

L2 GENDER FACILITATION AND INHIBITION IN SPOKEN WORD RECOGNITION

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ABSTRACT

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This dissertation investigates the role of grammatical gender facilitation and inhibition in second language (L2) learners' spoken word recognition. Native speakers of languages that have grammatical gender are sensitive to gender marking when hearing and recognizing a word. Gender facilitation refers to when a given noun that is preceded by an adjective with the same gender marking (e.g., in Italian, *bella casa* “beautiful_{Feminine Adjective} house_{Feminine Noun}”) is recognized more quickly than if the noun is preceded by an adjective that does not have a gender marking (e.g., *grande casa* “big_{Neutral Adjective} house_{Feminine Noun}”). Gender inhibition refers to when a noun that is preceded by an adjective that has the wrong gender marking (e.g., **bello casa* “beautiful_{Masculine Adjective} house_{Feminine Noun}”) is recognized more slowly than if the noun is preceded by an adjective that does not have a gender marking (e.g., Bates, Devescovi, Hernandez, & Pizzamiglio, 1996; Dahan, Swingley, Tanenhaus, & Magnuson, 2001; Davidson, de la Fuente, Montrul, & Foote, 2011; Guillelmon & Grosjean, 2001). Effects of gender facilitation and gender inhibition among late second language (L2) learners are less strong than those found among native speakers (Davidson, et al., 2011; Foote, 2011) or nonexistent (Guillelmon & Grosjean, 2001). These earlier L2 studies, however, examined only learners whose first language (L1) was English, which does not have grammatical gender. In this study I compare the spoken word recognition of L2 learners with gender in the L1 to those without gender in the L1 in three different tasks (which differed in terms of automatic versus controlled processing) in order to investigate gender facilitation and inhibition in the L2 and how it is

affected by the type of task and the transparency of the gender marking on the noun.

A control group of 24 native speakers and 72 advanced learners of Italian divided in 3 experimental groups completed the three spoken word recognition tasks. The learners were placed into one of the 3 groups on the basis of gender in the L1: (a) Romance L1s that have gender systems similar to that of Italian (e.g., Spanish); (b) L1s that have gender systems different from that of Italian (e.g., Russian); and (c) L1s that do not have gender (e.g., English). The participants listened to adjective-noun combinations and responded by (a) repeating the noun, (b) by identifying the gender of the noun, or by (c) indicating the grammaticality of the adjective and the noun together. The response times and the accuracy of the participants' responses were recorded and analyzed with mixed measures ANOVAs and *t* tests.

I predicted that the native speakers and all of the learners would show effects of inhibition in the more controlled explicit tasks and that the transparency of the gender of the noun would affect the speed with which they identified the nouns. I predicted that only the native speakers and the L1 Romance learners would show effects of facilitation and/or inhibition in the implicit, less controlled task.

The results showed that learners of Italian who have Romance gender in the L1 are similar to native speakers in their processing of gender in the L2. Learners who have another (non-Romance) gender system in the L1 pattern more similarly to learners who do not have any gender in the L1, at least in controlled processing tasks. All participants were influenced by the transparency of the gender on the noun, but native speakers and L1 Romance learners were less affected than the other two learner groups. The findings are discussed in terms of the role that gender plays in the lexical access of L2 learners and how it differs from that of native speakers. The findings are also discussed in terms of implications for L2 acquisition of grammatical gender.

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CHAPTER 1 INTRODUCTION

Gender is a morphosyntactic phenomenon common in languages whereby nouns have an inherent classification, and agreement may be marked between a particular noun and other elements in the discourse that refer to it, including determiners, adjectives, past participles, clitics, and pronouns. There may be two or three or even more genders in a language. Natural or semantic gender refers to the gender provided to a noun by its biological sex, for example, *uomo* (“man”) is a masculine noun in Italian and *donna* (“woman”) is a feminine noun in Italian. Grammatical gender, on the other hand, refers to the fact that other nouns which have no natural gender (or are not even animate), have a seemingly arbitrary gender assigned to them. Native speakers learn the grammatical gender of these nouns within the first few years of life and are able to mark agreement on other elements that are connected grammatically to these nouns (Aikhenvald, 2000; Chini, 1995; Corbett, 1991).

The fact that gender is quite common among languages could indicate that it is useful in the languages that have it as it helps speakers to follow discourse more successfully by coordinating or coindexing words that refer to the same thing (Bates, Devescovi, Pizzamiglio, D’Amico, & Hernandez, 1995; Myles, 1995). Myles provides the example of the French sentence,

*Heureuse*_{FemSing} *que son nom n’ait pas été appelé par le proviseur, Marie repartit voir Jean.* (“Happy that her name had not been called by the headmaster, Mary went back to see John.”) (p. 240). It is clear to native speakers of French that the adjective *heureuse* (“happy”) which is marked with feminine gender can only refer to Mary in the sentence and not to one of the other three nouns in the sentence which have either natural masculine gender (*Jean*, “John”) or grammatical masculine gender (*nom*, “name” and *proviseur*, “headmaster”). Grammatical gender marking serves as a useful tool in coindexing “happy” and “Mary.” Furthermore, gender marking can play an important role in how listeners and speakers access lexical items. Specifically, gender marking may increase the speed with

which a target word is accessed among various other potential candidates in the mental lexicon when one recognizes a spoken word relative to when a target word is not preceded by a gender cue (Bates, et al., 1995).

Native speakers of languages with grammatical gender acquire gender at a young age. Italian children produce some gender agreement by two years of age and by the time they are three or four, they have pretty much mastered gender agreement between nouns and singular articles (Chini, 1995). Spanish-speaking children as young as 3 years of age have shown effects of gender processing; in an eye tracking study, the children looked more quickly at a picture of an object when it was preceded by a correctly gender-marked adjective than when it was not (Lew-Williams & Fernald, 2007).

Gender information about a given noun is available to native speakers during lexical access. Native speakers of Italian who had been experimentally manipulated into a tip of the tongue (TOT) state in which they were unable to recall a particular noun were still able to state the gender of that elusive noun (Vigliocco, Antonini, & Garrett, 1997). Similarly, native speakers of languages with gender maintain the same gender of the noun when they have slips of the tongue (Vatz, 2009). In spite of the importance of grammatical gender in native speakers' lexical representations of nouns, however, learners of such languages rarely show such native-like control of gender and continue to make gender errors even at advanced levels of proficiency (Carroll, 1989; Franceschina, 2005; Gass & Alvarez Torres, 2005; Holmes & Dejean de la Bâtie, 1999; McCarthy, 2008).

Although a relatively simple structure from a cognitive point of view (e.g., match –o endings on nouns with –o endings on adjectives), any foreign language teacher can attest to the difficulty that gender agreement can cause students. The acquisition of grammatical gender when learning a second language (L2) is especially problematic for those learners whose first language (L1) does not have gender (Carroll, 1989; Guillelmon & Grosjean, 2001; Rogers, 1987). Several studies have found that

learners whose L1 does have gender, however, seem to display fewer difficulties acquiring gender and to mark gender agreement more similarly to native speakers of those languages (Franceschina, 2005; Sabourin, Stowe, & de Haan, 2006). It is possible that the difficulty that L2 learners have with marking gender agreement in the L2 is related to the fact that the learners do not utilize gender marking in the same way as native speakers when listening to the L2. Native speakers of languages with grammatical gender have been found to recognize nouns more quickly when those nouns are preceded by gender-marked elements. For example, if a given noun is preceded by an adjective with the same gender marking (e.g., in Italian, *bella casa*, “beautiful_{FemSing} house_{FemSing}”), native speakers will recognize the noun more quickly than if the noun is preceded by an adjective that does not have a gender marked element (e.g., *grande casa*, “big_{NeutralSing} house_{FemSing}”); this is referred to as gender facilitation. If a noun is preceded by an adjective that has an incongruent (i.e., wrong) gender marking (e.g., **bello casa*, “beautiful_{MascSing} house_{FemSing}”), native speakers will be slower in recognizing it; this is referred to as gender inhibition (e.g., Bates, Devescovi, Hernandez, & Pizzamiglio, 1996; Bentrovato, Devescovi, D'Amico, & Bates, 1999; Dahan, Swingley, Tanenhaus, & Magnuson, 2000; Davidson, de la Fuente, Montrul, & Foote, 2011; Foote, 2011a; Guillelmon & Grosjean, 2001; Wicha et al., 2005). Gender, therefore, seems to serve a useful purpose, at least for native speakers, in word recognition.

It has been found that native speakers of English who learn languages such as Spanish or French as adults do not show this same facilitation and inhibition effects of gender when processing spoken words in their L2 (Guillelmon & Grosjean, 2001; Lew-Williams & Fernald, 2010), so it would appear that L2 learners do not benefit from gender facilitation, nor are they affected by gender inhibition. English does not, however, have grammatical gender. The question of whether L2 learners

who come from a different L1 background—specifically from an L1 that has grammatical gender—might demonstrate effects of gender facilitation and/or inhibition in L2 spoken word recognition has not been investigated. It is logical to question whether learners who have gender in their L1 show effects of gender facilitation or inhibition in processing their L2s like native speakers do, especially as L2 learners coming from L1s that have gender seem to acquire the gender system of the L2 more successfully than L2 learners without gender in the L1.

In addition to the first language of the L2 learners, the type of task that the learners engage in to measure gender facilitation and/or inhibition may play a role in whether any facilitatory or inhibitory effects are seen in the data. L2 learners, it has been argued, make use of different resources to learn the L2 and store it in memory than native speakers do. In particular, learners are said to rely on explicit, declarative, or metalinguistic knowledge and mechanisms whereas children learning their L1 are said to learn implicitly, using proceduralized knowledge (DeKeyser, 2000; Montrul, Foote, & Perpiñán, 2008; Ullman, 2001). Measures of lexical access that call on automatic processing of language as in Guillelmon and Grosjean (2001), where no effects were found among late L2 learners, may not find indications of facilitation or inhibition whereas other measures that call on more controlled processing may. This dissertation reports the results of three different measures of lexical access which differ in the type of processing which is called upon.

It is also important to understand whether a lack of facilitation or inhibition is related to a learner's failure to assign a gender to a particular noun. For example, as not all nouns in Italian are clearly marked for gender (through a masculine *-o* or feminine *-a* word ending), it is possible that a lack of effects results from uncertainty about a noun's gender. For this reason, this study will consider the transparency of a noun's gender on the facilitation and/or inhibition shown.

The question of whether L2 learners display effects of gender facilitation and/or inhibition in lexical processing is crucial to a better understanding of how L2 learners differ from native speakers in how they process words that they hear. This study will add to our current understanding of how L2 speakers process gender and how this may be related to persistent gender errors in L2 production. In addition, evidence of facilitation or inhibition gives us clearer insight into existing models of word recognition and of gender marking effects on that process. The study consists of three tasks measuring gender facilitation and inhibition of spoken word recognition given to three experimental groups of learners of Italian and one control group of native speakers of Italian. The three learner groups consist of: (a) learners whose L1 does not have gender, (b) learners whose L1 does have gender but not Romance gender, (c) learners whose L1 is a Romance language (and thus contains a gender system similar to the L2).¹

In this dissertation, the term *gender facilitation* refers to faster spoken word recognition when the word is preceded by a gender-marked determiner or adjective as opposed to when it is preceded by a determiner or adjective with no gender marking (as measured by response times [RTs] in milliseconds). *Gender inhibition*, on the other hand, refers to slower spoken word recognition when the word is preceded by a wrong gender-marked determiner or adjective as opposed to when it is preceded by a determiner or adjective with no gender marking (as measured by response times [RTs])

¹ L1s that have gender are separated into non-Romance gender and Romance gender in this study because other Romance gender systems are similar to that of Italian in that there are just two genders of masculine and feminine and in that many nouns share the same gender (e.g., “kiss” in Italian: *bacio*_{MASC}; in Spanish: *beso*_{MASC}; in French: *baiser*_{MASC}; and in Portuguese: *beijo*_{MASC}). Nouns in Romanian have retained a third neuter gender from Latin (or possibly from the Slavic substrate) (Bateman & Polinsky, 2009). There is disagreement about whether the neuter category is actually a separate gender, however, as neuter nouns show agreement with articles and adjectives through a masculine singular marking in the singular and a feminine plural marking in the plural (Bateman & Polinsky, 2009; Chini, 1995). Because of these differences, Romanian was not included in the Romance group. The one L1 Romanian speaker among the participants was not included in the data analyses.

in milliseconds).

This dissertation will first review the literature on the L2 acquisition of grammatical gender by L1 speakers of languages without gender. Then in chapter 3, I will describe current psycholinguistic models of lexical access in spoken word recognition, with a description of common measures of lexical access and a review of previous studies on gender facilitation and inhibition in the L1 and the L2. The fourth chapter is a description of the current study with the research questions that guided it, the predicted results, the target structure (Italian gender), the participants, and the materials. Chapters 5 through 7 describe the three experiments conducted—Auditory Naming, Gender Monitoring, and Grammaticality Judgment, respectively—including the procedure, the analyses of data, the results, and brief discussions of the results for each of the tasks. Chapter 8 is a general discussion of all the results with answers to the research questions and implications for models of lexical access and theories of gender acquisition in the L2. Finally, the dissertation concludes with a summary of the findings, limitations of the study, and indications for future research.

CHAPTER 2 GENDER ACQUISITION

Although gender is acquired early by native speakers and gender marking is valuable to native speakers in terms of lexical access, a great deal of recent L2 research, both from a generative and a cognitive framework, has found that L2 learners still find it difficult to acquire. Many studies have considered the particular problems that speakers of L1s that lack gender have in learning an L2 with gender, particularly in comparison to L2 learners coming from L1s that have gender (Franceschina, 2005; Montrul, et al., 2008; Sabourin, et al., 2006; Spinner & Juffs, 2008; White, Valenzuela, Kozłowska-Macgregor, & Leung, 2004). Gass and Alvarez Torres investigated the role of input and interaction on L1 English speakers' acquisition of gender agreement in Spanish because its absence in the L1 makes it "highly problematic for English learners of Spanish despite high frequency in the input" (2005, p. 9). Furthermore, Gass and Alvarez Torres suggest that the need to acquire gender is not a great priority for L2 learners because misuse of gender by a learner "is unlikely to cause a breakdown in communication" (p. 9). Likewise, Benati (2004) claimed that gender agreement tends to be a problem area for L1 English learners of Italian because of its low communicative value in learners' L2 production; that is, gender agreement on adjectives in Italian does not add any meaning to the utterance and is redundant.

This feature of grammar (*a* = singular feminine) is highly redundant (*la casa bella*) and low in semantic value (-semantic value and +redundancy) as it does not contribute very much to the meaning of the utterance. There is no difference in meaning between *casa bella* and *casa bello*." (Benati, 2004, pp. 71-72)

Debate has arisen over whether possible differences in gender acquisition between speakers of L1s without gender (-Gender) and L1 speakers with gender (+Gender) can be traced to representational differences in the syntax (Franceschina, 2001a, 2005; Sabourin, et al., 2006) or in the

morphology of the two groups (McCarthy, 2008), or to an inability to access the correct form quickly enough in production due to processing constraints or mapping problems (Alarcón, 2006; Spinner & Juffs, 2008), or even whether differences exist at all between the two groups (White, et al., 2004).

Gender Assignment

When considering L2 gender errors, it is necessary to differentiate between errors of gender assignment and errors of gender agreement. Gender assignment is a lexical process that involves knowing the correct gender of a given noun, but gender agreement is a syntactic process that involves the marking of agreement on adjectives and determiners (Foote, 2011b). Drawing on Corbett (1991), Chini describes this difference as “*il G del controllore...cioè il G del nome che controlla l'accordo, a base più o meno semantica*” [the controller gender...that is, the gender of the noun that controls the agreement, on a more or less semantic basis] as compared to the “*G del target...cioè che riceve marche di G per questioni formali di accordo (aggettivo, articolo)...in sé privo di significato*” [target gender...that is, that which receives gender marking for formal reasons of agreement (adjective, article)...in itself lacking meaning] (1995, p. 27).

Some research has suggested that gender assignment (rather than agreement) may be the problem that learners have with gender (Carroll, 1989) and that the learners' familiarity with nouns may affect their overall success with gender marking on those particular nouns (Sabourin, et al., 2006; Spinner & Juffs, 2008). As one's familiarity with a noun is certainly based on its frequency in the input that one receives, it is likely that learners are better able to assign gender to high frequency nouns (Andersen, 1984). Sabourin et al. (2006) used mid and high frequency nouns with near-native Dutch learners to measure their ability to assign the gender of the noun, and found that higher frequency nouns were easier for all of the participants to assign gender to. Oliphant (1998) used highly infrequent Italian nouns with beginning level learners in order to ensure that the learners were

not aware of the gender, so as to better understand the cues (semantic, syntactic, or morphophonological) that the learners used to assign gender to unfamiliar nouns. Oliphant found that learners are sensitive to morphophonological cues (word endings) and syntactic cues (articles) when assigning gender to unfamiliar nouns. Problems arise, however, when cues conflict, especially with the natural gender of the word. For example in the grammatical sentence, *Rita è un architetto serio* (“Rita is a serious architect”) the cue provided in the natural gender of the woman, Rita, conflicts with both the morphophonological cue of the noun *architetto* (i.e., the masculine –o ending) and the syntactic cues of the determiner (the indefinite masculine article *un*) and of the adjective (*serio*).

Other studies indicate that gender assignment—as compared to gender agreement—is a relatively unproblematic process for L2 learners. Sabourin et al. found that transfer of the gender feature from the L1 is not necessary for successful gender assignment (2006). Their L1 English learners of Dutch achieved 80% correct assignment of gender on nouns, well above chance. Franceschina (2005) likewise found that L1 English speakers assigned grammatical gender to Spanish nouns with near perfect accuracy (99.01%) as did the learners with gender in the L1 (99.29%) and the native speakers (99.62%). For Sabourin et al. and Franceschina, then, the difference between learners of +Gender and -Gender L1s is not located in the assignment of gender to nouns, but in the agreement that must be made between nouns and elements that agree with the noun (e.g., determiners, adjectives, past participles, and pronouns).

Gender Agreement

Because studies have found that when asked the gender of nouns, advanced L2 learners of the language can usually supply the correct gender without problem, even though they may fail to mark agreement between the same noun and determiners, adjectives, or other elements that must agree with the noun, some researchers have argued that the problem with gender for L2 learners is one of

agreement, not of assignment (Franceschina, 2005; Guillelmon & Grosjean, 2001; Sabourin, et al., 2006).

In a study of L2 Dutch, Sabourin et al. (2006), for example, found that although transfer of the gender feature from the L1 (in this case, the L1s were German, “Romance languages,” and English) was not necessary for *assignment* of gender to nouns, transfer of gender from the L1 was necessary for gender *agreement*. Today Dutch has two genders: common gender and neuter gender. Historically, however, Dutch had three genders: masculine, feminine, and neuter (comparable to the German gender system). Masculine and feminine genders were collapsed into the modern-day common gender, with a resulting imbalance in the division of noun gender: two-thirds of the nouns in Dutch are common, only one third are neuter (Sabourin, et al., 2006). Unsurprisingly, common gender is the default for L2 learners of Dutch. Agreement in Dutch must be marked on both determiners and relative pronouns. L1 English learners in the study performed a gender agreement task at chance levels when marking agreement between relative pronouns and nouns. An L1 Romance group performed above chance, and an L1 German group performed better than both the English and Romance native speakers, but not as well as the native Dutch speakers. The authors argued that surface transfer of similar lexical and morphophonological forms from the L1 (in the case of the German speakers) was more helpful to learners in marking gender in the L2 than simply having the gender feature in the L1 (in the case of the Romance speakers). Because of this importance of the gender feature in the L1 syntax, Sabourin et al. claim that their results provide support for the idea that L2 learners who do not have the syntactic feature of gender in the L1 cannot fully acquire native-like gender in the L2.

Some studies have found that indeed the problem with the acquisition of gender for -Gender L1 speakers is syntactic. Other studies have suggested that the problem may be one of morphological representations (McCarthy, 2008), of access to the gender feature, of processing constraints (Myles,

1995; Spinner & Juffs, 2008), of proficiency level (White, et al., 2004), or of familiarity with the noun (Andersen, 1984; Sabourin, et al., 2006).

Theories of L2 Gender Acquisition

Representational Deficit Hypothesis

The Representational Deficit Hypothesis claims that syntactic features, like gender agreement, that are not present in the L1 cannot be fully acquired in the L2 after the critical period has passed (Hawkins & Casillas, 2008; Hawkins & Liszka, 2003; Tsimpli & Dimitrakopoulou, 2007). The Representational Deficit Hypothesis predicts that L2 learners will be able to acquire interpretable features that appear on a noun which are necessary for semantic interpretation (i.e., the isolated noun gender), but that they will not be able to acquire uninterpretable features² that appear on the determiner and adjective (i.e., the feature checking that occurs during gender agreement) if the L1 does not contain grammatical gender (White, et al., 2004). Thus, the interpretable feature of gender assignment may be acquired by L2 learners who don't have the gender feature in their L1, but gender agreement as one of the "uninterpretable features will 'fail' (i.e. be non-acquirable and thus absent) permanently in L2A [second language acquisition]." (Leung, 2003, p. 199).

Franceschina's (2001a) study of L2 Spanish production by a native English speaker found that the speaker, Martin, had the correct gender on nouns (assignment) but not on determiners and adjectives (agreement), leading her too to conclude that no feature checking was taking place.

²In Generative Theory, an interpretable feature is a property of a noun that affects semantic interpretation of the noun. For example, the plural feature is interpretable because it affects the semantics or meaning of the noun (e.g., *man* is different in meaning from *men*) (Adger, 2003). The gender of a noun is another such feature that is associated with the semantics of the noun although that semantic connection may not be readily evident in the language today (Aikhenvald, 2000; Chini, 1995). Uninterpretable features are the opposite, in that they do not affect meaning, but only relate to the syntax. For example, in English the singular third person verb in the present tense takes a final -s (*The man walks.*). The final -s does not affect the semantics of the sentence but is necessary for syntactic agreement.

Franceschina (2005) investigated near-native L2 speakers of Spanish of L1s without grammatical gender (English, $n = 15$) and L1s with grammatical gender (Arabic, $n = 4$; French, $n = 9$; German, $n = 2$; Greek, $n = 2$; Italian, $n = 24$; and Portuguese, $n = 12$). Five of the six tasks that the participants carried out measured gender agreement; the sixth measured simple gender assignment through the provision of the appropriate determiner *el* or *la*. One of the gender agreement tasks required participants to choose one of three possibilities (*zapatos* “shoes,” *camisas* “blouses,” and *polleras* “skirts”) after hearing a sentence like: *Los que me gustaban no estaban en oferta*. “The ones_{MascPl} I liked were not marked down.” The masculine plural *los* indicates that only the masculine plural choice, *zapatos*, could be the correct answer. In the second and third tasks, the participants had to produce a missing word that would fit the grammatical context appropriately. The fourth task was a grammaticality judgment with correction task, and the fifth task consisted of having the participants describe the color of an invented noun for which a gender-marked determiner had been provided (e.g., *un*_{MascSing} *pifar*). Franceschina’s results indicated that +Gender L1 speakers performed gender agreement at levels equal to that of native speakers, but that the L1 English speakers consistently produced grammatical agreement at levels significantly different from those of both the native speakers and the +Gender L1 speakers. Franceschina argues that this continuing deficit in the performance of gender agreement by the L1 speakers of a language without gender, even at this high level of proficiency (possibly the endstate as participants had lived in Latin America for many years and scored within the range of native speakers on proficiency tests), shows that native-like attainment of grammatical gender is possible only for L2 learners who have the feature in the L1.

Missing Surface Inflection Hypothesis

Other theories claim that there is not a representational deficit in the L2 learner’s syntax. The Missing Surface Inflection Hypothesis claims that syntactic features of the L2 that are not present in

the L1 can be acquired from the access that a learner has to Universal Grammar (Schwartz & Sprouse, 1996; White, et al., 2004). The Missing Surface Inflection Hypothesis suggests that the problem of gender agreement lies not in the lack of a gender feature in the syntax, but in the mapping of the syntactic feature onto morphological forms (Prévost & White, 2000). Prévost and White claim that unidirectional errors, such as using one gender as a default, are evidence that errors are not random and that the feature does exist in the syntax.

White et al. (2004) presented a study that called into question the Representational Deficit Hypothesis and provided support for the Missing Surface Inflection Hypothesis. White et al. compared gender and number agreement in L2 Spanish by L1 French and L1 English speakers of advanced, intermediate, and low proficiency levels using both comprehension and production tasks. As predicted, results showed that gender agreement was a problem only for low proficiency learners (both L1 English and L1 French) and not for intermediate and advanced level learners (both L1 English and L1 French) who performed similarly to native speakers. White et al. concluded that an uninterpretable feature (e.g., gender agreement) can be acquired in the L2 even if it is not present in the L1, but that gender can be problematic for lower proficiency learners of any L1. The tasks in the study have been criticized, however, for not being adequately challenging for the intermediate and advanced level learners leading to ceiling effects in the results (Franceschina, 2005).

Other studies arguing against the Representational Deficit Hypothesis have shown that gender agreement is not only a problem for learners coming from L1s without gender, but that learners who have the feature in the L1 can also find gender agreement difficult at least at beginning levels. Bruhn de Garavito and White (2003) found that L1 French speakers had similar problems with gender in L2 Spanish as those reported for L1 English speakers. Gess and Herschensohn (2001), like White et al. (2004), found that advanced learners performed better than lower level learners on gender agreement

leading them to conclude that gender can be acquired with proficiency.

Morphological Underspecification Hypothesis

McCarthy (2007) proposed that learners do indeed have a representational problem in that their representations are not like those of native speakers, but for her, the representational problem is located in the morphology, not the syntax of the learner. McCarthy's L2 learners of Spanish evidenced problems with gender not only in the elicited production task, but also in the comprehension task, thereby disproving, according to McCarthy, the Missing Surface Inflection Hypothesis claim that gender errors are caused by communication pressures associated with production. McCarthy also found that the learners showed a masculine default; that is, learners tended to erroneously mark masculine gender with feminine nouns more than they marked feminine gender with masculine nouns. The fact that masculine is the less marked of the two genders, or the underspecified form—that is, “masculine is encoded as the presence of a bare gender node without any further specification” (p. 466)—means that this L2 masculine default is an underspecification error. There is an asymmetry between learners' masculine and feminine features in their morphology. McCarthy argues that this representational problem is not located in the syntax; she points out earlier research in favor of the Missing Surface Inflection Hypothesis which shows that learners who demonstrate difficulty using the correct morphemes have no difficulty with syntactic properties such as verb movement and case.

McCarthy claimed that the masculine default was “the outcome of systematic substitution errors” (2008, p. 465). The existence of default genders used by L2 learners has been documented for various languages. Like McCarthy, Montrul et al. (2008), Franceschina (2001a), and White et al. (2004) found a default of masculine gender for learners of Spanish. Masculine gender has also been found as a default in L2 French (Holmes & Dejean de la Bâtie, 1999; Renaud, 2010). In Dutch a default of common gender has been observed (Sabourin, et al., 2006) (as stated earlier, Dutch has two

genders: common and neuter), and Spinner and Juffs (2008) found that L2 learners of German used a default of feminine gender.

Processing Constraints in Production

Default genders according to some researchers may also be an indication of processing constraints. These processing constraints have been suggested as responsible for the errors that learners make when producing gender agreement rather than the lack of transfer of the gender feature from the L1 (Myles, 1995; Spinner & Juffs, 2008; White, et al., 2004). The problem then with marking gender agreement for L2 learners would not be one of a syntactic or morphological representational deficit as posited by the Representational Deficit Hypothesis or the Morphological Underspecification Hypothesis, but rather a computational problem where learners are unable to successfully access the gender feature or to compute the agreement because of performance pressures and processing constraints (McCarthy, 2008). Support for the idea that processing constraints are responsible for gender errors is found in the fact that the more complicated the agreement that must be carried out, the more difficulty that learners show in marking the agreement.

Research has found that the complexity of the noun phrase (NP) affects success in gender marking, in that learners mark gender agreement significantly more accurately on determiners than on adjectives (Holmes & Dejean de la Bâtie, 1999) and in that NPs consisting of only a determiner and a noun are easier to mark agreement on than NPs consisting of a determiner, a noun, and an adjective (Spinner & Juffs, 2008; White, et al., 2004). In Spinner and Juffs' longitudinal case study of two learners of German, one from a +Gender L1 (Italian) and the other from a -Gender L1 (Turkish), it was found that both learners either resorted to a default determiner form when an adjective was added to the NP, resulting in reduced accuracy on gender marking on the determiner, or eliminated the determiner from the phrase completely. Spinner and Juffs suggest that the addition of an adjective to

the NP may have increased the learners' processing load and thus, the determiners were eliminated.

White et al. (2004) found that their low and intermediate proficiency level learners produced considerably more errors in gender marking when NPs consisted of a determiner, a noun, and an adjective than when NPs consisted of only of a determiner and a noun, particularly for feminine nouns. Unlike Spinner and Juffs' learners of German who tended to use feminine determiners as a default (when they used determiners at all), White et al.'s learners of Spanish seemed to prefer a masculine default. White et al. also suggest in their discussion that this use of defaults may reflect processing constraints; they say that lower level learners may fail to retrieve the correct gender in real time because of communication pressures, and not because of lack of the gender feature in the L1.

Looking at the coindexation of gender-marked elements in L2 French, Myles (1995) found that the distance between the elements affects the success with which the learners notice errors in gender agreement. Learners were required to make decisions about the grammaticality of gender agreement between the noun and the adjective that it governs when the two elements were separated by four different structural distances. The structural differences were defined not in terms of linear distance (i.e., number of words between elements), but in terms of levels of embeddedness. The first level of embeddedness consisted of a noun and the adjective that it governed within the same NP (i.e., an attributive adjective). The second level consisted of a noun and the adjective that it governed located outside of the NP, but within the clause (i.e., a predicative adjective). The third level consisted of a noun and the adjective that it governed outside of the clause (i.e., appositive adjectives and relative pronouns). The fourth level consisted of a noun and a referential pronoun outside of the sentence. This increasing structural distance of the two elements to be coindexed (i.e., marked for agreement) was found to be increasingly difficult for learners, especially lower proficiency level learners. The only exception to this was the fourth level of embeddedness which Myles argues is due to the fact that

the governed element was not an adjective, but a pronoun, which is more salient to learners. The fact that errors in agreement were less likely to be noticed as the structural distance increased provides further support for the idea that gender agreement problems lie in processing constraints.

Gender in Comprehension

Several recent studies have argued that if gender problems are due to production-based communication pressures and not a representational difference, then learners should perform like native speakers on tasks which do not require production but only comprehension. The reasoning is that by having learners complete comprehension tasks, the performance pressure is relieved, processing is no longer constrained beyond its resources, and gender agreement should be more native-like. The results have been mixed.

Some studies that have looked at learners' comprehension of gender agreement have shown that learners are not like native speakers (Grüter, Lew-Williams, & Fernald, 2011; McCarthy, 2008). McCarthy found that intermediate learners actually showed lower accuracy in a comprehension task (79.7%) than in a production task (82.3%). In the same comprehension task used in White et al. (2004), learners had to identify the correct picture (out of 3 choices) based on a gender-marked clitic in a sentence that they had read. For example, the sentence would say, *Paco quiere llevar algunas cosas que acaba de comprar pero no encuentra nada. Paco dice: 'Acabo de comprarlo: dónde está?'* ("Paco wants to bring some things that he just bought, but he can't find anything. Paco says, 'I just bought it_{MascSing}: Where is it?'"). Learners had to recognize that the clitic *lo* attached to the end of the verb *comprar* is masculine singular and thus, could only refer to the picture of an item that is masculine and singular in Spanish (e.g., *el cinturón*) and not to the feminine singular choice (e.g., *la camisa*), nor to the plural third choice (e.g., *las corbatas*). Advanced learners, however, did show better accuracy on agreement in the comprehension task than the production task (97.3% and 92.0%,

respectively). McCarthy nonetheless argues that the existence of errors and masculine defaults in a comprehension task disproves the possibility that gender difficulties are due to processing constraints in production.

Foote (2011b) did, however, find that late learners of Spanish like native speakers were sensitive to noun adjective ungrammaticalities in a comprehension task that measured reading times through a moving window design. Similarly, Keating (2009) found in an eye tracking study that advanced learners of Spanish like native speakers showed slower reading times of sentences with ungrammatical noun-adjective combinations than on sentences with grammatical noun-adjective combinations when the ungrammaticalities occurred within the determiner phrase. Both Foote and Keating found that learners were more sensitive to the ungrammaticalities when the noun and the adjective were close to each other (i.e., attributive adjectives) than when they were structurally more distant (i.e., predicative adjectives or adjectives in subordinate clauses). This effect of structural distance, as found in Myles (1995), indicates that gender agreement may be more difficult the further apart the gender-marked elements appear structurally.

In an attempt to tease apart whether learners' difficulties with gender lay in the lack of the gender feature in their syntax or in a production-based performance difficulty, Grüter, Lew-Williams, and Fernald (2011) provided advanced to near-native proficiency level Spanish learners with tasks that measured both production of gender agreement and comprehension of gender agreement. Interestingly, they divided comprehension-based issues into two tasks, one that measured offline retrieval of gender information (in a picture-matching task) and an online measure of gender retrieval in real-time (an eye-tracking during listening task). The results from the eye tracking task were not clear-cut; learners did look more quickly at the target noun that they heard spoken on different gender trials where learners saw pictures of two different gendered nouns (*la pelota*, "ball"; *el zapato*, "shoe") than on

same gender trials where learners saw pictures of two same gendered nouns (*la pelota*, “ball”; *la galleta*, “cookie”), but the difference between the trial types was not as large as for native speakers of Spanish and was not found to be significant in paired comparisons (although a main effect of trial type was found in an earlier ANOVA). Grüter et al. suggest that while learners may benefit from a preceding gender-marked determiner in online processing, the link between a noun and the correct gender node (i.e., gender-marked determiner) is not as strong as in the L1 and thus leads to less reliable gender assignment and slower access to gender information.

In order then to better understand whether L2 learners can acquire grammatical gender and can perform gender agreement and gender assignment similarly to native speakers, it is necessary to have an understanding of how gender marking is processed. It is also necessary to have an understanding of how gender marking is related to lexical access in the L1 and how L2 learners are similar to and different from native speakers in their processing of grammatical gender.

CHAPTER 3 GENDER AND LEXICAL ACCESS

If the process of gender retrieval is similar in speech production and speech recognition (Holmes & Segui, 2006), the difficulty that learners coming from L1s without gender face in marking gender agreement when producing language could be reflected in their use of gender cues (or lack thereof) when recognizing speech in the L2. The process of lexical access in spoken word recognition may differ for L2 learners and native speakers. In particular, L2 learners may not show the effects of facilitation or inhibition from gender marking that native speakers show.

Gender Facilitation and Inhibition

Various studies have found either gender facilitation or gender inhibition or both among native speakers of languages with gender. In studies of visual word recognition, effects of facilitation and inhibition have been found in Serbo-Croatian in a lexical decision task involving congruently and incongruently marked adjectives preceding nouns (Gurjanov, Lukatela, Lukatela, Savic, & Turvey, 1985) and effects of inhibition have been found in a French lexical decision task (Cole & Segui, 1994). In spoken word recognition, Grosjean, Dommergues, Cornu, Guillelmon, and Besson (1994) found that nouns that were preceded by a gender-marked determiner (*une*_{FemSing} *jolie plage*_{FemSing}, “a nice beach”) were recognized more quickly than nouns without any preceding gender-marked determiner (*jolie plage*_{FemSing}, “nice beach”) (note that the adjective *jolie* is homophonous in the masculine [*joli*] and feminine forms [*jolie*]). Grosjean et al. found these facilitatory effects in both a lexical decision task and a gating task (a task where participants hear increasing segments of a word until it is recognized). Jakubowicz and Faussart (1998) found that native speakers of French responded more slowly in identifying nouns as real words when those nouns were preceded by a determiner with the wrong gender marking (*ma*_{FemSing} *chat*_{MascSing}, “my cat”) than they did when the nouns were

preceded by the correct determiner (*mon*_{MascSing} *chat*_{MascSing}, “my cat”). Jacobsen (1999) found facilitation and inhibition in a picture naming task and inhibition in a German word naming task where nouns were preceded by gender-marked determiners.

Bentrovato et al. (1999) showed that picture naming times can be influenced by the gender marking of a preceding article in sentential contexts for Italian native speakers. Participants saw for example a picture of a book and read a sentence in which the word for book (*libro*_{MascSing}) was preceded by a congruent article (*un*_{MascSing}) or an incongruent article (**una*_{FemSing}); for example, *Quando vado a letto prima di addormentarmi leggo sempre un* (in the congruent condition) / **una* (in the incongruent condition) *libro. Per questo mia mamma mi ha regalato una collezione di romanzi gialli.* (“When I go to bed before falling asleep I always read a book. For this reason, my mother gave me a collection of murder mysteries.”). The study found strong effects of facilitation and a smaller degree of inhibition when gender congruency was violated. Wicha et al. (2005) found that native Spanish speakers named pictures more quickly when those pictures were preceded by articles with the correct gender marking. They found that these effects of gender facilitation and inhibition carried over into a controlled task of judging a picture’s semantic fit into a sentence, but not in semantically incongruous sentences (i.e., there was gender facilitation and inhibition only in the semantically congruous pictures).

Bates et al. (1996), on which the current study is partially based, explored the role of gender facilitation and inhibition in spoken word recognition in native Italian speakers using an auditory naming task, a gender monitoring task, and a grammaticality judgment task. It was considered to be evidence of gender facilitation if faster response times occurred when participants heard nouns preceded by congruent gender markers (i.e., adjectives marked with the same gender) than when nouns

were preceded by neutral gender markers (i.e., adjectives not transparently marked for gender). Evidence of gender inhibition, on the other hand, would consist of slower response times when participants heard nouns preceded by incongruent gender markers (i.e., adjectives marked with the opposite gender of the noun) than when nouns were preceded by neutral gender markers. For example, participants might hear *brutta casa* (“ugly_{FemSing} house_{FemSing}”) (a congruent item), *grande casa* (“large_{NeutSing} house_{FemSing}”) (a neutral item), or **brutto casa* (“ugly_{MascSing} house_{FemSing}”) (an incongruent item). Participants would then respond as quickly as possible by repeating the noun (in the auditory naming task), by indicating the gender of the noun (in the gender monitoring task), or by indicating the grammaticality of the adjective-noun combination (in the grammaticality judgment task). Bates et al. found effects of both facilitation and inhibition in the auditory naming task, of inhibition in the gender monitoring task, and of faster processing of congruent items than incongruent items in the grammaticality judgment task. (It is not possible to say that there was facilitation or inhibition in the grammaticality judgment task because there were no neutral items included in this task. Because participants developed a strategy of responding before hearing the complete item in the case of neutral items—as they were automatically grammatical in that adjectives in the neutral condition had no marking for gender and therefore agreed with both masculine nouns [*grande libro*, “big_{NeutAdj} book_{MascNoun}”] and feminine nouns [*grande casa*, “big_{NeutAdj} house_{FemNoun}”])—Bates et al. decided to eliminate the neutral condition. The lack of a baseline in the data led Bates et al. to discuss the grammaticality judgment task in terms of faster and slower response times but not of “facilitation” or “inhibition.”)

In native speakers of many languages with gender then, gender congruency between a noun and a preceding adjective or determiner facilitates word recognition and gender incongruency inhibits

word recognition. More recent studies have questioned whether the same effects can be found in bilinguals and how age of acquisition may affect any possible facilitation or inhibition.

Guillelmon and Grosjean (2001) replicated the auditory naming task of the Bates et al. (1996) study with L1 French speakers and English-French bilinguals in order to gain a better understanding of whether early and late bilinguals demonstrate the same gender facilitation and inhibition effects that Bates et al. found for native Italian speakers. Facilitation and inhibition were found for the native French speakers (replicating the Bates et al. findings in the auditory naming task for French) and for early bilinguals, but not for late bilinguals (i.e., native English speakers who had learned French as adults).

Foote (2011a), however, did find that late learners of Spanish showed the same significant effect of inhibition in a word repetition (i.e., auditory naming) task as native speakers and early learners of Spanish in a study with the same design as Guillelmon and Grosjean (2001). Foote's late learners, however, did not show as strong of a pattern of facilitation—with a mean 2 millisecond difference between congruent items (e.g., *el mejor libro* “the_{Masc} best_{Masc/Fem} book_{Masc}”) and neutral items (e.g., *su mejor libro* “his/her_{Masc/Fem} best_{Masc/Fem} book_{Masc}”)—as the native speakers (with a mean 13 millisecond difference) and early learners (with a mean 15 millisecond difference). (The effect of congruency was not significant for any of the 3 groups in the study, though.) Foote suggests that this finding of inhibition among late learners of Spanish as compared to Guillelmon and Grosjean's late learners of French as possibly due to the more transparent marking of gender in Spanish (where an *-o* ending tends to correspond to masculine gender and an *-a* ending tends to correspond to feminine gender) as compared to French or to the fact that almost all of the late learners in Foote's study were teaching Spanish at universities and thus were more attuned than Guillelmon

and Grosjean's learners to picking up and correcting errors of grammatical gender agreement (that their students made).

Davidson, de la Fuente, Montrul, and Foote (2011), like Guillelmon and Grosjean (2001), did find that early learners (i.e., heritage speakers of Spanish) had a facilitation advantage over late L2 learners in an auditory naming task. The late learners patterned like native speakers and heritage speakers only in the two metalinguistic, controlled processing tasks of gender monitoring and grammaticality judgment. Early exposure to Spanish provided the heritage speakers with more native-like processing of gender in the more automatic processing task.

Eye tracking provides another methodology which can show whether listeners use gender cues on preceding determiners and adjectives to access the correct noun more quickly during spoken word recognition. Dahan et al. (2000) using an eye tracker showed facilitation effects in French native speakers. When presented with spoken instructions that did not include any gender-marked determiner (e.g., preceded by the ambiguous plural article *les* as in *cliquez sur les boutons*, “click on the buttons”), the eye movements of the French speakers went toward pictures of words that had the same initial phoneme as the target noun. For example, when hearing *cliquez sur les boutons*, (“click on the buttons”), participants would look not only at the picture of buttons, but as the word *boutons* unfolded they tended also to look at the picture of bottles (*les bouteilles*, “the bottles”) as the beginning sounds of the words are similar, as compared to pictures of two nonphonemically related competitors. When nouns appeared with a preceding gender-marked article (i.e., a singular noun and article as in *cliquez sur le_{MascSing} bouton_{MascSing}*, “click on the button”), participants were no more likely to look at the competitor with the same initial phonemes if that competitor was of the other gender (i.e., *cliquez sur la_{FemSing} bouteille_{FemSing}*, “click on the bottle”) than they were to look at pictures of two other nonphonemically related competitors. Dahan et al. concluded that this was

evidence that preceding gender marking could restrict the set of competing nouns during word recognition. This study, therefore, provides support for the idea that gender marking can affect the process of lexical access before the word is actually accessed.

Some eye tracking studies have looked at whether learners benefit as do native speakers from gender facilitation in their spoken word recognition. Native adult speakers of Spanish as well as native Spanish speaking children as young as three years of age use gender-marked articles preceding nouns to help them identify more quickly pictures of objects, but L2 learners of Spanish (native speakers of English) do not seem to benefit from the same facilitation (Lew-Williams & Fernald, 2007, 2010). Whereas the native Spanish adult and child speakers would redirect their gaze from a distractor picture to the target on trials where there were two objects of different genders (*la pelota*_{FemSing}, “ball”; *el zapato*_{MascSing}, “shoe”) faster than when the pictures were two objects of the same gender (*la pelota*_{FemSing}, “ball”; *la galleta*_{FemSing}, “cookie”), the L2 learners showed no difference in looking at the target regardless of whether the two objects had different genders or not. The learners only looked faster at the target pictures on different gender trials when novel words were taught and then tested with the definite pronoun, indicating that the learners may not have been showing evidence of actual gender facilitation but rather had learned the new items as chunks (e.g., *lapelota*), not as separate article and noun pairings (e.g., *la pelota*).

Models of Lexical Access

The differences between native speakers and L2 learners found in some gender facilitation studies could indicate differences in the process of lexical access that takes place when words are recognized in the L1 and in the L2. In order to develop a clearer picture of how lexical access occurs in the L2, it is necessary to understand current models of L1 lexical access. There are three phases that are passed through when a spoken word is identified in the L1 by a listener (Harley, 2008). First,

auditory input data (or a representation thereof) makes some type of initial contact with the mental lexicon. Then, as more of the word is uttered, various competitors (i.e., possible words) are activated in some way. During the second phase, lexical selection, one of the possible competitors is selected as the target word. The other competitors are eliminated through decay of activation; the lexical entry that is finally selected is the one that remains the most activated. Finally, word recognition is the final phase in identifying a spoken word and it occurs once the lexical entry has been selected. After recognition, the listener has access to all of the grammatical and phonological information associated with that word.

The recognition process interacts with factors such as sentence context (i.e., gender marking on preceding words) although proponents of different models of lexical access disagree about when and how much context affects word recognition (Friederici & Jacobsen, 1999). There are two types of models of word recognition, or rather a continuum upon which different models of lexical processing fall. Autonomous models of word recognition are based on the idea that information can only flow bottom up from the perceptual input of the incoming word and thus sentence context cannot play a role in the selection of a lexical candidate. It is not until the end of the process at the word recognition phase when the other competitors have already been eliminated that context can be used for checking or evaluating the output of the processing, according to proponents of autonomous models. Proponents of interactive models argue, however, that there is top-down processing involved in lexical selection as well so that sentence context (including syntactic context such as preceding gender-marked determiners and adjectives) plays an important role from the beginning of the word identification process (Bates, et al., 1996; Bates, et al., 1995). If sentence context does play a role in the earlier phases of word identification (i.e., initial contact and/or lexical selection), gender marking may serve as an important type of syntactic context that influences lexical selection. Gender marking,

for example on an adjective preceding a noun, might influence the noun candidates that are activated prior to lexical selection in accordance with more interactive models. Even if gender marking as a form of sentence context does not influence lexical selection, as argued by proponents of more autonomous models, gender marking would still play a role in evaluating or checking if the selected noun fits the context at the final phase of the process, that of word recognition. For example, even if an adjective marked with feminine gender (e.g., *bella* “beautiful”) does not influence which nouns are activated during the second stage, lexical selection, the adjective is still involved in the third stage, word recognition, where the listener checks if the selected noun is feminine and therefore fits with the adjective *bella*. The difference in the two types of models lies in whether the gender of *bella* can help facilitate the selection of a noun by activating feminine nouns in the lexicon (interactive models), or can only serve as a check after the noun has been chosen to make sure that it is feminine (autonomous models). Bates et al. argue that although previous research had found that syntactic context does little to reduce the number of potential competitors in lexical selection in English, a morphologically rich language like Italian provides richer syntactic context “in which agreement morphology can provide powerful constraints on lexical access” (1996, p. 992).

Gender marking then, as a type of sentential context, has been argued to play a role in lexical access in the L1. An interactive model of lexical processing posits that the gender marking on the adjectives or determiners that modify the noun in question is available before word selection and activates all the nouns in the lexicon that have the same gender. Recognition is facilitated when the gender marking is congruent with the noun (i.e., correct) and inhibited when the gender marking is incongruent with the noun (i.e., wrong). This model assumes that gender facilitation takes place in the lexicon prelexically (i.e., before lexical access). The other possibility is that gender is activated postlexically in both the lexicon and the syntax; word recognition takes place in the lexicon and then

the syntax performs agreement checking on the gender of the words. This postlexical account assumes an autonomous model of lexical processing where gender cues in the sentence are used after lexical access has occurred. The agreement checking that takes place postlexically is a binary decision in that the syntax checks only to see if the agreement is congruent or not. Thus, unlike the prelexical account (an interactive model of lexical access) which predicts both gender facilitation and inhibition, the postlexical account (an autonomous model of lexical access) predicts that this checking will result in inhibition effects but not facilitation (Friederici & Jacobsen, 1999; Jakubowicz & Faussart, 1998).

There have been L1 gender facilitation studies in support of both the prelexical and the postlexical accounts. Jakubowicz and Faussart (1998) found faster lexical decisions among French native speakers for nouns preceded by congruently marked articles as compared to nouns preceded by incongruently marked articles. They claimed that this finding was a type of inhibition and therefore support for the postlexical account. As there was no neutral baseline, but only congruent and incongruent conditions, however, they could not argue that facilitation had been found. Grosjean et al. (1994) found that French nouns preceded by gender-marked determiners were recognized faster than French nouns that were not preceded by gender-marked determiners. Grosjean et al. claimed that this was a type of facilitation and therefore support for a prelexical account in which the gender-marked determiner activated all the nouns of the same gender in the lexicon. Bates et al.'s (1996) findings of both facilitation and inhibition in a task where participants repeated the noun as soon as they heard it lent support to a prelexical locus of gender marking effects. As stated earlier, Guillelmon and Grosjean (2001) found both facilitation and inhibition in a word repetition task among native French speakers and early learners of French, but not among the late learners of French. They cited two possible explanations for why age of acquisition is so important to the gender marking effect based on the two models of where this effect takes place. First, prelexical accounts state that a gender-marked

adjective or determiner activates all of the nouns with that gender in the lexicon. On this account, Guillelmon and Grosjean argue, it is possible that the late English-French bilinguals learned the language too late to have formed the connections between nouns that share the same gender or to have acquired the gender feature on the nouns. Alternatively from a postlexical account, Guillelmon and Grosjean argue, it is possible that the late bilinguals have never acquired the syntactic checking mechanism that one uses after lexical access to check the agreement or that “they simply cannot make use of it” (p. 509).

Task Effects on Lexical Access

The type of gender marking effect that occurs, be it facilitation or inhibition, may be related to the particular task that is used (Bates, et al., 1996; Bates, et al., 1995; Davidson, et al., 2011). Bates et al. (1995), for example, employed two different tasks to investigate the role that gender plays in the lexical access of native Italian speakers. In an auditory word naming task, the response times of participants repeating a single noun without a preceding context of a determiner or an adjective as soon as they heard it were measured; the purpose of this task was not to facilitate word recognition but only to investigate if grammatical gender is a factor that affects lexical access in Italian or that interacts with other factors that are known to affect lexical access in other languages, such as frequency, age of acquisition, and length. In the second task, a gender monitoring task, participants identified the gender of a single noun as quickly as possible after hearing it. Bates et al. found that grammatical gender does affect lexical access and that both tasks were sensitive measures of lexical access in Italian as response times were closely tied to the point at which the word became uniquely identifiable from competitors. The two measures, however, were claimed to measure different kinds of processing. Whereas the auditory naming task involved automatic processing as participants heard, accessed, and repeated the noun, gender monitoring required a more controlled, explicit type of

processing in which the participant not only accessed the noun but made a metalinguistic decision about the correct gender of the noun. Bates et al. found effects of morphophonological gender in the gender monitoring task, but not in the auditory naming task. Nouns on which gender was transparently marked (i.e., with an *-o* ending on masculine nouns or an *-a* ending on feminine nouns) were accessed more quickly than nouns on which there was no morphophonological marking (i.e., where an ambiguous *-e* ending occurred on nouns which could be either masculine or feminine) in the task that required more explicit attention to gender (i.e., the gender monitoring task).

Thus, it is argued that an auditory naming task gets at prelexical processing and a gender monitoring task (as a task that requires identification of the gender of the noun) serves as a measure of postlexical processing. In auditory naming the participant only needs to repeat the noun as soon as it is recognized without any conscious reflection on it, whereas in gender monitoring the participant needs to not only access the noun, but also to use metalinguistic knowledge from the syntax about the gender of the noun. In this way, gender monitoring is similar to a lexical decision task (in which participants must indicate if a word is an actual word or a nonword) in that it requires a conscious decision about a word after lexical access has occurred. A gender monitoring task is also similar to a grammaticality judgment task as used in later gender facilitation studies (Bates, et al., 1996; Davidson, et al., 2011) (and in the current study) in which a conscious decision about the grammaticality of an adjective and noun appearing together must be made. Auditory naming tasks on the other hand reflect an earlier, more automatic phase in the word recognition process (Davidson, et al., 2011; Friederici & Jacobsen, 1999).

The lexical decision task appears to be sensitive to late decision processes (e.g., Forster, 1979; Jakimik, Cole & Rudnick, 1985; Seidenberg, Waters, Sanders & Langer, 1984) and is not, therefore, appropriate for assessing the role of context in the early phases of lexical processing.

[Auditory] Naming, in contrast, seems to reflect *earlier phases* [emphasis added] of lexical processing and therefore promises to be a more useful task with which to determine the locus of context effects. (Frauenfelder & Tyler, 1987, p. 11)

The fact that auditory naming is considered a measure of prelexical access and gender monitoring of postlexical access is important to the controversy about the locus of gender marking effects because the existence of facilitation in a prelexical measure would be support for interactive models of lexical processing in which contextual information preceding a word can affect the ease with which it is selected. In fact, proponents of a more autonomous model of lexical processing claim that the preponderance of gender marking effects that have been found have consisted of inhibition in postlexical measures such as gender monitoring or lexical decision (Jakubowicz & Faussart, 1998). Effects of facilitation as well as inhibition that have been found in gender marking effects studies (Bates, et al., 1996; Grosjean, et al., 1994; Guillelmon & Grosjean, 2001) have been dismissed by such proponents on the grounds that (a) auditory naming is not a pure measure of lexical processing as it involves the production system as well as the comprehension system (i.e., one produces the noun by speaking it once it has been identified) and (b) the facilitation that has been found is phonological in nature and therefore in line with a postlexical checking account (Friederici & Jacobsen, 1999).

Automatic vs. Controlled Processing

The type of processing, automatic or controlled, that a particular task taps into is an important consideration in the differences that previous studies have found between native speakers and L2 learners in gender facilitation and gender inhibition. It has been suggested that L2 learners may rely more on a different type of knowledge when learning and using their second language than native speakers do (DeKeyser, 1997, 2000; N. C. Ellis, 2005; Foote, 2010, 2011a, 2011b; Ullman, 2001, 2006). Native speakers are believed to use implicit or proceduralized knowledge in acquiring and

using their first language. Much like learning to ride a bicycle, native speakers learn to use their language with little or no thought as to how the language works or why it works in the way that it does. The knowledge that they have about their language often cannot be described in terms of rules, and use of the language generally requires no conscious control. Learners who learn the language after the critical period for language learning has passed, however, may rely less on automatic, proceduralized knowledge and more on declarative or explicit knowledge, that is, knowledge that is learnable, verbalizable, and subject to conscious control (R. Ellis, 2006). L2 learners tend to do better in controlled, written tasks or tasks that require explicit, metalinguistic knowledge (Foote, 2011b; Montrul, et al., 2008). Some aspects of language cannot be easily acquired by late learners through implicit means (N. C. Ellis, 2005), and thus are acquired through more explicit means such as rule memorization. L2 use may require more conscious control than L1 use, often because of the misunderstandings that can occur or the difficulty that the learner has with using the L2 (N. C. Ellis, 2005; R. Ellis, 2006). “We only think about walking when we stumble, about driving when a child runs into the road, and about language when communication breaks down” (N. C. Ellis, 2005, p. 308).

There are different theories as to how L2 learners acquire language, either through implicit or explicit learning, and whether knowledge learned explicitly can ever become implicit. In the noninterface position, implicit and explicit knowledge are distinct and explicit knowledge cannot become implicit (Krashen, 1981 as cited in R. Ellis, 2006). In the interface position, explicit knowledge can become automatized, implicit knowledge through practice and use (DeKeyser, 1997; R. Ellis, 2006). In the weak interface position, R. Ellis asserts that explicit knowledge (i.e., that knowledge of a language that is a result of conscious learning) can “convert” into implicit knowledge (i.e., that knowledge that is unconscious and is used in fluent communication) provided that “the learner is ready to acquire the targeted feature” (2006, p. 97). According to this theory, direct

instruction can facilitate second language acquisition through explicit knowledge which allows learners to notice the gap between their own output and the target language forms in the input that they receive.

The issue of whether explicit knowledge can become implicit is important in considering the differences between less proficient and more advanced learners in terms of sensitivity to gender marking. In a moving window reading comprehension task, Foote (2011b), for example, found that late English-Spanish bilinguals showed the same sensitivity to gender agreement errors that early English-Spanish and native speakers of Spanish showed. Foote cautions, however, that the native-like processing could be a case of explicitly learned knowledge becoming implicit due to the learners' years of formal instruction and experience teaching (and correcting the gender agreement errors of) Spanish learners.

Closely related to the idea of explicit knowledge use in the L2 is the importance of attention in the learning and use of the L2. Schmidt's Noticing Hypothesis (2001) stated that L2 learning takes place when attention allows learners to notice forms in the input. This noticing is necessary for intake. Similarly, Gass's notion of apperception (1997) maintained that input may become intake when learners apperceive, or relate to past experiences, information in the input. Apperception is a priming device for later learning; learners "must apperceive input before they can use that input for learning" (Gass, Svetics, & Lemelin, 2003, p. 499). Tomlin and Villa (1994) divided attention into 3 components: alertness, or "readiness to deal with incoming stimuli or data" (p. 190); orientation, or the direction of attention toward certain stimuli; and detection, or the "cognitive registration of sensory stimuli" (p. 192). This last component, detection, is the most similar to Schmidt's noticing and Gass's apperception in that it is crucial for grammatical structure learning.

Several studies have looked at the effects of attention on L2 learning. Shook (1994) found that

L2 Spanish learners performed better on grammatical structures after their attention was drawn to the structures in the input, in particular those structures that were more meaningful in the input such as the present perfect rather than those that were less meaningful like relative pronouns. Leow (2001) found that awareness or consciousness had facilitative effects on the recognition and written production of target forms in L2 Spanish and that differences in levels of awareness led to differences in the processing of L2 forms. Gass and Alvarez Torres (2005) found that the acquisition of Spanish morphosyntax—specifically, grammatical gender agreement—was facilitated by the use of interaction as an attention-drawing device followed by input as a hypothesis-confirming device. Gass et al. (2003) found that L2 Italian learners benefited from focused attention when dealing with new L2 structures, particularly at lower levels of proficiency. The importance of attention in L2 learning and use may hold implications for gender processing among L2 learners in tasks which require metalinguistic control and conscious awareness of the gender of particular nouns, like gender monitoring and grammaticality judgment.

If late L2 learners do indeed rely on explicit knowledge and focused attention in their L2 learning and use, it is possible that they will show gender facilitation or gender inhibition in tasks that call on explicit or more controlled processing, that is, gender monitoring and grammaticality judgment tasks. By the same token, late L2 learners (at least those who do not have gender in the L1) may not show gender facilitation or inhibition in a task like auditory naming that requires implicit or more automatic processing.

Transparency of Gender Marking

The facility with which learners recognize the gender of a given noun or mark agreement on modifiers of that noun is related to the transparency of the gender of the noun in languages that have grammatical gender (Alarcón, 2006; Bordag, Opitz, & Pechmann, 2006; Bordag & Pechmann, 2008;

Davidson, et al., 2011; Foote, 2011b; Holmes & Dejean de la Bâtie, 1999; Holmes & Segui, 2006; Montrul, et al., 2008; Oliphant, 1998). Transparency refers to the morphophonological ending on a noun which is a more or less reliable cue (depending on the language and the particular ending) to the gender of the noun. For example, nouns for which the gender is transparent in Italian are those that are masculine and end in *-o* (e.g., *libro* “book”) or are feminine and end in *-a* (e.g., *casa* “house”). Nouns that end in *-e* in Italian are opaque as to gender because some nouns that end in *-e* are masculine (e.g., *nome* “name”) and some are feminine (*chiave* “key”).³

Montrul et al. (2008) found that L2 learners of Spanish (as well as heritage language learners who had been introduced to the language early in life) were more accurate in assigning gender to nouns on which the gender was transparently marked (i.e., masculine nouns ending in *-o* and feminine nouns ending in *-a*) than on opaque nouns (i.e., masculine and feminine nouns ending in *-e* or in a consonant) and on “exceptional ending nouns,” or those nouns that have the opposite ending of what would be expected for their gender (i.e., masculine nouns ending in *-a* and feminine nouns ending in *-o*). The Spanish learners and heritage speakers also showed more gender agreement errors on these nouns which are not transparently marked for gender. In accordance with other studies which have found a masculine default for learners of Spanish (Harris, 1991; McCarthy, 2008; White, et al., 2004), Montrul et al. found that the errors that learners made tended to be on feminine nouns, incorrectly

³ Following Bates et al. (1996), the term “opaque” is used throughout the current study to refer to nouns for which the grammatical gender is not readily observable from the noun ending (i.e., *-o* for masculine, *-a* for feminine in Italian). It is to be noted, however, that not all “opaque” nouns are completely opaque as to gender. Nouns that end in *-ione*, such as *regione*, for example, are usually feminine (Chini, 1995). Other studies have referred to nouns without reliable morphophonological cues as “nontransparent” (Foote, 2011a), “noncanonical” (Davidson, et al., 2011; Montrul, et al., 2008), “exceptional” (Holmes & Dejean de la Bâtie, 1999), “morphophonologically ambiguous” (Vigliocco & Zilli, 1999), “outer core” (Harris, 1991) or “irregular” (Gass & Alvarez Torres, 2005). Although these terms may be more accurate in that nouns without the more reliable cue (*-o* = masculine and *-a* = feminine) may not be completely “opaque” as to gender, the word “opaque” is used in keeping with the terminology of the study on which the current study is based.

assigning them masculine gender or incorrectly marking adjectives that agreed with them as masculine. In fact, opaque feminine nouns resulted in the highest proportion of errors in the study.

Learners may not be the only ones though who benefit from transparent noun endings in processing the gender of nouns. Native speakers of French have been found to assign gender to nouns more easily when those nouns have gender-typical endings than when they have exceptional endings (Desrochers, Paivio, & Desrochers, 1989; Holmes & Dejean de la Bâtie, 1999; Taft & Meunier, 1998). Native speakers of Italian, Spanish, and French can be experimentally induced to produce more gender agreement errors on predicative adjectives when the gender of the head noun with which they agree is not transparently marked (Franck, Vigliocco, Antón-Méndez, Collina, & Frauenfelder, 2008; Vigliocco & Zilli, 1999). In spoken word recognition tasks, Bates et al. (1995) and Bates et al. (1996) found that native speakers of Italian identified the gender of transparently marked nouns more quickly than opaque nouns. Bates et al. (1996) found that opaque nouns were processed more slowly in the gender monitoring and grammaticality judgment tasks, the two tasks that involved postlexical controlled processing (as compared to the more automatic processing that occurs in the auditory naming task where participants only repeated the noun without having to perform any postlexical checking on it). Bates et al. explained that Italian native speakers must find gender identification easier on a noun which is transparently marked for gender and claim that this is even greater support for the idea that the effect of transparency is postlexical in that learners must check for the gender agreement after the noun has been accessed. The fact that transparency effects were only found in the postlexical tasks of gender monitoring and grammaticality judgment and not in the prelexical task of auditory naming supports this conclusion.

Davidson et al. (2011) did not, however, find that native speakers of Spanish were slower in responding to nouns with opaque (or in their words, “noncanonical”) gender in a gender monitoring

and a grammaticality judgment task. Nor, were the native speakers significantly less accurate on items with opaque nouns. Both groups of learners, heritage speakers and late L2 learners, did, however, perform less accurately and more slowly on items with opaque nouns in both the gender monitoring task and grammaticality judgment task.

CHAPTER 4 CURRENT STUDY

The purpose of the current study was to investigate whether late L2 learners of different L1 backgrounds—specifically, (a) L1s that do not have a gender system (-Gender [-G]); (b) L1s that have a gender system different from Italian (+Gender [+G]); and (c) L1s that have a gender system similar to that of Italian (+Romance Gender [+RG])—show effects of gender facilitation and/or inhibition. The three groups of learners and a native speaker control group participated in three tasks that measure spoken word recognition: (a) an Auditory Naming task in which participants heard an adjective preceding a noun and had to repeat the noun as soon as they recognized it; (b) a Gender Monitoring task in which participants heard an adjective preceding a noun and had to identify the gender of the noun as quickly as possible (by pressing one of two keys on the keyboard); and (c) a Grammaticality Judgment task in which participants heard an adjective preceding a noun and had to state whether the combination was grammatical (i.e., correct in terms of gender agreement) as quickly as possible (by pressing one of two keys on the keyboard). In the Auditory Naming and Gender Monitoring tasks, participants heard congruent items (i.e., items on which the adjective and noun were marked with the same gender), incongruent items (i.e., items on which the adjective and noun were marked with different genders), and neutral items (i.e., items on which the adjective was not marked for gender). The congruent condition was a measure of gender facilitation, the incongruent condition was a measure of gender inhibition, and the neutral condition was used as baseline. In the Grammaticality Judgment task, participants heard only congruent and incongruent items (as in Bates, et al., 1996, see chapter 3).

The three tasks differed in terms of the amount of conscious control necessary; the Auditory Naming task is considered an automatic measure of processing, the Gender Monitoring task is a more controlled measure, and the Grammaticality Judgment task is the measure where the most amount of

conscious control or metalinguistic awareness is necessary. The Auditory Naming task is a task that does not require controlled, conscious processing because it consists of the immediate repetition of the noun as soon as it is recognized (Bates, et al., 1996; Davidson, et al., 2011). The Gender Monitoring and Grammaticality Judgment tasks are postlexical measures of processing (Bates, et al., 1996; Frauenfelder & Tyler, 1987; Friederici & Jacobsen, 1999) which consist of using the syntax to check gender agreement between a preceding gender marker and a following noun (Bates, et al., 1996; Davidson, et al., 2011). They are thus considered more controlled measures of processing. The tasks therefore covered a range of types of processing (which could possibly differ for L2 learners in comparison to native speakers).

Finally, the current study took into consideration the effects of gender facilitation and inhibition on learners of Italian with nouns on which the gender was transparently marked (i.e., with an *-o* or *-a* ending) and nouns on which the gender was not transparent (i.e., nouns of both genders which end in *-e*), using stimuli similar to those used with native Italian speakers by Bates et al. (1996). The transparency of the gender on the noun, which has been found to influence the postlexical checking mechanism in native speakers in the more controlled tasks (Bates, et al., 1996), was predicted to play a role in gender identification and grammaticality judgment among learners who might rely even more on such explicitly marked cues to gender (see also Bordag & Pechmann, 2008; Holmes & Segui, 2006 for the role of gender marked endings in word production).

Research Questions and Predictions

This study was guided by the following research questions:

1. Do L2 learners of Italian of three different L1 groups (+Romance Gender, +Gender, –Gender) show effects of gender facilitation and/or inhibition when recognizing nouns that are preceded by gender-marked adjectives?

2. Does the type of task (whether it is the automatic, less controlled Auditory Naming task or the more controlled, explicit Gender Monitoring and Grammaticality Judgment tasks) affect whether or not facilitation and/or inhibition are shown?
3. Does the transparency of the gender marking on the noun affect whether facilitation and/or inhibition occur?

It is predicted that L2 learners in the –Gender group will not show effects of facilitation or inhibition in the implicit, less controlled measure of word recognition (Auditory Naming) as such effects have not been found with native English-speaking late learners of Spanish and French in most previous studies (Davidson, et al., 2011; Guillelmon & Grosjean, 2001; Lew-Williams & Fernald, 2010). It is predicted, however, that the +Romance Gender group, consisting of individuals who have presumably established L1 noun-gender connections, will show effects of gender facilitation and inhibition as the native speakers of languages with gender have in the past (Bates, et al., 1996; Davidson, et al., 2011; Foote, 2011a; Guillelmon & Grosjean, 2001). (It is predicted that the native speakers of Italian will show gender facilitation and inhibition here as well.) It is expected that the +Romance Gender group in particular will perform like native speakers as they have a similar gender system in the L1. As Sabourin et al. (2006) found that the surface similarities between gender systems benefited learners more (in the case of German learners of Dutch) than simply having the gender feature in the L1 (in the case of Romance learners of Dutch), it is predicted that the learners in this study who have the most similar gender systems in the L1 (i.e., the +Romance Gender learners of Italian) will show effects of facilitation and inhibition, but the learners with only the gender feature in the L1 (i.e., the +Gender learners) will not show effects of facilitation and inhibition. As this task does not require explicit knowledge of gender or grammaticality (as the other two tasks do), it is expected

that none of the groups will be influenced by the transparency of the noun (as was found in Bates et al. for native speakers of Italian).

For the task of Gender Monitoring, it is predicted that there will be an effect of incongruency for L2 learners, especially in the +Romance Gender group, since this task requires more explicit identification of gender rather than automatic processing. Seeing as the +Romance Gender learners have a similar gender system in the L1, it is expected that they and the native speakers of Italian will show inhibition (but not facilitation) in this more postlexical task that calls on a syntactic checking mechanism, as native speakers have shown inhibition in earlier studies in more controlled tasks (Bates, et al., 1996; Davidson, et al., 2011). Pilot testing of Italian learners at a lower proficiency level than those in the present study indicated that L1 English learners (–Gender) did not show effects of inhibition in a Gender Monitoring task. It is possible that the learners in the current study being at a more advanced level of proficiency will be slowed in their checking mechanism by the incongruency between adjectives and nouns more than the participants in the pilot study who perhaps lacked the proficiency or previous input to have formed a strong understanding of gender agreement. In fact, Davidson et al. (2011) found that native English speakers who had learned Spanish late in life patterned similarly to early bilinguals and native Spanish speakers in the more controlled gender monitoring and grammaticality judgment tasks, and Montrul et al. (2008) found that late learners of Spanish actually performed better than heritage language learners on more metalinguistic, less oral tasks. It is therefore predicted that both the –Gender and the +Gender learners will be affected by inhibition in the Gender Monitoring task, which requires controlled processing and draws on explicit knowledge of the L2. No groups are predicted to show effects of facilitation, as Gender Monitoring is considered a measure of postlexical processing (no facilitation was found for the native speakers of Italian in Bates et al., 1996).

In the Grammaticality Judgment task it is expected that all groups (native speakers, +Romance Gender learners, +Gender learners, and –Gender learners) will show faster response time (RTs) in the congruent than the incongruent condition because of the three tasks, the Grammaticality Judgment task is the task that calls on the most explicit, metalinguistic, controlled type of processing (Bates, et al., 1996). It is further predicted that all participants, both native speakers and all L2 learners, will demonstrate greater accuracy on morphophonologically transparent items in both the Gender Monitoring and the Grammaticality Judgment tasks and that they will respond more quickly to morphophonologically transparent items, as these tasks require a postlexical checking mechanism which may be slowed by less reliable morphophonological gender cues. Such effects of transparency were found in previous facilitation studies for native speakers of Italian (Bates, et al., 1996), for English-French bilinguals (Holmes & Segui, 2006), for Czech-German bilinguals (Bordag & Pechmann, 2008), and for early and late English-Spanish bilinguals (Davidson, et al., 2011).

Target Structure

Nouns

All nouns in Italian have one of two possible genders: masculine or feminine. Most nouns that are masculine end in *–o* in the singular, and most nouns that are feminine end in *–a* in the singular. Approximately, 80% of Italian nouns are transparently marked for gender in this way (Franck, et al., 2008). So, for example, *piatto* (“plate”) ends in *–o* and is masculine singular and *casa* (“house”) ends in *–a* and is feminine singular. Regular adjectives that modify these nouns show the same endings as can be seen below:

piatto rosso

[plate MascSing red MascSing]

“red plate”

casa rossa

[house FemSing red FemSing]

“red house”

Nouns that follow this clear pattern of masculine singular ending in *-o* and feminine singular ending in *-a* will be referred to as morphophonologically transparent and the exceptions to this clear pattern will be referred to as morphophonologically opaque (Bates, et al., 1996; Bordag & Pechmann, 2008) (See Footnote 3). Morphophonologically opaque nouns include those that end in *-e* in their base form and may be either masculine singular or feminine singular. Approximately 17% of masculine nouns and 19% of feminine nouns in Italian end in an opaque final *-e* (Franck, et al., 2008).⁴ For example:

fiore MascSing

“flower”

prigione FemSing

“prison”

Only singular nouns will be used in this study.

Adjectives

In Italian, adjectives agree with the noun they modify. Adjectives too can be divided into two categories: morphophonologically transparent and morphophonologically opaque.

Morphophonologically transparent adjectives end in *-o* when they modify masculine singular nouns (e.g., *piatto rosso* “red plate”) and in *-a* when they modify feminine singular nouns (e.g., *casa rossa* “red house”). Morphophonologically opaque adjectives end in *-e* (in the singular) when they modify

⁴ There are also nouns whose morphophonological cue is misleading because they end in *-o* but are actually feminine like *mano* (“hand”) or end in *-a* but are actually masculine like *problema* (“problem”) including a group of words that have come into Italian from Greek that all end in *-ma* but are masculine (*sistema* MascSing, “system”; *programma* MascSing, “program”) (Chini, 1995; Robustelli, 2007). Yet another group of phonologically opaque nouns are those ending in consonants which are often loanwords from English and as a rule are masculine, for example *il computer* MascSing (Oliphant, 1998). Loan words from French and German, however, tend to maintain the original gender, and some English words used in Italian receive feminine gender because of a feminine Italian translation equivalent with which they are associated (e.g., *la love story* associated with *la storia* FemSing *d’amore*) (Chini, 1995). There are also Italian nouns that end in *-i* or in *-u* in the singular that may be masculine or feminine like *tesi* FemSing (“thesis”) or *ragù* MascSing (“red meat sauce”) (Robustelli, 2007). None of these types of nouns will be considered in this study.

masculine singular nouns and when they modify feminine singular nouns (e.g., *piatto grande* “big plate” and *casa grande* “big house”).⁵ The morphophonologically opaque adjectives therefore give no indication of whether a given noun is masculine or feminine and thus can be used as a neutral baseline in this study to measure RTs to nouns when there is no extra cue given as to the noun’s gender from the adjective.

Order of nouns and adjectives

Both attributive and predicative adjectives show agreement with nouns in Italian. Attributive adjectives are those adjectives that appear in the same noun phrase as the noun governing the agreement. Predicative adjectives, on the other hand, are adjectives that appear outside of the noun phrase in which the governing noun is located (Corbett, 1979; Myles, 1995). For example, in the sentence *La casa rossa è bella* (“The red house is beautiful”), the adjective *rossa* is an attributive adjective because it is in the same noun phrase as *casa*. In the sentence *La casa è rossa* (“The house is red”), *rossa* is a predicative adjective because it is outside of the noun phrase in which *casa* is located (in the predicate of the sentence). In both sentences, *rossa* ends in *-a*, marking agreement with the feminine noun *casa*.

The items in this study consisted of adjectives preceding nouns in order to provide a gender marking (i.e., on the adjective) that could facilitate or inhibit subsequent recognition (lexical access) of the following noun. Earlier gender facilitation and inhibition studies have used determiners rather than adjectives before nouns. Guillelmon and Grosjean (2001), for example, used the French determiners *le* MascSing (“the”), *la* FemSing (“the”), and *leur* NeutralSing (“their”). Similarly, studies of gender facilitation in Spanish have used the determiners *el* MascSing (“the”), *la* FemSing (“the”), and *su*

⁵ There are also adjectives that do not show any gender or number agreement, like *blu* (*piatto blu* “blue plate” and *casa blu* “blue house”). No adjectives of this type are included in this study.

NeutralSing (“his/her”) (Davidson, et al., 2011; Foote, 2011a; Lew-Williams & Fernald, 2010). The need to have a neutral baseline prohibited the use of determiners in this study, however. Unlike the Spanish possessive adjective *su*, the Italian third person singular possessive adjective is not neutral in terms of gender marking; that is, it marks agreement with masculine and feminine nouns (e.g., *il suo* MascSing *piatto* “his/her plate” and *la sua* FemSing *casa* “his/her house”). And, Italian is unique in that possessive adjectives appear with determiners, so that use of the third person plural possessive adjective (*loro* “their”)—which is neutral in terms of gender agreement like the French *leur*—would not be grammatical without the preceding article (*il loro piatto* and *la loro casa*). Because of these difficulties and because of a desire to keep the materials similar to the original Bates et al. (1996) study, the current study used items made up of attributive adjectives preceding nouns.

Generally in Italian sentences attributive adjectives appear after the governing noun. Some adjectives can, however, appear before the noun, but must also, like those that follow the noun, show agreement (Chini, 1995). For example, adjectives that are predictable on a semantic basis, that is, that do not add any new information to a noun may precede the noun, for example *la calda estate* (“the hot summer”). Or, if a quality expressed by an adjective is subjective rather than objective, the adjective appears before the noun (Setti, 2011).

Per spiegare la variabilità nella collocazione dei diversi aggettivi qualificativi è necessario introdurre il criterio semantico della maggiore o minore oggettività dell’aggettivo qualificativo: tanto più la qualità espressa dall’aggettivo è oggettiva (ad esempio i colori, gli stati fisici, ecc.) tanto più la posizione dell’aggettivo è fissa, mentre all’aumentare della soggettività, quindi con aggettivi che esprimono apprezzamenti e considerazioni del parlante, la mobilità aumenta. [In order to explain the variability in the collocation of different attributive adjectives it is necessary to introduce the semantic criterion of the greater or lesser

objectivity of the attributive adjective: the more the quality expressed by the adjective is objective (for example, colors, physical states, etc.), the more the position of the adjective is fixed, while with the increasing of the subjectivity—with adjectives that express appraisals or considerations of the speaker—the mobility increases.] (Setti, 2011)

Other adjectives change meaning when they appear before the noun instead of after it. For example, *un amico vecchio* (“an old friend”) means a friend who is old (in years), but *un vecchio amico* is a friend that one has had for a long time (Setti, 2011). Other adjectives can only appear after nouns, including adjectives that indicate physical states (e.g., colors, materials, shapes); compound adjectives (e.g., *antiruggine* “rust-proof”); nationalities (e.g., *italiano*); and adjectives modified by a suffix (e.g., *piccolino*) (“La posizione degli aggettivi qualificativi,” 2010). In order to keep the adjective-noun combinations as natural-sounding and as grammatical as possible, only adjectives which can appear before nouns in Italian were used in this study.

Participants

The participants in this study were 130 learners of Italian recruited at the *Università per Stranieri* (Foreigners’ University) in Perugia, Italy and 27 native speakers of Italian living for the most part in the Perugia area. The *Università per Stranieri* is a well-respected institution in Italy that has been offering Italian language classes to students from all over the world since its founding in the 1920s. The participants were recruited from advanced Italian classes, specifically from the C1 and C2 classes.⁶ Learners in these classes were either placed there through a placement test that they took when they arrived in Perugia or they had worked their way to this level by passing the classes of the

⁶The classes correspond to different levels of language proficiency as defined by the Common European Framework of Reference (CEFR). The CEFR—which is made up of levels A1, A2, B1, B2, C1, and C2—has become a common system for classifying language proficiency in Europe, as it “provides a basis for the mutual recognition of language qualifications, thus facilitating educational and occupational mobility” (“Common European framework of reference for languages: Learning, teaching, assessment,” 2011).

previous levels. Learners in these classes were expected to reach the stated level (e.g., C1) by the end of the course. Therefore, learners in the C1 course, for example, might not have actually been truly at the C1 level yet at the time of data collection. Advanced learners of Italian were chosen as proficiency level seems to affect how learners process agreement morphology (Foote, 2010; McCarthy, 2008; Renaud, 2010; Sagarra & Herschensohn, 2011) and gender agreement is acquired late in the L2 (Keating, 2009). So, only the most advanced students possible were included in order to ensure that the learners were as close as possible to a level of ultimate attainment, as in other word recognition and gender agreement studies (Foote, 2010; Franceschina, 2001a, 2005; Guillelmon & Grosjean, 2001; Sabourin, et al., 2006; Scherag, Demuth, Rösler, Neville, & Röder, 2004). Participants were paid 15 euros for their time.

The learners of Italian were divided into three groups based on their native language: (a) L1 speakers of Romance languages (+RG); (b) L1 speakers of languages that have grammatical gender but are not Romance languages (+G); and (c) L1 speakers of languages without grammatical gender (–G). Of the original 130 non-native speaking Italian participants, 72 participants were kept for analysis, 24 in each of the three above-mentioned groups. Of the original 27 native Italian speakers (NS), 24 were kept for analysis. Table 1 shows the L1s of the participants in each group.

Table 1: L1s of Participants Kept for Analysis

Group	L1	<i>n</i>
Native Italian Speakers		24
Italian Learners		60
	+Romance Gender	24
	Spanish	17
	Portuguese	5
	French	2
	+Gender	24
	Russian	6

Table 1 (cont'd)

	Polish	6
	Bulgarian	4
	German	3
	Slovak	1
	Croatian	1
	Serbian	1
	Belarussian	1
	Greek	1
–Gender		24
	Chinese	10
	English	6
	Japanese	3
	Korean	2
	Turkish	2
	Hungarian	1

Most of the participants removed from the data set were removed because they were bilingual from a young age. There were, for example, 9 participants who identified themselves as native speakers of French but who used an African language (Fang, Lari, Lingala, Fula, Igbo, or Wolof) at home with family. These languages, as members of the Niger-Congo language family, have noun class systems somewhat analogous to grammatical gender (Chini, 1995). Because the African language would possibly place the participants in the +G group and the French would place them in the +RG group, these participants were removed from the data analyses. Likewise, 10 native speakers of Central Asian/Eastern European languages (Uzbek, Azerbaijani, Kazak, Armenian, and Georgian)—all languages without grammatical gender—were bilingual in Russian (a +G language) and were thus removed. A Philippine participant, a native speaker of Ilocano (a –G language), was removed because he was bilingual with Spanish (a +RG language). Five native speakers of Hindi and one native speaker of Polish (both +G languages) were removed from the data set because they were proficient from a young age in English (a –G language), and 4 native speakers of Polish were removed because they indicated that they had spoken French (a +RG language) from a young age and at a high

level of proficiency. In addition, 2 native speaking German participants and 3 native speaking Spanish participants were removed because they had an Italian parent. Other participants were removed not for their bilingualism, but because of technical issues. Some participants were not included in the analysis because they had a large number of lost items in the Auditory Naming task because they did not repeat the correct word and/or the voice key did not trip at the onset of their repetition of the noun;⁷ for a few others there were technical problems with the E-Prime software during the Auditory Naming task and all of the data for that task were lost. Two participants in the –G group were not included because low Listening Test scores (67.57% and 70.27%) indicated that they might not have had the proficiency level in Italian to be comparable to the other participants. As mentioned earlier (see Footnote 1), the one native speaker of Romanian was removed from the data set because of differences between Romanian gender and other Romance gender systems. Of the original 27 native speakers of Italian, the 24 with the lowest number of lost items in the Auditory Naming task were kept for analysis. The participants not included in the analyses are listed in Table 2.

Table 2: Participants Removed from Analysis

Group	L1	Reason for removal	<i>n</i>
Native Italian Speakers		loss of AN items	3
Italian Learners			
	+Romance Gender		16

⁷The voice key on the E-Prime button box is tricky because if one speaks too softly on an item, it will not trip until the second syllable or not trip at all. On the other hand, it can for certain participants be too sensitive and trip too early when participants make any sound before the onset of the repeated noun (e.g., a lip smack when opening their mouths). A fixation point appeared on the computer screen when the voice key tripped and this served as a signal to the participants as to whether they were speaking loud enough, whether they were making too many lip smacks, etc. This was explained to participants and there was a practice session and pause before the task actually started. There were, however, certain participants for whom many items were lost this way. The percentage of lost items varied from 0% to 55% across all original participants. Participants with a large percentage of lost items were not included for analysis (see *Data Analysis* section, chapter 5).

Table 2 (cont'd)

+Gender	French	bilingual with Fang (+G)	3
		bilingual with Lari (+G)	2
		bilingual with Wolof (+G)	3
		bilingual with Lingala (+G)	1
	Spanish	Italian parent	3
		loss of AN items	3
	Romanian	Romanian not included in +RG	1
			24
	Hindi	bilingual with English (–G)	5
	Polish	C2 level of French (+RG)	4
		bilingual with English (–G)	1
	German	Italian parent	2
		loss of AN items	2
	Albanian	loss of AN items	2
	Arabic	used only one hand on keyboard	1
	Bulgarian	loss of AN items	1
	Czech	loss of AN items	1
	Greek	misunderstood GM task	1
		loss of AN items	1
	Russian	bilingual with Armenian (–G)	1
	Serbian	loss of AN items	1
	Slovakian	loss of AN items	1
			18
–Gender	Uzbek	bilingual with Russian (+G)	4
	Georgian	bilingual with Russian (+G)	2
	Azerbaijani	bilingual with Russian (+G)	2
	Armenian	bilingual with Russian (+G)	1
	Kazak	bilingual with Russian (+G)	1
	Ilocano	bilingual with Spanish (+RG)	1
	Chinese	loss of AN items	2
	Japanese	loss of AN items	2
		low Listening Test scores	2
	Vietnamese	loss of AN items	1

Note. AN = Auditory Naming task; GM = Gender Monitoring task; –G = –Gender group; +G = +Gender group; +RG = +Romance Gender group.

The same 72 learners of Italian (24 in each group, +RG, +G, –G) and 24 native speakers of Italian (NS) were kept for analysis in all three experiments. Although the same participants were used for all three tasks, the order in which the participants completed them was not counterbalanced because of the nature of the tasks. As the Auditory Naming task is a more automatic measure of word

recognition in which conscious attention is not paid to the gender of the word being accessed and Gender Monitoring and Grammaticality Judgment are more controlled tasks in which the participants' attention is explicitly drawn to the gender of each word, participants who completed the Gender Monitoring or the Grammaticality Judgment task before the Auditory Naming task might have become aware of the goal of the study and might have paid unnecessary attention to the gender of each noun in the Auditory Naming thus affecting their RTs. Counterbalancing the order of the tasks would therefore have been detrimental to one of the aims of the study, that of investigating the difference gender plays in word recognition between an automatic measure of lexical access (Auditory Naming) and more controlled measures of lexical access (Gender Monitoring and Grammaticality Judgment).

Materials

Nouns and Adjectives

The materials used in this study were based on those used in Bates et al. (1996)⁸ and consisted of a total of 120 nouns, with 40 nouns being used for the Auditory Naming task in Experiment 1, 40 other nouns being used for the Gender Monitoring task in Experiment 2, and the remaining 40 nouns being used for the Grammaticality Judgment task in Experiment 3. Of these 120 nouns, 60 were morphophonologically transparent nouns, 30 of which were masculine nouns that ended in *-o* and 30 of which were feminine nouns that ended in *-a*. The other 60 nouns were morphophonologically opaque nouns that ended in *-e*, 30 of which were masculine and 30 of which were feminine. There were 30 adjectives, 20 of which were morphophonologically transparent (i.e., that ended in *-o* or *-a* depending on the gender of the noun they preceded) which were used in the congruent and incongruent conditions. There were also 10 morphophonologically opaque adjectives (i.e., that ended in *-e*) that were used in the neutral condition.

⁸ Unfortunately the original materials used in Bates et al. (1996) were not published with the study and could not be located in spite of attempts by the author.

The nouns and adjectives were all two or three syllables long. None of the nouns started with a vowel or a fricative (Bates et al. 1995 found that fricative-initial nouns had significantly slower RTs). All nouns were inanimate in order to avoid any possible effects of semantic gender, and all nouns and adjectives were singular forms. The nouns and adjectives were taken from the LIP Corpus - *Lessico di frequenza dell'italiano parlato* (De Mauro, Mancini, Vedovelli, & Voghera, 1993). Each noun appeared only once for a given participant in a task, but the same noun appeared in all three conditions (Congruent, Neutral, and Incongruent) across participants in the Auditory Naming and Gender Monitoring tasks and in both conditions (Congruent and Incongruent) in the Grammaticality Judgment task. In this way all nouns appeared in all conditions and participants encountered each noun only once (e.g., in the first two tasks a third of the participants heard a given noun in the Congruent condition, a third of the participants heard the same noun in the Neutral condition, and a third of the participants heard the same noun in the Incongruent condition). In each task, there were 10 masculine nouns that ended in *-o* (Masculine Transparent), 10 masculine nouns that ended in *-e* (Masculine Opaque), 10 feminine nouns that ended in *-a* (Feminine Transparent), and 10 feminine nouns that ended in *-e* (Feminine Opaque).

Nouns were controlled across all conditions and all tasks for frequency and number of syllables. A one-way ANOVA indicated that the mean frequencies of the nouns in each of the noun conditions (Masculine Transparent, Masculine Opaque, Feminine Transparent, and Feminine Opaque) in each of the three tasks (i.e., there were 12 groups: 4 noun conditions X 3 tasks) were not significantly different, $F(11, 43.89) = .03, p = 1.00$. A one-way ANOVA also found that the mean numbers of syllables in each of the 12 groups were not significantly different, $F(11, 108) = .30, p = .98$.

The nouns were also controlled for uniqueness point. The uniqueness point was measured by using *Il dizionario della lingua italiana* (Devoto & Oli, 1990) to find the syllable at which the noun is uniquely identifiable, or at which it is different from all other words in the dictionary. Nouns which are not identifiable until the last syllable were assigned a value of 1, nouns which are identifiable on the second to the last syllable were given a value of 2, and any noun which is not identifiable until after the last syllable was given a value of 0. For example, *carne* (“meat”) is uniquely identifiable on the last syllable because hearing only the first syllable, one could expect that the word might be another Italian word like *carta* (“paper”). *Carne* was therefore assigned a uniqueness point of 1. *Passo* (“step”), however, is not actually identifiable until after the last syllable because there are other words that start with *passo* such as *passola* (“seedless grape”). *Passo* was therefore assigned a uniqueness point of 0. Mean uniqueness points of each of the 12 groups were not significantly different, $F(11, 85.87) = .50, p = .90$.⁹

The adjectives which randomly appeared before the nouns depending on the condition (e.g., an adjective that ended in *-e* appeared before nouns in the Neutral condition, whereas an adjective that ended in *-a* appeared before a masculine noun in the Incongruent condition) were also submitted to a one-way ANOVA. The opaque and transparent adjectives were not found to be significantly different for mean frequency, $F(1, 48) = 1.66, p = .20$, nor for mean number of syllables, $F(1, 48) = .00, p = 1.00$.¹⁰ Table 3 provides the mean frequencies, mean number of syllables, and mean uniqueness

⁹ Levene’s test found that the ANOVA assumption of homogeneity of variance was violated, so the Brown-Forsythe statistic was used for the ANOVAs on noun frequency and uniqueness point.

¹⁰ Adjectives were not controlled for uniqueness point as the RTs on each item were measured from the beginning of each noun that the participant heard spoken. Thus, the point at which all other competitors could be eliminated (the uniqueness point) was important for the noun which made up part of the RT but not for the adjective which was finished before the clock started.

points of the nouns across the various conditions. Table 4 provides the mean frequencies and mean number of syllables for the adjectives.

Table 3: Mean Frequencies, Number of Syllables, and Uniqueness Points of Nouns by Condition

		Frequency		Syllables		Uniqueness Point	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Auditory Naming							
Feminine							
	Opaque	54.00	77.20	2.50	0.53	1.50	0.53
	Transparent	52.40	11.28	2.50	0.53	1.2	0.42
Masculine							
	Opaque	53.60	57.71	2.60	0.52	1.30	0.48
	Transparent	54.00	9.29	2.50	0.53	1.20	0.42
Gender Monitoring							
Feminine							
	Opaque	54.00	70.91	2.50	0.53	1.50	0.53
	Transparent	51.80	13.75	2.60	0.52	1.20	0.42
Masculine							
	Opaque	58.00	62.21	2.70	0.48	1.30	0.48
	Transparent	54.80	11.23	2.50	0.53	1.30	0.82
Grammaticality Judgment							
Feminine							
	Opaque	53.20	37.87	2.40	0.52	1.50	0.71
	Transparent	51.60	10.30	2.50	0.53	1.20	0.42
Masculine							
	Opaque	54.50	23.13	2.70	0.48	1.40	0.52
	Transparent	58.50	8.66	2.50	0.53	1.40	0.70
Total (<i>N</i> = 120)		54.20	39.78	2.54	0.50	1.33	0.54

Note. In each condition of all three tasks *n* = 10. The nouns are not divided into Congruent, Neutral, and Incongruent conditions because all nouns were used in all 3 conditions.

Table 4: Mean Frequencies and Number of Syllables of Adjectives by Condition

	<i>N</i>	Frequency		Syllables	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Opaque	10	24.80	16.07	2.50	0.53

Table 4 (cont'd)

Transparent	20	30.50	11.53	2.50	0.51
Total	30	29.36	12.59	2.50	0.51

Note. Opaque adjectives are used in the Neutral condition in the Auditory Naming and Gender Monitoring tasks. Transparent adjectives are used in masculine and feminine forms in the Congruent and Incongruent conditions in all three tasks.

The adjectives and nouns were recorded in separate wav files by a male native speaker of Italian using Audacity software (Audacity Team, 2008). They were then spliced and stored in separate wav files to be used by E-Prime. RTs were measured from the onset of the noun to the onset of the participant's vocal response in the Auditory Naming task or to the onset of the participant's key press in the Gender Monitoring and Grammaticality Judgment tasks. The 40 nouns in each of the three lists were randomized by E-Prime and the adjective that appeared before each noun was randomized in order to avoid the possibility of some adjective-noun combinations being more felicitous than others. The noun *morale* was originally included as a feminine opaque noun in the Auditory Naming task but was excluded from the result set before analysis because it also has a masculine form.

Background Questionnaire

Participants completed a background questionnaire that asked for biographical data such as age, gender, L1, possible speech or hearing disorders, handedness, years of Italian study, Italian courses taken, age at which Italian study was begun, and information about other languages studied. In addition, in order to form a more complete picture of the participants' proficiency level in Italian (in addition to noting what particular class level they were enrolled in), participants were asked to state whether or not, previous to the data collection, they had ever taken and passed the CELI (*Certificato di conoscenza della lingua italiana*) exam, an exam of Italian language proficiency administered by the

Università per Stranieri, and if so, what level of the exam.¹¹ They were also asked how long they had been in Italy and whether they lived and/or worked with native Italian speakers. Finally, participants were asked to rate their own proficiency in Italian for listening, speaking, reading, and writing, using a five-point scale (*Principiante, Medio/Basso, Medio, Medio/Alto, Avanzato*; “Beginner, Low Intermediate, Intermediate, High Intermediate, Advanced”). The background questionnaire can be found in Appendix C.

Data from the background questionnaire revealed that the participants were quite similar across groups in terms of biographical data and Italian language learning experience. Out of the total 24 participants in each group, there were 6 males in the +RG group, 2 males in the +G group, and 5 males in the –G group. There were 2 participants each in the +RG and +G groups and 3 participants in the –G group who identified themselves as left-handed. The few speech or hearing disorders identified by the participants would not have affected the tasks in this study. One participant said that her hearing in her right ear was not as strong as in her left ear and that she occasionally had difficulty hearing very soft voices. This participant indicated, however, that she had no difficulty understanding the audio on the headphones in the three experiments. One +RG participant indicated that she had problems pronouncing *parole con la “z” iniziale* (“words with an initial -z”), but none of the nouns in this study started with –z. One of the +G participants wrote that she had problems with *suoni /ʃ/ e /ʎ/ e raddoppiamento* (“sounds with /ʃ/ and /ʎ/ and gemination”), but again these pronunciation variations, common among L2 learners of Italian, would not have made any difference to the tasks in this study. Three other participants in the –G group (a native Chinese speaker and two native Japanese speakers) stated that they had difficulty producing the difference between the –r and –l sounds. Again, these pronunciation variations should not have interfered with the tasks in this study.

¹¹ The CELI exams and their corresponding levels on the CEFR (see Footnote 6) are: CELI 1 = A2, CELI 2 = B1, CELI 3 = B2, CELI 4 = C1, CELI 5 = C2.

Most of the participants in the +RG and +G groups had been in Italy for less than a year (with the exception of 2 +RG participants who had lived in Italy for 2 and 3 years, respectively, and 3 +G participants had been in Italy for 5, 2, and 2 years, respectively). There was, however, a larger number of participants in the –G group who had been living in Italy for longer periods of time; 11 of these participants had been living in Italy between 1 and 7 years. Most of the participants in the study had studied Italian at university and at private language schools in their home countries before coming to Perugia (21 participants in each group). A few participants in each group, however, had started Italian study at high school (2 +RG participants, 3 +G participants, and 3 –G participants). Most of the participants did not indicate on the Background Questionnaire that they had ever taken the CELI exam. In each of the three learner groups there was one participant who had passed the CELI 4 exam (level C1 on the CEFR). One +RG participant, 1 +G participant, and 3 –G participants stated that they had passed the CELI 3 exam (level B2 on the CEFR) at some point previous to the data collection (i.e., they may have passed the CELI 3 several months previous to the data collection but then continued studying Italian and consequently might have moved even higher beyond the B2 level measured by the CELI 3).

The five possible ratings on the self-rated proficiency (*Principiante*, *Medio/Basso*, *Medio*, *Medio/Alto*, *Avanzato*; “Beginner, Low Intermediate, Intermediate, High Intermediate, Advanced”) were assigned a number between 1 and 5 (*Principiante* = 1, *Medio/Basso* = 2, etc.). These self-rated proficiency means were then compared with a one-way ANOVA for each language skill. For Listening, the ANOVA found that the –G group had a significantly lower mean rating than the +G group, $F(2, 71) = 5.61$, $p = .01$. For Speaking, there were no significant differences found by the ANOVA, $F(2, 71) = 1.01$, $p = .37$. For Reading, the –G group was found to have a significantly lower mean than both the +RG and the +G groups, $F(2, 71) = 12.76$, $p = .00$. For Writing, the

ANOVA was marginally significant with the –G group mean again lower than that of the +G group, $F(2, 71) = 3.15, p = .05$. The mean age of participants and the mean self-rated proficiency in the four language skills in each group are listed in Table 5.

Table 5: Participant Characteristics

Group	Age <i>M (SD)</i>	Self Rated Proficiency			
		Listening <i>M (SD)</i>	Speaking <i>M (SD)</i>	Reading <i>M (SD)</i>	Writing <i>M (SD)</i>
+RG	28.61 (11.98)	4.13 (.74)	3.67 (.96)	4.25 (.68)	3.58 (.83)
+G	25.26 (4.55)	4.19 (.51)	3.79 (.74)	4.21 (.58)	3.80 (.78)
–G	26.00 (5.35)	3.74 (.92)	3.48 (1.04)	3.44 (.79)	3.35 (.65)

Note. In each group $n = 24$. Self Rated Proficiency on a scale from 1 (lowest) to 5 (highest). +RG = +Romance Gender group; +G = +Gender group; –G = –Gender group.

Listening Test

Originally, it had been hoped that it would be possible to include only the data from learners at the very highest level of proficiency, C2, in the study. It was soon apparent, however, that it would not be possible to find enough learners (who were not bilingual in another language from a young age) at that level of proficiency to fill each of the three groups, certainly not to fill the +RG group where there was the possibility of only 3 L1s (i.e., Spanish, Portuguese, and French). As stated in the *Participants* section in this chapter, the participants had been recruited from the C1 and C2 classes, but that did not necessarily mean that the level of all of the participants was truly C1 or C2 because some of the learners had worked their way up to that level by passing the classes in the previous levels (but perhaps not making the necessary gains in actual proficiency to move up a CEFR level). Learners might not have been truly at the C1 or C2 level also because of the fact that a class that was called C1,

for example, meant that learners should reach the C1 level by the end of the class, but they might not have necessarily reached it at the time of data collection (i.e, at the beginning of the C1 class, they might have just completed the B2 class and therefore would actually still be at the B2 level). Therefore, in order to ensure that all of the participants were at least at the level of B2 on the CEFR, the learners of Italian completed the listening section of a practice CELI exam of the B2 level taken from the exam preparation book and CD, *Come prepararsi all'esame del CELI 3* (Alessandroni, Marasco, Melani, & Rondoni, 2005). This Listening Test, the question on the background questionnaire about any possible scores the learners might have received on the CELI exam if taken before the data collection (described in the previous section), and the recruiting of participants only from C1 and C2 level classes were all measures taken to guarantee that the participants' listening skills (this being a study of *spoken* word recognition) were at the most advanced level of proficiency possible. Appendix D contains the entire transcript of the listening passages and the test questions with the English translations.

The Listening Test was out of a total of 37 points (one point for each correct answer in the two multiple choice sections and one point for each correct word included in the fill-in-the-blank section). Participants' scores were divided by 37 in order to have a percentage score. Participants who received lower than 75% on the Listening Test were removed from the analysis. The mean percentage scores and the standard deviations for each group are listed in Table 6. A one-way ANOVA found the difference between the –G and +G groups to be marginally significant, $F(2, 44.43) = 3.09, p = .055$.¹²

Table 6: Listening Test Results

Group	<i>M %</i>	<i>SD</i>
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¹² Welch's *F* statistic was used as the ANOVA assumption of homogeneity of variance was found to be violated by Levene's test.

Table 6 (cont'd)

+RG	94.26	4.09
+G	94.60	4.22
-G	90.65	6.81

Note. In each group $n = 24$. +RG = +Romance Gender group; +G = +Gender group; -G = -Gender group.

Vocabulary and Gender Test

As it was possible that not all of the learners knew all of the nouns and adjectives that were used in the materials, the learners were given a Vocabulary and Gender Test after having completed all other tasks in the study. It was necessary to ascertain which nouns the learners did not know because it would not have been possible for them to access those nouns if they did not exist in their lexicons. As it was not feasible to have the learners translate the Italian words into their own L1s, given the diversity of L1s represented in the study, nor to have them provide the English translation, as there was no way of knowing ahead of time what knowledge if any the learners had of English, they were asked to indicate how well they knew the meaning of the nouns and adjectives used in the materials. Learners had the possibility of checking one of three options for each vocabulary word: *Conosco questa parola bene*, “I know this word well”; *In un certo modo conosco questa parola/Posso indovinarne il significato*, “I sort of know this word/I can guess the meaning”; or *Non ne conosco il significato*, “I don't know the meaning of it.” In addition, learners were asked to indicate whether each noun was M (masculine) or F (feminine). The inclusion of this gender assignment task was intended to see which nouns the learners were able to identify the gender of—when not under any time constraint as they were when completing the word recognition tasks—in order to compare the gender knowledge of the different participant groups and the gender knowledge of nouns in the different conditions and tasks. (See Appendix E for the complete Vocabulary and Gender Test with the English

translation).

The Vocabulary and Gender Test was analyzed with a mixed measures ANOVA. First, participant scores were calculated for each noun known and for each gender correctly identified in order to compare the scores of the different participant groups. For the vocabulary score, each noun that participants indicated that they knew received two points. If the learners indicated that they could guess the meaning of the noun or sort of knew the meaning of the noun (i.e., they checked the second of the three columns on the Vocabulary Test), they would receive one point for that noun. If they indicated that they did not know the meaning at all of the noun (i.e., they checked the third column on the Vocabulary Test), they did not receive any points for that noun. The participants' total scores were divided by 238 (double the total number of nouns in the study as each noun was worth two points) to get a percentage score. For the gender score, each noun for which the correct gender was indicated was given a point. The total number of points that each participant received for the correct gender was divided by 119 (the total number of nouns in the study) to get a percentage score. The vocabulary and gender percentage means for each participant group, along with the standard deviations, can be seen in Table 7.

Table 7: Vocabulary and Gender Test Results by Participant Group

Group	Vocabulary Test		Gender Test	
	<i>M %</i>	<i>SD</i>	<i>M %</i>	<i>SD</i>
+RG	95.76	4.33	96.46	3.46
+G	97.55	2.59	94.92	3.93
-G	93.61	4.58	88.06	7.25

Note. In each group $n = 24$. +RG = +Romance Gender group; +G = +Gender group; -G = -Gender group.

A mixed measures ANOVA for the Vocabulary Test score found a significant main effect for

Task, $F(2, 138) = 41.05, p = .000, \eta_p^2 = .373$. Overall, the learners knew the nouns that appeared in the Grammaticality Judgment task the best ($M = 98.3\%, SE = .3$), then the ones in the Gender Monitoring task ($M = 95.1\%, SE = .5$), followed by the ones in the Auditory Naming task ($M = 93.7\%, SE = .8$). There was no main effect for Gender, $F(1, 69) = 2.69, p = .11, \eta_p^2 = .037$, but there was for the Transparency of the noun, $F(1, 69) = 15.78, p = .000, \eta_p^2 = .186$. Transparent nouns ($M = 96.4\%, SE = .4$) were better known than opaque nouns ($M = 95.0\%, SE = .5$). There was also a main effect for Group, $F(2, 69) = 5.65, p = .005, \eta_p^2 = .141$, the +G group knowing the most nouns ($M = 97.5\%, SE = .8$), then the +RG group ($M = 95.8\%, SE = .8$), followed by the –Gender group ($M = 93.8\%, SE = .8$). The difference between the greater number of nouns known by the +G group as compared to the –G group was significant ($p = .004$), but the greater number of nouns known by the +G group as compared to the +RG group was not significant ($p = .36$).

There were several interactions. First, there was an interaction between Transparency and Group, $F(2, 69) = 12.07, p = .000, \eta_p^2 = .259$, which was due to the fact that participants in the –G group knew the meanings of the opaque nouns ($M = 91.8\%, SE = .9$) less well than those of the transparent nouns ($M = 95.7\%, SE = .8$), but learners in the +RG and +G groups did not show that difference ($M = 95.9\%, SE = .9$ vs. $M = 95.7\%, SE = .8$ and $M = 97.2\%, SE = .9$ vs. $M = 97.8\%, SE = .8$, respectively). There was also an interaction between Task and Transparency, $F(2, 138) = 28.73, p = .000, \eta_p^2 = .294$, which indicated the fact that in the Auditory Naming task, learners knew the opaque nouns better ($M = 94.4\%, SE = .7$) than the transparent nouns ($M = 92.9\%, SE = .9$), but in the Gender Monitoring and Grammaticality Judgment tasks the learners knew the transparent nouns ($M = 97.1\%, SE = .4$ and $M = 99.2\%, SE = .2$, respectively) better than the opaque nouns ($M = 93.2\%, SE =$

.7 and $M = 97.3\%$, $SE = .5$, respectively). There was also an interaction between Gender and Transparency, $F(1, 69) = 12.17$, $p = .001$, $\eta_p^2 = .150$, which indicated a greater difference between known transparent nouns ($M = 96.6\%$, $SE = .5$) and known opaque nouns ($M = 94.3\%$, $SE = .6$) of masculine gender than between known transparent nouns ($M = 96.2\%$, $SE = .5$) and known opaque nouns ($M = 95.7\%$, $SE = .5$) of feminine gender. Finally, there was an interaction of Task, Gender, and Transparency, $F(2, 138) = 20.30$, $p = .000$, $\eta_p^2 = .227$. This interaction showed that masculine nouns in the Auditory Naming task were better known if they were opaque ($M = 95.3\%$, $SE = .8$) than if they were transparent ($M = 92.1\%$, $SE = 1.2$), but masculine nouns in the Gender Monitoring and Grammaticality Judgment tasks were better known if they were transparent ($M = 98.8\%$, $SE = .4$ and $M = 98.9\%$, $SE = .4$, respectively) than if they were opaque ($M = 91.3\%$, $SE = .9$ and $M = 96.2\%$, $SE = .6$, respectively).

The mixed measures ANOVA on the Gender Test results found a main effect for Task, $F(2, 138) = 5.45$, $p = .005$, $\eta_p^2 = .073$, with learners knowing the gender of the nouns best in the Grammaticality Judgment task ($M = 94.6\%$, $SE = .6$), followed by those in the Gender Monitoring task ($M = 93.4\%$, $SE = .5$), and lastly those in the Auditory Naming task ($M = 92.8\%$, $SE = .8$). (This effect of Task was completely by unfortunate coincidence, there was no way of knowing beforehand that the learners would happen to know the genders of the nouns in certain tasks better than those of the nouns in others. See *Lack of Effects in Auditory Naming* section in chapter 8.) There was no main effect of Gender, $F(1, 69) = 2.29$, $p = .135$, $\eta_p^2 = .032$, but there was a main effect of Transparency, $F(1, 69) = 5.45$, $p = .000$, $\eta_p^2 = .0596$, which indicated better identification of the noun gender on transparent ($M = 98.3\%$, $SE = .3$) than on opaque nouns ($M = 88.9\%$, $SE = 1.0$). There was also a main effect of Group, $F(2, 69) = 16.85$, $p = .000$, $\eta_p^2 = .328$. The +RG group was the most accurate in assigning the gender

to the nouns ($M = 96.7\%$, $SE = 1.0$), then the +G group ($M = 95.1\%$, $SE = 1.0$), then the –G group ($M = 89.0\%$, $SE = 1.0$). The differences between the –G group and the two higher groups were significant.

An interaction between Transparency and Group proved significant, $F(2, 69) = 21.77$, $p = .000$, $\eta_p^2 = .387$, indicating that although all learners were more accurate on transparent than opaque nouns, this difference was greater for –G learners ($M = 97.9\%$, $SE = .4$ vs. $M = 80.1\%$, $SE = 1.8$) than for +RG learners ($M = 98.3\%$, $SE = .4$ vs. $M = 95.1\%$, $SE = 1.8$) or for +G learners ($M = 98.7\%$, $SE = .4$ vs. $M = 91.4\%$, $SE = 1.8$). A second interaction between Task and Gender, $F(2, 69) = 12.06$, $p = .000$, $\eta_p^2 = .149$, showed that in the Grammaticality Judgment task, feminine nouns were more accurately identified than masculine nouns ($M = 95.0\%$, $SE = 1.0$ vs. $M = 94.2\%$, $SE = .9$), but masculine nouns were more accurately identified than feminine nouns in the Auditory Naming task ($M = 95.0\%$, $SE = .8$ vs. $M = 90.6\%$, $SE = 1.3$) and the Gender Monitoring task ($M = 94.2\%$, $SE = .6$ vs. $M = 92.6\%$, $SE = .9$). Finally, an interaction between Task, Gender, and Transparency showed that the difference in accuracy between feminine opaque and masculine opaque nouns in the Auditory Naming task (mean difference = 9.3%) was greater than the difference between feminine opaque and masculine opaque nouns in the Gender Monitoring task (mean difference = -1.8%) and the Grammaticality Judgment task (mean difference = 1.1%). The mean percentages for the Vocabulary Test and Gender Test by noun condition can be found in Table 8.

Table 8: Vocabulary and Gender Test Results by Noun Condition

	Vocabulary Test		Gender Test	
	<i>M %</i>	<i>SD</i>	<i>M %</i>	<i>SD</i>
Auditory Naming				
Masculine				

Table 8 (cont'd)

	Transparent	92.08	11.49	97.50	3.33
	Opaque	95.28	7.04	91.25	7.26
	Feminine				
	Transparent	93.75	12.92	98.33	2.76
	Opaque	93.96	8.64	82.87	12.48
Gender Monitoring					
	Masculine				
	Transparent	97.99	2.95	98.61	1.13
	Opaque	91.32	12.54	87.92	12.02
	Feminine				
	Transparent	95.35	7.99	96.94	2.60
	Opaque	95.00	8.06	87.08	11.07
Grammaticality Judgment					
	Masculine				
	Transparent	98.89	1.47	98.61	1.85
	Opaque	96.18	7.28	89.31	8.21
	Feminine				
	Transparent	99.58	.75	99.17	.97
	Opaque	98.40	2.25	89.17	4.98

The second way in which the Vocabulary and Gender Test was analyzed was by looking at how well the nouns in the various conditions and tasks were known by the participants. A percentage of how well known each noun was calculated (i.e., each noun could receive up to 144 points, two points per 72 participants) for the Vocabulary Test score. There were 50 nouns that received a perfect score and were thus known by all participants. Another 53 of the nouns received scores of between 90% and 99% and another 12 nouns received between 75% and 89%. The four least known nouns included: *lega* (“league” at 59.77%), *reddito* (“income” at 61.81%), *cantiere* (“construction site” at 65.97%), and *cornice* (“frame” at 71.53%). Three of these least known nouns (*lega*, *reddito*, and *cornice*) were in the Auditory Naming task which would explain the main effect of Task on the Vocabulary Test ANOVA; the fact that these three least known nouns all happened to be in the Auditory Naming task would have led to the significantly lower scores for that task as compared to Gender Monitoring and Grammaticality Judgment on the Vocabulary Test.

A percentage of correct gender assignment was calculated (i.e., each noun could receive up to 72 points, one for each participant) for the Gender Test score as well. Twenty-nine of the nouns were assigned the correct gender by all participants (only 4 of which were opaque, all four of which were masculine). Another 61 nouns were assigned the correct gender by between 90% and 99% of the participants, and another 24 were assigned the correct gender by between 75% and 89% of the participants. The nouns which were assigned the correct gender by fewer than 75% of the participants were three feminine opaque nouns (*corte* “court” at 62.5%, *cornice* “frame” at 63.89%, and *corrente* “current” at 63.89%) and two masculine opaque nouns (*confine* “border” at 63.89% and *carcere* “prison” at 72.22%).

In sum, the Vocabulary Test results indicated that the learners knew most of the nouns used in the study, scoring over 90% in the various noun conditions, but there were differences in how well they knew the words in the various tasks of the study. Words in the Auditory Naming task in Experiment 1 were less well-known than those in the other two tasks, a difference caused in part by the inclusion of three of the four least known nouns in this task. It was also found that participants knew transparent nouns better than opaque nouns. The results of the Gender Test mirrored those of the Vocabulary Test in several ways. First, learners with gender in the L1 (+RG and +G groups) outperformed the learners without gender in the L1 (–G group) on gender assignment (94.92% and 93.61% vs. 88.06%). The learners without any gender in the L1 (–G group) were lower than the +G group on every measure (Listening Test, Vocabulary Test, and Gender Test) which could definitely signal a difference in proficiency level between the two groups. The fact that the –G learners were significantly lower than both the +G group and the +RG group on the Gender Test, however, could have been due to the difference in the existence of a gender system in the L1; having the concept of gender (and in the case of the +RG learners, many actual cognates of the nouns) in the L1, the +G and

+RG learners had less to learn than the –G learners. The second way in which the results of the Gender Test mirrored those of the Vocabulary Test was that transparent nouns were more correctly assigned the correct gender than opaque nouns (unsurprisingly). Finally, the Gender Test results mirrored the Vocabulary Test results in that nouns in the Auditory Naming task were less accurately identified in terms of gender than the nouns of the other two tasks, reflecting probably the lack of knowledge of the nouns in this task as compared to the other two tasks shown in the Vocabulary Test. This hypothesis gains further support when one notes that the gender of masculine opaque nouns in the Auditory Naming task were identified with 91.25% accuracy, whereas the gender of feminine opaque nouns in the Auditory Naming task were identified with 82.87% accuracy. Seeing as the masculine and feminine opaque nouns were identified with similar accuracy levels in the other two tasks where learners better knew the nouns (approximately 87% for both masculine and feminine opaque in the Gender Monitoring task and approximately 89% for both masculine and feminine opaque in the Grammaticality Judgment task), one could hypothesize that when the learners did not know an opaque noun in the Auditory Naming task, they turned to a default gender when assigning gender to it, as learners have been found to do in other languages (see chapter 2). Here the learners were less accurate in assigning feminine gender; when faced with an unknown noun ending in *-e*, learners turned to a default masculine gender. Masculine has been found to be the default for other Romance languages as well (in Spanish Franceschina, 2005; McCarthy, 2008; Montrul, et al., 2008; White, et al., 2004) (in French Holmes & Dejean de la Bâtie, 1999; Renaud, 2010).

In conclusion, then, learners were similar in profile across the participant groups, but some small but significant differences in proficiency level did appear. Although all learners self-rated their proficiency of listening skill as intermediate or high-intermediate and the three groups all scored above a mean 90% on the Listening Test, the learners without gender in the L1 (-G group) scored

significantly lower than the learners with non-Romance gender in the L1 (+G group) on the Listening Test. The learners without gender in the L1 also knew fewer nouns in the Vocabulary Test than the learners with non-Romance gender in the L1 (+G group) and were less accurate in identifying the gender of the nouns on the Gender Test than both the learners with Romance gender in the L1 (+RG group) and the learners with non-Romance gender in the L1 (+G group). This result of the Gender Test is not surprising, as gender assignment to nouns (i.e., knowing which is the correct gender for a particular noun, especially an opaque noun) is considered part of the problem that L2 learners have with gender (see *Gender Assignment* section in chapter 2). These differences in terms of listening proficiency and knowledge of the nouns and their gender on the part of the –G group as compared to the other two learner groups may have played a role in the results of the tasks in Experiments 2 and 3. As will be seen in chapters 6 and 7, learners without gender in the L1 showed the least accuracy of all the participant groups, which was most likely influenced by their lesser knowledge of the nouns and their genders.

CHAPTER 5 EXPERIMENT 1: AUDITORY NAMING

Procedure

The Auditory Naming task was created and run with E-Prime 1.0 software. After completing the consent form and background questionnaire, half of the learners completed the Listening Test and then the Auditory Naming task, whereas the other half completed the Listening Test after having completed the word recognition tasks in the three experiments. Before starting the Auditory Naming task, participants read these directions on the computer screen: *Sentirai due parole. Ripeti la seconda parola che senti (il sostantivo). Rispondi il più velocemente e il più accuratamente possibile. Premi il tasto dello spazio per iniziare.* [“You will hear 2 words. Repeat the second word that you hear (the noun). Respond as quickly and accurately as possible. Press the spacebar to begin.”] The researcher then explained to the participants that they would see a fixation point appear when the microphone picked up their vocal response and that if they did not see that fixation appear exactly when they spoke, they were not being accurately recorded. After the instructions a fixation point appeared, and the participants heard an adjective-noun item. The participants heard 8 practice items consisting of nouns and adjectives not used in the experimental items. The practice session consisted of 3 congruent items (e.g., *bella casa* “beautiful house”), 2 neutral items (e.g., *grande libro* “big book”), and 3 incongruent items (e.g., **bello macchina* “beautiful car”). In the pause following the practice items, the researcher encouraged soft-spoken participants to speak more loudly and the position of the microphone was adjusted slightly for those participants for whom the voice key tripped too early. (See Footnote 7.) Participants then saw the following directions on the screen: *Adesso ci sarà l'esperimento. Se hai qualche domanda, chiedi alla ricercatrice prima di continuare. Premi il tasto dello spazio per iniziare l'esperimento.* [“Now there will be the experiment. If you have any questions, ask the researcher before continuing. Press the spacebar to begin the experiment.”]

If participants did not respond to an item, the item timed out after 3000 msec. The adjective and noun in each item were separated by 1 msec. RTs were measured from the onset of the noun of the item that the participant heard over headphones until the onset of the participant's response. The task was carried out on a Dell PC laptop which was connected to an E-Prime serial response button box and an omnidirectional microphone. The actual audio of the participant's response (i.e., the noun that he/she repeated) was recorded by an Olympus WS-311M digital voice recorder. The researcher noted all items for which the voice key in the button box tripped too early or too late and all of the nouns which were incorrectly repeated, by writing down each word in a notebook as the participant repeated them. When the participant repeated the wrong word (e.g., some participants said the word *nato*, "born," upon hearing the noun *lato*, "side") or when the researcher saw that the fixation point marking the tripping of the voice key occurred before or after the first syllable of the participant's repetition, she noted it next to the noun that she had written in the notebook.

The learners of Italian completed the Vocabulary and Gender Test at the end of the session after having completed the three word recognition tasks (i.e., the three experiments) on the computer. The Vocabulary and Gender Test was given to the learners after the word recognition tasks in order to avoid the possibility that indicating how well they knew the meaning of the nouns first (on the Vocabulary and Gender Test) might lead to quicker recognition of the nouns in the subsequent computer tasks. The entire procedure in the three experiments described in this and the following two chapters, the Listening Test, and the Vocabulary and Gender Test took between 75 and 90 minutes.

Data Analysis

The data from the Auditory Naming task were analyzed in terms of RTs with E-Prime. The data more than 2 standard deviations above or below the overall mean RT for each participant were trimmed, but not excluded (i.e., they were trimmed as equal to the cutoff value). Inaccurate repetitions

were discarded as well as repetitions on which the voice key tripped too early, tripped on the second syllable, or didn't trip at all. These discarded items accounted for 2.24% of the NS data, 4.17% of the +RG data, 3.89% of the +G data, and 4.74% of the –G data in the Auditory Naming task. Items in the Auditory Naming task which included nouns that learners had indicated that they did not know the meaning of in the Vocabulary and Gender Test were removed before analysis, as it was assumed that learners would not be able to lexically access words that they were not familiar with; 2.12% of the data in the Auditory Naming task were removed for this reason.

Mean RTs were calculated by participants and by items for the 12 conditions of Congruency (Congruent, Neutral, Incongruent), Gender (Masculine, Feminine), and Transparency (Transparent, Opaque). A mixed measures ANOVA was performed with Congruency, Gender, and Transparency as within-participant variables and Group (NS, +RG, +G, –G) as a between-participant variable for the by-participants analysis.

Results

Auditory Naming RT Data

In the Auditory Naming data, no main effect of Congruency was found in the by-participants analysis, $F_1(2, 178) = .50, p = .61, \eta_p^2 = .006$, or in the by-items analysis, $F_2(1.61, 56.29) = 1.87, p = .171, \eta_p^2 = .051$.¹³ There was a main effect of Gender, significant by-participants, $F_1(1, 89) = 32.78, p = .000, \eta_p^2 = .269$, but not by items, $F_2(1, 35) = 1.92, p = .175, \eta_p^2 = .052$. This main effect by-participants was due to faster RTs on masculine nouns ($M = 1391$ msec, $SE = 19.09$) than on feminine

¹³Mauchly's Test of Sphericity was used to check the data for sphericity, an assumption of mixed measures ANOVAs. The assumption was violated in the by-items analysis for the within-participant variable of Congruency, $\chi^2(2) = 9.49, p = .009$ and of Group, $\chi^2(5) = 35.33, p = .000$. Thus, in the by-items ANOVA, the Greenhouse-Geisser corrected F -statistic is reported for Congruency ($\epsilon = .804$) and Group ($\epsilon = .594$).

nouns ($M = 1442$ msec, $SE = 19.73$). Transparency, too, was significant by-participants, $F_1(1, 89) = 11.38$, $p = .001$, $\eta_p^2 = .113$, but not by-items, $F_2(1, 35) = .26$, $p = .611$, $\eta_p^2 = .007$. This main effect of Transparency was due to faster RTs on opaque nouns ($M = 1404$ msec, $SE = 19.81$) than on transparent nouns ($M = 1432$ msec, $SE = 19.00$). The main effect of Group approached significance in the by-participants analysis, $F_1(3, 89) = 2.38$, $p = .075$, $\eta_p^2 = .074$, and was significant in the by-items analysis, $F_2(1.78, 62.38) = 28.75$, $p = .000$, $\eta_p^2 = .451$. The participants in the NS group had significantly faster overall RTs ($M = 1332$ msec, $SE = 15.54$) than the other three groups (+RG: $M = 1481$ msec, $SE = 18.22$; +G: $M = 1431$ msec, $SE = 20.86$; –G: $M = 1446$ msec, $SE = 23.98$). The RTs of the +G speakers were significantly faster than the RTs of the +RG speakers as well.

The interaction of Transparency and Group was significant by participants, $F_1(3, 89) = 3.62$, $p = .016$, $\eta_p^2 = .109$, but not by items, $F_2(3, 105) = 1.01$, $p = .390$, $\eta_p^2 = .028$. The significant interaction of Transparency and Group was due to the fact that –G learners were slower in repeating transparent nouns ($M = 1464$ msec, $SE = 38.19$) than opaque nouns ($M = 1392$ msec, $SE = 39.80$), whereas the other three groups were similar in RT regardless of transparency of the noun. There was also a significant by-participants interaction of Gender and Transparency, $F_1(1, 89) = 17.23$, $p = .000$, $\eta_p^2 = .162$, but it was not significant by-items $F_2(1, 35) = 1.30$, $p = .262$, $\eta_p^2 = .036$. This by-participants interaction effect was due to the fact that transparent nouns were repeated more quickly than opaque nouns when the nouns were feminine ($M = 1429$ msec, $SE = 20.18$ vs. $M = 1456$ msec, $SE = 21.38$) but opaque nouns were repeated more quickly than transparent nouns when the nouns were masculine ($M = 1348$ msec, $SE = 21.87$ vs. $M = 1435$ msec, $SE = 20.76$). Somewhat surprisingly, the interaction between Congruency and Group did not reach significance, $F_1(6, 178) =$

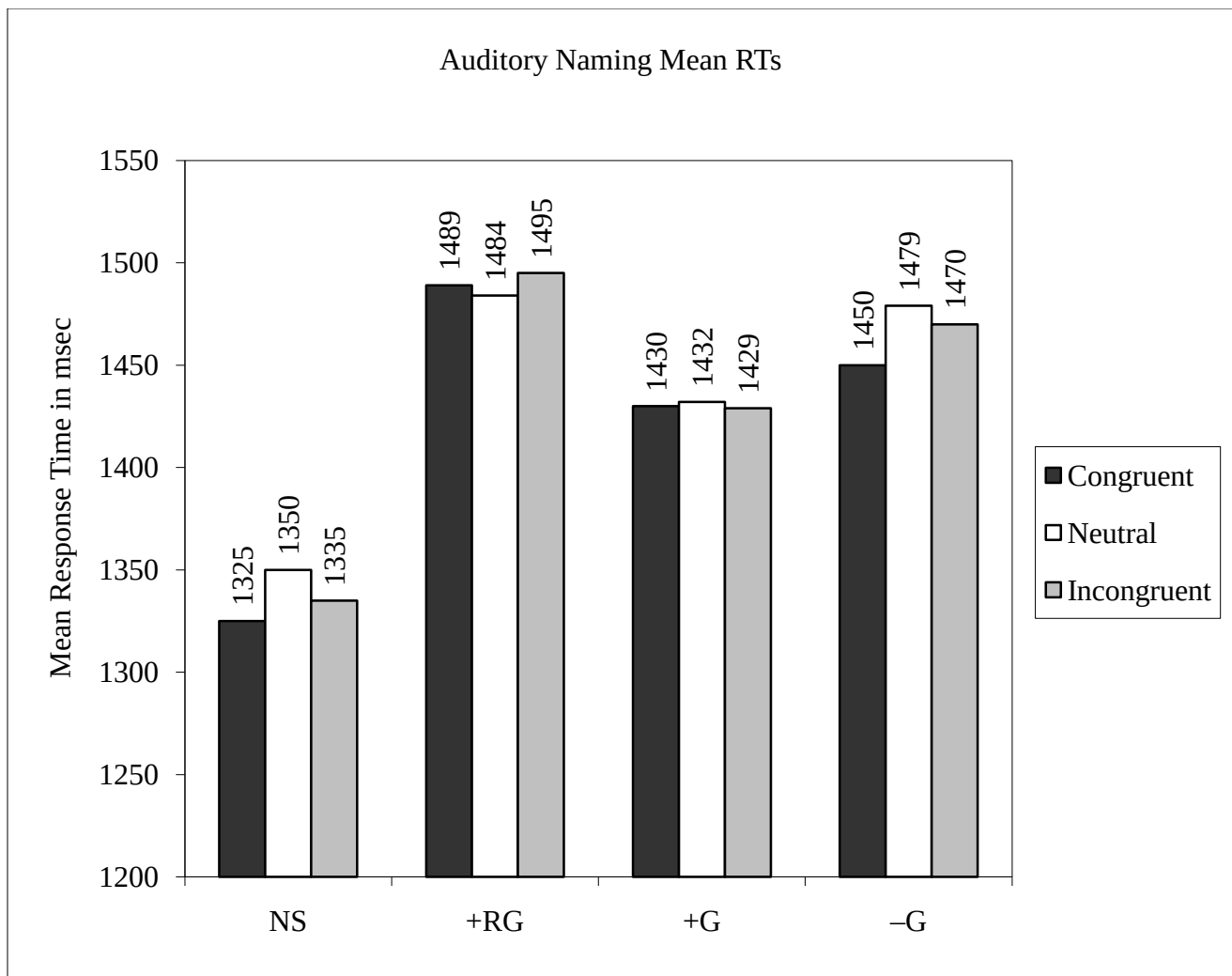
1.04, $p = .404$, $\eta_p^2 = .034$, $F_2(6, 210) = 1.03$, $p = .410$, $\eta_p^2 = .028$, in spite of the fact that the NS group had a faster RT mean in the Congruent condition than in the Neutral condition (i.e., facilitation). The mean RTs and standard deviations in the various noun conditions of the Auditory Naming task can be found in Table 9, and Figure 1 provides a visual description of the mean RTs found in the different participant groups in Congruent, Neutral, and Incongruent conditions.

Table 9: Mean RTs by Noun Condition in Auditory Naming Task

		NS <i>M (SD)</i>	+RG <i>M (SD)</i>	+G <i>M (SD)</i>	–G <i>M (SD)</i>
Congruent					
	Masculine				
	Transparent	1328 (198)	1527 (179)	1422 (222)	1501 (281)
	Opaque	1265 (201)	1439 (178)	1375 (243)	1375 (185)
	Feminine				
	Transparent	1348 (218)	1472 (155)	1434 (242)	1468 (221)
	Opaque	1360 (254)	1519 (193)	1487 (224)	1448 (225)
Neutral					
	Masculine				
	Transparent	1364 (237)	1508 (140)	1403 (231)	1478 (203)
	Opaque	1317 (257)	1464 (175)	1396 (219)	1421 (202)
	Feminine				
	Transparent	1321 (202)	1494 (157)	1441 (213)	1499 (203)
	Opaque	1399 (238)	1469 (192)	1491 (198)	1515 (220)
Incongruent					
	Masculine				
	Transparent	1338 (219)	1471 (193)	1435 (223)	1454 (288)
	Opaque	1288 (217)	1464 (160)	1362 (235)	1402 (188)
	Feminine				
	Transparent	1329 (228)	1525 (138)	1430 (226)	1477 (187)
	Opaque	1386 (200)	1519 (191)	1492 (287)	1547 (215)

Note. In each participant group $n = 24$. NS = Native Speakers; +RG = +Romance Gender group; +G = +Gender group; –G = –Gender group. All RTs in msecs.

Figure 1: Auditory Naming Mean RTs



Experiment 1 Discussion

As there was no main effect of Congruency in the ANOVA that was run on the Auditory Naming RT data, there was no gender facilitation or inhibition found for any of the groups (including the native speaker group who did, however, show faster RT means in the congruent condition than in the neutral condition). Participants were affected by the transparency of the gender on the noun, with opaque nouns being repeated more quickly than transparent nouns by learners without gender in the L1 (-G group). It is unclear why this should have been the case. It is possible that the gender on opaque nouns is lexicalized for the learners, but it is not lexicalized in the case of transparent nouns.

The opaque nouns with this lexicalized gender are then recognized and repeated faster than the transparent nouns regardless of whether they are preceded by congruent, neutral, or incongruent adjectives. Masculine nouns were also repeated more quickly than feminine nouns. This is surprising because in earlier studies of word recognition in Romance languages (Bates, et al., 1996; Colé, Pynte, & Andriamamonjy, 2003; Foote, 2011a), feminine nouns were recognized more quickly than masculine nouns. Bates et al. (1996) claimed that the faster RTs on feminine nouns could be due to nonsignificant differences in word length between masculine and feminine nouns and Foote (2011a) noted earlier uniqueness points for feminine nouns in her materials. It is possible that small differences in word length made a difference in this study as well (although all nouns were carefully controlled for syllable length and uniqueness point). The main effect of Group indicated that native speakers of Italian were significantly faster in repeating the nouns than the three learner groups, and native speakers of non-Romance gender languages (+G group), the next fastest group after the native speakers, were significantly faster in repeating the nouns than L1 speakers of Romance languages, the slowest of the participant groups (the –G group was in the middle, nonsignificantly slower than the +G group and nonsignificantly faster than the +RG group). That L1 speakers of Romance languages should be the slowest in responding is surprising, especially considering that they knew the nouns and their genders as well as the +Gender group and knew the genders of the nouns better than the –Gender group.

CHAPTER 6 EXPERIMENT 2: GENDER MONITORING

Procedure

The Gender Monitoring task was created and run with E-Prime 1.0 software. For this task, participants read the following instructions on the computer screen: *Sentirai due parole. Premi il tasto a sinistra (M) se la seconda parola che senti (il sostantivo) è maschile. Premi il tasto a destra (F) se la seconda parola che senti (il sostantivo) è femminile. Rispondi il più velocemente e il più accuratamente possibile. Premi il tasto dello spazio per iniziare.* [“You will hear two words. Press the key on the left (M) if the second word you hear (the noun) is masculine. Press the key on the right (F) if the second word you hear (the noun) is feminine. Respond as quickly and accurately as possible. Press the spacebar to begin.”] The number 1 key in the top left corner of the keyboard was covered with a label with the letter M and the number 0 key in the top right corner of the keyboard was covered with a label with the letter F. Learners typically asked me after reading these directions, *Sempre la seconda (parola)?* [“Still just the second (word)?”]. I always responded, *Sì, sempre la seconda* [“Yes, still just the second one.”], and I indicated to them where to place their hands (with their index fingers on the 1 and 0 keys) before beginning the practice session. The practice session consisted of 8 items that did not include any of the nouns or adjectives used in the experimental items. Then, there was a pause during which participants could ask the researcher questions or press the spacebar to begin with the experiment.

If participants did not respond to an item, the item timed out after 5000 msec. Participants were given 2000 extra milliseconds to respond to the items in this task than they were given in the Auditory Naming task (in which items would time out after 3000 msec) on the reasoning that identifying the gender of the noun in the item would require more metalinguistic thought than simply repeating the second word. The adjective and noun in each item were separated by 1 msec. RTs were

measured from the onset of the noun to the onset of the key press. The task was carried out on a Dell PC laptop.

Data Analysis

Items in the Gender Monitoring task which included nouns that learners had indicated that they did not know the meaning of in the Vocabulary and Gender Test (see chapter 4) were removed before analysis, as it was assumed that learners would not be able to lexically access words that they were not familiar with; 1.86% of the data in the Gender Monitoring task was removed for this reason.

The Gender Monitoring task items were analyzed with E-Prime in terms of both accuracy of the gender identification and in terms of RTs to the items. For the accuracy analysis, the mean percentage error was calculated for each condition. For the RT analysis, only those RTs for correct items were analyzed; as in other gender facilitation studies, RTs to items on which the participant did not correctly identify the gender of the noun were not included in the analyses as it was possible that participants were not accessing the right word. The data more than 2 standard deviations above or below the overall mean RT for each participant were trimmed, but not excluded (i.e., they were trimmed as equal to the cutoff value). Mixed measures ANOVAs were performed on the error data and the RT data with Congruency, Gender, and Transparency as within-participant variables and Group as a between-participant variable.

Results

Gender Monitoring Accuracy Data

In the Gender Monitoring accuracy data, the mixed measures ANOVA found a main effect of Congruency, $F_1(2, 184) = 7.93, p = .000, \eta_p^2 = .079, F_2(1.99, 71.91) = 5.44, p = .006, \eta_p^2 = .131$. The overall identification of the noun gender was significantly less accurate in the Incongruent condition ($M = 90.7\%, SE = 1.0$) than in the Neutral condition ($M = 92.4\%, SE = .7$) and than in the

Congruent condition ($M = 94.7\%$, $SE = .7$). There was also a robust main effect of Transparency, $F_1 (1, 92) = 105.43$, $p = .000$, $\eta_p^2 = .534$, $F_2 (1, 36) = 36.05$, $p = .000$, $\eta_p^2 = .500$. As expected, the participants were more accurate in identifying the noun gender of nouns on which the gender was transparently marked ($M = 98.6\%$, $SE = .3$) than on nouns which were opaque ($M = 86.8\%$, $SE = 1.2$). There was also a main effect of Group in the error data, $F_1 (3, 92) = 7.98$, $p = .000$, $\eta_p^2 = .206$, $F_2 (1.81, 65.12) = 10.38$, $p = .000$, $\eta_p^2 = .224$. Pairwise comparisons revealed that the NS group ($M = 94.8\%$, $SE = 1.3$) was significantly more accurate in the Gender Monitoring task than the –G group ($M = 88.4\%$, $SE = 1.3$). The +RG group was slightly higher than the native speaker group in terms of accuracy ($M = 96.3\%$, $SE = 1.3$) and was significantly more accurate than both the +G group ($M = 91.4\%$, $SE = 1.3$) and the –G group.

There was an interaction of Transparency and Group in the error data, $F_1 (3, 92) = 6.38$, $p = .001$, $\eta_p^2 = .172$, $F_2 (3, 108) = 7.26$, $p = .000$, $\eta_p^2 = .168$. This interaction was due to the fact that the four participant groups were quite similar in their accuracy on transparent nouns (NS: $M = 98.4\%$, $SE = 1.0$; +RG: $M = 99.6\%$, $SE = .9$; +G: $M = 98.7\%$, $SE = 2.6$; –G: $M = 97.8\%$, $SE = 2.8$), but noticeably different in their accuracy in identifying the gender of opaque nouns (NS: $M = 90.3\%$, $SE = 1.0$; +RG: $M = 93.1\%$, $SE = .9$; +G: $M = 83.3\%$, $SE = 2.6$; –G: $M = 78.4\%$, $SE = 2.8$). There was also an interaction between Transparency and Congruency, $F_1 (2, 184) = 5.73$, $p = .004$, $\eta_p^2 = .059$, $F_2 (2, 72) = 3.99$, $p = .023$, $\eta_p^2 = .100$. Although the transparent nouns were more correctly identified than opaque nouns in all conditions of Congruency, transparent nouns were identified correctly more or less equally regardless of whether they were preceded by congruent, neutral, or incongruent adjectives ($M = 98.9\%$, $SE = 1.6$; $M = 98.7\%$, $SE = 1.7$; $M = 98.3\%$, $SE = 2.0$, respectively). Opaque nouns,

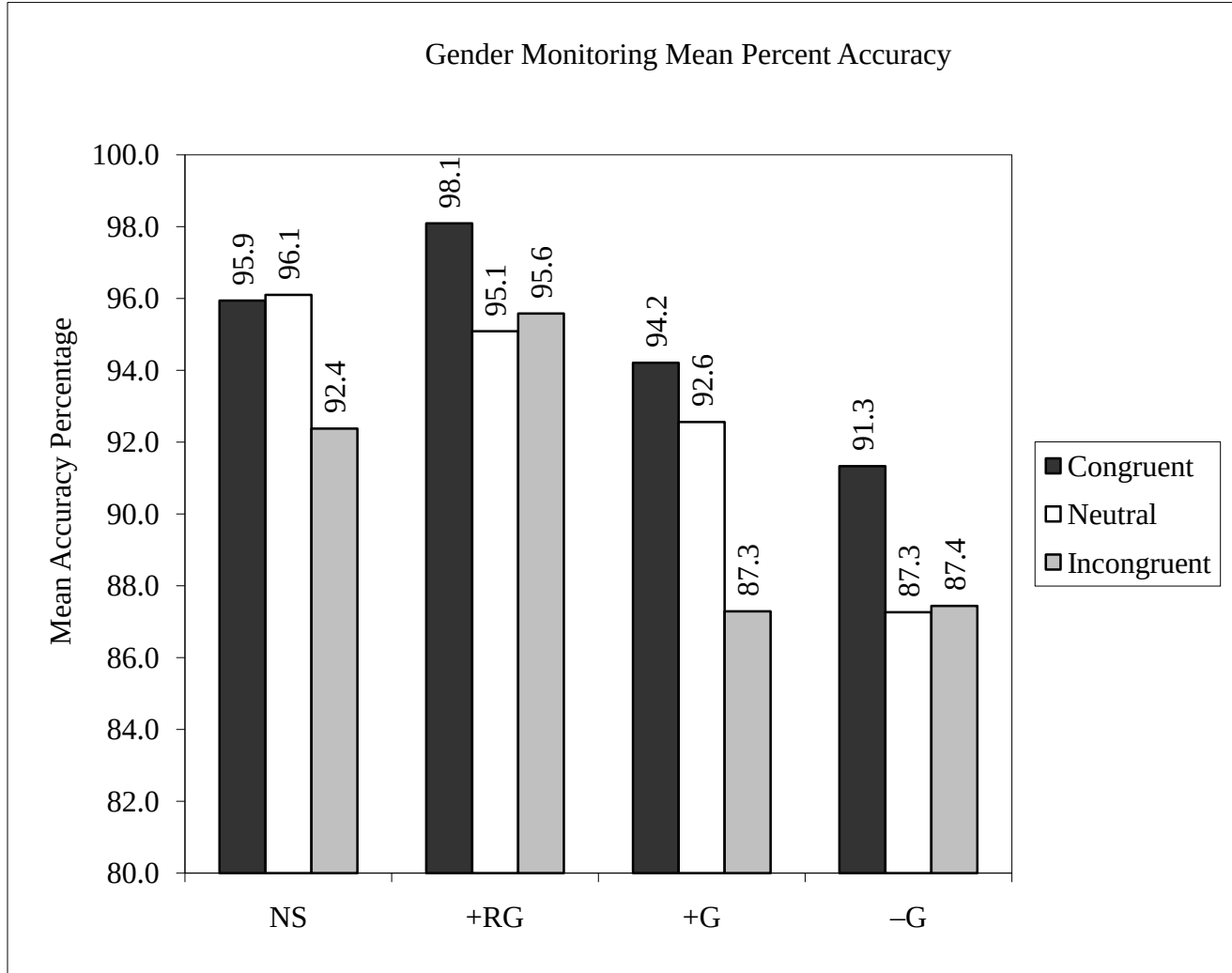
however, were identified more accurately when they were preceded by congruent adjectives than when preceded by neutral adjectives which in turn were more accurately identified than when they were preceded by incongruent adjectives ($M = 90.2\%$, $SE = 1.6$; $M = 86.1\%$, $SE = 1.7$; $M = 82.6\%$, $SE = 2.0$, respectively). The mean percent accuracy for each group in all conditions can be seen in Table 10 and the mean percent accuracy of congruent, neutral, and incongruent items for each group can be seen in Figure 2.

Table 10: Mean Percent Accuracy by Noun Condition in Gender Monitoring Task

		NS <i>M % (SD)</i>	+RG <i>M % (SD)</i>	+G <i>M % (SD)</i>	–G <i>M % (SD)</i>
Congruent					
Masculine					
	Transparent	100.00 (0.00)	100.00 (0.00)	100.00 (0.00)	95.17 (0.11)
	Opaque	94.13 (0.17)	94.79 (0.16)	91.38 (0.14)	86.08 (0.24)
Feminine					
	Transparent	97.25 (0.09)	100.00 (0.00)	97.92 (0.10)	100.00 (0.00)
	Opaque	92.38 (0.16)	97.58 (0.08)	87.54 (0.20)	83.74 (0.25)
Neutral					
Masculine					
	Transparent	100.00 (0.00)	98.63 (0.07)	100.00 (0.00)	100.00 (0.00)
	Opaque	97.25 (0.09)	92.75 (0.15)	85.79 (0.21)	75.04 (0.29)
Feminine					
	Transparent	97.58 (0.08)	98.63 (0.07)	98.63 (0.07)	95.88 (0.11)
	Opaque	89.58 (0.22)	90.38 (0.15)	85.83 (0.16)	78.13 (0.27)
Incongruent					
Masculine					
	Transparent	98.96 (0.05)	100.00 (0.00)	100.00 (0.00)	97.92 (0.07)
	Opaque	90.63 (0.22)	90.29 (0.20)	73.29 (0.25)	78.88 (0.21)
Feminine					
	Transparent	97.58 (0.08)	100.00 (0.00)	94.83 (0.12)	97.58 (0.08)
	Opaque	82.33 (0.27)	92.04 (0.17)	81.04 (0.21)	75.38 (0.29)

Note. In each participant group $n = 24$. NS = Native Speakers; +RG = +Romance Gender group; +G = +Gender group; –G = –Gender group.

Figure 2: Gender Monitoring Mean Accuracy



Gender Monitoring RT Data

The mixed measures ANOVA on the accurate RT data from the Gender Monitoring task found a main effect of Congruency significant both by participants, $F_1(2, 184) = 4.31, p = .015, \eta_p^2 = .045$, and by-items, $F_2(1.66, 59.92) = 8.94, p = .001, \eta_p^2 = .199$.¹⁴ The overall Congruent RT mean ($M =$

¹⁴ As in the Auditory Naming RT data the by-items analysis was found to violate the assumption of lack of sphericity in the data by Mauchly's Test of Sphericity. The assumption was violated for the within-participant variable of Congruency, $\chi^2(2) = 7.89, p = .019$ and of Group, $\chi^2(5) = 20.10, p =$

1716 msec, $SE = 28.71$) was faster than the overall Neutral RT mean ($M = 1734$ msec, $SE = 31.19$) which in turn was faster than the overall Incongruent RT mean ($M = 1771$ msec, $SE = 35.92$). This difference in Neutral and Incongruent RTs was significant; that is, there was reliable inhibition found. The ANOVA also found a main effect of Transparency, significant by participants, $F_1(1, 92) = 72.12$, $p = .000$, $\eta_p^2 = .439$, and by-items, $F_2(1, 36) = 27.74$, $p = .000$, $\eta_p^2 = .435$. This robust main effect of Transparency was due to the fact that transparent nouns were identified with the correct gender more quickly than opaque nouns ($M = 1647$ msec, $SE = 26.72$ for transparent nouns vs. $M = 1834$ msec, $SE = 36.64$ for opaque nouns). Gender of the noun, however was not found to have a significant main effect, $F_1(1, 92) = 2.44$, $p = .122$, $\eta_p^2 = .026$; $F_2(1, 36) = .33$, $p = .858$, $\eta_p^2 = .001$. The variable of Group was significant both by participants and by items, $F_1(3, 92) = 10.67$, $p = .000$, $\eta_p^2 = .258$, $F_2(2.13, 76.58) = 147.44$, $p = .000$, $\eta_p^2 = .804$. Pairwise comparisons revealed that this main effect of Group was due to the NS group identifying the gender of the noun significantly faster ($M = 1474$ msec, $SE = 60.23$) than the +RG group ($M = 1799$ msec, $SE = 60.23$); significantly faster than the +G group ($M = 1745$ msec, $SE = 60.23$); and significantly faster than the –G group ($M = 1944$ msec, $SE = 60.23$). The by-items pairwise comparisons revealed that the +RG and +G groups were significantly faster than the –G group as well.

The mixed measures ANOVA also found an interaction between Transparency and Group, $F_1(3, 92) = 2.85$, $p = .042$, $\eta_p^2 = .085$, $F_2(3, 36) = 10.60$, $p = .000$, $\eta_p^2 = .227$. This interaction indicated that the +G and –G groups performed a great deal faster when the noun was transparent than when it was opaque. The +G group indicated the gender of transparent nouns with a mean RT of 1613 msec

.001. Thus, in the by-items ANOVA, the Greenhouse-Geisser corrected F -statistic is reported for Congruency ($\epsilon = .832$) and Group ($\epsilon = .709$).

($SE = 53.44$) and opaque nouns with a mean RT of 1877 msec ($SE = 73.29$), and the –G group indicated the gender of transparent nouns with a mean RT of 1826 msec ($SE = 53.44$) and opaque nouns with a mean RT of 2063 msec ($SE = 73.29$). The other two groups, although faster with transparent nouns, did not show such great differences in RTs between transparent and opaque nouns. The NS group showed a mean RT on transparent nouns of 1408 msec ($SE = 53.44$) and a mean RT on opaque nouns of 1539 msec ($SE = 73.29$), and the +RG group showed a mean RT on transparent nouns of 1740 msec ($SE = 53.44$) and a mean RT on opaque nouns of 1857 msec ($SE = 73.29$).

There was also an interaction effect in the by-participants analysis of Transparency and Gender, $F_1(3, 92) = 2.85, p = .042, \eta_p^2 = .085$. Although transparent nouns were identified more quickly than opaque nouns regardless of whether the noun was masculine or feminine, transparency had a stronger effect on masculine nouns than on feminine nouns as transparent masculine nouns were identified a great deal more quickly than opaque masculine nouns ($M = 1632, SE = 27.02$ and $M = 1883, SE = 40.65$, respectively) as compared to the difference between transparent feminine nouns ($M = 1662, SE = 28.51$) and opaque feminine nouns ($M = 1785, SE = 42.70$). Finally, there was a three-way interaction effect between Congruency, Gender, and Group, $F_1(6, 184) = 3.65, p = .002, \eta_p^2 = .106, F_2(6, 216) = 3.99, p = .001, \eta_p^2 = .100$. This interaction indicated that native speakers identified feminine nouns more quickly when preceded by congruent adjectives than when preceded by neutral adjectives and more slowly when preceded by incongruent adjectives than when preceded by neutral adjectives. This pattern did not hold for the other participant groups, nor for masculine nouns. The mean RTs and standard deviations in the various noun conditions of the Gender Monitoring task can be found in Table 11.

Table 11: Mean RTs by Noun Condition in Gender Monitoring Task

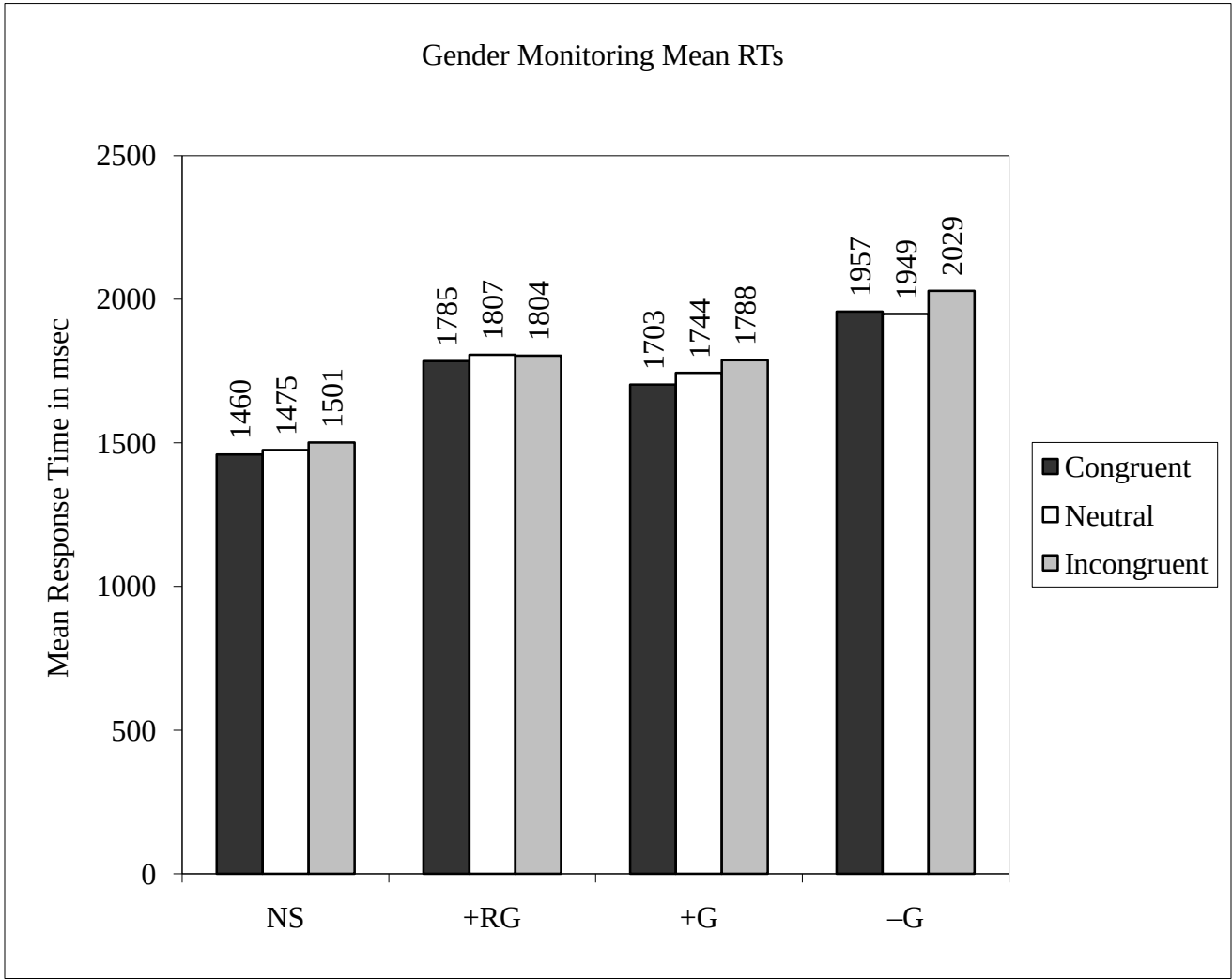
		NS <i>M (SD)</i>	+RG <i>M (SD)</i>	+G <i>M (SD)</i>	–G <i>M (SD)</i>
Congruent					
	Masculine				
	Transparent	1383 (226)	1751 (347)	1576 (220)	1791 (308)
	Opaque	1575 (517)	1779 (288)	1832 (317)	2246 (529)
	Feminine				
	Transparent	1362 (204)	1754 (361)	1595 (266)	1832 (335)
	Opaque	1521 (263)	1855 (336)	1810 (416)	1960 (395)
Neutral					
	Masculine				
	Transparent	1412 (237)	1789 (438)	1567 (232)	1781 (331)
	Opaque	1555 (254)	1939 (524)	1883 (393)	2088 (511)
	Feminine				
	Transparent	1417 (246)	1702 (317)	1671 (321)	1914 (394)
	Opaque	1518 (269)	1800 (360)	1854 (378)	2024 (360)
Incongruent					
	Masculine				
	Transparent	1415 (254)	1701 (291)	1641 (285)	1774 (409)
	Opaque	1543 (356)	1930 (452)	2064 (649)	2246 (543)
	Feminine				
	Transparent	1459 (229)	1747 (343)	1627 (237)	1862 (333)
	Opaque	1591 (380)	1837 (392)	1819 (391)	2243 (782)

Note. In each participant group $n = 24$. NS = Native Speakers; +RG = +Romance Gender group; +G = +Gender group; –G = –Gender group. All RTs in msec.

To tease apart the main effect of Congruency, paired-samples one-tailed t tests were carried out on the means of each of the four participant groups. The t tests revealed that although the NS data patterned in the right direction (i.e., Congruent faster than Neutral and Incongruent slower than Neutral) these differences did not prove significant, Congruent-Neutral: $t(23) = -.61, p = .25, d = -.21$ and Incongruent-Neutral: $t(23) = .39, p = .14, d = .16$. In the +RG data, there were no significant differences, Congruent-Neutral: $t(23) = .61, p = .24, d = .25$ and Incongruent-Neutral: $t(23) = -.10, p = .46, d = -.04$. In the +G group, the facilitation was significant (Congruent-Neutral: $t(23) = -1.78, p = .045, d = .74$) and the inhibition approached significance (Incongruent-Neutral: $t(23) = 1.17, p = .09, d$

= .49). In the –G group, the inhibition approached significance (Incongruent-Neutral: $t(23) = 1.61, p = .06, d = .67$), but there was no effect of facilitation (Congruent-Neutral: $t(23) = .15, p = .44, d = -.06$). The mean RTs found in the different participant groups in Congruent, Neutral, and Incongruent conditions can be seen in Figure 2.

Figure 3: Gender Monitoring Mean RTs



Experiment 2 Discussion

In the accuracy data of the Gender Monitoring task, significant effects of inhibition were

found. Participants were less accurate in identifying the gender of a noun when that noun was preceded by an incongruent adjective than when it was preceded by a neutral adjective. They were also more accurate in identifying the noun when it was preceded by a congruent adjective than when it was preceded by a neutral adjective, but this difference in accuracy was not significant. Interestingly, the L1 speakers of Romance languages performed slightly more accurately (although it was not significant) on the identification of the noun gender in this task than the native speakers of Italian. This surprising finding might have something to do with the +Romance Gender group being composed of language students who would be more aware of or more adept with metalinguistic tasks such as identifying a noun's gender as compared to the native speaker control group. Like the native speakers of Italian, these learners with L1 Romance gender were significantly more accurate in identifying the noun's gender than the learners who have gender in the L1 (+G group) and than the learners who do not have gender in the L1 (–G group). This similarity to native speaker accuracy is particularly evident with the opaque nouns where an interaction effect between Group and Transparency indicated greater differences in accuracy when the nouns are opaque than when they are transparent for +Gender learners and –Gender learners but not for +Romance Gender learners (and native speakers). An interaction between Congruency and Transparency indicated that participants in general were more accurate in identifying opaque nouns when they were preceded by congruent adjectives than when they were preceded by neutral adjectives and they were less accurate in identifying opaque nouns when they were preceded by incongruent adjectives than when they were preceded by neutral adjectives. This facilitation and inhibition in terms of accuracy on opaque nouns did not hold true for transparent nouns which were identified with more or less equal accuracy regardless of whether they were preceded by congruent, neutral, or incongruent adjectives.

As for the RT data, the native speaker and +G groups patterned in the right direction, that is,

they were faster in the congruent condition than in the neutral condition which in turn was faster than the incongruent condition. This facilitation and inhibition was significant (or approached significance with a medium effect size) for the +G learners but not for the native speakers. The inhibition shown among the –G learners also approached significance with a large effect size (there was no facilitation for the –G learners who were slightly slower in the congruent condition than the neutral condition). The +RG learners did not, however, show any facilitation or inhibition; in fact their mean RTs were slightly faster in the incongruent than in the neutral condition (but not significantly so). Transparency played a role in how quickly the noun’s gender was identified, with transparent nouns being identified more quickly than opaque nouns, particularly when the noun was masculine. But again, the +RG learners patterned with the native speakers in terms of RT to transparent and opaque nouns; whereas learners without Romance gender in the L1 (+G and –G groups) showed much faster RTs to transparent nouns than to opaque nouns, native speakers and L1 Romance speakers did not show such drastic differences in RTs depending on the transparency of the gender ending on the noun. Overall, native speakers were quicker in identifying the gender of the noun than the three learner groups, and the learners without gender in the L1 (–G group) were significantly slower than both of the two learner groups with gender in the L1 (+RG and +G groups) in identifying the gender of the noun. So, although the learners with non-Romance gender in the L1 (+G group) patterned like the learners without any gender in the L1 (–G group) in terms of accuracy of gender identification of the noun and importance of the transparency of the gender marking on the noun (both for accuracy of identification and for speed of response), the learners with non-Romance gender in the L1 (+G group) were similar to the learners who had Romance gender in the L1 (+RG group) in terms of overall speed of response to items in general (i.e., they were significantly faster than learners without gender in the L1 [–G group]).

CHAPTER 7 EXPERIMENT 3: GRAMMATICALITY JUDGMENT

Procedure

The Grammaticality Judgment task was created and run with E-Prime 1.0 software. For this task, participants read the following instructions on the computer screen: *Sentirai due parole. Premi il tasto a sinistra (G) se la combinazione dell'aggettivo e il sostantivo e' grammaticale (se hanno lo stesso genere grammaticale). Premi il tasto a destra (N) se la combinazione dell'aggettivo e il sostantivo non e' grammaticale (se non hanno lo stesso genere grammaticale). Rispondi il piu' velocemente e il piu' accuratamente possibile. Premi il tasto dello spazio per iniziare.* [“You will hear two words. Press the key on the left (G) if the combination of the adjective and noun is grammatical (if they have the same grammatical gender). Press the key on the right (N) if the combination of the adjective and noun is not grammatical (if they do not have the same grammatical gender). Respond as quickly and accurately as possible. Press the spacebar to begin.”] The letter A key on the left hand side of the keyboard was covered with a label with the letter G and the letter L key on the right hand side of the keyboard was covered with a label with the letter N. Learners typically asked me after reading these directions, *La G se vanno bene insieme?* [“The G if they go together well?”] or *La G se sono tutti e due maschili o tutti e due femminili?* [“The G if they are both masculine or both feminine?”]. I always responded, *Sì, giusto* [“Yes, right.”], and I indicated to them where to place their hands (with their index fingers on the A and L keys) before beginning the practice session. Like the two earlier tasks, the practice session consisted of 8 items that did not include any of the nouns or adjectives used in the experimental items. Then, there was a pause during which participants could ask the researcher questions or press the spacebar to begin the experiment.

If participants did not respond to an item, the item timed out after 5000 msec as in the Gender Monitoring task which also required metalinguistic thought. The adjective and noun in each item were

separated by 1 msec. RTs were measured from the onset of the noun to the onset of the key press. The task was carried out on a Dell PC laptop.

Data Analysis

Items in the Grammaticality Judgment task which included nouns that learners had indicated that they did not know the meaning of in the Vocabulary and Gender Test (see chapter 4) were removed before analysis, as it was assumed that learners would not be able to lexically access words that they were not familiar with; 0.62% of the data in the Grammaticality Judgment task were removed for this reason.

The Grammaticality Judgment task items were analyzed with E-Prime in terms of both accuracy of the gender identification and in terms of RTs to the items. For the accuracy analysis, the mean percentage error was calculated for each condition. As in other gender facilitation studies, only those RTs for correct items were analyzed and the data more than 2 standard deviations above or below the overall mean RT for each participant were trimmed, but not excluded (i.e., they were trimmed as equal to the cutoff value). Mixed measures ANOVAs were performed on the error data and the RT data with Congruency, Gender, and Transparency as within-participant variables and Group as a between-participant variable.

Results

Grammaticality Judgment Accuracy Data

In the mixed measures ANOVA on the accuracy data in the Grammaticality Judgment task, there was a main effect of Congruency, significant both by participants, $F_1(1, 92) = 6.38, p = .013, \eta_p^2 = .065$, and by-items, $F_2(1, 36) = 9.52, p = .004, \eta_p^2 = .209$. This main effect of Congruency was due to participants having overall more accurate responses on congruent items ($M = 91.6\%, SE = 1.0$) than on incongruent items ($M = 88.9\%, SE = .9$). (Recall that there were only two levels of

Congruency in the Grammaticality Judgment task, Congruent and Incongruent, see *Gender Facilitation and Inhibition* section, chapter 3). There was no significant main effect of Gender, $F_1(1, 92) = .000, p = .990, \eta_p^2 = .000, F_2(1, 36) = .007, p = .94, \eta_p^2 = .000$. There was, however, a main effect of Transparency significant by participants, $F_1(1, 92) = 103.23, p = .000, \eta_p^2 = .529$, and by-items, $F_2(1, 36) = 40.83, p = .000, \eta_p^2 = .531$. The main effect of Transparency was due to overall more accurate responses on transparent ($M = 95.6\%, SE = .8$) than opaque nouns ($M = 84.9\%, SE = 1.1$). There was also a main effect of Group, significant by participants, $F_1(3, 92) = 13.83, p = .000, \eta_p^2 = .311$, and by-items, $F_2(2.37, 85.22) = 22.56, p = .000, \eta_p^2 = .385$. This main effect of Group was due to an overall lower accuracy mean of the –G group ($M = 82.6\%, SE = 1.5$) than the other three groups (NS: $M = 95.4\%, SE = 1.5$; +RG: $M = 93.8\%, SE = 1.5$; +G: $M = 89.2\%, SE = 1.5$). The +G group mean accuracy was also significantly lower than the NS mean accuracy rate.

Several interactions proved significant in the accuracy data. First, there was an interaction of Congruency and Group, $F_1(3, 92) = 2.82, p = .043, \eta_p^2 = .084, F_2(3, 108) = 3.97, p = .01, \eta_p^2 = .099$. This interaction indicated that the NS group, unlike the learner groups, was actually more accurate on Incongruent items ($M = 96.6\%, SE = .8$) than on Congruent items ($M = 94.5\%, SE = 1.1$). As in the Gender Monitoring task, an interaction between Transparency and Group, $F_1(3, 92) = 17.56, p = .000, \eta_p^2 = .364, F_2(3, 108) = 12.83, p = .000, \eta_p^2 = .263$, was due to greater differences in mean accuracy rates between transparent and opaque nouns of +G and –G groups ($M = 96.5\%, SE = 1.6$ vs. $M = 82.0\%, SE = 2.1$ and $M = 93.1\%, SE = 1.6$ vs. $M = 72.1\%, SE = 2.1$, respectively) than between transparent and opaque nouns of the NS and +RG groups ($M = 95.8\%, SE = 1.6$ vs. $M = 95.0\%, SE =$

2.1 and $M = 97.0\%$, $SE = 1.6$ vs. $M = 90.5\%$, $SE = 2.1$, respectively). There was also an interaction of Congruency and Transparency, $F_1(1, 92) = 8.94$, $p = .004$, $\eta_p^2 = .089$, $F_2(1, 36) = 9.19$, $p = .004$, $\eta_p^2 = .203$, due to a greater difference between transparent and opaque nouns in the incongruent condition ($M = 95.6\%$, $SE = 1.1$ vs. $M = 82.1\%$, $SE = 1.4$) than in the congruent condition ($M = 95.6\%$, $SE = 1.0$ vs. $M = 87.7\%$, $SE = 1.2$). Finally, there was a three-way interaction between Congruency, Transparency, and Group, $F_1(3, 92) = 3.66$, $p = .015$, $\eta_p^2 = .107$, $F_2(3, 108) = 3.72$, $p = .014$, $\eta_p^2 = .094$. This interaction was due to the fact that all groups showed similar accuracy in the Congruent and Incongruent conditions when the noun was transparent, but the +G and –G groups performed more accurately in the Congruent condition ($M = 89.5\%$, $SE = 2.0$ and $M = 75.1\%$, $SE = 2.6$, respectively) than in the Incongruent condition ($M = 74.6\%$, $SE = 2.4$ and $M = 69.2\%$, $SE = 2.6$, respectively) when the noun was opaque. The NS and +RG group did not, however, show such differences in accuracy between the Congruent ($M = 94.2\%$, $SE = 1.5$ and $M = 92.0\%$, $SE = 2.1$, respectively) and the Incongruent condition ($M = 96.0\%$, $SE = 1.2$ and $M = 88.7\%$, $SE = 3.4$, respectively) when the noun was opaque. Table 12 shows the mean accuracy by noun condition for each group in the Grammaticality Judgment task and Figure 3 shows the mean percent accuracy of congruent, neutral, and incongruent items for each group.

Table 12: Mean Percent Accuracy by Noun Condition in Grammaticality Judgment Task

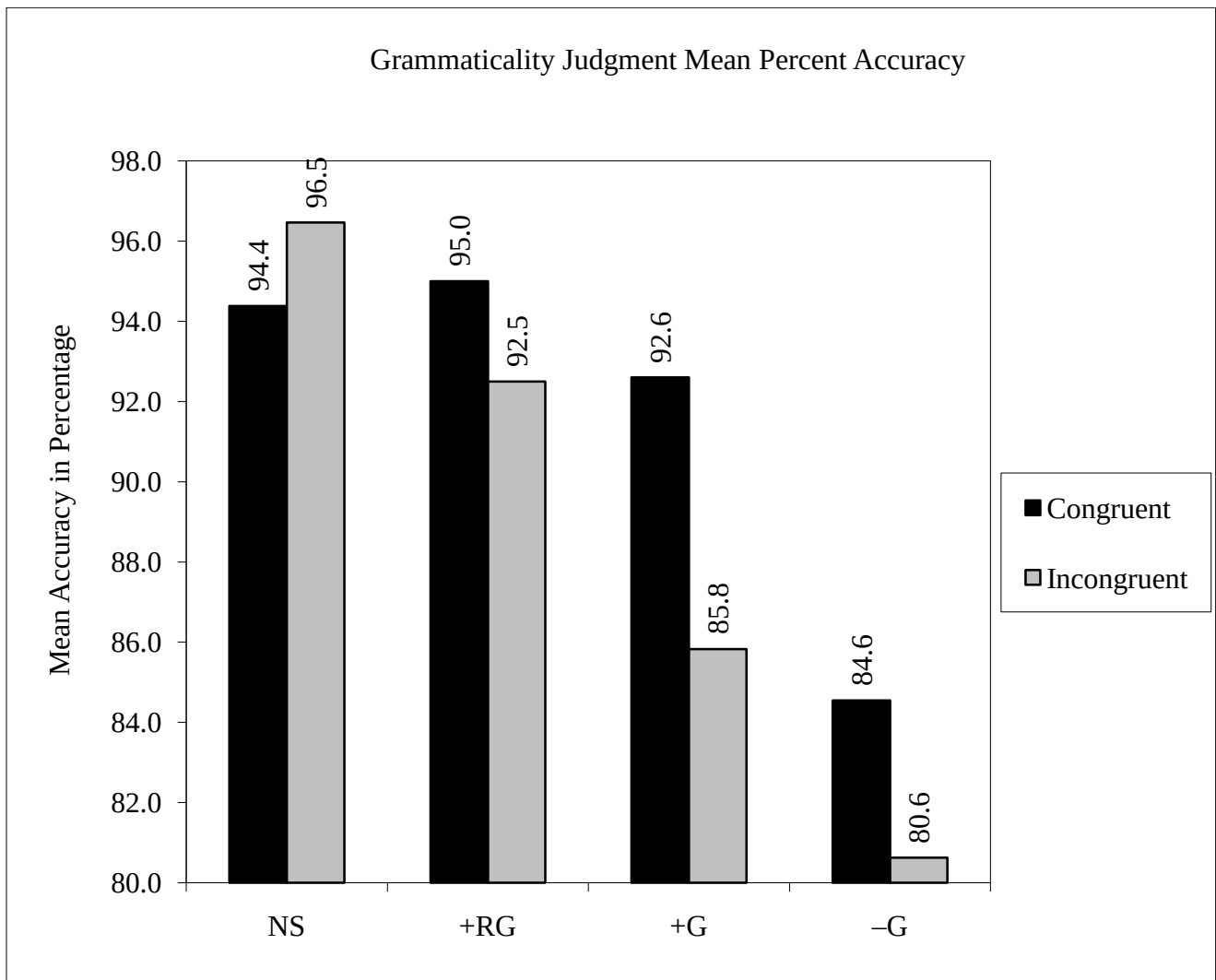
	NS <i>M % (SD)</i>	+RG <i>M % (SD)</i>	+G <i>M % (SD)</i>	–G <i>M % (SD)</i>
Congruent				
Masculine				
Transparent	95.83 (0.17)	96.67 (0.08)	95.83 (0.10)	93.33 (0.13)
Opaque	95.83 (0.10)	88.33 (0.13)	90.42 (0.15)	72.71 (0.27)
Feminine				
Transparent	93.33 (0.17)	99.17 (0.04)	95.83 (0.13)	94.79 (0.12)

Table 12 (cont'd)

Incongruent	Opaque	92.50 (0.16)	95.83 (0.08)	88.33 (0.17)	77.38 (0.27)
	Masculine				
	Transparent	95.83 (0.08)	95.63 (0.09)	96.67 (0.08)	92.50 (0.16)
	Opaque	96.67 (0.10)	82.71 (0.13)	80.42 (0.20)	74.38 (0.25)
	Feminine				
	Transparent	98.33 (0.06)	96.67 (0.10)	97.50 (0.07)	91.67 (0.21)
	Opaque	95.00 (0.11)	95.00 (0.12)	68.75 (0.28)	63.96 (0.29)

Note. In each participant group $n = 24$. NS = Native Speakers; +RG = +Romance Gender group; +G = +Gender group; -G = -Gender group.

Figure 4: Grammaticality Judgment Mean Accuracy



Grammaticality Judgment RT Data

A mixed measures ANOVA was performed on the accurate RT data in the Grammaticality Judgment task. A main effect of Congruency was found, significant both by participants, $F_1(1, 92) = 10.74, p = .001, \eta_p^2 = .105$, and by-items, $F_2(1, 36) = 11.39, p = .002, \eta_p^2 = .240$. Faster overall RTs occurred in the congruent condition ($M = 2035$ msec, $SE = 44.13$) than in the incongruent condition ($M = 2128$ msec, $SE = 45.65$). There was also a main effect of Gender, significant both by participants, $F_1(1, 92) = 11.29, p = .001, \eta_p^2 = .109$, and by-items, $F_2(1, 36) = 6.20, p = .017, \eta_p^2 = .147$. Overall, items with feminine nouns were reacted to more quickly ($M = 2036$ msec, $SE = 47.10$) than items containing masculine nouns ($M = 2126$ msec, $SE = 42.08$). A significant main effect of Transparency, $F_1(1, 92) = 108.19, p = .000, \eta_p^2 = .540, F_2(1, 36) = 68.90, p = .000, \eta_p^2 = .657$, was due to overall faster RTs on items containing transparent nouns ($M = 1937$ msec, $SE = 39.48$) than on items containing opaque nouns ($M = 2226$ msec, $SE = 49.55$). Finally, there was a main effect of Group, $F_1(3, 92) = 8.93, p = .000, \eta_p^2 = .225, F_2(3, 108) = 146.05, p = .000, \eta_p^2 = .802$. Post hoc tests revealed that the NS group's overall RT mean ($M = 1770$ msec, $SE = 85.19$) was significantly faster than that of the +G group ($M = 2106$ msec, $SE = 85.19$) and that of the -G group ($M = 2391$ msec, $SE = 85.19$). The overall mean RT of the +RG group was also significantly faster ($M = 2058$ msec, $SE = 85.19$) than that of the -G group.

There was a significant interaction of Transparency and Group, $F_1(3, 92) = 9.23, p = .000, \eta_p^2 = .231, F_2(3, 108) = 19.96, p = .000, \eta_p^2 = .357$. This interaction was due to a much greater difference in RT mean between the Transparent condition and the Opaque condition for the -G group

(mean difference = 583 msec) than for the other three groups (NS: 129 msec; +RG: 238 msec; +G: 286 msec). The interaction between Gender and Group was marginally significant in the by-participants analysis, $F_1(3, 92) = 2.34, p = .079, \eta_p^2 = .071$, and significant in the by-items analysis, $F_2(3, 108) = 2.87, p = .040, \eta_p^2 = .074$. This interaction was due to faster RTs on feminine nouns among the three learner groups, but faster RTs on masculine nouns among native speakers. Another marginally significant interaction that was found by the by-participants ANOVA (it was not significant in the by-items analysis) was between Congruency and Gender, $F_1(1, 92) = 3.70, p = .058, \eta_p^2 = .039, F_2(1, 36) = .849, p = .363, \eta_p^2 = .023$. This interaction was evidence of faster RTs on feminine nouns as compared to masculine nouns in the congruent condition (mean difference: 141 msec) than on feminine nouns as compared to masculine nouns in the incongruent condition (mean difference: 39 msec). The mean RTs and standard deviations in the various noun conditions of the Grammaticality Judgment task can be found in Table 13.

Table 13: Mean RTs by Noun Condition in Grammaticality Judgment Task

	NS <i>M (SD)</i>	+RG <i>M (SD)</i>	+G <i>M (SD)</i>	–G <i>M (SD)</i>
Congruent				
Masculine				
Transparent	1660 (337)	1967 (361)	2012 (465)	2189 (495)
Opaque	1794 (460)	2154 (442)	2237 (643)	2830 (637)
Feminine				
Transparent	1658 (435)	1801 (377)	1846 (384)	1975 (385)
Opaque	1808 (557)	1950 (376)	2119 (580)	2666 (602)
Incongruent				
Masculine				
Transparent	1746 (398)	2042 (407)	2061 (433)	2262 (554)
Opaque	1831 (262)	2304 (511)	2309 (585)	2739 (572)
Feminine				
Transparent	1735 (475)	2013 (503)	1936 (407)	2088 (470)

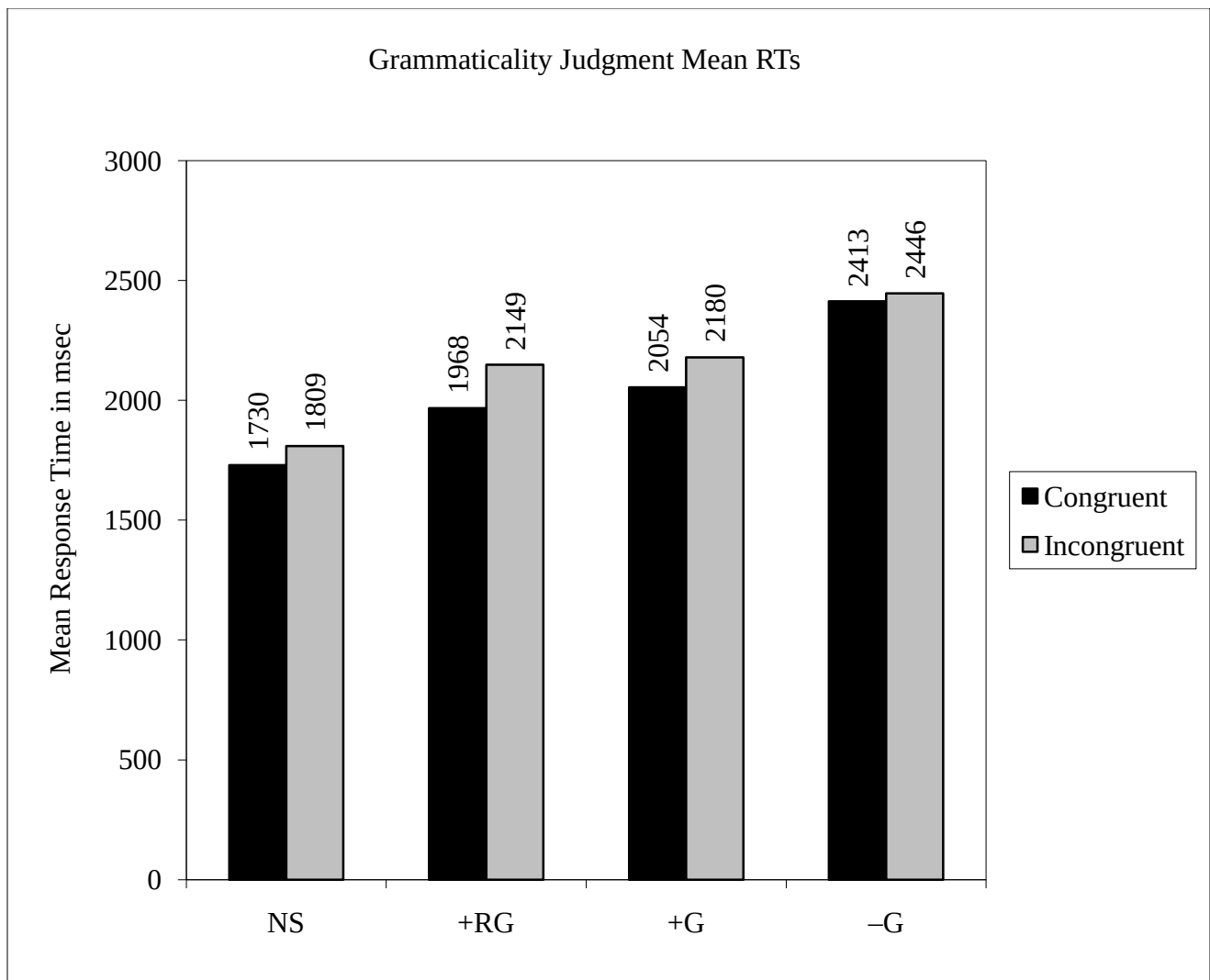
Table 13 (cont'd)

Opaque	1926 (387)	2238 (511)	2424 (785)	2720 (772)
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Note. In each participant group $n = 24$. NS = Native Speakers; +RG = +Romance Gender group; +G = +Gender group; –G = –Gender group. All RTs in msec.

In order to tease apart the main effect of Congruency, paired samples one-tailed t tests were calculated for the Congruent and Incongruent RT means of the four participant groups. The difference between RT means for Congruent and Incongruent items for the NS group was marginally significant with a large effect size, $t(23) = 1.65$, $p = .057$, $d = .69$. The difference between RT means for Congruent and Incongruent items for the +RG and +G groups was significant, $t(23) = 4.04$, $p = .000$, $d = 1.68$ and $t(23) = 1.72$, $p = .05$, $d = .72$. The faster RTs in the Congruent condition as compared to the Incongruent condition did not, however, prove significant for the –G group, $t(23) = .109$, $p = .46$, $d = .046$. Figure 3 shows the mean RTs found in the four different participant groups in Congruent and Incongruent conditions.

Figure 5: Grammaticality Judgment Mean RTs



Experiment 3 Discussion

Learners were more accurate in identifying the grammaticality of adjective-noun combinations when those combinations were congruent (i.e., correct) than when they were incongruent (i.e., wrong) (native speakers were actually less accurate on congruent items) and when the noun ended in a transparent *-o* or *-a* ending than when it ended in an opaque *-e* ending. The two groups of learners without Romance gender in the L1, that is, the *-G* group and the *+G* group were significantly less accurate than the native speakers in identifying the grammaticality of the items. The learners with Romance gender in the L1 (*+RG* group) were not, however, significantly less accurate than the native

speakers. Transparency of the noun affected the L1 Romance group (+RG group) less than it did the other two groups of learners (+G group and –G group) as well. Like native speakers of Italian, the L1 Romance speakers did not show a large difference in accuracy when the noun was opaque as compared to when it was transparent (mean difference for +RG: 6.5%; mean difference for NS: 0.8%). Learners with non-Romance gender in the L1, like learners without any gender in the L1, showed a greater effect of the transparency of the noun in the accuracy of judging the grammaticality of an adjective-noun combination (mean difference for +G: 14.5%; mean difference for –G: 21.0%). Further evidence of this importance of transparency of the noun gender for the learner group with non-Romance gender in the L1 (+G group) is found in the significant interaction of Congruency, Transparency, and Group in the Grammaticality Judgment accuracy data. In the +G group the importance of congruency between the adjective and noun when the noun is opaque is more important than it is for the +RG group; the +G group shows 14.9% improvement in accuracy in identifying the grammaticality of items with opaque nouns when the preceding adjective is congruent as to when it is incongruent. The +RG group shows only a 3.3% improvement in accuracy on opaque items due to congruency. As in the Gender Monitoring task, then, the accuracy of the learners with Romance gender in the L1 (+RG group) was quite similar to the native speakers, whereas +G and –G groups patterned similarly.

In the RT data from the Grammaticality Judgment task, participants in general responded faster to congruent items than to incongruent items, to items containing transparent nouns than to items containing opaque nouns, and to items containing feminine nouns than to items containing masculine nouns. Although it may not be appropriate to speak of these significant differences in terms of facilitation and inhibition as there was no neutral baseline in this task, it is clear that a congruent gender cue on the adjective led to faster recognition of the following noun than an incongruent gender

cue on the adjective (see other studies that have looked at gender congruency and incongruency without a neutral baseline: Bates, et al., 1996; Davidson, et al., 2011; Jakubowicz & Faussart, 1998). Jakubowicz and Faussart describe these faster RTs in noun recognition after congruent gender cues as compared to incongruent cues as a type of inhibition.

All four participant groups patterned in the right direction in terms of RT in the Grammaticality Judgment task; that is, they were all faster in the congruent condition than the incongruent condition. In terms of speed of reaction, the L1 Romance speakers were again similar to the native speakers of Italian in that the native speakers were significantly faster overall than the other two learner groups (+G and –G groups) but not significantly faster than the L1 Romance group. In terms of the effect of congruency, the native speakers and the learners with gender in the L1 (+RG and +G groups) all showed effects of congruency in the Grammaticality Judgment task (or in the words of Jakubowicz and Faussart, inhibition); they were significantly (or marginally significantly) faster in the congruent than the incongruent conditions. The faster RTs in the congruent condition than in the incongruent condition of learners without gender in the L1 (–G group) were not, however, significant. The gender of the noun was also found to have a significant effect in this task, with feminine nouns being responded to more quickly than masculine, particularly in the three learner groups and in the congruent condition.

CHAPTER 8 GENERAL DISCUSSION

The experiments in chapters 5-7 investigated gender facilitation and inhibition effects among native speakers of Italian and learners of three different L1 backgrounds: those with Romance gender in the native language, those with a gender system in the native language that is not Romance, and those with no gender in the native language. The different participant groups were included in order to have a clearer understanding of how the native language might influence any possible effects of gender facilitation or inhibition in the L2. The task in each experiment was different so as to measure different types of gender processing. The Auditory Naming task in chapter 5 was considered an automatic task that relies on implicit, less controlled processing. The Gender Monitoring task in chapter 6 and the Grammaticality Judgment task in chapter 7 were considered more metalinguistic tasks that require explicit, more controlled processing. These different tasks were included to see if L2 learners show effects of gender facilitation or inhibition in tasks that require different types of processing.

Answers to Research Questions

Research Question 1

Do L2 learners of Italian of three different L1 groups (+Romance Gender, +Gender, -Gender) show effects of gender facilitation and/or inhibition when recognizing nouns that are preceded by gender-marked adjectives?

L2 learners of Italian did show effects of gender facilitation and inhibition when recognizing nouns that were preceded by gender-marked adjectives in Italian, both in terms of accuracy and response time. Learners with non-Romance gender in the L1 (+G group) showed both facilitation and inhibition in the Gender Monitoring task in which they had to identify the gender of nouns that followed adjectives marked with gender endings that were congruent, neutral, and incongruent with

the nouns. Learners without any gender in the L1 (-G group) also showed inhibition in this same task, identifying the gender of the nouns more slowly when the adjectives carried incongruent gender markings than when the adjectives carried neutral gender markings. Learners who have gender in the L1, both those with Romance gender systems similar to that of Italian and those with gender systems different from that of Italian (+RG and +G groups), showed effects of congruency in a grammaticality judgment task that required participants to indicate whether an adjective and following noun were grammatical, that is, had the same gender.

It was predicted that only the native speaker control group and the +RG group (i.e., those learners with Romance gender in the L1) would show facilitation and inhibition when repeating the noun in the first task, Auditory Naming. Earlier studies had found that L1 English speakers learning Romance languages do not show native-like effects of facilitation and inhibition in word repetition tasks (Davidson, et al., 2011; Guillelmon & Grosjean, 2001; Lew-Williams & Fernald, 2010), and Sabourin et al. (2006) found that having a similar gender system in the L1 as that of the target language was more beneficial to learners than simply having some gender system in the L1. Therefore, it was predicted that the –Gender learners (those without any gender in the L1) and the +Gender learners (those with different gender systems from that of the L2) would not perform like native speakers in this task. Results showed, however, that there was no significant main effect of congruency found in the Auditory Naming task at all (although native speakers did show faster repetition of the noun when it was preceded by a congruent adjective than when it was preceded by a neutral adjective [i.e., nonsignificant facilitation]). Contra prediction, the native speakers and the learners of Italian who had Romance gender in the L1 did not show any significant effects of facilitation or inhibition. +Romance Gender learners were in fact slightly faster in the neutral condition ($M = 1484$ msec) than they were in the congruent condition ($M = 1489$ msec) although this

difference was not significant. As there was no main effect of congruency and the native speaker control group did not show the predicted effects, it is not appropriate to draw conclusions about the learners' lack of effects in the Auditory Naming task (see *Lack of Effects in Auditory Naming* section, this chapter).

In the Gender Monitoring task, it was predicted that all groups, both native speakers and learners would show gender inhibition in this task which calls on more controlled, explicit processing. Late learners, even those without gender in the L1, have been found to perform as well as (or in certain cases even better, Montrul, et al., 2008) than individuals who learn the language as children on tasks which require metalinguistic or grammatical knowledge about the language. It was therefore expected that all groups of learners would show effects of gender congruency, regardless of the L1. Specifically, participants were expected to show only inhibition, not facilitation, in this task which is considered a postlexical measure of processing as it involves the checking mechanism in the syntax that takes place after a word is accessed in the lexicon. The overall results of the Gender Monitoring task showed that the congruency of the adjective that preceded the noun was important to both the accuracy and the speed with which the participants responded. Significant effects of inhibition in the accuracy and response time data were found. When broken down by participant group with *t* tests, this main effect of congruency in response times was found to be due to significant effects in the +G and – G groups. Native speakers of Italian showed faster response times when adjectives with congruent gender marking preceded the nouns than when neutral adjectives preceded the nouns and slower response times when adjectives with incongruent gender marking preceded the nouns than when neutral adjectives preceded the nouns. These effects of facilitation and inhibition were not significant, though. L1 Romance speakers had faster response times in the congruent condition than in the neutral condition, but this difference was not significant, and their response times in the incongruent condition

were actually slightly (and nonsignificantly) faster than in the neutral condition. The learners of Italian with non-Romance gender in the L1 (+Gender group) and learners without gender in the L1 (–Gender group), however, both showed effects of gender inhibition. Learners in the +Gender group actually showed effects of gender facilitation, as well, although it had been predicted that no groups would show any facilitation as gender identification is considered a task that involves postlexical access checking, not the facilitation of selection of lexical competitors. It is difficult to say why the learners in the +G group showed facilitation in this task. Maybe claims that gender monitoring tasks are only postlexical measures of inhibition are mistaken; maybe gender monitoring tasks can also show effects of facilitation. As the native speaker control group did not show any gender facilitation in this task, however, it is not possible to make any claims of facilitation also being a part of gender monitoring tasks without further investigation in future studies. What is clear is that two of the learner groups showed significant or marginally significant inhibition in this task but the +Romance Gender group and the native speakers did not.

It had been predicted that in the final task, Grammaticality Judgment, all participants, learners and native speakers alike, would show effects of congruency with slower, less accurate responses on items where the adjective and noun were incongruent for gender. Bates et al. (1996) claimed that making a judgment about the grammaticality of an adjective and noun together in terms of gender was the most metalinguistic of tasks and would therefore tap into the most controlled type of processing. It was therefore assumed that even late L2 learners without gender in the L1 (i.e., the –G group) would show effects of congruency in this task which requires explicit knowledge of gender. The overall results showed that significantly faster and significantly more accurate responses occurred with congruent than with incongruent items. Breaking the results down into individual groups, it is clear that there were strong effects of congruency on the native speakers and the two learners groups with

gender in the L1 (+RG and +G groups). The learner group without any gender in the L1 (-G group), although faster in the congruent than the incongruent condition, did not show any significant difference between the two conditions. So, contrary to predictions, only those participants with some kind of gender in the L1 (native Italian, Romance, or non-Romance) showed effects of congruency in the Grammaticality Judgment task.

In summary, Research Question 1 was answered in the affirmative, learners did show effects of gender inhibition when recognizing nouns that were preceded by gender-marked adjectives. In the Gender Monitoring task, learners with non-Romance gender and learners with no gender in the L1 (+G and -G groups) showed inhibition. In the Grammaticality Judgment task learners with gender in the L1, both those with Romance gender and those with non-Romance gender (+RG and +G groups), showed effects of congruency. The finding of facilitation among learners with non-Romance gender in the L1 in the Gender Monitoring task is to be approached with caution and is in need of further investigation. Table 14 provides a summary of the findings of facilitation and inhibition in the groups.

Table 14: Summary of Facilitation and Inhibition Findings

	NS	Group		
		+RG	+G	-G
Auditory Naming	X	X	X	X
Gender Monitoring	X	X	Inhibition Facilitation (?)	Inhibition
Grammaticality Judgment	Inhibition ^a	Inhibition	Inhibition	X

Note. NS = Native Speakers; +RG = +Romance Gender group; +G = +Gender group; -G = -Gender group. Table includes only effects of facilitation and inhibition that were significant or approached significance. An X indicates that no facilitation or inhibition occurred in that task for that group.

^aThe term inhibition is used here to refer to the congruency effects in the Grammaticality Judgment task even if there was no baseline in the task (see Jakubowicz & Faussart, 1998).

Research Question 2

Does the type of task (whether it is the automatic, less controlled Auditory Naming task or the more controlled, explicit Gender Monitoring and Grammaticality Judgment tasks) affect whether or not facilitation and/or inhibition are shown?

It was predicted that all of the L2 learners with and without gender in the L1 would show effects of inhibition in the two more controlled tasks that measure explicit processing of gender, Gender Monitoring and Grammaticality Judgment. This prediction was made because previous research has found that individuals depend more on explicit knowledge in L2 learning and use than in L1 learning and use (DeKeyser, 1997, 2000; N. C. Ellis, 2005; R. Ellis, 2006; Ullman, 2001); that focused attention leads to better processing of morphosyntax in the L2 (Gass & Alvarez Torres, 2005; Gass, et al., 2003; Leow, 2001; Robinson, Mackey, Gass, & Schmidt, in press); and that late L2 learners perform in a more native-like way on tasks that require controlled or metalinguistic processing (Foote, 2011b; Montrul, et al., 2008). It was also predicted that since L2 learners are less able to use implicit knowledge of the language than L1 speakers, L2 learners without gender in the L1 (-G group) would not show effects of facilitation or inhibition in the more automatic, less controlled task of Auditory Naming. It was predicted, however, that learners with Romance gender in the L1 (+RG group) would behave more like native speakers and both the +RG and NS groups would show facilitation and inhibition in the Auditory Naming task based on such effects found among native speakers of Romance languages found in earlier studies (Bates, et al., 1996; Davidson, et al., 2011; Foote, 2011a; Guillelmon & Grosjean, 2001). Based on findings by Sabourin et al. (2006) that learners with different gender systems in the L1 perform differently, however, it was predicted that learners with non-Romance gender would not show facilitation and/or inhibition in this more automatic task.

As mentioned above, there was no facilitation or inhibition found in the Auditory Naming task. It is therefore not possible to describe the differences in facilitation and inhibition found among learners in terms of differences in the types of processing used in word repetition (Auditory Naming) as compared to identification of noun gender or judgment of adjective-noun grammaticality (Gender Monitoring and Grammaticality Judgment, respectively). The findings of this study do present some interesting differences, however, in the congruency effects that L2 learners showed between the two tasks considered the more controlled, explicit tasks.

An important difference in the findings for these two tasks is that the learners without gender in the L1 (–G group) showed effects of inhibition in the Gender Monitoring but not in the Grammaticality Judgment task. If the Grammaticality Judgment task is the more metalinguistic, more controlled of the two tasks as argued in Bates et al. (1996), it is not logical that the late L2 learners without gender in the L1 would not show significant inhibition in this task but would show it in the less metalinguistic task of Gender Monitoring. The greater inhibition shown by the –Gender group in the Gender Monitoring task would suggest that gender monitoring is actually the more controlled, more metalinguistic of the two tasks. Of course making a judgment about the grammaticality of an adjective-noun combination is postlexical in nature (like gender monitoring or lexical decision tasks) because it is not until one has accessed the noun with all of its syntactic and phonological information that one can perform the syntactic checking mechanism on the adjective and noun in the item that they can decide if it is grammatical. Grammaticality judgment nonetheless could be said to be not nearly as controlled and metalinguistic as gender monitoring where the participants have to actually think about whether only the second of the two words is a masculine or feminine noun in Italian. In grammaticality judgment, listeners have to simply use their intuition, or their “ear,” to hear if the phrase that they hear *suona bene* (“sounds good together”). In fact, further evidence for

grammaticality judgment being the more automatic of the two tasks comes from the fact that some participants asked me after reading the instructions for the Grammaticality Judgment task before starting the task, *Vuoi dire se vanno bene insieme?* (“You mean, if they go together well?”). Not wanting them to think it was a question of semantic fit of the adjective and noun, I usually responded, *Sì, giusto, se vanno bene insieme come genere.* (“Yes, right, if they go together well for gender.”). Participants could have been listening for how well the two words went together and not thinking in terms of grammaticality of gender agreement.

Moreover, the lack of significant inhibition shown by native speakers in the Gender Monitoring task could be an indication of it being the more controlled of the two tasks. During pilot testing native speakers of Italian told me that they developed a strategy of listening only for the second word in the Gender Monitoring task. It is possible that the native speakers (and possibly the L1 Romance learners [+RG group], both of whom did not show the expected significant effects of inhibition in the Gender Monitoring task) developed such a strategy here as well. In the Grammaticality Judgment task, such a strategy was not possible as they had to listen to both words to hear if they went together well or not.

It is argued then that the amount of metalinguistic knowledge and controlled processing called on by the task did play a role in the gender inhibition found in this study, but not in terms of prelexical versus postlexical measures of access. Rather, it is argued that of the two postlexical measures, gender monitoring is the measure that calls on more controlled processing and metalinguistic knowledge. Late L2 learners without gender in the L1 (–G group) showed the effects of incongruency in this more controlled measure. They did not, however, show significant effects of inhibition in the Grammaticality Judgment task where the other participants seemingly relied more on their intuition of what sounded good together.

Research Question 3

Does the transparency of the gender marking on the noun affect whether facilitation and/or inhibition occur?

The transparency of the noun ending showed robust effects in this study, particularly for the learners without Romance gender in the L1 (+G and –G groups). There was a significant main effect of transparency in all five by-participants ANOVAs run on the data. Overall, items that contained a noun with a transparent –o or –a ending were responded to more accurately and faster than items containing a noun with an opaque –e ending in the Gender Monitoring and Grammaticality Judgment tasks.

It was predicted that the transparency of the noun's gender would not have any effect in the Auditory Naming task as word repetition does not require any identification of the noun's gender or judgment of the grammaticality of the adjective and noun together and as Bates et al. did not find it to be a significant factor in the auditory naming of native Italian speakers. The Auditory Naming task in this study, however, was just full of surprises and transparency was indeed a significant factor. Nouns that were opaque were repeated faster than nouns that were transparent. It is not clear why this should have been the case. Further study is needed to investigate this finding.

It was expected that transparency would be a factor in the Gender Monitoring and Grammaticality Judgment tasks as has been found in other studies for both learners (Davidson, et al., 2011) and native speakers (Bates, et al., 1996; Bates, et al., 1995). When the results are broken down by participant group, it becomes clear that the transparency of the noun gender played an important role for the +Gender and the –G groups, but a less important role for the native speakers and the +RG group. The accuracy rates on the Gender Monitoring and Grammaticality Judgment tasks were higher when the noun was transparent than when it was opaque for learners without Romance gender in the

L1 (+G and –G groups). The accuracy rates of the learner group with Romance gender in the L1 (+RG group) were more similar to that of native speakers in that there was not as great of a difference between transparent and opaque nouns. The learners in the +G and –G groups were also faster in responding when the noun was transparent than when it was opaque in the Gender Monitoring task. The learners with Romance gender in the L1 (+RG group) and the native speakers did not show as much of a difference in response time between the transparent and opaque conditions.

The Role of L1 Gender in L2 Processing

This study found gender inhibition in the L2. Adjectives that had incongruent gender cues slowed the recognition of the following nouns in comparison to when the adjectives had no gender cues (in the Gender Monitoring task) or had congruent gender cues (in the Grammaticality Judgment task). Learners of Italian with Romance gender in the L1 performed the most similarly to native speakers, as had been predicted. Learners with no gender in the L1 performed the least similarly to the native speakers, again as had been predicted. The most interesting results come from the group for whom it was the most difficult to make predictions, that of learners with a gender system in the L1 different from that of Italian.

In some ways the +Gender group was more similar to the +Romance Gender group. The +Gender group was just as proficient as the +Romance Gender group, perhaps even more so, as they scored (nonsignificantly) higher than the +Romance Gender group on the Listening Test and they self-rated their proficiency at equal or slightly higher levels. They also knew more of the vocabulary words on the written Vocabulary Test and they were able to assign gender to the nouns in the study on the written Gender Test at statistically the same level of accuracy as the +Romance Gender learners. In addition, their overall response times were as fast as the +Romance Gender learners on the Gender Monitoring task (which was significantly faster than those of the –Gender learners) and faster than the

+Romance Gender learners on the Auditory Naming task. Finally, the +Gender group showed the same effects of incongruency in the Grammaticality Judgment task that the +Romance Gender and native speakers showed (which the –Gender learners failed to show).

But looking more closely at the data, one sees important differences between the +Gender group and the +Romance Gender group (and therefore the native speaker group). In terms of accuracy, +Romance Gender learners were not significantly different from the native speakers in the Gender Monitoring and Grammaticality Judgment tasks. The +Gender learners, like the –Gender learners, were significantly less accurate than the native speakers in identifying the gender. This finding is particularly interesting in light of the fact that the +Gender learners knew the genders of the nouns equally well as the +Romance Gender learners, as shown by the results of the written Gender Test. This difference suggests that having a similar gender system in the L1 leads to better accuracy in L2 gender processing. Another way in which the +Gender learners patterned more similarly to the –Gender learners than to the +Romance Gender learners was in the importance of transparency in gender processing. The +Gender learners and –Gender learners were influenced by the transparency of the noun both in their accuracy and the response times. Transparent nouns were responded to faster and more accurately than opaque nouns. The difference between transparent and opaque nouns was not as substantial for the +Romance Gender group and the native speakers.

One of the major findings for the +Romance Gender group was the high rates of accuracy in identifying the noun gender and judging the grammaticality of adjective-noun combinations. In fact, the +Romance Gender group was more accurate than the NS group in the Gender Monitoring task (although it was not a significant difference). Certainly the reason for this high level of accuracy in speeded tasks (as noted above, the +Gender group had a similar level of accuracy on an untimed written gender assignment task) is related to the superficial similarities of the gender systems in terms

of cognate nouns and same genders in the L1 and the L2. In order to see this more clearly, the Italian genders of the nouns used in the study were compared with the genders of the translation equivalents in the L1s of the +Romance Gender group (Spanish, Portuguese, and French) and in two of the L1s of the +Gender group. Table 15 shows the percentage of gender convergence of the Italian nouns with their equivalents in these L1s. As can be seen in the table, the percentage of nouns that have the same gender in the L1 as the gender in Italian is much greater for the three languages of the +Romance Gender group than for the two languages of the +Gender group. The full list of translation equivalents and their genders in Spanish, Portuguese, French, Russian, and German can be found in Appendices F-J.

Table 15: L1 Gender Convergence with Italian Nouns

	Same Gender (%)	Different Gender (%)
Italian - Spanish	86.7	13.3
Italian - Portuguese	90.0	10.0
Italian - French	84.2	15.8
Italian - Russian	45.8	54.2
Italian - German	40.8	59.2

Lack of Effects in Auditory Naming

Surprisingly, this study did not find reliable effects of gender facilitation or inhibition in the Auditory Naming task for native speakers, whereas other studies have found such facilitation effects for native speakers of languages with grammatical gender (Bates, et al., 1996; Davidson, et al., 2011; Foote, 2011a; Grüter, et al., 2011; Guillelmon & Grosjean, 2001). There are several reasons why this may be the case.

First, the fact that facilitation was not found in the Auditory Naming task may be due to the

fact that inhibitory effects tend to be stronger and more reliable than facilitatory effects in spoken word recognition in general (Foote, 2011a). Foote, too, found significant inhibition in her auditory naming task with Spanish native speakers and early and late learners, but the pattern of facilitation shown did not prove significant. The lack of facilitation in the Auditory Naming task provides support for autonomous models of lexical access in that the preceding sentential context (i.e., gender marking on the adjective) did not activate all of the competitors with the same gender prelexically (i.e., before lexical access). Contra Bates et al. (1996; 1995) and Guillelmon and Grosjean (2001), native speakers did not show gender facilitation effects and therefore did not seem to be accessing the gender information prelexically. So, the lack of facilitation in the Auditory Naming task may just be support for the autonomous, postlexical models of lexical access, but there are also several considerations about the study itself that must be taken into account.

A difference in auditory naming tasks in some of the other studies and the current study is that the preceding gender-marked context in which the target word appeared was an article; that is, many other studies employed a design where the noun was preceded by an article whereas the current study had the nouns preceded by adjectives. Given the frequency with which a given noun is preceded by a definite article in a language, the smaller facilitation effects seen in this study may be a simple result of the fact that L1 speakers (and learners, too) have been exposed to article-noun pairings in the language a great deal more than adjective–noun pairings and thus have developed a natural collocation between the article and noun that leads them to show greater effects than they possibly could with a randomly selected adjective, as in the words of Holmes and Dejean de la Bâtie, “individual adjectives” are typically “the least frequent associates” (1999, p. 480) (Ahmad, Alison, & Yeow-Meng, 2004; Bassano, Maillochon, & Mottet, 2008; Carroll, 1989; MacWhinney, 1978; Mariscal, 2009; Pinker, 1984; Tomasello, 2000). In fact, Lew-Williams and Fernald (2010) discuss this strong collocational

pattern between article and noun that native speakers are exposed to from infancy and give the example that “the probability of hearing *pelota* after the article *la* is just 0.002” but that “the probability of *la* preceding *pelota*—is .624, suggesting that familiar nouns and definite articles co-occur at a striking rate” (Lew-Williams & Fernald, p. 460). These “determiner-noun links develop and strengthen as a result of frequency, which may also play a role in gender and lemma activation” (Vatz, 2009, p. 35). Therefore, these more frequent collocations of article-noun may result in stronger or more activated connections between article and noun lemmas than between adjective and noun lemmas. In this study the probability of hearing a given noun (e.g., *bacio*, “kiss”) after a given adjective (e.g., *sano*, “healthy”) would certainly be a great deal lower than hearing it after the definite article (*il*, “the”). The lack of collocational fit that the nouns in this study had with their preceding gender-marked context, especially as compared to other studies where the collocation was so strong, may have affected the amount of facilitation that was shown among the native speakers.¹⁵

Another difference between this study and some earlier studies has to do with the presentation of the conditions. Guillelmon & Grosjean (2001) and Foote (2011a) divided their participants into separate groups so that half of the participants heard only the congruent and neutral conditions and the other half heard only the incongruent and neutral conditions, but none of them heard all three conditions. Perhaps separating the conditions in this way led to clearer effects of facilitation and inhibition.

The theory that the difference in the results of the Auditory Naming task is due to differences in materials or presentation of materials of this and earlier studies does not, however, explain the difference between facilitation effects found in Bates et al., (1996) and the lack of effects in this study

¹⁵ In fact, every attempt was made to avoid the possibility of certain adjective-noun collocations being processed more quickly than other less felicitous combinations by the use of random assignment of an adjective to each noun by the E-Prime software (within the constraints of congruency, gender, and transparency conditions demanded by each item).

for the Auditory Naming task. This difference in findings was particularly surprising considering the similarity in design and materials between the Bates et al. study and the current study. Both studies had native speakers of Italian living in a monolingual context (i.e., in central Italy) and nouns that were selected from the same frequency list under the same constraints of frequency, syllable length, and uniqueness point. This theory also does not explain why effects were found in the other two tasks which used the same adjectives and similar nouns presented with the three congruency conditions together.

A final possibility for the lack of effects in the Auditory Naming task is loss of data. There were more data lost from the Auditory Naming task than from the other two tasks. As explained in chapter 4, it was necessary to remove items from both the native speaker and the learner data where the participant had repeated the word incorrectly or where the voice key in the button box had tripped too early or too late. In addition, for the learner data, luck would have it that participants knew significantly fewer words in the Auditory Naming task than the other two tasks and therefore there was a greater percentage of words removed before analysis from the Auditory Naming task as compared to the other two tasks (2.12% as compared to 1.86% and 0.62%). There was no way of knowing ahead of time that the nouns in the Auditory Naming task would be less known to the learners as they had the same mean frequency as those in the other two tasks. The greater number of data lost in the Auditory Naming task could have thus contributed to the lack of significant findings.

Implications for Lexical Access Models

Unlike Bates et al. (1996) and Guillelmon and Grosjean's (2001) studies which found support for interactive models of lexical access, the current study did not find any evidence that syntactic context can influence the selection of a lexical candidate. Interactive models of lexical access are based on the idea that information from the sentential context (such as a gender cue on a preceding

adjective) can influence lexical selection of the noun prelexically, from the beginning of the word recognition process. There was no facilitation found in the Auditory Naming task in this study, however, so there is little support for the idea that the existence of a gender-marked adjective facilitated the lexical selection of the noun. The inhibition found during the Gender Monitoring task and the effects of incongruency found during the Grammaticality Judgment tasks were indicative of postlexical processes that involved the checking of the gender agreement in the syntax after the noun (with all its syntactic and phonological information) had been accessed. This lack of support for interactive models of lexical access does not entail, however, support for autonomous models of lexical access. Although it is true that autonomous models of lexical access hold that sentential context (i.e., gender of the preceding adjective) does not affect lexical selection of the noun from among competitors and can only play a role postlexically, after the noun has been recognized, the fact that significant facilitation was not found in this study does not necessarily mean that it does not exist. As described in the last section, there are a number of other explanations for why facilitation was not found in the Auditory Naming task in this study.

One important finding of this study that has implications for lexical access is that gender marking, as a form of sentential context, can slow the word recognition process in the L2 in much the same way as it does in the L1; L2 gender inhibition processes can be native-like. In particular, learners with L1 gender systems that are similar to that of the L2 show the same, if less strong, effects of gender inhibition as native speakers. Earlier word recognition studies that have found that L1 English learners of Spanish benefit from gender facilitation (Foote, 2011a; Grüter, et al., 2011) have found that these learners' facilitation was not as strong as that of the native speakers, or in the words of Grüter et al., "any processing advantage L2 learners may gain as a result of gender-marking on the determiner [/adjective] is somewhat weaker or less consistent than what can be observed in

native speakers” (2011, p. 254). The current study showed that this weaker processing advantage shown by L2 learners is even stronger and more native-like if the L2 learners have gender, especially a similar gender system, in the L1. This study showed that the learners of Italian who have Romance gender in their L1 patterned very much like the native speakers (although with slightly slower overall response times), particularly in terms of accuracy.

Even those L2 learners who did not have Romance gender in the L1 showed effects of inhibition. L2 learners, both those with and without gender in the L1 (+Gender and –Gender groups), showed inhibition in the more controlled, explicit task of Gender Monitoring. At least in postlexical tasks that involve explicit knowledge of gender agreement and controlled processing even L2 learners who have no gender in the L1 can at high enough levels of proficiency develop native-like gender processing, contra claims made by Guillelmon and Grosjean (2001). Proficiency is most likely an important factor based on earlier findings of L2 learners’ marking of gender agreement (White, et al., 2004) (and the fact that pilot testing of this study with lower proficiency learners did not find inhibition effects among L1 English learners of Italian). Task, too, plays an important role as the learners without gender in the L1 showed inhibition in what was argued in this paper to be the more controlled task of Gender Monitoring, but not in what was argued to be the more automatic, intuitive task of Grammaticality Judgment.

Having a gender system in the L1 that differs from that of the L2, as in the case of the +Gender group, also results in native-like inhibition. The +Gender group in this study showed inhibition in both the Gender Monitoring and the Grammaticality Judgment task, and even showed an unexpected effect of facilitation in the Gender Monitoring task that needs to be investigated further in future studies. So, having the gender feature in the L1, even if it is not a similar gender system, can lead to similar gender processing as that of native speakers, even in less controlled, more intuitive (albeit

postlexical) tasks like grammaticality judgment.

In summary, then the findings of this study suggest that the role of gender processing in L2 lexical access is a complicated interplay of the L1 and the type of processing that is called on by the task (and probably the level of proficiency although this was not investigated in the current study). The more similar the gender system in the learners' L1, the more native-like the gender inhibition the learners will show. The more attention-focused, metalinguistic the type of processing called on, the more native-like gender inhibition the learners will show. (And the difference in effects found between the pilot testing on lower proficiency learners and the advanced participants here suggest that the higher the proficiency level of the learners, the more native-like gender inhibition the learners will show.)

Implications for L2 Gender Acquisition

The findings of this study also have important implications for the L2 acquisition of gender agreement. As described in chapter 2, there are different theories in the generative literature as to whether L2 learners are able to ever acquire native-like syntactic representations such as gender agreement. The Representational Deficit Hypothesis (Franceschina, 2001b, 2005; Hawkins & Casillas, 2008; Tsimpli & Dimitrakopoulou, 2007) states that because of this representational deficit in the syntax, uninterpretable features not present in the L1 like gender agreement will be absent in the L2. The Morphological Underspecification Hypothesis (McCarthy, 2007) also states that there is a representational deficit but that this deficit lies not in the syntax of the L2 learners but rather in the morphology of the L2 learners. Others argue that the differences are due, not to a representational deficit in the L2, but to computational problems with the actual production of gender agreement or the realization of morphological forms (Prévost & White, 2000; Spinner & Juffs, 2008; White, et al., 2004). As these issues are not due to representational deficits in the L2, problems with gender are

related to the proficiency level of the learners and learners can in theory eventually acquire native-like gender agreement.

The results of this study provide evidence against the Representational Deficit Hypothesis. The learners of Italian who did not have gender in the L1 (the –Gender group) showed effects of inhibition on the Gender Monitoring task. The fact that learners were affected by the gender on the preceding adjective in their recognition of the noun might indicate that the learners have formed at some point a syntactic mechanism that performs the checking of grammatical agreement between the adjective and the noun. The fact that they were slower after the incongruent adjective than they were after the neutral adjective in identifying the gender of the noun implies that they might have some representation of the uninterpretable feature of gender agreement in their syntax. The Representational Deficit Hypothesis claims that L2 learners can acquire the interpretable gender feature on the noun (i.e., the ability to assign gender to a given noun) but not the uninterpretable feature of gender agreement. But if learners are sensitive to violations of gender agreement in their processing in the Gender Monitoring task, then they might have a syntactic mechanism that performs a checking agreement on the gender after lexical access has occurred, not simply the lexical category of masculine or feminine (i.e., the interpretable feature) on the noun.

The bigger picture here is that all of the learners showed some effect of the gender agreement between the adjective and the noun. It did not matter if learners had a gender system in the L1 or not, when the learners encountered violations of gender agreement in their oral comprehension of noun phrases, they slowed down. The learners without any gender in the L1 were slowed by lack of gender agreement when listening to noun phrases in the Gender Monitoring task and the learners with non-Romance gender in the L1 were slowed by the lack of gender agreement in both the Gender Monitoring and the Grammaticality Judgment tasks. They were also less accurate in responding to

items when there was a violation of gender agreement. This slower processing and lower accuracy show that all of the participants were affected by gender agreement in the noun phrase in comprehension.

This is not to say that the representation of gender in the L2 syntax is exactly equivalent to that of the L1. Learners of the L2 may not be as automatic or as fast as native speakers, and those learners who lack gender in the L1 perform less similarly to native speakers than those learners who have some non-Romance gender system in the L1, who, in turn, perform less similarly to native speakers than those who have Romance gender in the L1. Yet, if learners without gender in the L1 had no representation of gender at all in the syntax, there would not have been any effects of inhibition among the –Gender group in the Gender Monitoring task.

The issue of where the gender problem lies for L2 learners cannot be simplified into terms of whether learners who do not have the gender feature in the L1 will ever have the representation in the L2. At the same time it cannot be resolved solely by claiming the existence of communication pressures and processing constraints that lead to errors in the computation of gender agreement in production. Certainly, communication pressures and processing constraints can add to the problem of marking gender agreement in an L2 while dealing with the myriad of other challenges of producing language in an L2, but the differences of L1 and L2 gender agreement exist not just in production but in comprehension as well (Foote, 2011b; Grüter, et al., 2011; McCarthy, 2008). The representation of gender in the syntax that L2 learners without gender in the L1 have is not entirely native-like as found by the overall slower response times, the lower accuracy, and the lack of inhibition in the more automatic task of Grammaticality Judgment, but then neither is the representation of gender in the syntax of the L2 learners *with* gender in the L1 (the +Gender group, who should have the uninterpretable feature in the syntax according to the Representational Deficit Hypothesis) as they too

showed differences from the native speakers in this study.

This study also provides support for Sabourin et al.'s (2006) conclusion that having a superficially similar gender system in the L1 is more beneficial to L2 learners than simply having the deep structure (or syntactic uninterpretable feature) of gender in the L1. It was evident that the +Romance Gender learners performed more similarly to native speakers than the +Gender learners, especially in terms of accuracy and the effect of noun transparency.

Returning to the question of gender assignment versus gender agreement (see chapter 2), this study is important because it suggests that the difference between the native speakers (along with the Romance gender learners) and the two groups without Romance gender in the L1 (the +Gender and the –Gender groups) could be a problem with gender assignment more than with gender agreement. The fact that the learners without Romance gender were noticeably slower and less accurate in identifying the gender of the noun or the grammaticality of the noun phrase when the noun was not transparently marked for gender suggests that these learners may not have formed the interpretable feature on those nouns that end in *–e* as well as those that end in *–o* or *–a*. Learners are easily able to assign the lexical gender feature to nouns that carry a reliable cue to gender, but are less able to assign gender to those nouns which do not. The learners with Romance gender in the L1, on the other hand, do not show the same sensitivity to transparency and thus the same problem with gender assignment, undoubtedly because of the high number of cognates with the same gender in the L1 and in Italian (see *The Role of L1 Gender in L2 Processing* section, this chapter, and Appendices F-J). The question of transparent versus opaque nouns as considered in this study is interesting because it could indicate a problem with gender assignment among L2 learners, as compared to gender agreement. When L2 learners know the gender of a given noun (in the case of transparent nouns), they are affected by the lack of gender agreement in the noun phrase. Quite logically, when they cannot assign the correct

gender to a given noun, they are less affected by the lack of agreement in the noun phrase.

L2 gender acquisition is not simply a matter of having it or not having it. As claimed above, it is a complex interplay of factors such as L1, proficiency level, type of task, and transparency of gender marking.

CHAPTER 9 CONCLUSION

Limitations and Suggestions for Further Research

There were several limitations in this study. First, the loss of data in the Auditory Naming task could have affected the lack of facilitation and inhibition effects in that task. As described in the last chapter, the lack of facilitation in the Auditory Naming task should not necessarily be attributed to the autonomous nature of lexical access in spoken word recognition, as Bates et al. found support for interactive models of lexical access with similar materials. The relatively small number of items in each task (40) may not have been able to counterbalance the loss of data because of the sensitivity of the voice key in the E-Prime button box. Future studies should include more items so as to counterbalance this loss.

Loss of items also occurred because learners did not know all of the nouns used in the study (particularly in the Auditory Naming task, unfortunately). Words such as *cornice* “frame,” *carcere* “prison,” and *cantiere* “construction site,” were marked as unknown in the Vocabulary Test by many learners. The nouns were taken from the same frequency corpus, at approximately the same level of frequency, as the nouns used in the Bates et al. (1996) study. The participants in the Bates et al. study were native speakers of Italian, however, and it is possible that the learners in the current study may not have been at an advanced enough level of proficiency (in spite of the measures taken to ensure that they were close to ultimate attainment) to have recognized some of the lower frequency items. This could be compounded by the fact that most of the learners were not permanent residents in Italy, but had come to Perugia to study Italian in the months preceding the data collection. Having had much of their language learning experience in a foreign language classroom in their home countries (as compared to naturalistic learners in an immersion setting), it is possible that they had not been exposed to some of the vocabulary words that are not a typical part of a foreign language class (see Gallina,

2010 for differences in vocabulary between learners in and outside Italy). This hypothesis gains further support when one considers that all learners indicated that they knew the noun *mare* (“sea”) well, whereas only 77.78% of participants indicated that they knew the noun *carcere* (“prison”) in spite of the fact that the two words are similar in frequency among native speakers in spoken Italian according to the LIP Corpus (De Mauro, et al., 1993). In fact, *carcere* is slightly more frequent (56 as compared to 53 per 490,000 words). One can imagine that discussions of *il mare* would be more commonplace in a foreign language classroom (e.g., in units about vacations or pastimes that Italians enjoy) than discussions of *il carcere*, particularly in lower level classes. In order to reduce the number of data that must be removed, future studies should use vocabulary words that would be more familiar to L2 learners, possibly by selecting words that have higher frequency ratings or by using academic corpora or L2 textbooks to find the nouns. Or, future studies should use participants who have lived for a significant amount of time in the L2 environment and therefore would be more familiar with the words used. This option would of course limit the number of participants and therefore the generalizability of the findings, though.

Another limitation of this study was that the Vocabulary and Gender Test was a written test. Spoken vocabulary and gender tests would have been better since this was a test of spoken word recognition and proficiency level was ensured through a listening test. Some words, in fact, might have been recognized orally but not visually. For example, the noun *chilo* (“kilo”) was not recognized by 5 participants (4 +RG participants and 1 –G participant). This word, a cognate in the other Romance languages (see Appendices F-H), would have been better recognized when heard spoken but was not recognized most likely because of orthographic differences in the languages.

This study found effects of facilitation that approached significance among the learners with non-Romance gender in the L1 in the Gender Monitoring task. This finding was unexpected because

gender monitoring is considered a measure of the processing that takes place postlexically. There should therefore be no facilitation found as facilitation is a prelexical phenomenon. It is possible that gender monitoring is not a strictly postlexical process. The role of facilitation in controlled processing tasks such as gender monitoring or lexical decision should be investigated further.

Another area in gender facilitation and inhibition studies that merits further investigation is how the gender of the noun affects the response times of both learners and native speakers. Gender frequently has a significant main effect in the ANOVAs run on the data, but no one has adequately explained why this should be the case. Earlier studies have found faster response times to feminine nouns (Bates, et al., 1996; Colé, et al., 2003; Foote, 2011a), but this study found faster response times to masculine nouns than to feminine nouns in the Auditory Naming task and faster response times to feminine nouns than to masculine nouns in the Grammaticality Judgment task. Is it simply a matter of measurable but nonsignificant differences in the stimuli (as reasoned by Bates et al.) or could the gender of the noun actually play some role in how quickly it is accessed? It may be that there are fewer feminine than masculine nouns in Italian and this inequality results in faster recognition of feminine nouns. Similarly, the fact that masculine is a default gender for learners of Romance languages as found here in the written Vocabulary and Gender Test and as has been found in other studies might play a role in the faster recognition of feminine nouns that has been found in most studies. Further investigation is needed.

This study found that the gender processing of L2 learners involves a complex interplay of factors such as the similarity of gender system of the L1, the proficiency level of the learner, and the type of processing called on by the task. The learners in this study were all advanced learners of Italian (mostly C1 and C2 on the CEFR), but earlier studies (Sagarra & Herschensohn, 2011; White, et al., 2004) have found proficiency to be a significant factor in the native-likeness of gender agreement

processing, in the case of the White et al. study, trumping even the role of the L1 (native French and English learners of Spanish performed similarly at lower levels of proficiency). It is therefore necessary to understand better what role proficiency plays in the amount of gender facilitation and inhibition shown in L2 spoken word recognition and how it is related to the L1 of the learner and the type of processing measured by the task.

In conclusion, this study found that L2 learners of Italian showed effects of gender congruency in spoken word recognition tasks. Native speakers and learners in three different L1 groups (those with Romance gender in the L1, those with non-Romance gender in the L1, and those without gender in the L1) listened to nouns preceded by gender-congruent, neutral, and incongruent adjectives in three tasks that differed in the amount of controlled processing required. In the most automatic task, the Auditory Naming task, where participants only repeated the noun, no effects of gender congruency were found. In the more controlled Gender Monitoring task, the learners with non-Romance gender in the L1 and the learners without any gender in the L1 showed slower response times when identifying the gender of nouns preceded by incongruent gender-marked adjectives than when identifying the gender of nouns preceded by neutral gender-marked adjectives. In the Grammaticality Judgment task, the native speakers, the learners with Romance gender in the L1, and the learners with non-Romance gender in the L1 were slower in indicating the grammaticality of an adjective-noun combination when the adjective was incongruently marked for gender than when it was congruently marked for gender with the noun. Learners with Romance gender in the L1 were most similar to native speakers in their gender processing, especially in terms of accuracy and of inhibition effects in the Grammaticality Judgment task. Learners with non-Romance gender in the L1 performed more similarly to the learners without gender in the L1, especially in terms of inhibition in the controlled processing task of Gender Monitoring and in terms of the effect of the transparency of the noun gender on accuracy and response

time. It was argued that the Grammaticality Judgment task, rather than being the most controlled of the tasks calling on the most explicit of knowledge was actually less controlled than the Gender Monitoring in which metalinguistic knowledge and focused attention is necessary to identify the noun gender. In grammaticality judgment, learners and native speakers are able to rely on intuition and sense of what sounds grammatical and is therefore the more automatic of the two tasks. It was also argued that L2 learners without the syntactic feature of gender in the L1 can form such a feature in the L2 in contradiction to what is argued by the Representational Deficit Hypothesis. The existence of inhibition in gender monitoring proves that L2 learners without the gender feature in the L1 have the postlexical agreement checking mechanism in their L2 syntax. Gender processing in the L2 is a complex interplay of L1 gender, proficiency level, and type of processing required by the spoken word recognition task.

APPENDICES

Appendix A: Nouns Used in Study

Table 16: Nouns

	Nouns					
	Auditory Naming		Gender Monitoring		Grammaticality Judgment	
Masculine Transparent	lato	giudizio	paio	controllo	passo	popolo
	resto	processo	letto	romanzo	gioco	principio
	chilo	progetto	corpo	concetto	grado	mercato
	dato	reddito	luogo	biglietto	campo	linguaggio
	ruolo	regalo	prodotto	minimo	bacio	passaggio
Masculine Opaque	nome	parere	mese	regime	male	dovere
	monte	cartone	pane	confine	piede	carcere
	cuore	locale	mare	cognome	caffè	limite
	bene	mobile	canone	colore	canale	cotone
	termine	dolore	natale	cantiere	codice	potere
Feminine Transparent	causa	chiamata	giunta	campagna	pasta	partita
	prova	presenza	porta	richiesta	testa	moneta
	lotta	materia	palla	misura	banca	lettura
	lega	battaglia	media	battuta	chiesa	notizia
	piazza	natura	pratica	qualità	data	cucina
Feminine Opaque	legge	gestione	notte	corrente	luce	pace
	corte	ragione	gente	lezione	croce	tensione
	mente	morale	carne	canzone	base	pensione
	chiave	nazione	nave	mozione	morte	regione
	rete	cornice	neve	pressione	classe	missione

Appendix B: Adjectives Used in Study

Table 17: Adjectives

Opaque (Neutral Condition)	Transparent (Congruent and Incongruent Conditions)
felice	doppio
dolce	largo
triste	lieto
grave	lento
breve	caldo
lieve	puro
pesante	ricco
recente	duro
giovane	sano
simile	vasto
	tipico
	rapido
	corretto
	tremendo
	moderno
	perfetto
	estremo
	concreto
	classico
	cattivo

Appendix C: Background Questionnaire

Questionario

1. Numero del Partecipante: _____ 2. Genere: M___ F___ 3. Età: _____
4. Madre Lingua (cioè, Prima Lingua): _____
5. Hai qualche difetto di pronuncia o problemi di udito? Yes _____ No _____
Se sì, per piacere descrivere: _____
6. Quanti anni hai studiato l'italiano?
Scuola Elementare/Media _____ Università _____
Scuola Superiore (Liceo) _____ Scuola di Lingue Privata/Tutoring _____
7. Quali corsi di lingua italiana hai frequentato?

8. A quale età hai iniziato ad imparare l'italiano? _____
9. Hai fatto il CELI? Quale livello? Hai passato l'esame? Quando? _____
10. Oltre all'italiano, quale altre lingue straniere hai studiato? (Per piacere elencare le lingue studiate, il numero di anni di studio ed il livello raggiunto.)

11. Da quando sei in Italia? _____
Lavori in Italia? Per cortesia spiegare. _____
Vivi insieme a persone italiane? _____
12. Quale è il tuo livello in italiano? (Selezionare una risposta per ogni categoria.)

Ascolto:	Principiante	Medio/Basso	Medio	Medio/Alto	Avanzato
Parlato:	Principiante	Medio/Basso	Medio	Medio/Alto	Avanzato
Lettura:	Principiante	Medio/Basso	Medio	Medio/Alto	Avanzato
Scrittura:	Principiante	Medio/Basso	Medio	Medio/Alto	Avanzato

Grazie.

TUTTE LE INFORMAZIONI RIMARRANNO CONFIDENZIALI

Translation:

Background Questionnaire

1. Participant Number: _____ 2. Gender: M___ F___ 3. Age: _____
4. Native Language (i.e., First Language): _____
5. Do you have any speech or hearing disorders? (circle one) Yes _____ No _____
If yes, please describe: _____
6. Are you right-handed or left-handed? _____
7. How many years have you studied Italian in the following environments?

Elementary/Middle School_____ College_____

High School_____ Private Language School/Tutoring_____

8. What Italian language courses have you taken?

9. At what age did you start to learn Italian? _____

10. Have you taken the CELI? What level? Did you pass? When? _____

11. Besides Italian, what other foreign languages have you studied? (Please write languages, number of years studied, and proficiency.)

12. How long have you been in Italy? _____

Do you work in Italy? Please explain. _____

Do you live with Italian people? _____

13. How would you assess your proficiency in Italian? (Circle one for each category.)

Listening:	Beginner	Low Intermediate	Intermediate	High Int.	Advanced
Speaking:	Beginner	Low Intermediate	Intermediate	High Int.	Advanced
Reading:	Beginner	Low Intermediate	Intermediate	High Int.	Advanced
Writing:	Beginner	Low Intermediate	Intermediate	High Int.	Advanced

Thank you.

ALL INFORMATION WILL REMAIN CONFIDENTIAL

Appendix D: Transcript of Listening Test with English Translation

Transcript—Original:

Prima unita' di esercitazione per il conseguimento del CELI 3 – Certificato di conoscenza della lingua italiana Livello 3. Prova di comprensione dell'ascolto. Il candidato ha un minuto di tempo a sua disposizione per scorrere brevemente i test proposti nel fascicolo. Inizio della prova.

D1. Primo testo

Ascolterete ora un'intervista che tratta dell'importanza dello sport nella crescita dei bambini. Ascoltate attentamente e svolgete l'attività indicata nel foglio. Il testo va ascoltato due volte.

Per far crescere meglio i bambini, per evitare il rischio di aumenti di peso, per uno sviluppo armonico l'attività sportiva è fondamentale, ma bisogna che i genitori considerino alcuni principi fondamentali. I consigli vengono dal professor Pietro Ferrara.

<<Professore, ci sono sport che meglio di altri favoriscono la crescita dei bambini?>>

<<No, vanno tutti bene, purché coerenti alla maturazione psico-fisica del bambino.

Contrariamente a quanto si pensava in passato infatti, anche il tennis o la scherma possono essere tranquillamente praticati. Certo per i più piccoli sono da preferire gli sport di squadra, perché più formativi. L'elemento del divertimento va assolutamente preservato. >>

<<Nell'età evolutiva, quante ore settimanali è bene prevedere per una corretta pratica sportiva?>>

<<A sei anni bastano due sedute settimanali della durata di circa un'ora ciascuna. Tra gli otto ed i dieci anni invece, tre sedute della stessa durata o poco più. Non va mai sottratto tempo al gioco, e lo sport non deve diventare un lavoro.>>

<<I genitori quali altre attenzioni devono avere verso un figlio che pratica sport?>>

<<Beh, innanzi tutto il bambino va incoraggiato ad assumere uno stile di vita dinamico e non statico - per intenderci, quello tipico di chi sta davanti alla TV o al computer - e non bisogna dimenticare di affidarlo sempre a mani esperte, assecondando le sue esigenze e i suoi gusti.>>

<<Quale è la dieta da consigliare?>>

<<Dopo l'attività fisica l'organismo richiede cibi come frutta fresca, succhi di frutta, fette biscottate, con o senza marmellata. Insomma, alimenti con una percentuale di liquidi molto alta per garantire il reintegro delle perdite idriche e dei minerali consumati.>>

<<Dinamicità, abitudini alimentari sane, equilibrio psico-fisico: cose che il bambino si ritroverà da adulto.>>

<<L'attività fisica a partire dai cinque anni, insieme ad una corretta alimentazione, influisce positivamente sulla crescita. Infatti agli importanti benefici fisici sono da aggiungere una migliore socializzazione ed un maggiore equilibrio psichico. Inoltre la pratica sportiva è fondamentale per la buona salute, tanto da avere un ruolo importante nella prevenzione di malattie dell'età adulta. Dunque lo sport per i bambini va benissimo, purché però si rispetti l'evoluzione dell'individuo. Per il bambino significa educare senza smettere di giocare.>>

Original Questions in Text Booklet:

1. Quali sport aiutano meglio di altri i bambini a crescere bene?

- A. Solo gli sport di squadra
- B. Meglio il tennis e la scherma
- C. Sport con certe caratteristiche

- D. Gli sport piu' divertenti
- 2. Quanto tempo un bambino deve dedicare alla pratica sportiva?
 - A. Varia a seconda dell'età del bambino
 - B. Non meno di tre volte alla settimana
 - C. Tutto il tempo che ha a disposizione
 - D. Lo stesso tempo che dedica ai giochi
- 3. Che attenzioni particolari devono avere i genitori verso il figlio?
 - A. Devono spingerlo a fare molto sport
 - B. Devono seguire le sue preferenze
 - C. Devono vietargli di giocare con il computer
 - D. Devono sempre accompagnarlo personalmente
- 4. Quali cibi sono consigliati dopo aver fatto sport?
 - A. Cibi molto nutrienti
 - B. Cibi ricchi di liquidi
 - C. Solo frutta e verdura
 - D. Alimenti con zuccheri
- 5. In definitiva lo sport per i bambini
 - A. può essere iniziato a qualsiasi età
 - B. cura alcune malattie dell'infanzia
 - C. può essere un sostituto dei giochi
 - D. aiuta la loro crescita fisica e psichica

Transcript—English Translation:

*First unit of practice for the CELI 3 – Certificate of Knowledge of the Italian Language Level 3
Listening comprehension test. The candidate has one minute to briefly review the proposed tests.
Beginning of the test.*

D1.

You will now listen to an interview on the importance of sports for child development. Please listen carefully and follow the directions listed in the test booklet. You will listen to the text two times.

In order to improve children's growth, in order to avoid the risk of weight gain, and for healthy development practicing sport is fundamental, but it is also necessary that parents take some fundamental principles into account. The following suggestions are given by professor Pietro Ferrara.

"Professor, are there any sports that help children grow better than others?"

"No, all of them are fine, as long as they are consistent with the mental and physical development of the child. In fact, unlike what was believed in the past, even tennis or fencing can be considered suitable activities. Of course for younger children team sports should be preferred, since they are more formative."

"During childhood, how many hours per week are appropriate for correctly practicing sports?"

"For a six-year-old child two times per week about one hour each can be considered appropriate. Between eight and ten years of age, three times per week again of the same duration or slightly more. Never subtract playing time, and sport should never become like a job."

"What should parents do who have a child practicing sports?"

“Well, first of all the child should be encouraged to have a dynamic lifestyle and not a static one – that is to say, the lifestyle of someone who is always watching TV or using the computer – and they shouldn’t forget to place him/her in the hands of an expert coach, complying with his/her wishes, and what he/she likes.”

“What is the suggested diet?”

“After physical activity our body requires foods like fresh fruit, fruit juices, and toast with or without jam. That is to say, foods with very high percentages of liquids to ensure the restoration of fluids and minerals.”

“Being active, healthy eating habits, psychological-physical equilibrium, these are things that a child will maintain in his adult life.”

“Physical activity starting at 5 years of age, together with a healthy diet, positively influences growth. As a matter of fact, to the important physical benefits, we can add better socialization and a better psychological equilibrium. Moreover, the practice of sport is fundamental for good health, so much so as to have an important role in the prevention of disease in adulthood. So, sports for children are great so long as the individual’s development is respected. For the child it means learning without giving up play.”

Questions in Text Booklet:

1. What sports help children to grow?
 - A. Only team sports
 - B. Tennis and fencing are the best
 - C. Sports with certain characteristics
 - D. The sports that are the most fun
2. How much time should a child dedicate to the practice of a sport?
 - A. It varies according to the age of the child
 - B. No fewer than three times a week
 - C. All the time he/she has available
 - D. The same time that he/she dedicates to play
3. What in particular should parents do with the child?
 - A. They should push him/her to do a lot of sport
 - B. They should follow his/her preferences
 - C. They should forbid him/her from using the computer
 - D. They should always accompany him/her personally
4. What foods are advised for after having practiced a sport?
 - A. Very nutritious foods
 - B. Foods rich in liquids
 - C. Only fruits and vegetables
 - D. Sugary foods
5. In summary, sports for children
 - A. can be started at any age
 - B. cure some childhood diseases
 - C. can be a substitute for play
 - D. help their physical and psychological growth

D2. Secondo testo

Ascolterete ora un’intervista che tratta di viaggi. Ascoltate attentamente e svolgete l’attività indicata nel foglio. Il testo va ascoltato due volte.

Per la nostra rubrica dal titolo “Il Viaggiatore”, oggi intervistiamo la Signora Angela, che ci racconterà della sua grande passione per l’Africa e dei suoi tanti viaggi fatti in questo continente.

<<Signora Angela, buongiorno e grazie per essere qui con noi.>>

<<Buongiorno anche a voi, e grazie dell’invito.>>

<< Lei ha quarantacinque anni, è di Roma, e ha all’attivo tanti viaggi che presto aumenteranno. Ma la cosa che ci ha incuriosito, e di cui vorremmo parlare con lei, riguarda le mete dei suoi viaggi, perché non sono quelle scelte normalmente dal turismo di massa. Lei infatti ha viaggiato esclusivamente in Africa, e anche l’ultimo suo viaggio è stato là. Ci può raccontare come è nata questa sua passione? Prego, a lei la parola.>>

<<Sì, grazie. Io sono una libera professionista, e fortunatamente il mio lavoro mi permette di prendermi dei lunghi periodi di vacanza senza dover chiedere il permesso a nessuno. Non so come sia nata questa mia passione. Probabilmente è stato un fatto naturale, perché io viaggio sin da quando ero piccola, con mio padre. Lui si doveva spostare continuamente a causa del suo lavoro. L’azienda per cui lavorava lo mandava spesso in Africa, e dato che mia madre invece era casalinga, lo seguiva portando via anche me e mio fratello. La prima volta che sono partita con loro avevo quattro anni; mio padre doveva andare in Mozambico per tre mesi. Io non ho dei ricordi ben definiti di quel primo viaggio perché ero troppo piccola, però mi ricordo che avevo paura dell’aereo, ma non fu difficile superarla. Dopo quella prima volta sono tornata tante altre volte in Africa con loro, e successivamente ho continuato a farlo da sola.>>

<<Ci può spiegare cos’è che la spingeva a tornarci?>>

<<Non è facile da spiegare. Sentivo che dovevo farlo. Si dice che esiste il così detto “mal d’Africa”, e io ne sono stata sicuramente contagiata. Ci sono tornata innumerevoli volte. Avevo nostalgia dei profumi, dei sapori, dei colori, dei panorami, dei silenzi, e della gente. Sentivo che ci dovevo andare e ogni volta è stato meraviglioso. Ho conosciuto tantissime persone che probabilmente non rivedrò più, ma che ricorderò per sempre. Certo, non è tutto perfetto o tutto bello, anche lì ci sono problemi e anche io ne ho avuti, ma secondo me l’Africa è magica.>>

<<Ha mai pensato di stabilirsi in Africa definitivamente, magari in futuro?>>

<<Per la verità ci ho pensato spesso, ma fino ad oggi ogni volta che ho preso in considerazione questa possibilità alla fine l’ho scartata. Oltre a dover lasciare il mio lavoro, che mi permette di vivere, dovrei lasciare qui degli affetti che mi mancherebbero troppo. Ora ho un compagno con il quale voglio costruire un futuro, e poi amo immensamente l’Italia. Ci sono nata e amo tornarci ogni volta che ne sono lontana. E’ casa mia, però chissà, mai dire mai.>>

Original Questions in Text Booklet:

6. L’intervistatore è incuriosito

- A. dalle mete scelte dal turismo di massa
- B. dall’ultimo viaggio fatto da Angela
- C. dall’aumento del numero di viaggiatori
- D. dai luoghi scelti dalla signora

7. Il lavoro di Angela

- A. ha a che fare con i viaggi
- B. le lascia molto tempo libero
- C. è legato a quello di suo padre
- D. è per lei una passione

8. Il suo primo viaggio in Africa

- A. è stato organizzato in tre mesi

- B. non le ha lasciato nessun ricordo
 - C. è stato fatto con la famiglia
 - D. non è stato per niente facile
9. Angela torna sempre in Africa perché
- A. ama tutto di quel continente
 - B. lì non ha mai avuto problemi
 - C. vuole rivedere gente conosciuta
 - D. per lei non c'è niente di brutto
10. Nel futuro di Angela c'è
- A. una vita con il suo compagno
 - B. un viaggio per visitare l'Italia
 - C. una svolta nel suo lavoro
 - D. un trasferimento in Africa

Transcript—English Translation:

You will now listen to an interview about travel. Please listen carefully and follow the directions listed in the test booklet. You will listen to the text two times.

For our show called "The Traveler," today we interview Ms. Angela, who will tell us about her great passion for Africa and about her many trips to this continent.

"Ms. Angela, good morning and thank you for being here with us."

"Good morning to you too, and thank you for inviting me."

"You are forty five years old, you are from Rome, have traveled a lot and will soon travel more. But the thing that surprised us, which is the subject of our conversation today, is the destinations of your trips, since they are not the ones normally chosen by mass tourism. In fact you have traveled only in Africa, and even your last trip was there. Could you please tell us how this passion of yours started? Please, go ahead."

"Yes, thank you. I work free lance, and fortunately my job allows me to take long vacations without having to ask anyone. I don't know how this passion of mine started. It was probably a natural consequence, because I have traveled since I was a little child, with my father. He had to continuously travel for work. The company he was working for used to often send him to Africa, and since my mother was a housewife, she would go with him and take me and my brother too. The first time I went with them I was four years old; my father had to go to Mozambique for three months. I don't have clear memories of that first trip because I was too young, but I remember I was afraid of flying, but it wasn't hard to overcome the fear. After that first time I went back to Africa with them many other times, and afterwards I kept on going by myself."

"Could you explain to us what was that motivated you to go back?"

"It is not easy to explain. I knew I had to go. They say that there is the so-called "Africa bug," I have surely caught it. I have been there countless times. I was homesick for the scents, tastes, colors, landscapes, silences, and people. I felt I had to go and every time it was wonderful. I met a lot of people that I will probably never see again, but that I will remember forever. Of course, it is not like everything is perfect or everything is always great, there are problems there too and I too have had them, but in my opinion Africa is magical."

"Have you ever thought about moving to Africa permanently, maybe in the future?"

"To be honest I thought about it many times, but up to now each time I have considered such a possibility in the end I decided against it. In addition to having to quit my job, I would have to

leave here some people I love, and I would miss them too much. Now I have partner with whom I want to build a future, and besides I love Italy with all my heart. I was born here, and I love coming back to Italy each time I am far away. It is my home, but who knows, never say never."

Questions in Text Booklet:

6. *The interviewer is surprised by*
 - A. *the destinations chosen by mass tourism*
 - B. *the last trip taken by Angela*
 - C. *the increase in the number of travelers*
 - D. *the places chosen by Ms. Angela*
7. *Angela's job*
 - A. *deals with travel*
 - B. *leaves her a lot of free time*
 - C. *is linked to that of her father*
 - D. *is a passion for her*
8. *Her first trip to Africa*
 - A. *was organized in three months*
 - B. *did not leave her any memories*
 - C. *was done with her family*
 - D. *was not easy at all*
9. *Angela always goes back to Africa because*
 - A. *she loves everything about that continent*
 - B. *she never had any problems there*
 - C. *she wants to see again people she knows*
 - D. *there is nothing bad about Africa*
10. *In Angela's future there is*
 - A. *a life together with her partner*
 - B. *a trip to visit Italy*
 - C. *a change at work*
 - D. *a move to Africa*

D3. Terzo Testo

Ascolterete ora un testo che tratta di mobili antichi. Ascoltate attentamente e svolgete l'attività indicata nel foglio. Il testo va ascoltato due volte.

Tutti noi sappiamo quale grande fortuna abbia avuto il mobile antico negli ultimi cinquanta anni. Pubblicazioni specializzate, riviste popolari, antiquari e mercatini hanno contribuito a diffondere la conoscenza dei vari stili in tutti gli strati sociali. Questo fatto, se da un lato ha affinato il gusto di molte persone, dall'altro ha dato inizio ad una moda che ha provocato sicuramente parecchia confusione. Molti hanno riempito la casa di mobili antichi non tanto per il piacere di possedere un'opera d'arte, espressione del gusto di un'epoca, ma soprattutto per investire il denaro in un oggetto destinato ad aumentare di valore nel tempo. Con il passare degli anni l'aumento delle vendite è stato così alto che i mobili molto antichi non si sono più trovati, e sono stati sostituiti dai mobili dell'800 e dai mobili d'importazione inglese o nord europea. Se comunque avete deciso di investire una certa somma di denaro per comperare un mobile antico, che diventi un elemento decorativo per il vostro salotto, le strade da seguire per non effettuare un acquisto sbagliato sono due. La prima è quella di rivolgersi ad un antiquario serio e di fiducia, che sarà in grado di spiegarvi, con competenza e precisione, le tecniche di lavorazione dei mobili che vi

interessano. La seconda è di farsi accompagnare da persone competenti e di osservare alcune regole basilari. L'ideale, prima di tutto, sarebbe scegliere il mobile prima del restauro, perché dopo questo lavoro sarà più difficile notare eventuali manomissioni non facili da riconoscere da un occhio inesperto. Se però il mobile che intendete acquistare è già stato restaurato, è bene osservare con attenzione alcuni particolari esterni ed interni. Per quanto riguarda l'esterno, oltre all'armonia di tutto l'insieme, bisognerà controllare se le venature del legno delle due parti del mobile sono simili, se le maniglie sono autentiche, e se eventuali intarsi sono d'epoca o rifatti recentemente. Dopo l'esame esterno, occorrerà controllare l'interno dei cassetti e il retro del mobile. Il mobile antico deve essere fatto a mano in ogni sua parte, ed anche eventuali chiodi visibili o sporgenti devono avere la caratteristica forma quadrangolare. Quanto ai cassetti, è bene diffidare degli spessori troppo regolari.

11. Antiquari e mercatini hanno contribuito a diffondere la conoscenza ...(11)... in tutti gli strati sociali.
 12. Ha dato inizio ad una moda che ha provocato sicuramente ...(12)...
 13. Investire il denaro in un oggetto destinato ad ...(13)... nel tempo.
 14. Sono stati sostituiti dai mobili dell'800 e dai ...(14)... inglese o nord europea.
 15. Le strade da seguire per non effettuare ...(15)... sono due.
 16. La seconda è di farsi accompagnare da persone competenti e di osservare ...(16)... basilari.
 17. Sarà più difficile notare eventuali manomissioni non facili da riconoscere da un...(17)...
 18. E' bene osservare con attenzione alcuni particolari ...(18)...
 19. Se eventuali intarsi sono d'epoca o ...(19)...
 20. Eventuali chiodi visibili o sporgenti devono avere ...(15)... quadrangolare.
- Fine della prova.

Transcript—English Translation:

You will now listen to an interview about antique furniture. Please listen carefully and follow the directions listed in the test booklet. You will listen to the text two times.

We all know what great success antique furniture has had in the last fifty years. Specialized publications, popular magazines, antique shops and markets have contributed to spreading the knowledge of the various styles in all social classes. This fact, if on the one hand has refined the tastes of a lot of people, on the other hand has started a trend that has certainly caused a lot of confusion. Many have filled the house with antique furniture not so much for the pleasure of owning a piece of art, expression of the taste of a period, but mostly in order to invest money in an object that is destined to increase in value in time. With the passing of time, the increase in sales was so high that very old furniture could not be found anymore, and has been replaced with furniture from the 1800s and with furniture imported from England or Northern Europe. If anyway you have decided to invest some money to buy an antique piece of furniture, that will become a decorative piece for your living room, there are two ways to go to not make a bad purchase. The first is to go to a serious antiques dealer that you trust, who will be able to explain to you, with competence and precision, the building techniques of the furniture you are interested in. The second is to have someone go with you who is competent and to follow some basic rules. First of all, the ideal would be to choose the piece before restoration, because after this work it will be harder to notice possible bad alterations not easily recognized by the inexperienced eye. If the piece that you intend to buy has already been restored, it is good to carefully observe certain external and internal details. As for the exterior, in addition to the overall harmony, it is necessary to check if the veins of the wood of the two parts of the piece are

similar, if the handles are authentic, and if any possible inlays are original or added recently. After the examination of the exterior, it will be necessary to check the inside of the drawers and the back of the piece. An antique piece of furniture must be hand made in each part, and any visible or protruding nails must have the characteristic square shape. As for the drawers, it is better not to trust thicknesses that are too regular.

11. *Antique shops and markets have contributed to spreading the knowledge ...(11)... in all social classes.*

12. *Has started a trend that has certainly caused ...(12)....*

13. *Invest money in an object that is destined to ...(13)... in time.*

14. *Has been replaced with furniture from the 1800s and with ...(14)... from England or Northern Europe.*

15. *There are two ways to go to not make ...(15)....*

16. *The second is to have someone go with you who is competent and to follow some basic ...(16)....*

17. *It will be harder to notice possible bad alterations not easily recognized by the ...(17)....*

18. *It is good to carefully observe certain ...(18)... details.*

19. *If any possible inlays are original or ...(19)....*

20. *Any visible or protruding nails must have ...(15)... square shape.*

End of test.

Appendix E: Vocabulary Test with English Translation

Table 18: Vocabulary Test

Test di Vocabolario Vocabulary Test Indicare per ciascuna parola italiana quanto bene ne conoscete il significato. Per i sostantivi, selezionare con un cerchio il corretto genere della parola italiana. <i>Indicate for each Italian word how well you know the meaning. Write the English translation on the blank line and, for the nouns, circle the correct gender of the word in Italian.</i>					
	Parola Word	Conosco questa parola bene <i>I know this word well</i>	In un certo modo conosco questa parola/Posso indovinarne il significato <i>I sort of know this word/I can guess the meaning</i>	Non ne conosco il significato <i>I don't know the meaning</i>	Genere Gender
1	bacio <i>kiss</i>				M o F
2	banca <i>bank</i>				M o F
3	base <i>base</i>				M o F
4	battaglia <i>battle</i>				M o F
5	battuta <i>joke</i>				M o F
6	bene <i>good</i>				M o F
7	biglietto <i>ticket</i>				M o F
8	breve <i>brief</i>				---
9	caffè' <i>coffee</i>				M o F
10	caldo <i>warm</i>				---
11	campagna <i>countryside</i>				M o F
12	campo <i>camp</i>				M o F
13	canale <i>canal</i>				M o F
14	canone <i>cannon</i>				M o F
15	cantiere <i>construction site</i>				M o F
16	canzone <i>song</i>				M o F

Table 18 (cont'd)

17	carcere <i>prison</i>				M o F
18	carne <i>meat</i>				M o F
19	cartone <i>cardboard</i>				M o F
20	cattivo <i>bad</i>				---
21	causa <i>cause</i>				M o F
22	chiamata <i>call</i>				M o F
23	chiave <i>key</i>				M o F
24	chiesa <i>church</i>				M o F
25	chilo <i>kilogram</i>				M o F
26	classe <i>class</i>				M o F
27	classico <i>classic</i>				---
28	codice <i>code</i>				M o F
29	cognome <i>last name</i>				M o F
30	colore <i>color</i>				M o F
31	concetto <i>concept</i>				M o F
32	concreto <i>concrete</i>				---
33	confine <i>border</i>				M o F
34	controllo <i>control</i>				M o F
35	cornice <i>frame</i>				M o F
36	corpo <i>body</i>				M o F
37	corrente <i>current</i>				M o F
38	corretto <i>correct</i>				---
39	corte <i>court</i>				M o F
40	cotone <i>cotton</i>				M o F
41	croce <i>cross</i>				M o F
42	cucina <i>kitchen</i>				M o F
43	cuore <i>heart</i>				M o F

Table 18 (cont'd)

44	data <i>date</i>				M o F
45	dato <i>data</i>				M o F
46	dolce <i>sweet</i>				---
47	dolore <i>pain</i>				M o F
48	doppio <i>double</i>				---
49	dovere <i>duty</i>				M o F
50	duro <i>hard</i>				---
51	estremo <i>extreme</i>				---
52	felice <i>happy</i>				---
53	gente <i>people</i>				M o F
54	gestione <i>management</i>				M o F
55	gioco <i>game</i>				M o F
56	giovane <i>young</i>				---
57	giudizio <i>judgment</i>				M o F
58	giunta <i>joint</i>				M o F
59	grado <i>grade</i>				M o F
60	grave <i>serious</i>				---
61	largo <i>wide</i>				---
62	lato <i>side</i>				M o F
63	lega <i>league</i>				M o F
64	legge <i>law</i>				M o F
65	lento <i>slow</i>				---
66	letto <i>bed</i>				M o F
67	lettura <i>reading</i>				M o F
68	lezione <i>lesson</i>				M o F
69	lieto <i>happy</i>				---
70	lieve <i>slight</i>				---
71	limite <i>limit</i>				M o F
72	linguaggio <i>language</i>				M o F
73	locale <i>place</i>				M o F
74	lotta <i>struggle</i>				M o F
75	luce <i>light</i>				M o F

Table 18 (cont'd)

76	luogo <i>place</i>				M o F
77	male <i>evil</i>				M o F
78	mare <i>sea</i>				M o F
79	materia subject				M o F
80	media middle				M o F
81	mente <i>mind</i>				M o F
82	mercato market				M o F
83	mese <i>month</i>				M o F
84	minimo minimum				M o F
85	missione mission				M o F
86	misura measure				M o F
87	mobile furniture				M o F
88	modern modern				---
89	moneta <i>coin</i>				M o F
90	monte mountain				M o F
91	morale moral				M o F
92	morte <i>death</i>				M o F
93	mozione motion				M o F
94	natale Christmas				M o F
95	natura nature				M o F
96	nave <i>ship</i>				M o F
97	nazione nation				M o F
98	neve <i>snow</i>				M o F
99	nome <i>name</i>				M o F
100	notizia <i>news</i>				M o F
101	notte <i>night</i>				M o F
102	pace <i>peace</i>				M o F
103	paio <i>pair</i>				M o F
104	palla <i>ball</i>				M o F

Table 18 (cont'd)

105	pane <i>bread</i>				M o F
106	parere <i>opinion</i>				M o F
107	partita <i>game</i>				M o F
108	passaggio <i>landscape</i>				M o F
109	passo <i>step</i>				M o F
110	pasta <i>pasta</i>				M o F
111	pensione <i>pension</i>				M o F
112	perfetto <i>perfect</i>				---
113	pesante <i>heavy</i>				---
114	piazza <i>square</i>				M o F
115	piede <i>foot</i>				M o F
116	popolo <i>people</i>				M o F
117	porta <i>door</i>				M o F
118	potere <i>power</i>				M o F
119	pratica <i>practice</i>				M o F
120	presenza <i>presence</i>				M o F
121	pressione <i>pression</i>				M o F
122	principio <i>principle</i>				M o F
123	processo <i>trial</i>				M o F
124	prodotto <i>product</i>				M o F
125	progetto <i>project</i>				M o F
126	prova <i>evidence</i>				M o F
127	puro <i>pure</i>				---
128	qualita' <i>quality</i>				M o F
129	ragione <i>reason</i>				M o F
130	rapido <i>rapid</i>				---

Table 18 (cont'd)

131	recente <i>recent</i>				---
132	reddito <i>income</i>				M o F
133	regalo <i>gift</i>				M o F
134	regime <i>regime</i>				M o F
135	regione <i>region</i>				M o F
136	resto <i>change</i>				M o F
137	rete <i>net</i>				M o F
138	ricco <i>rich</i>				---
139	richiesta <i>request</i>				M o F
140	romanzo <i>novel</i>				M o F
141	ruolo <i>role</i>				M o F
142	sano <i>healthy</i>				---
143	simile <i>similar</i>				---
144	tensione <i>tension</i>				M o F
145	termine <i>end</i>				M o F
146	testa <i>head</i>				M o F
147	tipico <i>typical</i>				---
148	tranquillo <i>tranquil</i>				---
149	triste <i>sad</i>				---
150	vasto <i>vast</i>				---

Appendix F: Spanish Translations and Genders of Nouns Used in Study

Table 19: Spanish Translations and Genders

Italian	Italian Gender (M or F)	Spanish	Spanish Gender (M or F)
bacio	M	beso	M
banca	F	banco	M
base	F	base	F
battaglia	F	batalla	F
battuta	F	broma	F
bene	M	el bien	M
biglietto	M	billete	M
caffè'	M	café	M
campagna	F	campo	M
campo	M	campo	M
canale	M	canal	M
canone	M	canon	M
cantiere	M	obra	F
canzone	F	canción	F
carcere	M	cárcel	F
carne	F	carne	F
cartone	M	cartón	M
causa	F	causa	F
chiamata	F	llamada	F
chiave	F	llave	F
chiesa	F	iglesia	F
chilo	M	kilo	M
classe	F	clase	F
codice	M	código	M
cognome	M	apellido	M
colore	M	color	M
concetto	M	concepto	M
confine	M	frontera	F
controllo	M	control	M
cornice	F	marco	M
corpo	M	cuerpo	M

Table 19 (cont'd)

corrente	F	corriente	F
corte	F	corte	F
cotone	M	algodón	M
croce	F	cruz	F
cucina	F	cocina	F
cuore	M	corazón	M
data	F	fecha	F
dato	M	hecho	M
dolore	M	dolor	M
dovere	M	deber	M
gente	F	gente	F
gestione	F	gestión	F
gioco	M	juego	M
giudizio	M	juicio	M
giunta	F	adición	F
grado	M	grado	M
lato	M	lado	M
lega	F	liga	F
legge	F	ley	F
letto	M	cama	F
lettura	F	lectura	F
lezione	F	lección	F
limite	M	límite	M
linguaggio	M	lengua	F
locale	M	restaurante	M
lotta	F	pelea	F
luce	F	luz	F
luogo	M	lugar	M
male	M	maldad	F
mare	M	mar	M
materia	F	materia	F
media	F	promedio	M
mente	F	mente	F
mercato	M	mercado	M
mese	M	mes	M
minimo	M	mínimo	M
missione	F	misión	F
misura	F	medida	F

Table 19 (cont'd)

mobile	M	mueble	M
moneta	F	moneda	F
monte	M	montaña	F
morale	F	moral	F
morte	F	muerte	F
mozione	F	moción	F
natale	M	navidad	F
natura	F	naturaleza	F
nave	F	barco	M
nazione	F	nación	F
neve	F	nieve	F
nome	M	nombre	M
notizia	F	noticia	F
notte	F	noche	F
pace	F	paz	F
paio	M	par	M
palla	F	pelota	F
pane	M	pan	M
parere	M	opinión	F
partita	F	partido	M
passaggio	M	pasaje	M
passo	M	paso	M
pasta	F	pasta	F
pensione	F	pensión	F
piazza	F	plaza	F
piede	M	pie	M
popolo	M	pueblo	M
porta	F	puerta	F
potere	M	poder	M
pratica	F	práctica	F
presenza	F	presencia	F
pressione	F	presión	F
principio	M	principio	M
processo	M	proceso	M
prodotto	M	producto	M
progetto	M	proyecto	M
prova	F	prueba	F
qualita'	F	calidad	F

Table 19 (cont'd)

ragione	F	razón	F
reddito	M	ingreso	M
regalo	M	regalo	M
regime	M	régimen	M
regione	F	región	F
resto	M	resto	M
rete	F	red	F
richiesta	F	solicitud	F
romanzo	M	novela	F
ruolo	M	papel	M
tensione	F	tensión	F
termine	M	fin	M
testa	F	cabeza	F

Appendix G: Portuguese Translations and Genders of Nouns Used in Study

Table 20: Portuguese Translations and Genders

Italian	Italian Gender (M or F)	Portuguese	Portuguese Gender (M or F)
bacio	M	beijo	M
banca	F	banco	M
base	F	base	F
battaglia	F	batalha	F
battuta	F	piada	F
bene	M	bem	M
biglietto	M	bilhete	M
caffè'	M	café	M
campagna	F	campo	M
campo	M	campo	M
canale	M	canal	M
canone	M	cânone	M
cantiere	M	canteiro de obras	M
canzone	F	canção	F
carcere	M	cárcere	M
carne	F	carne	F
cartone	M	papelão	M
causa	F	causa	F
chiamata	F	chamada	F
chiave	F	chave	F
chiesa	F	igreja	F
chilo	M	quilo(grama)	M
classe	F	classe	F
codice	M	código	M
cognome	M	sobrenome	M
colore	M	cor	F
concetto	M	conceito	M
confine	M	fronteira	F
controllo	M	controle	M
cornice	F	quadro	M
corpo	M	corpo	M

Table 20 (cont'd)

corrente	F	corrente	F
corte	F	corte	F
cotone	M	algodão	M
croce	F	cruz	F
cucina	F	cozinha	F
cuore	M	coração	M
data	F	data	F
dato	M	dados	M (plural)
dolore	M	dor	F
dovere	M	dever	M
gente	F	gente	F
gestione	F	gestão	F
gioco	M	jogo	M
giudizio	M	juízo	M
giunta	F	adição	F
grado	M	grau	M
lato	M	lado	M
lega	F	liga	F
legge	F	lei	F
letto	M	cama	F
lettura	F	leitura	F
lezione	F	lição	F
limite	M	limite	M
linguaggio	M	linguagem	F
locale	M	local	M
lotta	F	luta	F
luce	F	luz	F
luogo	M	lugar	M
male	M	mal	M
mare	M	mar	M
materia	F	matéria	F
media	F	média	F
mente	F	mente	F
mercato	M	mercado	M
mese	M	mês	M
minimo	M	mínimo	M
missione	F	missão	F
misura	F	medida	F

Table 20 (cont'd)

mobile	M	móvel	M
moneta	F	moeda	F
monte	M	monte	M
morale	F	moral	F
morte	F	morte	F
mozione	F	movimento	M
natale	M	natal	M
natura	F	natureza	F
nave	F	navio	M
nazione	F	nação	F
neve	F	neve	F
nome	M	nome	M
notizia	F	notícia	F
notte	F	noite	F
pace	F	paz	F
paio	M	par	M
palla	F	bola	F
pane	M	pão	M
parere	M	parecer	M
partita	F	partida	F
passaggio	M	passagem	F
passo	M	passo	M
pasta	F	massa	F
pensione	F	pensão	F
piazza	F	praça	F
piede	M	pé	M
popolo	M	povo	M
porta	F	porta	F
potere	M	poder	M
pratica	F	prática	F
presenza	F	presença	F
pressione	F	pressão	F
principio	M	princípio	M
processo	M	processo	M
prodotto	M	produto	M
progetto	M	projeto	M
prova	F	prova	F
qualita'	F	qualidade	F

Table 20 (cont'd)

ragione	F	razão	F
reddito	M	renda	F
regalo	M	presente	M
regime	M	regime	M
regione	F	região	F
resto	M	resto	M
rete	F	rede	F
richiesta	F	pedido	M
romanzo	M	romance	M
ruolo	M	papel	M
tensione	F	tensão	F
termine	M	fim	M
testa	F	cabeça	F

Appendix H: French Translations and Genders of Nouns Used in Study

Table 21: French Translations and Genders

Italian	Italian Gender (M or F)	French	French Gender (M or F)
bacio	M	baiser	M
banca	F	banc	M
base	F	base	F
battaglia	F	bataille	F
battuta	F	blague	F
bene	M	bien	M
biglietto	M	billet	M
caffè	M	café	M
campagna	F	campagne	F
campo	M	champ	M
canale	M	canal	M
canone	M	canon	M
cantiere	M	chantier	M
canzone	F	chanson	F
carcere	M	prison	F
carne	F	viande	F
cartone	M	carton	M
causa	F	cause	F
chiamata	F	appel	M
chiave	F	clef / clé	F
chiesa	F	église	F
chilo	M	kilo(gramme)	M
classe	F	classe	F
codice	M	code	M
cognome	M	nom de famille	M
colore	M	couleur	F
concetto	M	concept	M
confine	M	frontière	F
controllo	M	contrôle	M
cornice	F	cadre	M
corpo	M	corps	M

Table 21 (cont'd)

corrente	F	courant	M
corte	F	cour	F
cotone	M	coton	M
croce	F	croix	F
cucina	F	cuisine	F
cuore	M	coeur	M
data	F	date	F
dato	M	données	F (plural)
dolore	M	douleur	F
dovere	M	devoir	M
gente	F	gens	M (plural)
gestione	F	gestion	F
gioco	M	jeu	M
giudizio	M	jugement	M
giunta	F	rallonge	F
grado	M	degré	M
lato	M	côté	M
lega	F	ligue	F
legge	F	loi	F
letto	M	lit	M
lettura	F	lecture	F
lezione	F	leçon	F
limite	M	limite	F
linguaggio	M	langage	M
locale	M	restaurant	M
lotta	F	lutte	F
luce	F	lumière	F
luogo	M	lieu	M
male	M	mal	M
mare	M	mer	F
materia	F	matériel	M
media	F	moyenne	F
mente	F	esprit	M
mercato	M	marché	M
mese	M	mois	M
minimo	M	minimum	M
missione	F	mission	F
misura	F	mesure	F

Table 21 (cont'd)

mobile	M	meubles	M
moneta	F	pièce de monnaie	F
monte	M	mont	M
morale	F	morale	F
morte	F	mort	F
mozione	F	motion	F
natale	M	noël	M
natura	F	nature	F
nave	F	navire	M
nazione	F	nation	F
neve	F	neige	F
nome	M	prénom	M
notizia	F	nouvelle	F
notte	F	nuit	F
pace	F	paix	F
paio	M	paire	F
palla	F	balle	F
pane	M	pain	M
parere	M	avis	M
partita	F	partie	F
passaggio	M	passage	M
passo	M	pas	M
pasta	F	pâtes	F (plural)
pensione	F	retraite	F
piazza	F	place	F
piede	M	pied	M
popolo	M	peuple	M
porta	F	porte	F
potere	M	pouvoir	M
pratica	F	pratique	F
presenza	F	présence	F
pressione	F	pression	F
principio	M	principe	M
processo	M	processus	M
prodotto	M	produit	M
progetto	M	projet	M
prova	F	preuve	F
qualita'	F	qualité	F

Table 21 (cont'd)

ragione	F	raison	F
reddito	M	revenu	M
regalo	M	cadeau	M
regime	M	régime	M
regione	F	région	F
resto	M	reste	M
rete	F	filet	M
richiesta	F	requête	F
romanzo	M	roman	M
ruolo	M	rôle	M
tensione	F	tension	F
termine	M	fin	F
testa	F	tête	F

Appendix I: Russian Translations and Genders of Nouns Used in Study

Table 22: Russian Translations and Genders

Italian	Italian Gender (M or F)	Russian	Russian Gender (M, F, or N)
bacio	M	поцелуй	M
banca	F	банк	M
base	F	основа	F
battaglia	F	битва	F
battuta	F	шутка	F
bene	M	добро	N
biglietto	M	билет	M
caffè	M	кофе	M
campagna	F	деревня	M
campo	M	поле	N
canale	M	канал	M
canone	M	пушка	F
cantiere	M	стройка	F
canzone	F	песня	F
carcere	M	тюрьма	F
carne	F	мясо	N
cartone	M	картон	M
causa	F	причина	F
chiamata	F	звонок	M
chiave	F	ключ	M
chiesa	F	церковь	F
chilo	M	килограмм	M
classe	F	класс	M
codice	M	код	M
cognome	M	фамилия	F
colore	M	цвет	M
concetto	M	концепция	F
confine	M	граница	F
controllo	M	контроль	M
cornice	F	рама	F
corpo	M	тело	N

Table 22 (cont'd)

corrente	F	поток	M
corte	F	двор	M
cotone	M	хлопок	M
croce	F	крест	M
cucina	F	кухня	F
cuore	M	сердце	N
data	F	дата	F
dato	M	факт	M
dolore	M	боль	F
dovere	M	обязанность	F
gente	F	люди	Plural
gestione	F	управление	N
gioco	M	игра	F
giudizio	M	суждение	N
giunta	F	дополнение	N
grado	M	степень	F
lato	M	сторона	F
lega	F	лига	F
legge	F	закон	M
letto	M	кровать	F
lettura	F	чтение	N
lezione	F	урок	M
limite	M	ограничение	N
linguaggio	M	речь	F
locale	M	ресторан	M
lotta	F	конфликт	M
luce	F	свет	M
luogo	M	место	N
male	M	зло	N
mare	M	море	N
materia	F	материал	M
media	F	среднее	N
mente	F	разум	M
mercato	M	рынок	M
mese	M	месяц	M
minimo	M	минимум	M
missione	F	миссия	F
misura	F	измерение	N

Table 22 (cont'd)

mobile	M	мебель	F
moneta	F	монета	F
monte	M	гора	F
morale	F	мораль	F
morte	F	смерть	F
mozione	F	движение	N
natale	M	рождество	N
natura	F	природа	F
nave	F	корабль	M
nazione	F	нация	F
neve	F	снег	M
nome	M	имя	N
notizia	F	новости	F
notte	F	ночь	F
pace	F	мир	M
paio	M	пара	F
palla	F	мяч	M
pane	M	хлеб	M
parere	M	мнение	N
partita	F	игра	F
passaggio	M	пассаж	M
passo	M	шаг	M
pasta	F	паста	F
pensione	F	пенсия	F
piazza	F	площадь	F
piede	M	нога	F
popolo	M	население	N
porta	F	дверь	F
potere	M	сила	F
pratica	F	упражнение	N
presenza	F	наличие	N
pressione	F	давление	N
principio	M	принцип	M
processo	M	процесс	M
prodotto	M	продукт	M
progetto	M	проект	M
prova	F	доказательство	N
qualita'	F	качество	N

Table 22 (cont'd)

ragione	F	причина	F
reddito	M	заработок	M
regalo	M	подарок	M
regime	M	режим	M
regione	F	регион	M
resto	M	остаток	M
rete	F	сеть	F
richiesta	F	просьба	F
romanzo	M	роман	M
ruolo	M	роль	F
tensione	F	беспокойство	N
termine	M	конец	M
testa	F	голова	F

Appendix J: German Translations and Genders of Nouns Used in Study

Table 23: German Translations and Genders

Italian	Italian Gender (M or F)	German	German Gender (M, F, or N)
bacio	M	Kuss	M
banca	F	Bank	F
base	F	Basis	F
battaglia	F	Kampf	M
battuta	F	Witz	M
bene	M	Das Gute	N
biglietto	M	Fahrschein	M
caffè	M	Coffee	M
campagna	F	Land	N
campo	M	Feld	N
canale	M	Kanal	M
canone	M	Grundgebuehr	F
cantiere	M	Baustelle	F
canzone	F	Lied	N
carcere	M	Gefaengnis	N
carne	F	Fleisch	N
cartone	M	Karton	M
causa	F	Grund	M
chiamata	F	Anruf	M
chiave	F	Schluessel	M
chiesa	F	Kirche	F
chilo	M	Kilogramm	N
classe	F	Klasse	F
codice	M	Kode	M
cognome	M	Nachname	M
colore	M	Farbe	F
concetto	M	Konzept	N
confine	M	Grenze	F
controllo	M	Kontrolle	F
cornice	F	Rahmen	M
corpo	M	Koerper	M

Table 23 (cont'd)

corrente	F	Stroemung	F
corte	F	Koenigshof	M
cotone	M	Baumwolle	F
croce	F	Kreuz	N
cucina	F	Kueche	F
cuore	M	Herz	N
data	F	Datum	N
dato	M	Fakt	M
dolore	M	Schmerz	M
dovere	M	Aufgabe	F
gente	F	Leute	F
gestione	F	Management	N
gioco	M	Spiel	N
giudizio	M	Beurteilung	F
giunta	F	Addition	F
grado	M	Abschluss	M
lato	M	Seite	F
lega	F	Liga	F
legge	F	Gesetz	N
letto	M	Bett	N
lettura	F	Lesung	F
lezione	F	Lehrstunde	F
limite	M	Limit	N
linguaggio	M	Sprache	F
locale	M	Restaurant	N
lotta	F	Auseinandersetzung	F
luce	F	Licht	N
luogo	M	Platz	M
male	M	Uebel	N
mare	M	Meer	N
materia	F	Material	N
media	F	Durchschnitt	M
mente	F	Verstand	M
mercato	M	Markt	M
mese	M	Monat	M
minimo	M	Minimum	N
missione	F	Mission	F
misura	F	Abmessung	F

Table 23 (cont'd)

mobile	M	Mobelstuck	N
moneta	F	Muentze	F
monte	M	Berg	M
morale	F	Moral	F
morte	F	Tod	M
mozione	F	Antrag	M
natale	M	Weihnachten	N
natura	F	Natur	F
nave	F	Schiff	N
nazione	F	Nation	F
neve	F	Schnee	M
nome	M	Vorname	M
notizia	F	Nachrichten	F
notte	F	Nacht	F
pace	F	Frieden	M
paio	M	Paar	N
palla	F	Ball	M
pane	M	Brot	N
parere	M	Meinung	F
partita	F	Match	F
passaggio	M	Passage	F
passo	M	Stufe	F
pasta	F	Pasta	F
pensione	F	Rente	F
piazza	F	Rathausplatz	M
piede	M	fuss	M
popolo	M	Volk	N
porta	F	Tuer	F
potere	M	Macht	F
pratica	F	Uebung	F
presenza	F	Praesenz	F
pressione	F	Druck	M
principio	M	Beginn	M
processo	M	Prozess	M
prodotto	M	Produkt	N
progetto	M	Project	N
prova	F	Beweis	M
qualita'	F	Qualitaet	F

Table 23 (cont'd)

ragione	F	Grund	M
reddito	M	Einkommen	N
regalo	M	Geschenk	N
regime	M	Regime	N
regione	F	Region	N
resto	M	Rest	N
rete	F	Netz	N
richiesta	F	Anfrage	F
romanzo	M	Roman	M
ruolo	M	Rolle	F
tensione	F	Tension	F
termine	M	Ende	N
testa	F	Kopf	M

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