estoy enfermo, no quiero hacer nada con nadie.

36) A ella interesan las lenguas nórdicas.

37) En cinco años, voy casarme con mi novia.

38) Les gustan las cervezas irlandesas.

39) Leer es poder.

40) A Mauricio lo encantan los gatos.

41) Mi padre es más viejo de mi madre.

42) A los estudiantes le gusta dormir.

43) Voy al parque cuando pueda.

44) A ti y a mí nos interesa la paz mundial.

45) Lávate las manos antes de comer.

46) Le gusta los refrescos fríos.

47) No sé qué debe hacer Rodolfo este mes.

48) A ti te encantas los vestidos elegantes.

49) Tengo nada en común con ella.

50) Al presidente le importan la economía.

51) Llegué al restaurante antes de que salió Margarita.

52) Le encanta este postre.

53) Es sorprendente que duermas tanto.

54) Lo interesan los actores colombianos.

55) Tomás es muy simpático y por eso está mi amigo.

56) A nuestra amiga les importan las enfermedades infantiles.

57) Sofía no quiere que hay tanta pobreza en el mundo.

58) Te encantas este crucero caribeño.

59) Ven aquí después de que su hermano va al mercado.

60) Ellos les interesan las películas francesas.

61) Cristina estudia la biología porque quiere ser enfermera.

62) Les importa la inflación.

63) Prefiero a la comida picante.

64) A ti te gustas la tecnología.

65) A Vicente y a Juanita les importa las opiniones de otras personas.

66) Mi cumpleaños es un día muy emocionante para mí.

67) A Leonardo gusta Patricia.

68) Teresa come los burritos casi todos de los días.

69) A los alcaldes le importa la pobreza.

70) Es increíble que no comas las verduras.

71) Les encantan el museo antiguo.

72) Buscando la verdad es difícil.

73) Escribir está divertido.

74) A los profesores les interesan los documentales históricos.

75) El básquetbol debe ser más popular que el béisbol.

76) Me gusto la comida mexicana.

77) Quiero viajar por Europa ayer.

78) Les interesa los negocios internacionales.

79) No te digo algo.

80) Le gustan la mesa redonda.

81) Quieres que salimos esta noche.

82) Al entrenador de fútbol le importa la disciplina.

83) El chicle sea muy barato.

84) A Enrique lo gusta hablar en voz alta.

85) Duermo bien los domingos.

86) A Liliana les encanta el fútbol.

87) Ten paciencia ayer.

88) A los padres de Raquel le interesan las obras de teatro.

89) Maximiliano caminar lentamente.

90) Le encantan las fiestas tradicionales.

91) Su fruta favorita es la manzana.

92) A nosotros nos interesamos los coches pequeños.

93) El reloj es funcionando.

94) A mis tíos encanta tocar la guitarra.

95) Vienes por hablar con el jefe.

96) A nosotros nos interesan los rascacielos.

97) Mi hermana trabaja diariamente.

98) Quiero a comprar una computadora este mes.

99) Madrid y Barcelona son ciudades muy vibrantes y por eso Elena le gustan.

APPENDIX B

ALL GROUP SCORES AND READING TIMES BY CATEGORY

Group Scores by Category:

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Correctness				
All Correct Score	4.58	4.50	4.55	4.43
All Incorrect Score	2.76	2.93	2.67	3.21
Correct Test Score	4.78	4.62	4.68	4.56
Incorrect Test Score	2.89	2.88	2.60	3.17
Correct Distracter Score	4.48	4.43	4.47	4.37
Incorrect Distracter Score	2.60	3.00	2.75	3.26
All Test Score	3.38	3.32	3.12	3.52
All Distracter Score	3.49	3.66	3.53	3.79
All Score	3.44	3.49	3.32	3.66
	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Dative A				
A Correct Score	4.81	4.59	4.73	4.45
No A Incorrect Score	2.66	3.69	3.18	4.16
No A Correct Score	4.76	4.65	4.63	4.67
No A Incorrect Other Score	2.66	2.64	2.39	2.92
No A Score	3.32	3.46	3.23	3.69
A Score	3.43	3.22	3.04	3.40
No A Incorrect N+Z Score	2.66	2.93	2.60	3.27
A Incorrect Score	3.03	2.85	2.61	3.10
	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verbal Agreement				
Correct Verb-Theme Agreement Score	4.78	4.62	4.68	4.56
No Verb Agree Incorrect Score	2.97	2.81	2.55	3.11
Verb Agree Incorrect Score	2.84	2.93	2.65	3.21

Reflexive Construction Score	2.85	2.82	2.51	3.15
Verb Agree S Verb S Exp Score	4.90	4.70	4.72	4.68
Verb Agree PL Verb PL Exp Score	4.69	4.71	4.79	4.69
Verb Agree S Verb PL Exp Score	4.71	4.30	4.44	4.13
Verb Agree PL Verb S Exp Score	4.83	4.73	4.70	4.70
Verb S Not PL Le Score	3.20	2.95	2.70	3.20
Verb S Not PL Les Score	3.30	2.79	2.58	3.05
Verb PL Not S Les Score	3.08	2.84	2.55	3.18
Verb PL Not S Le Score	2.71	2.66	2.48	2.86
Verb S Not PL Le No A Score	3.18	2.84	2.65	3.05
Verb S Not PL Le A Score	3.22	3.04	2.75	3.35
Verb S Not PL Les No A Score	2.80	2.70	2.42	3.00
Verb S Not PL Les A Score	3.72	2.90	2.76	3.11
Verb PL Not S Le No A Score	2.61	2.47	2.36	2.60
Verb PL Not S Le A Score	2.80	2.84	2.59	3.09
Verb PL Not S Les No A Score	3.12	2.79	2.48	3.18
Verb PL Not S Les A Score	3.05	2.88	2.61	3.18
Reflexive w/ A Score	3.05	2.90	2.61	3.21
Reflexive No A Score	2.64	2.73	2.42	3.08
	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO Correct	4.78	4.62	4.68	4.56
IO Error Incorrect Score	2.88	2.75	2.54	2.98
IO Empty Incorrect Score	2.84	2.72	2.51	2.93
IO No Agree Score	3.07	2.93	2.68	3.21
IO DO Score	2.59	2.44	2.29	2.60
IO S Not PL Score	3.27	3.00	2.73	3.29
IO S Not PL PL Th Score	3.47	3.03	2.72	3.39
IO S Not PL S Th Score	3.09	2.97	2.73	3.19
IO PL Not S Score	2.88	2.87	2.63	3.12
IO PL Not S S Th Score	2.89	2.61	2.47	2.75
IO PL Not S PL Th Score	2.86	3.11	2.78	3.47
IO DO No A Score	2.21	2.35	2.18	2.52
IO DO A Score	2.97	2.53	2.40	2.67
Inc but IO Correct Score	2.90	2.98	2.66	3.32
	Native	Non-Native,	Non-Native,	Non-Native,

		All	High	Low
Verb				
Gustar No VA Score	3.24	2.81	2.53	3.13
Encantar No VA Score	2.83	2.83	2.61	3.09
Importar No VA Score	2.85	2.84	2.55	3.16
Interesar No VA Score	2.81	2.78	2.51	3.08
Gustar VA Score	4.86	4.75	4.78	4.72
Encantar VA Score	4.76	4.52	4.52	4.48
Importar VA Score	4.78	4.68	4.69	4.70
Interesar VA Score	4.74	4.53	4.72	4.33

Group Reading Times by Category:

	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Correctness				
All Correct RT	4539.16	6644.12	6026.15	7191.46
All Incorrect RT	5168.83	6562.44	6030.83	7123.97
Correct Test RT	4511.87	6164.79	5389.33	6856.53
Incorrect Test RT	5379.91	6499.51	5993.04	7040.72
Correct Distracter RT	4553.04	6898.66	6381.58	7359.23
Incorrect Distracter RT	4894.68	6647.90	6083.52	7220.37
All Test RT	5153.55	6414.61	5843.10	6993.71
All Distracter RT	4732.81	6764.49	6218.30	7286.42
All RT	4934.93	6591.91	6029.19	7145.09
	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Dative A				
A Correct RT	4893.40	6718.55	5718.64	7481.39
No A Incorrect RT	5586.74	7060.59	6537.21	7514.40
No A Correct RT	4136.91	5617.16	5084.07	6236.30
No A Incorrect Other RT	5299.58	6287.94	5761.13	6832.30
No A RT	4989.99	6228.20	5691.43	6782.98
A RT	5270.11	6547.14	5950.23	7145.90
No A Incorrect N+Z RT	5384.24	6498.78	5966.04	7023.38
A Incorrect RT	5377.21	6499.97	6009.53	7051.85
	Native	Non-Native, All	Non-Native, High	Non-Native, Low

Verbal Agreement				
VA RT	4511.87	6164.79	5389.33	6856.53
No Verb Agree Incorrect RT	5319.02	6324.29	5721.58	7022.65
Verb Agree Incorrect RT	5345.14	6639.73	6212.29	7055.18
Reflexive RT	5043.17	6228.09	5634.01	6988.77
Verb Agree S Verb S Exp RT	4409.92	5736.99	5233.06	6283.78
Verb Agree PL Verb PL Exp RT	5192.02	6694.30	5855.35	7637.05
Verb Agree S Verb PL Exp RT	4581.00	6696.36	5291.98	7419.68
Verb Agree PL Verb S Exp RT	3901.47	5756.68	5594.40	6303.16
Verb S Not PL Le RT	5205.17	6038.73	5127.40	6860.66
Verb S Not PL Les RT	6327.85	7271.80	7039.27	7302.30
Verb PL Not S Les RT	6006.67	6163.75	6034.32	6887.39
Verb PL Not S Le RT	5758.74	6227.06	5048.20	7212.12
Verb S Not PL Le No A RT	5016.24	6463.82	5122.39	7635.76
Verb S Not PL Le A RT	5383.61	5631.72	5132.21	6152.96
Verb S Not PL Les No A RT	6247.07	7433.37	7510.08	7349.68
Verb S Not PL Les A RT	6395.17	7090.54	6501.19	7244.39
Verb PL Not S Le No A RT	6132.78	6259.91	5251.27	7163.00
Verb PL Not S Le A RT	5422.10	6195.67	4845.14	7256.77
Verb PL Not S Les No A RT	5551.24	5679.53	5239.81	6112.27
Verb PL Not S Les A RT	6414.16	6659.50	6759.74	7662.50
Reflexive A RT	4795.03	6326.77	5651.15	7131.55
Reflexive No A RT	5301.65	6128.84	5616.67	6847.57
	Native	Non-Native, All	Non-Native, High	Non-Native, Low
I.O. Slot				
IO Correct RT	4511.87	6164.79	5389.33	6856.53
IO Error Incorrect RT	5283.28	6541.29	6140.48	6942.34
IO Empty Incorrect RT	5395.19	6447.45	6101.63	6719.33
IO No Agree RT	5313.36	6741.87	6293.89	7260.00
IO DO RT	5118.22	6251.03	5880.42	6563.61
IO S Not PL RT	5509.23	6904.93	6624.13	7485.99
IO S Not PL PL Th RT	6297.88	7539.20	7625.00	7609.16
IO S Not PL S Th RT	4766.97	6248.53	5601.02	7359.95
IO PL Not S RT	5133.81	6577.88	5952.40	7023.12
IO PL Not S S Th RT	4894.03	6549.78	5827.95	7027.48

IO PL Not S PL Th RT	5360.62	6604.72	6071.31	7019.07
IO DO No A RT	4541.13	6231.04	5929.89	6388.78
IO DO A RT	5695.32	6271.46	5833.06	6750.63
Inc but IO Correct RT	5456.85	6465.30	5870.90	7119.87
	Native	Non-Native, All	Non-Native, High	Non-Native, Low
Verb				
Gustar No VA RT	5074.88	5958.39	5095.47	6782.07
Encantar No VA RT	5267.53	6225.74	5536.20	6849.74
Importar No VA RT	5712.53	6550.42	5808.48	7159.23
Interesar No VA RT	5784.97	6734.02	6636.18	7394.20
Gustar VA RT	3496.86	5166.72	4848.72	5750.68
Encantar VA RT	5005.16	6434.34	5697.12	7112.48
Importar VA RT	4308.81	6096.60	5276.35	6951.36
Interesar VA RT	5201.64	6959.11	5779.87	7632.93

Native Scores and RT's by Ranking

	Native Score		Native RT
Verb Agree S Verb S Exp Score	4.898305085	Gustar VA RT	3496.857143
Gustar VA Score	4.857142857	Verb Agree PL Verb S Exp RT	3901.465517
Verb Agree PL Verb S Exp Score	4.827586207	No A Correct RT	4136.905172
A Correct Score	4.807017544	Importar VA RT	4308.810345
Correct Real Score	4.782608696	Verb Agree S Verb S Exp RT	4409.915254
Importar VA Score	4.775862069	Correct Real RT	4511.865217
No A Correct Score	4.75862069	All Correct RT	4539.156891
Encantar VA Score	4.75862069	IO DO No A RT	4541.131579
Interesar VA Score	4.74137931	Correct Filler RT	4553.044248
Verb Agree S Verb PL Exp Score	4.706896552	Verb Agree S Verb PL Exp RT	4581
Verb Agree PL Verb PL Exp Score	4.690909091	All Filler RT	4732.813417
All Correct Score	4.579178886	IO S Not PL S Th RT	4766.970588
Correct Filler Score	4.475663717	Person Agree A RT	4795.026667
Verb S Not PL Les A Score	3.722222222	A Correct RT	4893.403509
All Filler Score	3.487421384	IO PL Not S S Th RT	4894.028571

IO S Not PL PL Th Score	3.46875	Incorrect Filler RT	4894.677291
All Score	3.437363834	All RT	4934.933007
A Score	3.427184466	No A RT	4989.986376
All Real Score	3.383219955	Encantar VA RT	5005.155172
No A Score	3.321525886	Verb S Not PL Le No A RT	5016.235294
Verb S Not PL Les Score	3.303030303	Person Agree RT	5043.170068
IO S Not PL Score	3.272727273	Gustar No VA RT	5074.876404
Gustar No VA Score	3.235955056	IO DO RT	5118.223684
Verb S Not PL Le A Score	3.222222222	IO PL Not S RT	5133.805556
Verb S Not PL Le Score	3.2	All Real RT	5153.552154
Verb S Not PL Le No A Score	3.176470588	All Incorrect RT	5168.831889
Verb PL Not S Les No A Score	3.117647059	Verb Agree PL Verb PL Exp RT	5192.018182
IO S Not PL S Th Score	3.088235294	Interesar VA RT	5201.637931
Verb PL Not S Les Score	3.083333333	Verb S Not PL Le RT	5205.171429
IO No Agree Score	3.065217391	Encantar No VA RT	5267.527778
Person Agree A Score	3.053333333	A RT	5270.112621
Verb PL Not S Les A Score	3.052631579	IO Error Incorrect RT	5283.276817
A Incorrect Score	3.034912718	No A Incorrect Other RT	5299.576271
IO DO A Score	2.973684211	Person Agree No A RT	5301.652778
No Verb Agree Incorrect Score	2.971731449	IO No Agree RT	5313.355072
Inc but IO Correct Score	2.895316804	No Verb Agree Incorrect RT	5319.024735
Incorrect Real Score	2.889570552	Verb Agree Incorrect RT	5345.140496
IO PL Not S S Th Score	2.885714286	IO PL Not S PL Th RT	5360.621622
IO Error Incorrect Score	2.882352941	A Incorrect RT	5377.206983
IO PL Not S Score	2.875	Incorrect Real RT	5379.91411
IO PL Not S PL Th Score	2.864864865	Verb S Not PL Le A RT	5383.611111
Importar No VA Score	2.854545455	No A Incorrect N+Z RT	5384.239044
Person Agree Score	2.850340136	IO Empty Incorrect RT	5395.186667
IO Empty Incorrect Score	2.84	Verb PL Not S Le A RT	5422.1
Verb Agree Incorrect Score	2.837465565	Inc but IO Correct RT	5456.85124
Encantar No VA Score	2.833333333	IO S Not PL RT	5509.227273
Interesar No VA Score	2.808219178	Verb PL Not S Les No A RT	5551.235294
Verb S Not PL Les No A Score	2.8	No A Incorrect RT	5586.743243
Verb PL Not S Le A Score	2.8	IO DO A RT	5695.315789
All Incorrect Score	2.762564991	Importar No VA RT	5712.527273
Verb PL Not S Le Score	2.710526316	Verb PL Not S Le RT	5758.736842

No A Incorrect Score	2.662162162	Interesar No VA RT	5784.972603
No A Incorrect N+Z Score	2.657370518	Verb PL Not S Les RT	6006.666667
No A Incorrect Other Score	2.655367232	Verb PL Not S Le No A RT	6132.777778
Person Agree No A Score	2.638888889	Verb S Not PL Les No A RT	6247.066667
Verb PL Not S Le No A Score	2.611111111	IO S Not PL PL Th RT	6297.875
Incorrect Filler Score	2.597609562	Verb S Not PL Les RT	6327.848485
IO DO Score	2.592105263	Verb S Not PL Les A RT	6395.166667
IO DO No A Score	2.210526316	Verb PL Not S Les A RT	6414.157895

Combined Non-Native Grouping Scores and RT's by Ranking

	All Non-Native Score		All Non-Native RT
Gustar VA Score	4.746268657	Gustar VA RT	5166.723881
Verb Agree PL Verb S Exp Score	4.729411765	No A Correct RT	5617.158672
Verb Agree PL Verb PL Exp Score	4.712121212	Verb S Not PL Le A RT	5631.723404
Verb Agree S Verb S Exp Score	4.702898551	Verb PL Not S Les No A RT	5679.534884
Importar VA Score	4.678832117	Verb Agree S Verb S Exp RT	5736.992754
No A Correct Score	4.649446494	Verb Agree PL Verb S Exp RT	5756.682353
Correct Real Score	4.617810761	Gustar No VA RT	5958.386667
A Correct Score	4.585820896	Verb S Not PL Le RT	6038.728261
Interesar VA Score	4.525925926	Importar VA RT	6096.59854
Encantar VA Score	4.518796992	Person Agree No A RT	6128.840909
All Correct Score	4.495495495	Verb PL Not S Les RT	6163.752941
Correct Filler Score	4.430541872	Correct Real RT	6164.790353
Verb Agree S Verb PL Exp Score	4.304347826	Verb PL Not S Le A RT	6195.666667
No A Incorrect Score	3.694610778	Encantar No VA RT	6225.741573
All Filler Score	3.664223546	Verb PL Not S Le RT	6227.056818
All Score	3.494428969	Person Agree RT	6228.087819
No A Score	3.456398641	No A RT	6228.202718
All Real Score	3.32	IO DO No A RT	6231.043478
A Score	3.223027375	IO S Not PL S Th RT	6248.534884
IO PL Not S PL Th Score	3.112359551	IO DO RT	6251.027473
Verb S Not PL Le A Score	3.042553191	Verb PL Not S Le No A RT	6259.906977

IO S Not PL PL Th Score	3.033707865	IO DO A RT	6271.455556
IO S Not PL Score	3	No A Incorrect Other RT	6287.94382
Incorrect Filler Score	2.998287671	No Verb Agree Incorrect RT	6324.29078
Inc but IO Correct Score	2.982798165	Person Agree A RT	6326.774011
IO S Not PL S Th Score	2.965116279	All Real RT	6414.611294
Verb S Not PL Le Score	2.945652174	Encantar VA RT	6434.338346
IO No Agree Score	2.934097421	IO Empty Incorrect RT	6447.448087
Verb Agree Incorrect Score	2.930760499	Verb S Not PL Le No A RT	6463.822222
All Incorrect Score	2.929557008	Inc but IO Correct RT	6465.301606
No A Incorrect N+Z Score	2.928104575	No A Incorrect N+Z RT	6498.779412
Person Agree A Score	2.903954802	Incorrect Real RT	6499.51261
Verb S Not PL Les A Score	2.902439024	A Incorrect RT	6499.973306
Verb PL Not S Les A Score	2.880952381	IO Error Incorrect RT	6541.294118
Incorrect Real Score	2.878940731	A RT	6547.138486
IO PL Not S Score	2.867816092	IO PL Not S S Th RT	6549.776471
A Incorrect Score	2.848049281	Importar No VA RT	6550.423077
Verb S Not PL Le No A Score	2.844444444	All Incorrect RT	6562.444808
Verb PL Not S Le A Score	2.844444444	IO PL Not S RT	6577.87931
Importar No VA Score	2.838461538	All RT	6591.907382
Verb PL Not S Les Score	2.835294118	IO PL Not S PL Th RT	6604.719101
Encantar No VA Score	2.831460674	Verb Agree Incorrect RT	6639.729852
Person Agree Score	2.818696884	All Correct RT	6644.120978
No Verb Agree Incorrect Score	2.814184397	Incorrect Filler RT	6647.898973
Gustar No VA Score	2.808888889	Verb PL Not S Les A RT	6659.5
Verb S Not PL Les Score	2.793103448	Verb Agree PL Verb PL Exp RT	6694.295455
Verb PL Not S Les No A Score	2.790697674	Verb Agree S Verb PL Exp RT	6696.362319
Interesar No VA Score	2.784883721	A Correct RT	6718.552239
IO Error Incorrect Score	2.75210084	Interesar No VA RT	6734.017442
Person Agree No A Score	2.732954545	IO No Agree RT	6741.873926
IO Empty Incorrect Score	2.715846995	All Filler RT	6764.4929
Verb S Not PL Les No A Score	2.695652174	Correct Filler RT	6898.662069
Verb PL Not S Le Score	2.659090909	IO S Not PL RT	6904.931429
No A Incorrect Other Score	2.640449438	Interesar VA RT	6959.111111
IO PL Not S S Th Score	2.611764706	No A Incorrect RT	7060.586826
IO DO A Score	2.533333333	Verb S Not PL Les A RT	7090.536585
Verb PL Not S Le No A Score	2.465116279	Verb S Not PL Les RT	7271.804598

IO DO Score	2.43956044	Verb S Not PL Les No A RT	7433.369565
IO DO No A Score	2.347826087	IO S Not PL PL Th RT	7539.202247

High Non-Native Scores and RT's by Ranking

	High Non-Native Score		High Non-Native RT
Verb Agree PL Verb PL Exp Score	4.787878788	Verb PL Not S Le A RT	4845.136364
Gustar VA Score	4.779411765	Gustar VA RT	4848.720588
A Correct Score	4.732283465	Verb PL Not S Le RT	5048.204545
Verb Agree S Verb S Exp Score	4.724637681	No A Correct RT	5084.065693
Interesar VA Score	4.721311475	Gustar No VA RT	5095.473684
Verb Agree PL Verb S Exp Score	4.697674419	Verb S Not PL Le No A RT	5122.391304
Importar VA Score	4.691176471	Verb S Not PL Le RT	5127.404255
Correct Real Score	4.678030303	Verb S Not PL Le A RT	5132.208333
No A Correct Score	4.627737226	Verb Agree S Verb S Exp RT	5233.057971
All Correct Score	4.545454545	Verb PL Not S Les No A RT	5239.809524
Encantar VA Score	4.52238806	Verb PL Not S Le No A RT	5251.272727
Correct Filler Score	4.471458774	Importar VA RT	5276.352941
Verb Agree S Verb PL Exp Score	4.444444444	Verb Agree S Verb PL Exp RT	5291.984127
All Filler Score	3.529636711	Correct Real RT	5389.333333
All Score	3.322901849	Encantar No VA RT	5536.202247
No A Score	3.231818182	Verb Agree PL Verb S Exp RT	5594.395349
No A Incorrect Score	3.175	IO S Not PL S Th RT	5601.022222
All Real Score	3.119473189	Person Agree No A RT	5616.670455
A Score	3.040128411	Person Agree RT	5634.00565
IO PL Not S PL Th Score	2.777777778	Person Agree A RT	5651.146067
Verb S Not PL Les A Score	2.761904762	No A RT	5691.425
Incorrect Filler Score	2.752181501	Encantar VA RT	5697.119403
Verb S Not PL Le A Score	2.75	A Correct RT	5718.637795
IO S Not PL S Th Score	2.733333333	No Verb Agree Incorrect RT	5721.582633
IO S Not PL Score	2.725274725	No A Incorrect Other RT	5761.134529
IO S Not PL PL Th Score	2.717391304	Interesar VA RT	5779.868852

Verb S Not PL Le Score	2.70212766	Importar No VA RT	5808.484375
IO No Agree Score	2.675977654	IO PL Not S S Th RT	5827.953488
All Incorrect Score	2.666180758	IO DO A RT	5833.06383
Inc but IO Correct Score	2.661327231	All Real RT	5843.104421
Verb S Not PL Le No A Score	2.652173913	Verb Agree PL Verb PL Exp RT	5855.348485
Verb Agree Incorrect Score	2.65158371	Inc but IO Correct RT	5870.897025
IO PL Not S Score	2.625	IO DO RT	5880.423913
Verb PL Not S Les A Score	2.608695652	IO DO No A RT	5929.888889
A Incorrect Score	2.606854839	A RT	5950.229535
Person Agree A Score	2.606741573	IO PL Not S RT	5952.397727
Encantar No VA Score	2.606741573	No A Incorrect N+Z RT	5966.039604
Incorrect Real Score	2.604505632	Incorrect Real RT	5993.036295
No A Incorrect N+Z Score	2.600660066	A Incorrect RT	6009.528226
Verb PL Not S Le A Score	2.590909091	All Correct RT	6026.145183
Verb S Not PL Les Score	2.577777778	All RT	6029.189663
Importar No VA Score	2.546875	All Incorrect RT	6030.825073
No Verb Agree Incorrect Score	2.546218487	Verb PL Not S Les RT	6034.318182
Verb PL Not S Les Score	2.545454545	IO PL Not S PL Th RT	6071.311111
IO Error Incorrect Score	2.535911602	Incorrect Filler RT	6083.518325
Gustar No VA Score	2.526315789	IO Empty Incorrect RT	6101.626374
Person Agree Score	2.514124294	IO Error Incorrect RT	6140.480663
Interesar No VA Score	2.511111111	Verb Agree Incorrect RT	6212.28733
IO Empty Incorrect Score	2.505494505	All Filler RT	6218.299235
Verb PL Not S Le Score	2.477272727	IO No Agree RT	6293.893855
Verb PL Not S Les No A Score	2.476190476	Correct Filler RT	6381.575053
IO PL Not S S Th Score	2.465116279	Verb S Not PL Les A RT	6501.190476
Person Agree No A Score	2.420454545	No A Incorrect RT	6537.2125
Verb S Not PL Les No A Score	2.416666667	IO S Not PL RT	6624.131868
IO DO A Score	2.404255319	Interesar No VA RT	6636.177778
No A Incorrect Other Score	2.394618834	Verb PL Not S Les A RT	6759.73913
Verb PL Not S Le No A Score	2.363636364	Verb S Not PL Les RT	7039.266667
IO DO Score	2.293478261	Verb S Not PL Les No A RT	7510.083333
IO DO No A Score	2.177777778	IO S Not PL PL Th RT	7625

Low Non-Native Scores and RT's by Ranking

	Low Non-Native Score		Low Non-Native RT
Gustar VA Score	4.720588235	Gustar VA RT	5750.676471

Verb Agree PL Verb S Exp Score	4.704545455	Verb PL Not S Les No A RT	6112.272727
Importar VA Score	4.695652174	Verb S Not PL Le A RT	6152.956522
Verb Agree PL Verb PL Exp Score	4.6875	No A Correct RT	6236.303704
Verb Agree S Verb S Exp Score	4.68115942	Verb Agree S Verb S Exp RT	6283.782609
No A Correct Score	4.666666667	Verb Agree PL Verb S Exp RT	6303.159091
Correct Real Score	4.557620818	IO DO No A RT	6388.782609
Encantar VA Score	4.476923077	IO DO RT	6563.606742
A Correct Score	4.447761194	IO Empty Incorrect RT	6719.32967
All Correct Score	4.433002481	IO DO A RT	6750.627907
Correct Filler Score	4.370577281	Gustar No VA RT	6782.073394
Interesar VA Score	4.328358209	No A RT	6782.9819
No A Incorrect Score	4.162790698	No A Incorrect Other RT	6832.303167
Verb Agree S Verb PL Exp Score	4.130434783	Person Agree No A RT	6847.566667
All Filler Score	3.789193977	Encantar No VA RT	6849.738636
No A Score	3.694570136	Correct Real RT	6856.531599
All Score	3.660558864	Verb S Not PL Le RT	6860.659091
All Real Score	3.522770398	Verb PL Not S Les RT	6887.386364
IO PL Not S PL Th Score	3.465116279	IO Error Incorrect RT	6942.342857
A Score	3.39869281	Importar VA RT	6951.362319
IO S Not PL PL Th Score	3.386363636	Person Agree RT	6988.765363
Verb S Not PL Le A Score	3.347826087	All Real RT	6993.708729
Inc but IO Correct Score	3.31954023	IO PL Not S PL Th RT	7019.069767
IO S Not PL Score	3.287356322	No Verb Agree Incorrect RT	7022.647564
No A Incorrect N+Z Score	3.267100977	IO PL Not S RT	7023.120482
Incorrect Filler Score	3.261824324	No A Incorrect N+Z RT	7023.37785
Person Agree A Score	3.213483146	IO PL Not S S Th RT	7027.475
Verb Agree Incorrect Score	3.213302752	Incorrect Real RT	7040.715924
All Incorrect Score	3.20754717	A Incorrect RT	7051.851464
IO No Agree Score	3.205882353	Verb Agree Incorrect RT	7055.178899
Verb S Not PL Le Score	3.204545455	Encantar VA RT	7112.476923
IO S Not PL S Th Score	3.186046512	Inc but IO Correct RT	7119.866667
Verb PL Not S Les Score	3.181818182	All Incorrect RT	7123.970247
Verb PL Not S Les No A Score	3.181818182	Person Agree A RT	7131.550562
Verb PL Not S Les A Score	3.181818182	All RT	7145.091159
Incorrect Real Score	3.168152866	A RT	7145.900327
Importar No VA Score	3.15625	Importar No VA RT	7159.234375

Person Agree Score	3.145251397	Verb PL Not S Le No A RT	7163
Gustar No VA Score	3.128440367	All Correct RT	7191.455335
IO PL Not S Score	3.120481928	Verb PL Not S Le RT	7212.119048
No Verb Agree Incorrect Score	3.111747851	Incorrect Filler RT	7220.369932
Verb S Not PL Les A Score	3.111111111	Verb S Not PL Les A RT	7244.388889
A Incorrect Score	3.10460251	Verb PL Not S Le A RT	7256.772727
Verb PL Not S Le A Score	3.090909091	IO No Agree RT	7260
Encantar No VA Score	3.090909091	All Filler RT	7286.417183
Interesar No VA Score	3.079545455	Verb S Not PL Les RT	7302.3
Person Agree No A Score	3.077777778	Verb S Not PL Les No A RT	7349.681818
Verb S Not PL Les Score	3.05	Correct Filler RT	7359.22905
Verb S Not PL Le No A Score	3.047619048	IO S Not PL S Th RT	7359.953488
Verb S Not PL Les No A Score	3	Interesar No VA RT	7394.204545
IO Error Incorrect Score	2.98	Verb Agree S Verb PL Exp RT	7419.681159
IO Empty Incorrect Score	2.934065934	A Correct RT	7481.38806
No A Incorrect Other Score	2.918552036	IO S Not PL RT	7485.988506
Verb PL Not S Le Score	2.857142857	No A Incorrect RT	7514.395349
IO PL Not S S Th Score	2.75	IO S Not PL PL Th RT	7609.159091
IO DO A Score	2.674418605	Interesar VA RT	7632.925373
Verb PL Not S Le No A Score	2.6	Verb S Not PL Le No A RT	7635.761905
IO DO Score	2.595505618	Verb Agree PL Verb PL Exp RT	7637.046875
IO DO No A Score	2.52173913	Verb PL Not S Les A RT	7662.5