INFLUENCES ON GENDER AGREEMENT IN ADJECTIVES AMONG ADULT LEARNERS OF SPANISH

by

ELLEN MARIE AYRES

(Under the Direction of Don McCreary)

ABSTRACT

Research shows that the acquisition of grammatical gender agreement is a major stumbling block for learners of foreign languages. Even after years of study, learners struggle to produce correct gender agreement within entire phrases, and they continue to make errors well into advanced stages of proficiency. This study investigates linguistic and extralinguistic factors effecting the gender agreement production of college-age learners of Spanish. Fifteen Spanish language learners participated in this study, completing interviews and picture description tasks, producing a range of adjectives, which modified a wide variety of nouns. Participants were told that the study involved various grammatical aspects of Spanish acquisition, but were not informed that gender agreement or adjectives were the objects of study. This study confirmed that learners of all levels continue to struggle with gender agreement, even at advanced levels of study.

INDEX WORDS: Grammatical gender, Spanish, L2 (Second Language, Foreign Language, Target Language), Oral proficiency, Gender agreement, Adjective agreement

INFLUENCES ON GENDER AGREEMENT IN ADJECTIVES AMONG ADULT LEARNERS OF SPANISH

by

ELLEN MARIE AYRES

B.A., University of Mary Washington, 2006

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

MASTER OF ARTS

ATHENS, GEORGIA

2012

INFLUENCES ON GENDER AGREEMENT IN ADJECTIVES AMONG ADULT LEARNERS OF SPANISH

by

ELLEN MARIE AYRES

Major Professor: Don McCreary

Committee: Chad Howe
Margaret Quesada

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
August 2012

TABLE OF CONTENTS

PAGE

LIST OF TABLES

PAGE

CHAPTER 1: INTRODUCTION

1.1 Purpose of study

For English speakers learning foreign languages, especially common European languages, gender assignment and agreement can be among the most frustrating and bewildering aspects. Spanish has relatively simple gender assignment with only two genders: masculine and feminine. Nonetheless, the agreement of determiners and adjectives continues to be a stumbling block for students well into the more advanced levels of study. The topic of gender agreement is presented early on in Spanish language textbooks, in a straight forward manner:

> "In Spanish an adjective must agree in gender (masculine or feminine) and number (singular or plural) with the noun or pronoun it describes. […] Most masculine adjectives adjectives end in **-o**, and most feminine adjectives end in **-a**." (Castells, et al. 2010 p.64)

As an adult learner of Spanish myself, I find myself constantly using incorrect gender agreement in casual conversation, even though I recognize correct forms and could produce them on Spanish grammar tests. Based on my own experiences as a L2 learner and user of Spanish, I was eager to investigate some of the causes of this phenomenon.

Despite this early and explicit instruction, learners continue to struggle, especially in spontaneous production. When asked specifically to match nouns to their correctly gendered adjectives or determiners, they may be able to do so perfectly, but in conversation they may be less accurate. Part of this difficulty may stem from English speakers' lack of grammatical gender distinction in their native grammars. However, various studies have shown first language

interference to have minimal, if any, influence on non-native production (Sagarra and Herschensohn 2010; White, et al. 2004). Another aspect to consider is the way new adjectives are presented to learners. In *Mosaicos,* the introductory textbook quoted above, adjectives are presented alone, in a single masculine form, paired with a corresponding image. For example, the word *perezoso* (*lazy)* appears under the image of a man sitting slouched under a tree while another man works hard. No correspondingly lazy female image is presented, although other adjectives are listed only in feminine form.

1.2 Research questions and hypotheses

In this study, I seek to find patterns in the gender agreement errors made by college level learners of Spanish. The data come in the form of spontaneously produced speech by college aged learners of Spanish as a foreign language. Most studies of grammatical ability among learners of Spanish rely on structured grammar and vocabulary tests (Alarcón 2011; Montrul, Foote, and Perpiñan 2008; Cubelli et al. 2011), eye-tracking (Keating 2009), reaction time data (Dominguez, Cuentos, and Segui 1999), or memory recall tests (Sagarra and Herschensohn 2010). These tests have the benefit of providing researchers with data about plenty of specific nouns and adjectives, in specific situations. However, these tests do not necessarily test the "real world" abilities of learners to produce correct gender agreement while focusing on meaning, rather than form (Gass and Mackey 2007). Alarcón's 2011 study of agreement by early and late bilinguals did utilize an oral picture description task, but had participants fit their descriptions into the following set structure: *Veo un/una* "I see a" + noun + adjective (Alarcón 2011). By using naturalistic data via interviews and less structured picture description tasks, I hoped to access not only learners' grammatical competence, but their ability to express that competence in

actual conversation. In other words, I hoped to analyze learners' production abilities, using a "focus on form" approach (Ellis and Barkhuizen 2005).

My research questions are as follows: What factors influence accurate gender agreement production among college level learners of Spanish? Are these factors primarily linguistic, or do they involve individual learner characteristics as well? Based on these questions, my hypotheses for this study are as follows:

Hypothesis 1: In terms of grammatical gender, learners operate with a masculine default setting in their minds. As a result, masculine nouns will have few agreement errors, while feminine nouns will have more. This hypothesis follows previous research into gender agreement (Alarcón 2011).

Hypothesis 2: High proficiency learners of Spanish will continue to struggle with feminine gender agreement on adjectives. Time spent abroad in Spanish-speaking coutnries will not effect learners' gender-agreement accuracy.

Hypothesis 3: The position of the adjective relative to the noun will correlate with accuracy. Prenominal adjectives will be most accurate, followed by attributive, then predicate adjectives. This follows research by Lichtman (2009), which showed that early Spanish learners failed to detect gender discord across greater distance within a sentence.

Hypothesis 4: Nouns which are not morphologically marked for gender (non-overt nouns), will have lower accuracy than overtly marked nouns, which end in *-o* or *-a.* Nouns which are deceptively marked will have the lowest accuracy.

In this study, there were not enough participants to make definitive hypotheses or claims about the influence of speaker gender on agreement accuracy. Nonetheless, figures for speaker gender were calculated along with corresponding accuracy scores.

Chapter 2 of this thesis will discuss previous research in this field, and how this study adds to the body of research on gender agreement acquisition. Chapter 3 will detail the methodology of the study, including participants, procedure, and data analysis. Chapter 4 will present the results in a multivariate, variationist format, and will also discuss these results. Finally, Chapter 5 will conclude this study and will offer suggestions for future research on this topic.

CHAPTER 2: LITERATURE REVIEW

2.1 Spanish gender system and agreement

Spanish employs two distinct genders to classify nouns: masculine and feminine. These are features stored in the lexicon with every word, mapped directly and intrinsically to each word in the minds of native speakers (Dominguez, Cuetos, and Segui 1999).

Meaning and gender have a relationship which is not totally arbitrary, nor totally logical. Grammatical gender usually carries little inherent semantic meaning, especially for inanimate nouns, as indicated by different languages assigning different genders to the same real world referent. Languages divide up nouns into gender categories based on different qualifications; for example, in German, superordinate terms tend to be neuter, nouns for birds and mammals tend to be masculine, and reptiles and insects tend to be feminine. The ways in which languages divide nouns up, however, is relatively arbitrary. Some studies show that grammatical gender influences semantic interpretation in speakers' minds, but results have varied. This being the case, grammatical gender is also sometimes referred to as *noun class,* or *nominal agreement class.* Mostly, gender is a feature whose purpose is morphological and syntactic (Cubelli et al. 2011). The gender must agree within the entire noun phrase, including determiners and modifiers. This features carries on to adjectives even when they fall in the predicate position and the noun is the subject.

The gender of animate nouns often, but not always, corresponds to the inherent biological sex of the person or animal being referred to. For other nouns, the assignment of gender is

arbitrary, with no relation to phonology or meaning (Harris 1991). Generally speaking, masculine nouns end in *-o* (99.8% of the time) and feminine nouns end in *-a* (96.3% of the time), but there are a few exceptions to this (Alarcón 2011). Nouns of either gender can end with *-e,* or with consonants, rather than the typical *-o* or *-a*. On rare occasions, nouns can be deceptively marked, so that a masculine noun ends with *-a* or a feminine nouns ends with *-o*. Table 1 illustrates these possible noun endings.

Table 1: Noun endings (all but one* taken from Montrul, Foote, and Perpiñán 2008: 508)

	Masculine	Feminine
Typical ending	*El toro "the bull"*	*La vaca "the cow"*
-e ending	*El puente "the bridge"*	**La fuente "the fountain"*
Consonant ending	*El lápiz "the pencil"*	*La flor "the flower"*
Deceptive ending	*El problema "the problem"*	*La mano "the hand"*

Harris (1991) expands these endings, which he calls "word markers," to include the examples given in (1):

(1) Other possible word endings, or markers.

a. *-u* *El espíritu "the spirit"* *La tribu "the tribe"*
b. *-i* *El bikini "the bikini"* *La metrópoli "the metropolis"*

Harris states that the primary property of "word markers" is that "their appearance marks a derivationally and inflectionally complete word; word markers cannot be followed by any other suffix, derivational or inflectional, except for plural *-s"* (Harris 1991).

Native speakers use these gender markings to more effectively process familiar nouns, as indicated by responding faster to prompts when prenominal gender markings were present than when they were not (Sagarra and Herschensohn 2010). Essentially, greater shared information among lexical items, such as between a determiner and a noun, leads to greater mental activation, and more rapid processing (Cubelli et al. 2011).

Noun endings which are not typical, but not deceptive, are considered non-overt endings. Some non-overt nouns fall into predictable patterns. For example, words ending in *-dad* (as in, *la universidad "university")* tend to be feminine. However, a number of non-overt nouns must simply be learned along with their gender. Deceptive nouns are so called because their endings suggests one gender, but are in fact the other. As in the examples above, deceptive masculine nouns end in *-a,* and deceptive feminine nouns end in *-o.* Harris refers to these categories of noun endings, or "word markers," in a different way. He labels overt nouns as an "inner core" or prototype nouns, some non-overt nouns (primarily those ending in *-re* and *-r*) as an "outer core" of "slightly deviant cases." These are called the core because the vast bulk of Spanish nouns, adjectives, and adverbs belong to these categories. Nouns in the "outer core," he claims, actually do not have word markers, and thus have no correlation between word marker and grammatical gender. Deceptive nouns, adverbs ending in *-s,* and anything that does not fit into the inner or outer core is labelled as "motley *residue."* Within this class, Harris says the vast majority of nouns are masculine nouns ending in *-a.* Only a few are feminine nouns ending in *-o,* and of that few, only *mano "hand"* is "guaranteed," which presumably means it is well-attested (Harris 1991). In this study, *mano* is by far the most frequently used deceptively marked noun by non-native speakers.

2.1.1 Adjectives in Spanish

Adjectives in Spanish have no inherent gender, but must agree in gender and number with the noun they modify. Most adjectives fall into what Harris (1991) considers the "inner core," ending in either *-o* to agree with masculine nouns, or *-a* to agree with feminine nouns, as in (2a). In this study, these are referred to as "gender-marked adjectives." Some adjectives, however, end in *-e* or in consonants, and do not vary depending on the gender of the noun they modify, as in (2b). There are no adjectives which only end in *-o* but modify feminine nouns, but there are a few adjectives which only end in *-a* but modify both feminine and masculine nouns, as in (2c).

(2) a. *el pollo crudo "raw chicken"* *la carne cruda* "raw meat"

b. *la casa verde* "the green house"
el zapato verde "the green shoe"

la casa azul "the blue house"
el zapato azul "the blue shoe"

c. *la casa naranja* "the orange house"
el hombre belga "the Belgian man"

Interestingly, adjectives such as those in (2a), which must agree with the noun, also include some adjectives which might seem restricted to a certain gender or another. For example, *embarazada "pregnant"* can be inflected to agree with masculine nouns, as in (3):

(3) Mi padre soñó que estaba embarazado.
My father dream.PAST that to be.PAST pregnant.MASC
"My father dreamt that he was pregnant."

2.2 Acquisition of Spanish gender agreement among adult learners

Adult learners of languages such as Spanish, which has a grammatical gender system, tend to make errors regarding the gender of nouns. Even heritage speakers tend to display some holes or discrepancies in their gender systems as adults (Montrul, Foote, and Perpiñan 2008). Advanced learners with several years experience with Spanish still make gender agreement errors, indicating that exposure is not enough to ensure full acquisition of grammatical gender. Some explicit, direct instruction and corrective feedback is required for learners to develop appropriate gender representations. Such direct instruction and feedback, however, is often not enough to totally eradicate erroneous gender agreement and assignments in learners' minds and speech. Even after repeated feedback, learners continue making gender agreement errors, even within the same day that the feedback was received (Lemhöfer, et al. 2010).

Theories for this lack of complete acquisition can be divided into two diverging camps. The first is called either the Fundamental Difference Hypothesis or the Failed Functional Features Hypothesis. In this school of thought, also known as the "deficit approach" to SLA, L1 and L2 acquisition are inherently different processes, and only during L1 acquisition does the brain have access to Universal Grammar (UG). On the other end of the spectrum, certain theories maintain that access to UG is consistent throughout a person's life, and that L1 and L2 acquisition are essentially the same process. These theories, collectively also known as the "accessibility approach," are the Full Transfer/ Full Access Hypothesis and the Missing Surface Inflection Hypothesis. Of course, environmental reasons may also play a role in acquisition, not simply psychological or developmental reasons. For example, type and frequency of input varies for L1 versus L2 learners (Alarcón 2011; Sagarra and Herschensohn 2010).

Regardless of the reasons, studies show that L2 learners of Spanish do not make full use of the syntactic information provided by grammatical gender agreement. It is possible that learners view this information as redundant and unnecessary for communication. Despite the high availability of gender information in Spanish input, learners realize that gender agreement is not usually necessary to get one's point across, or to express a need (Keating 2009).

While studies of learners' underlying competence in grammatical gender, this study focuses on learners' production of gender agreement. Thus, no claims regarding the nature of universal grammar can be made based on the data collected here. Rather, the data will be analysed with the assumption that the masculine form is unmarked, and the feminine form is marked, and is therefore less accurately produced by learners. Markedness in this sense is defined as follows:

> "A phenomenon A in some language is more marked than is B if the presence of A in a language implies the presence of B, but the presence of B does not imply the presence of A." (Glass and Pérez-Leroux 1997 p. 71, quoting Eckman 1987).

As a rule, learners struggle more with marked features than with unmarked ones. Acquisition of a group of features, such as gender, can be said to have been acquired when the marked feature has been fully acquired (Glass and Pérez-Leroux 1997). Mackey and Gass (2005) state that the acquisition of a feature is successful if the learner correctly produces the feature at least ninety percent of the time. Following this, learners can be said to have fully acquired grammatical gender if they correctly produce feminine gender agreement at least ninety percent of the time.

A number of previous studies discuss the acquisition of gender agreement in Spanish among adult learners. Carmen Schlig's (2003) study of 75 advanced Spanish conversation and composition students found that most errors involved feminine nouns being assigned masculine gendered modifiers. Of those nouns, a high percentage were ones which did not end in the typical feminine *-a* (sch as *universidad* "university"). In her study, no masculine nouns were incorrectly modified with feminine adjectives, which contrasts with my own study, as I will discuss later. Interestingly, seventy-eight percent of her subjects were female, and only twenty-one percent were male. She maintains that the unmarked masculine ending is the default for both learners and native Spanish speakers, based on her findings and the fact that native speakers will assign masculine gender when they are in doubt of the "correct" ending.

In a study by Lew-Williams and Fernald (2010), adult L2 speakers were not able to use gender markings to improve response times, even after several years of Spanish instruction and high familiarity with the nouns under investigations. Sagarra and Herschensohn, on the other hand, showed that intermediate L2 speakers of Spanish were, in fact, beginning to show signs of native-like processing of gender-marked concord. Interestingly, these learners were significantly more accurate with inanimate than animate nouns (2010). This goes against previous assumptions of gender acquisition, which were that learners acquired gender markings first on animate, then inanimate nouns. Keating (2009) also found that advanced learners of Spanish, as well as native speakers, were sensitive to gender agreement violations on adjectives, indicating that full gender acquisition is possible in L2 learners, but that it occurs late in the acquisition process.

Keating also found that advanced L2 learners of Spanish are sensitive to the distance between noun and modifying adjective, while native speakers are not. Spanish adjectives can appear within or outside of the determine phrase, as shown in (4a) - (4c):

(4) a. Una casa pequeña cuesta mucho en San Francisco.
"A small house costs a lot in San Francisco."

b. La casa es bastante pequeña y necesita muchas reparaciones.
"The house is quite small and needs a lot of repairs."

c. Una casa cuesta menos si es pequeña y necesita reparaciones.
"A house costs less if it is small and needs repairs."

In (4a), the adjective is directly adjacent to the noun, in attributive position. (4b) demonstrates adjective agreement in predicate position, while (4c) shows adjective agreement from the subordinate clause (example from Keating 2009). The Shallow Structure Hypothesis predicts that learners can only achieve native-like proficiency with attributive adjectives (Keating 2009). Adjectives tend to have lower accuracy levels in terms of agreement among L2 speakers than determiners have, as well (White, et al. 2004).

Alarcón (2011) found that advanced L2 learners of Spanish did not perform as well on gender agreement tasks for non-overt nouns, especially when compared to heritage speakers. When adjective agreement of adjectives was compared with that of determiners, agreement in L2 speaker production was even less accurate for adjectives modifying non-overt nouns.

There is a general tendency among adult learners of Spanish to make more agreement errors with feminine nouns than with masculine nouns (Alarcón 2001; Schlig 2003). This is in keeping with Hawkins' suggestion that learners of languages with gender simply pick one gender

default, based on available input, and from there on learn the "exceptions" to this mental default. Hawkins, however, states that either masculine or feminine could be the default (Hawkins 2001), while the majority of studies seem to point to that default being masculine.

A distinction must also be made between lexical and syntactic gender. Lexical gender relates to the classification of semantic meaning, or how the noun itself is stored in the mind. Syntactic gender relates to agreement within the phrase, with the determiner and/ or adjectives. If a learner makes an error in agreement with either the determiner or adjective(s), but not both, the learner has not fully acquired syntactic gender. If the learner makes an error in agreement with both the determiner and adjective, he or she is lacking the appropriate lexical gender for that noun. Feminine nouns seem to be associated with more assignment errors than agreement errors, at least for L2 adult learners, lending credit to a theory of a masculine default setting in the mind (Alarcón 2011). It should also be noted that grammatical gender, whether lexical or syntactic, only has meaning in terms of agreement. Gender on nouns alone is meaningless in this sense (White, et al. 2004).

Gender agreement seems to be acquired later in the acquisition process, and with greater difficulty, than number agreement. This is this case across L1 backgrounds, indicating an issue with cognitive demands, rather than simply L1 transfer. Previous exposure to a language with grammatical gender also seems to have no significant effect (White, et al. 2004), though other studies indicate that gender in the first language can affect long-term memory storage of words in the second language (Cubelli et al. 2011).

Montrul, Foote, and Perpiñán compared adult learners of Spanish with heritage learners, finding "systematic gender agreement errors" in both groups, going against the theory that

heritage learners would have a distinct advantage, since native speakers never make gender agreement errors. Their participants performed both oral and written assessments, and the researchers found that adult learners actually outperformed heritage speakers in written tasks, but in oral tasks the heritage speakers performed better (2008).

Alarcón (2011) replicated this study, and found that both heritage and L2 speakers performed at ceiling levels during their written task, indicating that both groups acquired gender in their underlying grammars, which supports the Missing Surface Inflection Hypothesis. However, heritage speakers outperformed L2 speakers in oral tasks, in keeping with Montrul, et al. (2008), and providing evidence for some critical period affect. It is worth noting, though, that Alarcón only studied attributive adjectives in this study, not predicative adjectives, which are acquired later.

2.2.1. Types of learners; learner experiences

Isabelli-Garcia (2010) compared two groups of university students for correct gender agreement in adjectives. One group spent a semester studying abroad in Spain, while the other group enrolled in a traditional Spanish class at a university in the United States. Both groups were given a pre-test and a post-test for this feature. She found that, contrary to popular opinion, students who studied abroad saw a slight dip in performance of gender agreement, though their overall proficiency improved. She hypothesized that this dip was due to the abroad group's need to focus on overall meaning in their day-to-day Spanish-speaking lives, while the at-home group was pushed to focus more on grammatical accuracy.

2.2.1.1. Individual differences in language learning

Studies have shown that, in oral communication, women use more varied strategies than men do. Women have also been shown to use more social behaviors and conversational tools, and are more willing to initiate conversations. Men, however, tend to use strategies that could be described as local or analytical, involving decoding specific aspects of communication (Brantmeier 2003). In this study, I will investigate any possible difference in gender agreement between women and men, which could vary depending on communicative strategies frequently employed by learners. It is also interesting to note that, in higher education, women outnumber men in the Romance Language by four to one at the advanced levels. The higher the level of study, the greater the gender gap (Brantmeier 2003).

CHAPTER 3: METHODOLOGY

3.1 Participants

Participants were recruited for the study through a variety of methods. Emails distributed through the Linguistics and Romance Languages programs, fliers, and word of mouth proved most effective. Specific Spanish instructors were asked to tell their students about the study, and the researcher went into one intermediate classroom in the hopes of gaining more participants, but only one student participated as a result of this effort.

Despite the original intention of having equal numbers of male and female participants, of the eighteen total participants, five were male and thirteen female. Three native Spanish-speaking controls were interviewed. These native speakers are all highly proficient English speakers, and all were residing in the Athens, Georgia area during the time of the interview. The table below gives details about these native speakers. To ensure confidentiality, participants are referred to by number, in the order in which they participated in the study. Thus, Participant 9, though he was the third native speaker, was the ninth participant overall.

Table 2: Native speaker participants

	Gender	Country of origin	Age
Participant 1	Female	Spain	35
Participant 2	Female	Ecuador	23
Participant 9	Male	Puerto Rico (USA)	34

Although all three participants completed the online proficiency test and the interview, only one completed the picture description task. The other two were asked to schedule times to complete that task, but did not return. However, their interviews provided plenty of linguistic material with which to compare non-native Spanish learners.

Originally sixteen non-native speakers of Spanish participated in the study. All had begun to study Spanish seriously around adolescence or later. One participant first claimed to have started learning at age 4, but stopped for almost ten years before beginning again in middle school, so she was included. Another woman began learning Spanish in college, but was married to a Spanish-speaking man by the time of the interview, and they were raising their daughter to be bilingual. Although she had not taken many Spanish courses, and did not score perfectly on the online proficiency test, her spoken Spanish contained no grammatical errors. Her high performance in the verbal tasks, as well as the amount of Spanish immersion in her home, led me to exclude her. Thus, in the end there were fifteen non-native Spanish speakers who were included in the analysis.

All of the non-native Spanish learners were either currently enrolled in Spanish courses at the University of Georgia, or had been within the past six months. Only two participants were not currently enrolled. All learners were between the ages of nineteen and twenty-six. The table below details characteristics of these learners.

Table 3: Adult Spanish L2 learners

	Gender	Age	Course level	Years of Spanish	Time abroad
Participant 3	Female	21	4000	9	4 months
Participant 4	Male	21	2000	0.66	no
Participant 5	Female	19	3000	4	no
Participant 6	Female	22	4000	9	3 months
Participant 8	Female	19	4000	5	2 months
Participant 10	Male	22	4000	8	no
Participant 11	Female	20	4000	7	2 weeks
Participant 12	Female	21	4000	7	4 months
Participant 13	Female	20	4000	9	3 months
Participant 14	Female	20	4000	3	no
Participant 15	Female	21	2500	7	no
Participant 16	Male	26	2000	4	no
Participant 17	Male	20	4000	5	6 weeks
Participant 18	Female	20	3000	3	2 weeks
Participant 19	Female	21	2000	3	no

All of the non-native speakers listed English as their home language. Two participants also listed family languages in which they were highly proficient: Georgian and Haitian Creole. Many participants said that they had studied a language other than Spanish, as well. American Sign Language was the most popular, with four participants. French and Arabic had each been studied by three participants. Portuguese, Russian, and Italian had each been studied by one participant. There was a certain amount of overlap, since a few participants had studied several languages. No other language had been studied by enough participants for any conclusions to be drawn about possible effects on Spanish ability.

3.2 Procedure

The study was carried out in two parts. First, participants met one-on-one with the researcher, completed the questionnaire and online proficiency test, and was interviewed by the researcher. The proficiency test was administered by a website called Testpodium, and tested grammatical accuracy, reading and listening comprehension, vocabulary, and communication skills. Primarily, the proficiency test was intended as an additional measure of participants' language ability. All participants reported their course level, but individual ability can vary immensely within a single course.

The interview consisted of a series of open ended questions, in Spanish, about the participants' family, friends, past experiences, and political beliefs. Specifically, they were asked what they remembered from the attacks of September 11, 2001; the election of Barack Obama in 2008; how they felt about the president and the republican presidential candidates now; and, if they had ever been in a situation in which they felt their life was in danger. The questions were designed in the hopes of eliciting emotional adjectives (such as “I was excited” or “I got really mad”) and to get participants to focus on the meaning of their speech, rather than grammatical form. Follow-up questions were asked as the researcher felt necessary, to encourage more speech from the participant. Such questions tended to be similar, such as “Do you have a good relationship with your parents?” or “What sorts of things do you and your friends talk about?” Occasionally, a participant would lead the conversation away from the original question, and this was encouraged by the researcher. For example, one participant spent several minutes talking about the recent birth control debate, which produced several targettd adjectives. Interviews lasted from seven to thirty-one minutes, though most fell between ten and twenty minutes.

Following the interview, participants were asked to schedule a time to return to complete the second portion of the study, a paired picture description activity. All non-native speakers did return for this portion, but two of the native speakers did not return. Occasionally, scheduling problems meant that a participant did not have a partner for this activity, in which case the researcher acted as the second participant. In this activity, participants were given an image, and asked to describe it to their partner, who could not see it. Partners then drew the image to the best of their ability. Participants were instructed to be as detailed as possible, and to speak for at least eight minutes if possible. The images were selected from a book of illustrated children's stories titled *Mis Fabulas Favoritas* (2000).

These activities were designed to elicit speech which was not censored or modified by the speakers, but which would reflect their unconscious ability to produce gender agreement. Although some participants did self-correct when they caught themselves incorrectly modifying something, only the first instance of an adjective was considered. During the picture description task, participants were instructed not to correct their partner's Spanish. Both the interview and the picture description tasks were audio-recorded.

3.3 Analysis

Data in this study were coded according to the hypotheses stated above, and for topic. Topic coding was primarily done to determine which, if any, topics elicited more adjectives, correct or incorrect. Additionally, the number of English words used by each speaker was calculated, as an extra measure of proficiency.

Raw numbers and percentages were gathered for each variable and factor group. Then, Chi-square tests and a binomial up-down analysis was performed using the GoldVarb statistics

package. The Chi-square tests determined the significance of each factor group, and the binomial analyses provided log likelihoods for each factor, by analyzing all groups at the same time. Log likelihoods show the probability that a certain variable (such as noun gender) would be accurate or not, in this case. They also measure the quality of the fit of the analysis. With the default value set at "correct," log likelihoods over 0.5 (closer to 1.0) indicate a greater chance of accuracy, while those below 0.5 (closer to 0) have a lower chance of accuracy (Tagliamonte 2006).

Additionally, the total of Number (singular versus plural) errors was gathered, to determine that gender errors are, in fact, more numerous than number errors.

CHAPTER 4: RESULTS AND DISCUSSION

I have combined the results and discussion section here in order to better explain and discuss the significance of the variables under study. Many of the factor groups considered were found to be significant, especially when analyzed in conjunction with other factor groups, but several variables which were hypothesized to be significant were found not to be. Table 4 below details the significance and probability of accuracy for each variable under consideration in this study.

Table 4a: Multivariate analysis of factors significant to the probability of correct gender agreement.

Corrected mean			.84
Log likelihood			-175.394
Total N			410
	Factor weight	%	N
Noun Gender			
Masculine	.66	90	220
Feminine	.32	69	190
Range	*34*		
Noun Ending			
Deceptive	.70	81	16
Overt	.54	83	304
Non-overt	.34	70	90
Range	*36*		
Adjective Position			
Prenominal	.78	92	39
Attributive	.51	79	175
Predicate	.43	78	196
Range	*35*		

Corresponding article			
Correct article	.57	84	166
No article	.48	80	221
Incorrect article	.23	52	23
Range	*34*		
Noun animacy			
Animate	.62	86	185
Inanimate	.40	75	225
Range	*22*		

Table 4b: Factors which were not significant during the multivariate analysis of correct gender agreement.

Corrected mean			.84
Log likelihood			-175.394
Total N			410
	Factor weight	%	N
Adjective Reference			
Self-referential	[.57]	85	40
Non-self-referential	[.49]	79	370
Noun plurality			
Singular noun	[.49]	78	125
Plural noun	[.53]	81	285
Speaker gender			
Female	[.51]	81	314
Male	[.45]	77	96
Speaker course level			
2000-level	[.53]	79	96
3000-level	[.44]	73	48
4000-level	[.50]	82	266
Study-abroad versus home			
Study-abroad	[.50]	80	244
Stay-home	[.51]	80	166

Proficiency score			
56-69%	[.44]	76	46
70-79%	[.55]	82	50
80-89%	[.45]	76	92
90-99%	[.52]	82	222

Non-native speakers produced a total of 564 adjectives during the interview and picture description tasks. Of that total, eighty-four percent had correct gender agreement, which can be considered below the threshold of success for acquisition. Generally, accuracy of ninety percent or higher is required for a particular feature to be considered successfully acquired (Mackey and Gass 2005). Comparatively, ninety-three percent of all adjectives had correct number agreement, which is above the threshold of acquistiion, and provides evidence supporting the theory that number agreement is in fact acquired before gender agreement.

Once non-gender marked adjectives, such as *azul (blue),* were removed from the analysis, there remained 410 gender-marked adjectives. Not surprisingly, when only gender-marked adjectives were taken into account, the average accuracy fell. Gender-marked adjectives had an average accuracy of eighty percent. The reason for the greater accuracy with all adjectives is that in order for a participant to get a non-gender-marked adjective "wrong," he or she must alter the basic form of the adjective in some way, which was not as common as simply inflecting the adjective incorrectly. In some of these cases, there seemed to be inteference from English, as in (5):

(5) Discussing a family member's job:
"una empresa de seguridad <u>medical</u>"
Indef.art.FEM company.FEM of insurance.FEM *medical
"a medical insurance company" - The correct term is *médica (medical).*

This type of error was excluded from the analysis, since the error involved was not gender related.

There were also some cases of pronunciation errors, as in (6):

(6) *Participant 4, referring to* la luz (*light, feminine*)
"escurro? um, era escurro"
*dark was *dark
"It was dark."

In this case, the participant presumably meant *oscurro (dark)*. Tokens of this sort, in which the pronunciation error did not relate to the gender agreement, were included in the analysis. Example (6) was marked as incorrect, since *luz* is feminine. There were other similar errors, which were included in the analysis, in which speakers used words which were not correct Spanish words, but did use gender agreement, as in (7):

*(7) estamos más *cercos que antes*
"we are more close than before"

In (7), the correct term for "close" would be *íntimo* or *unido.* Here, the speaker seems to be confusing the English word "close" with the Spanish word *cerca,* which means "close" in proximity.

The factor group of noun gender proved to be highly significant. Previous studies demonstrate that learners have higher accuracy when modifying masculine nouns than feminine nouns, and the expectation was that the same pattern would be observed here. When only

gender-marked adjectives were considered, there were 190 feminine nouns produced, and 220 masculine nouns.

Adjective reference was taken into account, comparing adjectives which modified the speaker to adjectives modifying other people or things. The goal was to determine whether speakers are more accurate gender agreement when referring to themselves, and if there was any difference between female and male speakers when referring to themselves. Speakers did not refer to themselves nearly as often as they referred to other people or things, though, and there were only forty self-referential, gender-marked adjectives in this study, compared to 370 adjectives which were not self-referential.

In analyzing noun endings and their effects on gender agreement, I elected to use the terms *overt, non-overt,* and *deceptive. Overt* nouns are any that end in *-o* and are masculine, or end in *-a* and are feminine. *Non-overt* nouns end in anything other than *-o* or *-a. Deceptive* nouns end in *-o* or *-a,* but do not follow the usual gender agreement pattern. Such nouns are rare, and include *la mano "the hand"* and *el programa* "the program." As expected, there were far more overt nouns that either of the other categories in this study. Of the nouns modified by gender-marked adjectives, there were 304 overt nouns, making up 74.1% of all tokens. There were ninety non-overt nouns and sixteen deceptive nouns, making up 22% and 3.9% of tokens, respectively.

Adjectives in three different positions wer analyzed. Attributive adjectives, as in (8a), appear in the determiner phrase with the noun, even if they are separated from the noun by additional modifiers such as *muy "very."* There were 175 attributive adjectives analyzed in this study, making up 42.7% of all analyzed tokens. Predicate adjectives, which include adjectives

found anywhere outside of the DP, include those in the same sentence as the noun (8b), as well as those in subsequent sentences, but which refer back to the noun (8c). Predicate adjectives made up 47.8% of the total, with 196 tokens. Also considered in this study were prenominal adjectives, which appear before the noun, as in (8d). As they are often sandwiched between a gender-marked determiner and a gendered noun, it is predicted that these adjectives will have a higher accuracy rating. Only 39 adjectives were in prenominal position in this study, making up 9.5%.

(8) a. *los pantalones morados*
"the purple pants"

b. *mis padres están divorciados*
"my parents are divorced."

c. *Hay muchos animales de pollo. Son amarillo.*
"There are a lot of chickens. They are yellow."

d. *es la única foto que es en mi memoria*
"It is the only photo that is in my memory"

Noun animacy was taken into account, as well. Animate nouns include all nouns for people, such as *mujer "woman," padres "parents,"* and *candidatos "candidates,"* as well as words for animals, such as *vaca "cow," pollo "chicken,"* and *perro "dog."* Inanimate nouns include all nouns that are not people or animals. Learners tend to respond faster to nouns with inherent biological gender, also known as semantic gender (Alarcón 2009). There are 184 tokens with animate nouns that were produced in this study, making up 44.9%, and 226 tokens with inanimate nouns, making up 55.1%.

Since native speakers perform better on grammatical tests when prenominal gender information is given (Sagarra and Herschensohn 2010), I included an analysis of corresponding articles along with adjectives. I anticipated that the presence of a correct article would correlate with a greater chance of adjective accuracy, since the gender information will have effectively been presented twice (in the determiner and the noun). The presence of an incorrect article was expected to correlate with lower accuracy. Tokens with gender-marked adjectives were coded for the presence of a correct article (9a), an incorrect article (9b), or no article at all (9c). There were 166 tokens, or 40.5%, with correct articles, twenty-three, or 5.6%, with incorrect articles, and 221 with no articles, making up 53.9% of tokens.

(9) a. *Es el primer presidente african-americano*
"He is the first African-american president"

b. *Cuando está en la mismo lugar*
"When he/she is in the same place"

c. *Son gente buena.*
"They are good people."

Additionally, adjectives were analyzed according to whether they modified singular or plural nouns. I expected that learners attempting to focus on form in their speech would put more energy into number agreement with plurals than gender agreement, resulting in lower gender agreement accuracy with plural nouns than singular nouns. In this study, there were 285 singular nouns and 125 plural nouns under consideration, at 69.5% and 30.5%, respectively.

In section 4.9, results for participant variables are given. Non-native speaker interviews, when only participant speech time was calculated, lasted anywhere from six minutes twenty-two

seconds to twenty-eight minutes fifty seconds. All participants used at least one English word during their interview, even the native speakers, though some non-native speakers used far more than others. The most English used was by a male participant enrolled at the 2000 level. While his interview lasted just over thirteen minutes and he produced twenty-six Spanish adjectives for analysis, he also used a total of 148 English words, often in complete sentences. The researcher asked him to explain his answers in Spanish, but his response was often simply *sí "yes,"* with no further Spanish explanation. The other non-native speakers used an average of 9.1 English words during their interviews.

With the open-ended nature of the tasks and the differences in interview duration, there was considerable variation in the amount and diversity of material provided by each participant. Table 5 in section 4.1 provides the specific numbers of tokens provided by each NNS participant, broken down by topic area.

4.1 Variation by topic

Naturally, since all questions were open-ended and participants have different speaking styles, levels of vocabulary, and personal experiences, the amount of material produced for different topics varied. Additionally, the sheer length of time each interview lasted caused variability in the number of tokens produced. Statistically, "topic" was not significant as a variable in this study, perhaps due to the amount of variability among the factors. However, there were some interesting differences in the levels of accurate gender agreement by topic, as shown in the table below.

Table 5:Gender agreement by topic[1].

Topic	**Total adjectives**	**Correct agreement**		**Incorrect agreement**	
Family	79	70	89%	9	11%
Friends	49	43	88%	6	12%
Politics	16	11	69%	5	31%
Obama	39	33	85%	6	15%
Attacks	13	11	85%	2	15%
Danger	20	15	75%	5	25%
Pic. 1	65	49	75%	16	25%
Pic. 2	114	84	74%	30	26%
Other	15	12	80%	3	20%
Total	**410**	**328**	**80%**	**82**	**20%**

Overall, participants produced correct gender agreement in eighty percent of cases, and five of the specific topics had accuracy at or above this average accuracy for gender agreement. The most interesting difference here is the contrast between adjectives used to discuss "politics," and to discuss Barack Obama (both his election and how the participants feel about him now). When discussing politics, participants were less accurate with gender agreement than when discussing the election of Barack Obama. When these topics are broken into specific noun types, "politics" contains more masculine than feminine nouns, while the topic "Obama" has more masculine than feminine nouns, which may not be surprising, considering the gender of the man under discussion. Otherwise, the breakdown of noun and adjective types for these two topics follow the overall trends of the corpus as a whole.

1 The variable "topic" was run separately from other variables in GoldVarb, and was thus not included in Table 4a or 4b. The results for "topic" were not significant.

Other topics which fell below the average accuracy level (80%) of the corpus as a whole were “danger of death” and both picture descriptions. The topic “other” saw eighty percent accuracy, equal to the average accuracy for all topics. This topic category encompassed topics such as jewelry and birth control, and was used to label anything that strayed significantly away from the purpose of the question. However, “other” has the second lowest number of total tokens, with only fifteen, and the bulk of these are found in a single participant's discussion of birth control.

One possible reason for the variation in average accuracy by topic is the amount of adjectives produced by each speaker per topic. While every participant, regardless of situation, can discuss their families for a certain period of time, since everyone has a family of some sort, not every participant will choose to talk for as long. This could be due to limited vocabulary or simple reticence to discuss what could be a personal topic. The limited vocabulary was occasionally indicated by participants' use of English to describe family members. Interestingly, *stubborn* was used, in English, by more than one participant in this way. Also, some participants are not as chatty as others, regardless of personal background or Spanish ability. In fact, one participant did not provide any adjectives in his descriptions of his family. Such variability was found among the native speaker controls, as well.

Aside from these personal differences, the amount that each participant knew about the topics being discussed varied considerably, which impacted the amount of material they produced. For example, all participants had something to say about Barack Obama as president, though not all of them had strong feelings about him, or could speak about particular policies that have been enacted during Obama's term of office. Participants who had been old enough to

vote in the 2008 election naturally had more to say about that experience that those who had not voted in that election, in general. When asked how they felt about the current republican candidates, however, there was a wide gap in knowledge and amount of speech produced. Some participants went on at length about certain candidates or issues, or about the political process as a whole, while other participants told me they did not even know who was running this year.

When asked what they remembered from the September 11, 2001 attacks, the participants had even less to say overall. In fact, this topic produced the lowest number of gender-marked adjectives, probably because one of the most common adjectives used here was *triste (sad)*, which is not gender marked. The age of the participants must have an impact on these figures, since all of the non-native speakers interviewed were under the age of eighteen when the attacks occurred, and the majority had not yet reached adolescence. Therefore, their memories of the event would not be as clear or vivid as those of the older native speakers interviewed. Table 5 below shows individual adjective counts for each non-native speaker by topic. This table does not include Participant 7, who was excluded due to high proficiency, or any of the three native speakers (Partipants 1,2, and 9).

The picture description tasks produced by far the most adjectives, and of those, the second image produced more than the first. Participants seemed to struggle more with some of the vocabulary items in the second image, such as *jar, basket,* and *pig.* As an interesting side note, a number of participants who did not know the word for *pig (cerdo)* substituted words for various pork products, such as *tocino (bacon)* or *chorizo (sausage).* This resulted in such humorous sentences as “El tocino es triste” (participant #4).

Table 6: Total adjectives produced by each non-native participant, by topic

	Family	Friends	Politics	Obama	Attacks	Danger	Pic. 1	Pic. 2	Other	Total
Part. 3	26	6	0	12	2	11	0	25	0	82
Part. 4	0	2	1	2	3	2	0	16	0	26
Part. 5	1	4	0	6	1	2	20	0	1	35
Part. 6	7	8	4	13	2	0	9	0	12	55
Part. 8	5	1	3	3	0	1	0	15	0	28
Part. 10	13	9	0	1	1	0	12	0	0	36
Part. 11	3	8	1	7	2	3	11	0	0	36
Part. 12	5	3	0	2	0	4	11	0	1	26
Part. 13	2	6	1	1	2	1	0	11	0	24
Part. 14	13	7	1	1	0	0	0	11	4	37
Part. 15	7	2	1	0	3	0	14	22	0	49
Part. 16	9	0	6	2	2	1	0	17	0	37
Part. 17	2	3	0	1	2	2	0	25	0	35
Part. 18	7	2	0	6	1	1	16	0	0	33
Part. 19	3	7	0	3	0	0	0	11	0	33
Total	102	68	18	60	21	28	94	156	17	564

As seen here, there were a number of topics which not every participant used adjectives with. The "danger of death" topic, in particular, left some participants with very little to say. They simply had never been in any situations in which their lives were in danger, either real or imagined.

Native speakers were 100% accurate in their gender agreement. Although native speaker can conceivably make errors in this regard, such errors are rare, and were not found in this study. A list of adjectives produced by the native speaker participants can be found in Appendix 6. All together the three native speakers produced seventy-four adjectives.

4.2 Noun gender

Table 7: Agreement by noun gender. Results are significant.

	Feminine nouns		Masculine nouns		All nouns	
	Percentage	N	Percentage	N	Percentage	N
Percent Correct	69%	131	90%	197	80%	328
Percent Incorrect	31%	59	10%	23	20%	82
Probability of correct agreement	0.327		0.651		--	
All tokens	190		220		410	

In keeping with previous research, feminine nouns are more often incorrectly matched with masculine modifiers. In fact, masculine nouns fall above the average for all adjectives in accuracy, and would be considered successfully acquired, at ninety percent accuracy, if they were not the unmarked choice (Mackey and Gass 2005). Feminine nouns, on the other hand, are considerably lower than the threshold of successful acquisition, at sixty-nine percent. Given that feminine gender agreement is unmarked, the sign of successful acquisition of Spanish gender agreement as a whole should be the acquisition of the feminine forms alone. In that case, these figures suggest that these learners, many of whom are at an advanced level of study, have not successfully acquired Spanish's gender agreement system for adjectives. Of course, these figures are based entirely on participants' production, rather than their inherent knowledge of the system. These findings support hypothesis 1, which states that the default gender setting in learners'

minds is masculine. Thus, masculine nouns will have fewer agreement errors, while feminine nouns will have more. Based on these data, speakers certainly do seem to have such a masculine default.

Even with the preference for masculine endings, though, it is worth noting that ten percent of masculine nouns were incorrectly modified with feminine adjectives, which goes against the findings of some researchers. One possible reason for the modification of masculine nouns with feminine adjectives could be the proximity of a different feminine referent in the discourse, or a priming effect. For example, one male participant referred to himself as *baja (short),* after describing his mother in the same way.

4.3 Adjective reference

Table 8: Agreement according to whether the adjectives describes the speaker or not. Results were not significant.

	Self-referential adjectives		Non-self-referential adjectives		All adjectives
	Males N = 15	Females N = 25	Masc. Nouns N = 205	Fem. Nouns N = 165	
Percent Correct	94% (N=14)	80% (N=20)	89% (N=183)	67% (N=111)	
Total Percent Correct	85% N=34		79% N=294		80%
Total Percent Incorrect	12% N=6		16% N=76		20%
Probability of correct agreement	0.57		0.49		--
All tokens	40		370		410

At first glance, it seems that participants are better at inflecting adjectives used to describe themselves than others, and that male speakers are more accurate in this regard than female speakers are. If the data for adjective reference in this study were significant, it would seem that female learners are somewhat less accurate than their male counterparts when referring to themselves, since female speakers were only accurate eighty percent of the time when referring to themselves, compared to male speakers with ninety-four percent accuracy. However, the chi-square test showed that these data are not significant, and the numbers for self-referential adjectives are too low to make any substantial claims on this point.

4.4 Noun endings

Table 9: Agreement by noun gender morphology.

	Overt				Non-overt				Deceptive				All adj. tokens
	Masc. noun N=163		Fem. noun N=141		Masc. noun N=55		Fem. noun N=35		Masc. noun N=2		Fem. noun N=14		
	%	N	%	N	%	N	%	N	%	N	%	N	
Percent Correct	91%	149	73%	103	84%	46	49%	17	100%	2	79%	11	
Total Percent Correct	83% N=252				70% N=63				81% N=13				80%
Total Percent Incorrect	17% N=52				30% N=27				19% N=3				20%
Probability of correct agreement	0.54				0.34				0.7				--
All tokens	304				90				16				410

Non-overt nouns, as expected, are more likely to be incorrectly modified that overt nouns. It is interesting that deceptive nouns fall between overt and non-overt in terms of accuracy. It could be due to more extensive study of these nouns by students, or more conscious effort at accuracy for them than for non-overt nouns. That is, deceptively marked nouns may be stored lexically with a sort of red flag, alerting the student that the noun does not behave normally.

4.5 Adjective position

Table 10: Agreement by the position of the adjective

	Attributive				Predicate				Prenominal				All adj. tokens
	Masc. noun N=97		Fem. noun N=78		Masc. noun N=102		Fem. noun N=94		Masc. noun N=21		Fem. noun N=18		
	%	N	%	N	%	N	%	N	%	N	%	N	
Percent Correct	82%	80	76%	59	95%	97	60%	56	95%	20	89%	16	
Total Percent Correct	79% N=139				78% N=153				92% N=36				80%
Total Percent Incorrect	21% N=36				22% N=43				8% N=3				20%
Probability of correct agreement	0.51				0.43				0.78				--
All tokens	175				196				39				410

As expected, predicate adjectives are slightly less accurate overall than attributive adjectives, and prenominal adjectives are more accurate than either attributive or predicate. Since prenominal adjectives fall between the determiner and the head noun, they could be easier to process. Predicate adjectives, on the other hand, can be separated from the noun by several words or even clauses. Attributive adjectives often directly follow the noun, yet have a lower accuracy rate, perhaps because they can be distanced by other modifiers, such as *muy (very)*.

Masculine nouns, once again, have a much higher rate of accuracy, for all adjective positions. In fact, they are above the threshold of success in both the predicate and prenominal positions, but not attributive, though they do fall above average accuracy there. Feminine adjectives in the prenominal position come very close to being considered successfully acquired,

but fall far short of that in attributive and predicate positions. It is possible that learners rely more on the masculine default gender in predicate position than attributive position, which could explain the high rate of accuracy in masculine, but not feminine adjectives in predicate position. If the gender of the noun being modified is already tenuously attached in the speaker's mental lexicon, this linguistic distance could be enough to separate the gender feature from the adjective. Also, this space requires the speaker to mentally go back to that noun, which takes more mental effort.

4.6 Accuracy of learner variables

None of the learner variables analyzed in this study were shown to be significant, including speaker gender, course level, proficiency test score, or time spent in a Spanish-speaking country. However, accuracy figures for learners according to their proficiency are interesting. It was expected that accuracy would rise with the course level, so that learners in the 4000-level would score higher than those in the 3000-level, and those in the 3000-level would score higher than those in the 2000-level. While learners in the 4000-level did score highest, with eighty-four percent accuracy overall, learners in the 2000-level scored only slightly worse, and better than those in the 3000-level. Table 11 demonstrates these figures.

Table 11: Accuracy scores by participants' course level.

	Overall accuracy	Accuracy of feminine forms
2000-level	83%	66%
3000-level	81%	64%
4000-level	84%	71%

Similar results were found for participants' scores on the proficiency test. Participants who scored between seventy and seventy-nine percent on the proficiency test had the highest accuracy ratings, and the participants with the highest proficiency test scores had the second-highest accuracy rating when only feminine forms were considered. Table 12 shows these figures.

Table 12: Accuracy scores by participants' proficiency test scores.

Scores	Overall accuracy	Accuracy of feminine forms
50-69% (N=46)	82%	55%
70-79% (N=50)	84%	75%
80-89% (N=92)	81%	67%
90-99% (N=222)	84%	71%

4.7 Summary

These results indicate that linguistic factors influence gender agreement of adjectives to a greater extent than extralinguistic factors. Feminine nouns, in particular, have lower accuracy than masculine ones. Lower accuracy also correlates with non-overt endings on nouns, adjectives in the predicate position, and inanimate nouns.

CHAPTER 5: CONCLUSIONS

5.1 Hypotheses and research questions, in conclusion

This study reinforces findings of previous studies, specifically regarding agreement of feminine versus masculine nouns, and regarding the effect of noun morphology on agreement. The data also suggest that spontaneous production elicits lower levels of accuracy than many of the more structured grammatical tests used to measure gender competence. Since this study focused entirely on production, rather than underlying competence, it is difficult to make claims about the full acquisition of gender agreement by speakers, especially for unmarked forms.

Hypothesis 1 stated: In terms of grammatical gender, learners operate with a masculine default setting in their minds. As a result, masculine nouns will have few agreement errors, while feminine nouns will have more. Masculine nouns, on average, were modified accurately at a rate of ninety percent, meeting the threshold of successful acquisition by learners. Feminine nouns, however, were only modified accurately at a rate of sixty-nine percent, far below successful acquisition (Mackey and Gass 2005).

Hypothesis 2 stated: High proficiency learners of Spanish will continue to struggle with feminine gender agreement on adjectives. Time spent abroad in Spanish-speaking countries will not affect learners' gender-agreement accuracy. This hypothesis was borne out by the data in this study. Learners enrolled the 4000-level Spanish courses, the highest included in this study, produced correct gender agreement for female nouns only seventy-one percent of tokens. Participants with the highest scores of the proficiency test also struggled with feminine

agreement, and participants who had spent time in a Spanish-speaking country did not perform significantly better than other participants at the same level who had not studied abroad.

Hypothesis 3 proposed that: The position of the adjective relative to the noun will correlate with accuracy. Prenominal adjectives will be most accurate, followed by attributive, then predicate adjectives. This was proven correct by this research. Prenominal adjectives had the highest level of accuracy, followed by attributive adjectives, then predicate adjectives. Distance from the modified noun is a likely cause of this.

Hypothesis 4 proposed that: Nouns which are not morphologically marked for gender (non-overt nouns), will have lower accuracy than overtly marked nouns, which end in *-o* or *-a*. Nouns which are deceptively marked will have the lowest accuracy. This was supported in the initial claim, but not in its entirety. Non-overtly marked nouns were, in fact, the least accurate based on the data in this study, but deceptively marked nouns ended up being the most accurate grouping, followed by overtly marked nouns. The could relate to greater learner effort to learn deceptively marked nouns, or possibly to the nature of the deceptively marked nouns in this study.

My original research questions were: What factors influence accurate gender agreement production among college level learners of Spanish? Are these factors primarily linguistic, or do they involve individual learner characteristics, as well? In answering this question, it appears that the primary factors influencing the accuracy of spontaneously produced adjective gender agreement in Spanish are linguistic. Characteristics of individual learners do not seem to have much impact on gender agreement among adjectives in such spontaneous speech, though in more structured settings they may. The factors that do appear to influence agreement here are noun

gender (masculine or feminine), noun endings (overt, non-overt, or deceptive), the presence and accuracy of an article in the noun phrase, the position of the adjective in the sentence, and the animacy of the noun. While production data alone cannot determine the extent of acquisition of a feature, the participants in this study did not produce feminine adjective agreement at a level of accuracy sufficient to claim that they have fully acquire gender. To make such a claim, participants would have needed to produce feminine gender agreement correctly at least ninety percent of the time, which they did not do.

5.2 Limitations of study and suggestions for future research

A major limitation of this study was the relatively small number of participants, especially from certain groups. Ideally, an equal number of participants would be male and female, from each course level, and there would be more of them. That way, perhaps, more conclusions could be drawn about them.

Following up the interviews and picture description tasks with a structured gender agreement test could allow comparison between the different methodologies, as well. Additionally, differently framed interview questions may elicit more adjective tokens, allowing for greater analysis. For example, having participants create an imaginary profile for themselves for a dating service may elicit higher numbers of self-referential adjectives, as well as adjectives referring to desired qualities in a partner.

Limiting participants' use of English would also be beneficial, though difficult. It may help if participants do not know that the interviewer speaks English, though it could be awkward convincing them of that. Researchers must be careful, though, to keep participants relaxed and comfortable enough to speak freely, while at the same time restricting their use of English.

It is worth noting here that only the articles *el, la, un,* and *una* were considered, as well as contractions of these, such as *del* and *al,* and their corresponding plural forms. A more comprehensive consideration of determiners, including *todo/a, mucho/a,* and others, may reveal different patterns.

BIBLIOGRAPHY

(2000) *Mis Fabulas Favoritas.* LIBSA, Madrid.

Alarcón, Irma V. (2011). Spanish gender agreement under complete and incomplete acquisition: Early and late bilinguals' linguistic behavior within the noun phrase. *Bilingualism: Language and Cognition 14*.

Brantmeier, Cindy. (2003). The Role of Gender and Strategy Use in Processing Authentic Written Input at the Intermediate Level. *Hispania 86*, 844-856.

de Castells, Matilde Olivella, Elizabeth E. Guzmán, Paloma Lapuerta, and Judith E. Liskin-Gasparro. (2010). *Mosaicos: Spanish as a World Language.* Pearson Education, Inc. Upper Saddle River, New Jersey.

Cubelli, Roberto, Daniela Paolieri, Lorella Lotto, and Remo Job. (2011). The Effect of Grammatical Gender on Object Categorization. *Journal of Experimental Psychology: Learning, Memory, and Cognition 37*, 449-460.

Dominguez, Alberto, Fernando Cuetos, and Juan Segui. (1999). The Processing of Grammatical Gender and Number in Spanish. *Journal of Psycholinguistic Research, 28*.

Ellis, Rod, and Gary Barkhuizen. (2005). *Analysing Learner Language.* Oxford University Press, Oxford.

Gass, Susan M., and Alison Mackey. (2007). *Data Elicitation for Second and Foreign Language Research.* Routledge, New York, NY.

Glass, William R. and Ana Teresa Pérez-Leroux. (1997) *Contemporary Perspectives on the Acquisition of Spanish: Volume 2: Production, Processing, and Comprehension.* Cascadilla Press, Somerville.

Harris, James W. (1991). The Exponence of Gender in Spanish. *Linguistic Inquiry,* Vol. 22, No. 1. pp. 27-62.

Hawkins, Roger. (2001). The theoretical significance of Universal Grammar in second language acquisition. *Second Language Research,17*, 345-367.

Isabelli-García, Christina. (2010). Acquisition of Spanish Gender Agreement in Two Learning Contexts: Study Abroad and At Home. *Foreign Language Annals, 43*.

Keating, Gregory. (2009). Sensitivity to violations of gender agreement in native and nonnative Spanish: An eye-movement investigation. *Language Learning, 59,* 503-535.

Lemhöfer, Kristin, Herbert Schriefers, and Iris Hanique. 2010. "Native language effects in learning second-language grammatical gender: A training study." *Acta Psychologica,* 135.

Lew-Williams, Casey, and Anne Fernald. "Real-time processing of gender-marked articles by native and non-native Spanish speakers." *Journal of Memory and Language* 63 (2010).

Lichtman, Karen. (2009). Acquisition of Attributive and Predicative Adjective Agreement in L2 Spanish. In *Proceedings of the 10th Generative Approaches to Second Language Acquisition Conference (GASLA 2009),* ed. Melissa Bowles et al., 231-247. Somerville, MA: Cascadilla Proceedings Project.

Mackey, Alison, and Susan M. Gass. (2005). *Second Language Research: Methodology and Design*. Routledge, New York, NY.

Montrul, Silvina, Rebecca Foote, and Silvia Perpiñan. (2008). Gender Agreement in Adult Second Language Learners and Spanish Heritage Speakers: The Effects of Age and Context of Acquisition. *Language Learning, 58*, pp. 503-553.

Sagarra, Nuria, and Julia Herschensohn. (2010). The role of proficiency and working memory in gender and number agreement processing in L1 and L2 Spanish. *Lingua, 120*.

Schlig, Carmen. (2003). "Analysis of Errors Made by Third-Year Students." *Hispania, 86*, 312-319.

Tagliamonte, Sali A. (2006). *Analysing Sociolinguistic Variation.* Cambridge University Press, Cambridge, UK.

White, Lydia, Elena Valenzuela, Martyna Kozlowska-MacGregor, and Yan-Kit Ingrid Leung. (2004). Gender and number agreement in nonnative Spanish. *Applied Psycholinguistics, 25*, 105-133.

APPENDICES

Participant questionnaire

1. What is your age?
2. What gender do you most closely identify with?
3. What language(s) did you grow up speaking at home?
4. What language(s), other than English and Spanish, do you speak, including any listed in #3 above? For each, please circle the number of years spent speaking or studying the language.

_____	1	2	3	4	5	6	7	8	9	10+
_____	1	2	3	4	5	6	7	8	9	10+
_____	1	2	3	4	5	6	7	8	9	10+

5. Please rate your Spanish ability in the following categories on a scale of 1-10.

	1	2	3	4	5	6	7	8	9	10
Speaking										
Listening										
Reading										
Writing										

6. At what age did you start learning Spanish?
7. How many years have you spent actively learning Spanish?

8. In which environments have you learned Spanish? Please circle all that apply, if you have spent at least one year learning in said environment.

Traditional classroom Immersion classroom

Immersion in a Spanish-only environment No formal instruction

9. Have you spent any time studying abroad or living in a Spanish speaking country? yes / no
    a. Where?
    b. How long were you there?
    c. What was the purpose of your time abroad? Circle the most appropriate option below:

University study

High school study abroad/ exchange program

Volunteer service or mission trip

Extended vacation

Other (please explain)

    d. During your time abroad, what percentage of each activity below was conducted in Spanish?

- Speaking

- Reading

- Watching TV or movies

Appendix 2: Interview questions

First, let's talk some about the people in your life. Tell me about your family (parents, brothers and sisters, grandparents...)

Now tell me a little bit about your friends. Which friends do you spend most of your time with? What are these friends like?

Next, let's talk about some well-known events that happened in the past. In 2008, the United States elected Barack Obama president. Describe where you were and what you felt about the election at the time.

How do you feel about the president now?

Going farther back, let's talk a little bit about the attacks of September 11, 2001. What do you remember most from that event? How do you feel when you look back on it?

"Has there ever been a time in your life when you felt that your life was in danger? When you thought, “this is it?”"

****

Now I'm going to show you a couple of pictures. Describe them the best you can, using as much detail as possible.

En primer lugar, vamos a hablar un poco acerca de la gente en su vida. Háble**m**e de su familia (hermanos, padre/ madre, abuelos...)

Ahora dígame un poco acerca de tus amigos.

A continuación, vamos a hablar de algunos eventos bien conocidos que ocurrieron en el pasado. En 2008, **los ciudadanos de** los Estados Unidos **eligieron a** Barack Obama **para el p**residente. Describ**a** donde estaba y **como se** sentía sobre la elección **en ese** momento.

¿Cómo **se** siente acerca **d**el presidente ahora?

Va**ya** más atrás, vamos a hablar un poco acerca de los ataques del 11 de septiembre de 2001. ¿Qué es lo que más recuerd**a** de ese evento? ¿Cómo se siente cuando **reflexiona sobre eso**?

"A ud le ha pasado alguna vez en la vida un evento en el cual se sentía que estaba algo en peligro? ¿Cuando a Ud se le ocurrió el pensamiento de se iba a acabar la vida?”

****

Ahora voy a mostrarle un par de fotos. **Describalas** lo mejor que pued**a**, con tanto detalle como sea posible.

Appendix 3: Lists of adjectives produced by participants

Adjectives by non-native speakers

Attributive	**Predicate**	**Prenominal**
africano/a N = 1	aburrido/a N=1	mismo/a N=10
amarillo/a N = 10	alto/a N=6	otro/a N=14
americano/a N = 3	amarillo/a N=12	primero/a N=6
armado/a N = 1	americano/a N=1	propio/a N=2
avansado/a N = 1	apasionado/a N=1	proximo/a N=2
blanco/a N = 10	asombroso/a N=1	segundo/a N=2
bonísimo/a N = 1	asustado/a N=2	ultimo/a N=1
bonito/a N = 1	bajo/a N=4	unico/a N=1
bueno/a N = 7	blanco/a N=15	
cariño/a N = 1	bonito/a N=1	
chicito/a N = 1	bueno/a N=3	
claro/a N = 2	caro/a N=1	
cómico/a N = 1	cariño/a N=1	
conservativo/a N = 1	casado/a N=1	
corto/a N = 2	castaño/a N=3	
cualitativo/a N = 1	católico/a N=1	
democratico/a N = 1	*cerco/a N=2	
derecho/a N = 7	cerrado/a N=5	
diverso/a N = 1	chileno/a N=1	
electronico/a N = 2	ciego/a N=1	
específico/a N = 3	claro/a N=1	
exacto/a N = 2	comico/a N=1	
extranjero N = 1	conservativo/a N=3	
favorito/a N = 1	contento/a N=2	
furioso/a N = 1	corto/a N=2	
gordo/a N = 2	cristiano/a N=1	
guapo/a N = 1	democratico/a N=2	

izquierdo/a N = 8	diverso/a N=1	
largo/a N = 2	divertido/a N=1	
ligero/a N = 1	divorciado/a N=3	
liso/a N = 1	dramático/a N=1	
loco/a N = 1	duro/a N=1	
malo/a N = 1	embarazado/a N=2	
médico/a N = 2	emocionado/a N=1	
medio/a N = 2	enojado/a N=1	
morado/a N = 2	esponáneo/a N=1	
moreno/a N = 4	estúpido/a N=1	
negro/a N = 9	exitoso/a N=1	
nuevo/a N = 1	feminino/a N=1	
ondulado/a N = 1	georgiano/a N=1	
organizado/a N = 2	gordo/a N=4	
oscuro/a N = 1	guapo/a N=1	
pasado/a N = 10	informado/a N=1	
pequeño/a N = 12	japoneso/a N=1	
perezoso/a N = 1	junto/a N=6	
perfecto/a N = 1	largo/a N=1	
politico/a N = 1	llego/a N=1	
primario/a N = 1	loco/a N=5	
proximo/a N = 2	lógico/a N=1	
público/a N = 1	médio/a N=1	
raro/a N = 1	morado/a N=2	
religioso/a N = 3	moreno/a N=5	
republicano/a N = 2	muerto/a N=2	
rojo/a N = 17	negro/a N=6	
rosado/a N = 1	nervioso/a N=5	
rubio/a N = 4	ocupado/a N=1	
secundario/a N = 6	organizado/a N=1	
sencillo/a N = 2	orgulloso/a N=2	

serio/a N = 1	oscuro/a N=3	
tranquilo/a N = 1	peligroso/a N=2	
ultimo/a N = 1	pequeño/a N=7	
vario/a N = 1	perdido/a N=1	
violento/a N = 1	perfecto/a N=2	
	politico/a N=1	
	preocupado/a N=2	
	religioso/a N=2	
	ridículo/a N=1	
	rojo/a N=9	
	rosado/a N=2	
	rubio/a N=4	
	seguro/a N=5	
	serio/a N=3	
	simpático/a N=3	
	unido/a N=1	
	viejo/a N=2	
	vivo/a N=1	
Total N = 175	**Total N = 196**	**Total N = 39**

Adjectives by native speakers

Attributive	**Predicate**	**Prenominal**
alargado/a N = 1	alto/a N = 2	bueno/a N = 4
amarillo/a N = 1	famoso/a N = 1	mismo/a N = 4
americano/a N = 4	negativo/a N = 1	otro/a N = 3
blanco/a N = 3	pequeño/a N = 2	pequeño/a N = 2
bueno/a N = 1	positivo/a N = 1	primero/a N = 3
casado/a N = 2	unido/a N = 1	segundo/a N = 1
contento/a N = 1		
contrario/a N = 1		
derecho/a N = 2		
gordo/a N = 2		
idiomatico/a N = 1		
izquierdo/a N = 3		
largo/a N = 3		
malo/a N = 1		
pasado/a N = 4		
pequeño/a N = 5		
politico/a N = 4		
primario/a N = 1		
público/a N = 1		
recto/a N = 1		
redondo/a N = 2		
republicano/a N = 1		
rojo/a N = 1		
rubio/a N = 1		
secundaria N = 1		
típico/a N = 1		
Total N = 49	**Total N = 8**	**Total N = 17**

Appendix 4: Nouns produced

Nouns and pronouns used by non-native speakers, which were modified by adjectives

Overt	**Non-Overt**	**Deceptive**
la abuela N=2	el accidente N=1	la foto N=1
el abuelo N=2	el actor N=1	la mano N=13
algo N=3	el animal N=4	nada N=1
la amiga N=7	el audición N=1	el programa N=1
el amigo N=10	el café N=1	
el anillo N=1	el calcetín N=3	
el año N=8	el contenedor N=1	
el anteojo N=1	el debate N=1	
la asma N=1	la dirección N=1	
la barba N=2	la edad N=1	
el cabello N=1	la elección N=1	
la cabeza N=1	la flor N=10	
el camino N=1	la gente N=1	
la camisa N=9	el hombre N=4	
el candidato N=3	el hombro N=1	
la cara N=2	el lugar N=3	
la carta N=1	la luz N=2	
la casa N=4	la madre N=4	
el cerdo N=7	la nariz N=1	
la chica N=7	la noche N=1	
el chico N=4	la opinion N=1	
el cielo N=1	la organización N=3	
el círculo N=2	el padre N=11	
el compromiso N=1	el país N=3	
el correo N=1	el pantalon N=2	
la cosa N=5	la parte N=3	
el cuerno N=2	el pie N=1	

el cuerpo N=1	el presidente N=5	
el diseño N=1	la relación N=2	
la economía N=1	la seguridad N=1	
Él (or proper male name) N=9	el semestre N=2	
la empresa N=1	el sueter N=8	
la escuela N=6	la vez N=3	
el espacio N=1	el viernes N=1	
la experiencia N=1		
la familia N=7		
el formulario N=1		
la fuerza N=1		
la gafa N=3		
el grado N=1		
el grupo N=2		
la hermana N=3		
el hermano N=3		
el hielo N=1		
la historia N=2		
el hongo N=2		
el huevo N=1		
el lado N=2		
la lengua N=1		
la literatura N=1		
la manga N=3		
la mascota N=1		
el momento N=1		
la montaña N=3		
el mundo N=2		
la música N=1		
el negocio N=2		
la niña N=2		

la novia N=1		
el novio N=5		
el ojo N=2		
el padrino N=1		
la palabra N=1		
la película N=1		
el peligro N=1		
el pelo N=13		
el perro N=2		
la persona N=4		
la piedra N=2		
el piso N=1		
la planta N=4		
la política N=1		
el politico N=1		
el pollo N=10		
el proposito N=1		
el pueblo N=1		
el punto N=3		
el republicano N=2		
la risa N=1		
la semana N=1		
el sentido N=2		
el sujeto N=1		
el tenso N=2		
el tiempo N=2		
la tierra N=2		
el tío N=1		
la toalla N=1		
el tocino N=2		
el torro N=2		