Chapter 4

Research Methodology

4.0 Introduction

The discussion in the previous chapter made clear that, despite the extensive number of studies on pro-drop, numerous unanswered questions remain. Many previous studies were based on assumptions no longer current in linguistic theory, and none have provided a full developmental account of pro-drop from an OT perspective. Many accounts that have addressed developmental issues from a parameter-setting perspective have used a small number of subjects, considered only a single property of pro-drop, or asked for grammaticality judgments of sentences that lacked discourse contexts.[1] This dissertation attempts to address some of the previous shortcomings through the use of broad-based tests constructed to reveal information about the interfaces between discoursal and syntactic components of grammar related to null subjects, inversion, and *that-trace*. The specific research questions and hypotheses these tests attempt to address and the research methodology used in these studies are the focus of this chapter.

This chapter is organized as follows: Section 4.1 introduces the research agenda that this study begins to address through the specific research questions and hypotheses pursued in this study. Section 4.2 discusses the motivation for using a grammaticality judgment task as the centerpiece for this study, the limitations and validity of a study based on grammaticality judgments, and a brief description of how the grammaticality judgment task in this study was constructed (using a translation task) and refined

(through a small pilot study). Section 4.3 discusses the research pool used for the translation task, the pilot, and the main study, and the precise procedures used for collecting the data. Finally, Section 4.4 discusses in greater detail the creation of the tasks and the predicted results.

4.1 Research questions and hypotheses

This dissertation initiates a research program focused on answering questions related to linguistic theory, interlanguage theory, and learning theory. In terms of linguistic theory, the goal of this dissertation is to shed greater light on how discourse and syntax conflict in English and Spanish, especially as relates to the properties typically associated with pro-drop, and to uncover implications these conflicts may have for the L2 learning of Spanish. In terms of interlanguage theory, the goal is to explain how types and rates of error for English learners of Spanish reveal tensions between syntactic and discoursal constraints. In terms of learning theory, the goal is to test a particular learning algorithm to see if it guides L1 English learners to converge on the L2 Spanish constraint hierarchies.

To begin to address these broad concerns, this dissertation asks the following specific research questions:

(Q1) Is the proposed implicational hierarchy of Liceras (1989) empirically verifiable?

(Q2) If Liceras's hierarchy is verified, how should this hierarchy be understood in terms of OT constraint interactions? If the hierarchy is not verified, what modifications to it are required?

(Q3) What precisely are the relevant constraints that are involved in the mismatch between the way English and Spanish handle null subjects, inversion, and *that-trace*? What interactions between discourse and syntax are implicated by these constraints?

(Q4) Does the restructuring of these constraints as learners converge upon the target grammar find a natural explanation under the Constraint Demotion Algorithm of Tesar and Smolensky (2000)?

(Q5) Do learners eventually converge, in all respects, upon the target grammar? Are there pieces of the larger pro-drop phenomenon that remain resistant to acquisition?

In agreement with the Full Transfer/Full Access hypothesis of Schwartz and Sprouse (1996), this dissertation will assume that the initial state of the learner is a fully specified ranking of her native language. While this ranking is the one that is used in initial attempts to parse and produce utterances in the second language, the learner's subsequent acquisition is guided by the UG operation proposed in Optimality Theory (full access). Schwartz and Sprouse's hypothesis finds support in previous studies on pro-drop (e.g. Phinney 1987, White 1985, Liceras 1989) that claimed parameter resetting is difficult (due to L1 transfer), but possible (due to access to UG).

If parameter re-setting entails acquiring all the clustering of properties that pertain to a particular setting, then re-setting could be understood as automatization of all the properties that fall under that setting;[2] but if the acquisitional path of a pro-drop language does not involve the simultaneous appearance of the cluster of properties associated with pro-drop — that is, if a certain property is not obligatorily present at a particular interlanguage stage — then we have evidence for a process involving something other than the single setting of a parameter.

These research questions and set of assumptions have led to the formulation of four hypotheses:

(H1) As Liceras (1989) suggested, an implicational hierarchy will be found between the initial acceptability of null subjects, inversion, and *that-trace.*

(H2) 'Initial acceptability' will be distinct from 'correct use' of null subjects, inversion, and *that-trace*. The acceptance of inversion will not imply that the accurate use of null subjects has been acquired, nor will the acceptance of *that-trace* imply that the accurate use of inversion has been acquired.

(H3) Some L2 learners will eventually converge on native-like usage of null subjects, inversion and *that-trace*, but this convergence will come in only in the late stages of L2 acquisition and as a result of a sensitivity to the discoursal constraints of the language.

(H4) The developmental path taken by L2 learners may be characterized as the interaction of discrete discoursal and syntactic constraints, and this interaction will confirm the operation of the Constraint Demotion Algorithm of Tesar and Smolensky (2000).

The first hypothesis is based on the assumption that the results of Liceras (1989) will be replicated: null subjects will surface before inversion, and inversion will appear before *that-trace*. This hypothesis would only be falsified if the acquisitional order demonstrates that *that-trace* surfaces before inversion or null subjects, or that null subjects appeared after inversion.

The second hypothesis implies that the implicational hierarchy of Liceras (1989) requires further refinement. It separates licensing from use, claiming that Liceras's hierarchy applies only to the order in which these grammatical properties will find acceptance in the L2 grammar, but not necessarily the order in which native-like use of them will be acquired. This hypothesis would be falsified if the data shows null subjects

are used natively before inversion is acquired, or inversion is used natively before *that-trace* is acquired.

The third hypothesis references the issue of ultimate attainment.[3] Although L2 acquisition differs from L1 acquisition most dramatically in that L1 acquisition under normal conditions, unlike L2 acquisition, results in invariable success, the variable success of L2 learners should mean that at least some of the exceptional L2 learners in this study will achieve native-like competence regarding pro-drop. The first part of this hypothesis will be confirmed if some L2 learners do converge on the target grammar. If no learners in this study converge on the target L2, that result will falsify the hypothesis for the data set present in this study; however, this would not justify the conclusion that ultimate native-like competence is impossible, only that it was not achieved in this study. The second part of this hypothesis, that the convergence comes late in the acquisition process, follows previous findings (e.g. Galván 1998, LaFond, Hayes, and Bhatt 2001) that argued nuanced interactions between discourse and syntax result in the late acquisition of these properties. This second part of the hypothesis will be falsified if learners achieve early mastery of all pro-drop properties or if their mastery is unrelated to the acquisition of discoursal constraints.

The final hypothesis predicts that the developmental path taken by L2 learners may be characterized in OT terms as an interaction of discoursal and syntactic constraints and that this interaction will confirm of the Constraint Demotion Algorithm of Tesar and Smolensky (2000). This hypothesis fails (at least for the present analysis) either if no set of discoursal and syntactic constraints is found that can account for the results of the study, or if the restructuring of the constraint hierarchy that best accounts for the

developmental path is one that does not find a clear explanation using the learning algorithm proposed by Tesar and Smolensky.

4.2 The validity of grammaticality judgments

The centerpiece study of this dissertation is a cross-sectional grammaticality judgment task intended to provide insight into the state of learners' competence at various stages of linguistic development. Intuitions concerning the grammaticality or ungrammaticality of a sentence form part of native speakers' grammatical competence; in other words, native speakers have the ability to make solid judgments about both what can be said in a language and about what cannot be said. An important part of learning a second language is gaining the ability to determine the grammaticality of sentences in the target language. Therefore, grammaticality judgment tests have been widely used to investigate pro-drop (White 1985, Lakshmanan 1986, Phinney 1987, Liceras 1989, Yates 1990, Toribio, Roebuck, and Lantolf 1993, Pérez-Leroux and Glass 1997, 1999, Galván 1998, et al.).

The validity of grammaticality judgments has been challenged on several accounts. First, grammaticality judgments attempt to uncover grammatical 'competence', but, as Culicover (1997) mentions, the concept of competence itself involves a double idealization. Culicover writes the following (1997:11):

> We (falsely) treat all native speakers exactly the same and we assume that there is some stable and well-defined store of knowledge of language in the mind of the native speaker. The methodological assumption is that by ignoring differences between individuals and imprecision in the knowledge of individuals we may nevertheless discover something substantive and correct about natural language.

Not all researchers are willing to accept this idealization, and if the concept of 'competence' is questioned, any measure intended to arrive at that concept is also questionable.

Second, even among those who accept the common competence/performance distinction, it has been argued that grammaticality judgment tasks do not access the competence system in an untainted manner. The 'performance' of grammaticality judgments may itself vary, dependent on the mental state of the subjects making the judgment, the amount of time given for the task, or the ability of subjects to mentally construct possible scenarios permitting the utterance. For example, Schmerling (1978) argued that synonymy judgments (a type of grammaticality judgment) do not provide a useful test for an analysis of predicates taking infinitival complements. She argued that informants' base their judgments on more than just their knowledge of the language, bringing into the process special strategies used to deal with example sentences, strategies which interact with the informants knowledge about the world as well as their language.

Schmerling looked at the contrast between 4.1 and 4.2, where the (a) and (b) examples in 4.1 are thought to be synonymous, but the (a) and (b) examples in 4.2 are not:

(4.1.) a. *I expected the doctor to examine John.*
b. *I expected John to be examined by the doctor.*

(4.2.) a. *I persuaded the doctor to examine John.*
b. *I persuaded John to be examined by the doctor.*

She notes that since Rosenbaum (1967), the distinction between these sentences has been accounted for by concluding that *persuade* sentences exhibit an Equi analysis while

expected sentences involve a Raising analysis,[4] supporting the position that synonymy judgments reveal complex grammatical operations.

Schmerling shows that this type of analysis does not work well for a verb such as *allow*. Using a synonymy test, one could analyze *allow* as an Equi verb given the contrast in 4.3, but that analysis does not work if examples such as those in 4.4 are added, where *allow* looks like a Raising verb:

(4.3.) a. *I allowed the doctor to examine John.*
b. *I allowed John to be examined by the doctor.*

(4.4.) a. *The new regulations allow there to be intolerable situations like this.*
b. *The administration allowed unfair advantage to be taken of the strike.*

Schmerling argues that speakers have far more restricted direct intuitions of semantic meaning than previously thought — pragmatic factors have a way of slipping in to informants judgments of nonsynonymy. Informants decide, in absence of contrary pragmatic evidence, on the meaning of *granting permission*, as in 4.3, rather than the meaning *do nothing to prevent*, as in 4.4. This strategy is not a part of the grammar; it is, rather, a part of what it means to be an informant. Informants' judgments here are based not only on syntactic knowledge but also on their own personal knowledge of the world.

This article calls into question the use of grammaticality judgments to gain a view into the underlying grammatical system, but there are several fundamental reasons to use them despite these objections. First, although underlying competence cannot be directly accessed, whatever access we do obtain through performance systems may potentially reveal information about the grammatical system of the learner. In other words, the inevitable fact of some variability in the performance of speakers even on grammaticality

judgment tests does not invalidate their use, though it should prompt us to be somewhat cautious about conclusions based on these judgments alone.

Second, the grammaticality task used in this study employs several measures designed to enhance its validity. For example, subjects in this study were not asked to make contextless judgments of grammaticality. Whereas traditional grammaticality judgment tasks frequently provide a single sentence and then ask subjects whether such a sentence is grammatical, the task in this study supplied a discourse context in the form of a dialogue. Additionally, subjects were not simply asked for a positive or negative judgment regarding a sentence; rather, they were given a choice between a pair of sentences that were minimally different in regards to the condition under investigation. This choice somewhat reduced the chance that subjects would reject a particular ungrammatical sentence for a reason unrelated to the grammatical property being studied.

Third, grammaticality judgments do not need to be used in isolation. Although this dissertation focuses on the results of a study that used grammaticality judgments, this was not the only measure used here. Production tasks used in concert with grammaticality judgment tasks provide additional windows into the learner competence (Phinney 1987, Galván 1998). In the current study, the results of a translation task confirmed and augmented the results of the grammaticality judgment task. The translation task involved translating from English into Spanish the items that would then be used to create the grammaticality judgment task. In addition, a pilot study of the completed grammaticality judgment task subjected the task to further scrutiny, to insure that subjects were not confused about the discourse settings presented in the dialogues.

Different subjects were used for the translation, pilot, and grammaticality judgment tasks. These subjects will be discussed in the next section.

Therefore, despite the drawbacks related to grammaticality judgments, their use (which, as mentioned above, has been the standard practice in SLA research of pro-drop) is justified here. The modifications that have been implemented and the additional production measure as a confirming test enhance the validity of the test used in this study.

4.3 Research subjects and data collection procedures

Research subjects for the translation task, the pilot study, and the grammaticality judgment task were drawn from a variety of venues that are described here. All research subjects were adult members of academic communities in South Carolina or Pennsylvania who volunteered to participate in this study. A total of 370 subjects participated in these studies: 124 completed the translation task, 39 completed the pilot, and 207 completed the grammaticality judgment task.[5] Of the 370 subjects, 48 were native speakers of Spanish, 18 of whom were used for a control group for the translation task, and 30 of whom were used for the grammaticality judgment task. The native speakers of Spanish were from a variety of countries (Columbia, Costa Rica, Ecuador, Mexico, Peru, Puerto Rico, Spain, and Venezuela), a fact that was potentially important, since there are some differences in the Spanish spoken in these countries, but the results of the item analysis revealed no statistically significant differences related to country for the items in this study. The small pilot study did not use native speaker controls.

Subjects for the translation task were divided into four proficiency levels: beginning, intermediate, and advanced (based upon their placement in class levels and

number of years of Spanish instruction), and a fourth group consisting of native speaker controls. Subjects in the first three levels were native speakers of English who were learning Spanish at the University of South Carolina. The native speaker control group included native Spanish instructors, graduate teaching assistants in Spanish, and other graduate students at the University of South Carolina. There were 30 subjects in the beginning level, 36 in the intermediate level, 40 in the advanced level, and 18 native speakers as a control group. Participants in this study were given two dialogues and were asked to translate these into Spanish. Dialogues 6 and 8 (also found in Appendix A) serve as examples.

(6) *Watching television*

Julio: *Iris, do you like watching sports on television.*
Iris: *Not too much, but I sometimes watch tennis.*
Julio: *Really? I like tennis too.*
Iris: *Have you been watching the US Open?*
Julio: *Yes, I especially like Todd Martin.*
Iris: *Who do you think will win the US Open?*

(8) *At the restaurant*

Esther: *This food is great.*
Isabel: *Yes. I like to come here.*
Esther: *Are you going to the meeting tomorrow?*
Isabel: *I'm going to decide this afternoon.*
Esther: *Who is going to be there?*
Isabel: *A group of women from Cuba will be there.*

Subjects were given sufficient time to complete the dialogues; even at the beginning level most completed their translations in under 20 minutes. Although each participant translated two dialogues, they did not all translate the same dialogues. The specific

dialogues given to each participant were distributed randomly from a pool of 36 task items. All 36 tasks for this study may be found in Appendix A.

The 36 task items that were translated became the basis for the items used in the pilot and grammaticality judgment tasks. The pilot involved a 36-item grammaticality judgment task. The items were divided evenly between the grammatical properties of that null subjects, inversion and *that-trace*. The purpose for the pilot was to assess the time required to administer the test, and the clarity of the instructions, and the quality of the individual test items before they were used for the larger grammaticality study.[6] This pilot was administered to 39 intermediate level learners of Spanish at the University of South Carolina. The results of the pilot were used to revise certain dialogues that were confusing to the subjects due to difficulties with the vocabulary, lack of clarity regarding the discourse context, or other unforeseen ambiguities in the text.

The revision of the pilot became the main grammaticality test that was administered to 207 subjects. Subjects in this larger study were divided into five proficiency levels: 64 beginners, 51 intermediates, 56 advanced, 6 near-native speakers of Spanish, and 30 native speakers of Spanish. Placement in these levels was done prior to any examination of the results, on the basis of Spanish class level and years of instruction. Of the L1 English learners of Spanish, 98 were students at the Pennsylvania State University and 79 were students at the University of South Carolina. The native speaker control group for this task was completely drawn from a pool of international students from Spanish speaking countries who were studying English as a second language in Columbia, South Carolina. These students were enrolled at the English Programs for Internationals (EPI), neighboring the University of South Carolina.

All subjects for the grammaticality judgment task were given the 36 dialogues in Spanish. An example dialogue is the Spanish translation of dialogue 8 (also found in Appendix B):

(8) *En el restaurante*

Esther: *Esta comida está rica.*
Isabel: *Sí. A mí gusta venir aquí.*
Esther: *¿Vas a la reunión mañana?*
Isabel: *Voy a decidir esta tarde.*
Esther: *¿Quién va a estar allí?*
Isabel A: *Un grupo de mujeres de Cuba va a estar allí.* ☐
Isabel B: *Va a estar allí un grupo de mujeres de Cuba.* ☐

For each of these dialogues, subjects were asked to choose the response that best completed the dialogue by placing a check after the 'A' or 'B' response. The complete test of 36 items is given in Appendix B.

The distribution of subject participants among levels are shown in Table 4.1:

Table 4.1 Distribution of research subjects, by level

Test	Begin.	Inter.	Adv.	Near-Native	Native
Translation	30	36	40	-	18
Pilot	-	39	-	-	-
Gramm-Judgment	64	51	56	6	30

Several considerations went into grouping of proficiency levels in Table 4.1. First, since the grammaticality judgment task in this study is seeking to reveal, in part, whether native speakers of English can eventually converge on the L2 target language, the addition of a very advanced (i.e. near-native) group for this study appeared prudent. It is among near-natives, presumably, that the convergence on the L2 is most likely to occur, if it occurs at all. Second, since the translation task and the pilot were being used

in this study for the purposes of test creation and refinement, as well as to broadly confirm the patterns anticipated in the grammaticality judgment task, a near-native group was not as important for those tasks. This is, however, a limitation of the present study, and future research may wish to replicate both the translation task and the grammaticality judgment tasks, using more near-native speakers for both of the tasks.

Finally, some care is required in reporting the results of subjects from two different institutions. The proper placement of the subjects from the Pennsylvania State University, vis-à-vis the subjects from the University of South Carolina, was achieved through discussions with instructors from both institutions, the comparison of course syllabi and texts, and a comparison of demographic data given on a brief questionnaire (i.e. years of Spanish instruction, time spent in Spanish-speaking countries, etc.) .

The procedure used for data collection was as follows: Subjects were given the test instruments with an attached consent form. This form provided them with the general purpose of the study (to examine the development of Spanish language proficiency among native speakers of English studying Spanish as a foreign language) and the procedures that would be used. Subjects were informed of potential risks (fatigue, boredom, frustration) and potential benefits (reading comprehension or translation practice, the opportunity to contribute to empirical research in second language development). They were also assured that their answers would be stored securely and confidentially, and reported anonymously. The complete consent form is found in Appendix C.

Subjects were asked to sign and date the consent form, as well as to answer a brief questionnaire gathering demographic data about their native language, the amount of

Spanish instruction they had received, the amount of time they may have spent in Spanish-speaking countries, etc. The information was used to cull from the total sample, prior to an analysis of the results, those tests whose results may have been skewed due to extraneous variables. For example, some subjects reported native languages other than English or an inordinate number of years of instruction for the level of class they were taking. Some also failed to properly complete the task properly (e.g. by checking more than one box or skipping a page) so these tests were also culled from the total tabulations used for analysis.

4.4 Task items and predicted results

This section discusses in greater detail factors that were taken into consideration in the creation of the tasks, how this data was coded, and the predicted results. The same goal was being pursued in each of this dissertation's tasks—to reveal information about the status of null subjects, inversion, and *that-trace* at various stages in the development of learner grammars. Therefore, this section does not focus on the three different tests, but rather on the three grammatical properties and the items created to investigate them in all three tests.

A number of general considerations went into the creation of all the items used here. Since the same test would be administered to all levels, the vocabulary needed to carefully controlled to avoid lexical items that would be unfamiliar to beginning learners. The vocabulary used was drawn from beginning texts in consultation with instructors of beginning Spanish. Also, complex or advanced verbal structures (e.g. the subjunctive or

perfect tenses) were avoided, and sentence structure was kept as simple as the grammatical properties under investigation allowed.

The 36 items in all three tests were designed to investigate judgments regarding three conditions: null subjects, inversion, and *that-trace*. Each condition was further subdivided into subconditions. For example, items testing null subjects were of two types: those that tested the dropping of topic subjects and those that tested the retention of nontopic subjects. There were also two types of inversion items: those that involved presentational or contrastive focus and those that lacked this special discoursal feature. *That-trace* items in this study mostly contrasted sentences with a complementizer *que* with sentences lacking the complementizer, although two additional items tested whether judgments regarding [+*que*/-null subject] would contrast with [+*que*/+null subject]. Given the diverse set of grammatical properties and conditions, no distractors were included in the test design.

The test items created to investigate null subjects followed the methodology of LaFond, Hayes, and Bhatt (2001), with minor modifications.[7] Two types of items where constructed to investigate null subjects. The first type is exemplified in 4.5a (dialogue 20 in Appendix B), translated in 4.5a':

(4.5.) Dialogue selecting a topic subject

a. *En la universidad*

Simón: *Fue muy difícil esa clase de biología.*
Adriana: *Ah, ¿sí? ¿Qué estudias?*
Simón: *Historia. No me gustan las ciencias.*
Adriana: *Qué lástima. Las ciencias pueden ser muy interesantes.*
Simón: *¿Cómo te interesaste por las ciencias?*
Adriana A: *Tuve una maestra buenísima en la escuela secundaria.* √
Adriana B: *Yo tuve una maestra buenísima en la escuela secundaria.*

a'. *At the university*

Simón: *That biology class was very difficult.*
Adriana: *Really? What is your major?*
Simón: *History. I don't like science.*
Adriana: *That's too bad. Science can be interesting.*
Simón: *How did you get interested in science?*
Adriana: *I had a very good teacher in high school.*

The dialogue in 4.5 exemplifies a discourse setting that selects a phonetically unrealized topic subject. In 4.5, Adriana has been asked about her interest in science. Since Adriana and her interests are topics under discussion, and since Adriana is contextually recoverable as a discourse participant, a null subject is required in the response to Simón's question. The final choice that omits the overt first person pronoun (*yo*) is, therefore, the preferred choice. Learners of Spanish who are sensitive to the null subject requirements of Spanish should identify the need for a null subject in these types of examples, but early learners (whose L1 English grammatical constraint rankings demand that sentences have overt subjects) are predicted to less reliably choose the null subject in these contexts.

In contrast, certain discourse contexts in Spanish require overt subjects, particularly when the subject is not easily recoverable or is not the topic of the discourse. An example is provided in 4.6a, (dialogue 17 in Appendix B), translated in 4.6a':

(4.6.) Dialogue selecting overtly-realized subject

a. *Después de una visita al museo*

Luis: *Fui al museo esta mañana.*
Rosa: *¿Y qué viste?*
Luis: *Muchas pinturas de Picasso.*
Rosa: *A mí me gusta mucho Picasso.*
Luis: *A mí también; y por eso compré un póster en la tienda de regalos.*
Rosa A: *Yo también compré uno la semana pasada.* √
Rosa B: *También compré uno la semana pasada.*

a'. *After a trip to the museum*

Luis: I went to the museum this morning.
Rosa: What did you see?
Luis: Lots of paintings by Picasso.
Rosa: I like Picasso a lot.
Luis: Me too; so I bought a poster in the gift store.
Rosa: I also bought one last week.

In 4.6, even though Rosa is a participant in the conversation and, thus, a contextually recoverable referent, she is not the topic of the discourse or the preceding utterance. Therefore, the retention of the pronoun *yo* is warranted. Although Spanish and English do not differ regarding the requirement for subjects in such sentences (i.e. both grammatical systems require overt subjects), LaFond, Hayes, and Bhatt (2001) have shown that early L2 Spanish learners sometimes overgenerate null subjects in such sentences, indicating that the interlanguage grammar of these learners is different than both the grammar they know (their L1) and the target grammar they are attempting to learn (the L2). Under the assumptions of the theoretical framework used in this study, it could be predicted that the output of learner grammars may differ from both the L1 and L2 until constraint rankings converge on the target language ranking that properly identifies in which contexts null subjects should appear and in which they should not. Therefore, even though both Spanish and English require the use of overt subjects in sentences such as 4.6, some variance between native and learner groups for such items is expected.

Test items created to examine inversion were fashioned to investigate whether the conclusions of Grimshaw and Samek-Lodovici (1995) and Samek-Lodovici (1996) for Italian could also be extended to Spanish. Those previous studies observed that, while

English does not permit the appearance of post-verbal subjects, Italian does. More importantly, inversion in Italian is not as free as is sometimes assumed — subjects obligatorily appear at the right edge of the VP when they are contrastively focused. The inversion items in the current study investigated whether discoursal requirements govern focus also in Spanish. Since, in English, syntactic constraints prohibit post-verbal subjects, English uses other means to indicate focus (e.g. by marking the prominent element with intonational stress); therefore, transfer effects of the L1 may be predicted in early learners, resulting in lower rates of acceptance of inverted subjects.

An example is provided in 4.7a (dialogue 4 in Appendix B), translated in 4.7a', of a context that would suggest contrastive focus of a subject:

(4.7.) Discourse context selects inverted subject

a. *Asumiendo responsabilidad*

Pablo: *¿De qué te ríes?*
Janet: *Mamá y Papá van a llegar pronto.*
Pablo: *¡Ay! ¡La casa está muy sucia!*
Janet: *Te dije: 'No invites a tus amigos.'*
Pablo: *¿Me ayudas a limpiar la casa?*
Janet A: *¡No! Tienes que limpiarla tú, no yo.* √
Janet B: *¡No! Tienes que limpiarla, no yo.*

a'. *Taking responsibility*

Pablo: What are you laughing about?
Janet: Mom and dad are coming home early.
Pablo: Oh no! The house is very dirty!
Janet: I told you, 'Don't invite your friends.'
Pablo: Will you help me clean the house?
Janet: No! You will have to clean it, not me.

The dialogue in 4.7 presents a classic example of contrastive focus. In the dialogue, a brother and sister argue over who should clean the house. If contrastive focus calls for inversion in Spanish, Janet's 'A' response should be preferred. This is in contrast to items where the subject is not as clearly focused. Consider example 4.8a (dialogue 22 in Appendix B), translated in 4.8a':

(4.8.) Discourse context does not require inversion

a. *Hablando por teléfono celular*

Armando: ¿Bueno?
Patricia: Bueno, Armando. Ya voy para la casa.
Armando: Te llamó Erica. Ella también viene para acá.
Patricia: Se fue un poquito antes que yo.
Armando: Te veo pronto.
Patricia A: Acabo de salir de la escuela yo.
Patricia B: Yo acabo de salir de la escuela. √

a'. *On a cell phone*

Armando: Hello?
Patricia: Hi, Armando. I'm on my way home.
Armando: Erica called. She is on her way too.
Patricia: She left a little before me.
Armando: See you soon.
Patricia: I have just left the school.

Example 4.8 involves a cell phone conversation where Patricia calls Armando to let him know she is on her way home from school. When Armando says 'See you soon', Patricia replies that she has just left the school. The first person pronoun, *yo*, implies no special focus, contrastive or otherwise, and would not be expected to be inverted. It should be mentioned that in certain dialogues like these, native speakers would likely use a null subject (since the subject is a topic), so that neither the 'A' nor the 'B' response would be the most favored choice. Nevertheless, given the two lesser choices of either the overt

realization of the pronoun, or the overt and inverted realization of the pronoun, speakers should prefer the non-inverted choice, since the inverted choice should involve a greater degree of deviation from the expected norm.

The test items created to investigate *that-trace* effects manipulated the appearance of the complementizer *que* 'that'. English permits the exclusion of the complementizer *that* in sentences where Spanish would require it (4.9a), and it prohibits the use of the complementizer *that* in sentences where Spanish would require it (4.9b). Furthermore, when English uses the complementizer, in contrast to Spanish, it requires the use of the subject pronoun following it (4.9c)

(4.9.) a. *Does he think (that) he will win the U.S. Open?*
b. **Who$_i$ do you think that t_i will win the U.S. Open?*
c. *Do you think that he/*∅ will win the U.S. Open?*

The test items in this study explore these effects by providing dialogues in which sentences with a complementizer *que* are contrasted with sentences lacking the complementizer, exemplified in 4.10a (dialogue 6 in Appendix B), translated in 4.10a', and by a few additional sentences that tested other manipulations of *que* and subjects. For example, two sentences contrasted [+*que*/+null subject] with [+*que*/-null subject], as in example 4.11a (dialogue 18 in Appendix B), translated in 4.11a'), where a null topic subject is required following the complementizer *que*.

(4.10.) *Que* vs. no *que*

a. *Mirando la televisión*

Julio: *Iris, ¿a ti te gusta mirar deportes en la tele?*
Iris: *No me gusta mucho, pero a veces veo el tenis.*
Julio: *¿De veras? A mí me gusta el tenis también.*
Iris: *¿Has estado mirando el U.S. Open?*
Julio: *Sí, me gusta especialmente Todd Martin.*
Iris A: *¿Quién piensas va a ganar el U.S. Open?*
Iris B: *¿Quién piensas que va a ganar el U.S. Open?* √

a'. *Watching television*

Julio: *Iris, do you like watching sports on television?*
Iris: *Not too much, but I sometimes watch tennis.*
Julio: *Really? I like tennis too.*
Iris: *Have you been watching the US Open?*
Julio: *Yes, I especially like Todd Martin.*
Iris: *Who do you think will win the US Open?*

(4.11.) *Que* + null subject vs. *que* + overt subject

a. *Carmen y Felipe en la oficina*

Carmen: *¿Alguien me llamó cuando yo no estaba aquí?*
Esther: *Sí. Luis Pérez y Lilia Enríquez.*
Carmen: *Ok. ¿Alguien más?*
Esther: *No, no llamó nadie más.*
Carmen: *¿Dijeron Luis y Lilia lo que querían?*
Esther A: *No, pero dijeron que ellos iban a volver a llamar.*
Esther B: *No, pero dijeron que iban a volver a llamar.* √

a'. *Carmen and Felipe at the office.*

Carmen: *Did anyone call me while I was out?*
Esther: *Yes. Luis Pérez and Lilia Enríquez.*
Carmen: *Ok. Anyone else?*
Esther: *No, noone else called.*
Carmen: *Did Luis and Lilia say what they wanted?*
Esther: *No, but they said they are going to call again.*

Of the three properties under investigation in this study, *that-trace* appears to be the most purely syntactic. Whereas the presence or absence of null subjects and

inversion are predicted to correspond to certain discourse conditions in Spanish, sentences with *that-trace* effects are not expected to display this same type of discourse sensitivity; however, as with null subjects and inversion, there may be some lag for learners between acceptance of the property and the correct use of the property. For example, learners are predicted to accept sentences displaying *that-trace* sooner than they reject ungrammatical sentences on the basis of the lack of the complementizer.

In summary, for all three grammatical properties, it is predicted that the test items in this study will reveal significant differences between native speakers and early learners, and that these differences will be the result of conflicts between the L1 and L2 grammatical systems of the learners. As learners progress toward the resolution of these conflicts, understood in this study as the reranking of constraints, they are expected to converge on the target grammar. If this prediction is correct, at the higher levels of study, few differences will be found between the way native speakers and advanced learners treat null subjects, inversion, and *that-trace*. The experimental results of the translation and grammaticality judgment tasks in this study are presented in the next chapter.

Notes

[1] One study (Galván 1998) that was not a part of the selective review in the last chapter did use a larger number of research subjects: Galván administered a grammaticality judgment task and a written composition task to 222 native English-speaking learners of Spanish to uncover the use of null and lexical subjects in various syntactic and semantic-pragmatic environments. Galván's parameter-based analysis concludes that learners do not begin their acquisition of Spanish with the L1 settings of the null subject parameter, and he disagrees with the claims of Liceras (1989) and Phinney (1987) that the default setting of the parameter is [+pro-drop]. Most importantly, Galván argues that the distribution of null subjects in Spanish is constrained by semantic, pragmatic, and syntactic factors.

[2] If the use of null subjects is acquired before inversion and *that-trace*, then it is possible to claim that pro-drop is unrelated to inversion and *that-trace*, raising the question of why they should be studied together; however, this cluster of properties frequently (though not always) arise in certain languages, creating an observable correlation between properties *x*, *y*, and *z*. The reason for this correlation is a matter of interest. This dissertation has no disagreement with the use of the term 'pro-drop' as a shorthand to refer to this correlation, but the argument here is that pro-drop is not best conceived of as a parameter, because this clustering of properties is neither required (language may have one, or two, of the properties but not the third) nor simultaneous.

[3] The issue of ultimate attainment has been vigorously debated. For a summary of the issues involved on each side, the reader is referred to the study by Coppieters (1987) and the response to it by Birdsong (1992).

[4] 'Equi' refers to a syntactic operation hypothesized by early transformational grammar. This operation deleted a noun phrase when another identical noun phrase was present in the sentence; for example, *I asked John to come*, arose from the deletion of the second *John* in a pair of sentences, *I asked John* [*John come*]. This was thought to differ from 'Raising', a process of moving a noun phrase from the subordinate clause into the structure of the higher clause, as in *I believe him*$_{i}$ [t_{i} *to be honest*].

[5] In all cases, different subjects were used for the translation and grammaticality judgment tasks. Some of the subjects who participated in the translation task also participated in the pilot study. Since the pilot was being used solely to refine the reliability and validity of the grammaticality judgment task (i.e. no specific results are being reported from the pilot), the overlap between these two tasks poses no problem.

[6] Intermediates were chosen because it was thought that their responses (being the middle group of the study) would permit the best average assessment of these items. In retrospect, refinement of the final task would have been better served by adding beginners and native speakers to the pilot; nevertheless, as the next chapter will discuss, the pilot did provide useful information for the creation of the grammaticality judgment task.

[7] LaFond, Hayes, and Bhatt (2001) used dialogues similar to the ones used in this study, but the dialogues in that study did not provide titles for the dialogues or names for the participants in the dialogue. Dialogue participants in that study were simply labeled participant 'A' and participant 'B'. The addition of titles and names in this dissertation's study provides additional contextual information for each item, helping readers to access the 'narrative schema' (Chafe 1994) or 'domain of action' (Clark 1996) that would be appropriate for interpreting the conversation, thus giving a more natural basis for making discourse judgments.