

Exploring grammatical gender in L2 Spanish: is a transparent gender system easy to use for Russian-speaking students?¹

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Resum. Explorar el gènere gramatical en L2 espanyol: és un transparent sistema de gènere fàcil d'emprar per a estudiants russoparlants? El present estudi pilot investiga l'assignació del gènere gramatical a substantius transparents i opacs en castellà per a parlants nadius de rus amb un nivell intermig-avançat de castellà. 29 parlants nadius de rus i 28 parlants nadius de castellà van completar tres tasques d'assignació de gènere. Els participants havien d'assignar el gènere gramatical correcte a substantius reals inanimats amb terminació transparent (-o, -a) i opaca (-e, consonants) i també a substantius inventats amb terminació transparent (-o, -a) o opaca. Els resultats revelen que, malgrat que les puntuacions obtingudes pel grup d'aprenents d'L2 són altes, existeixen diferències significatives en comparació amb el grup dels nadius d'espanyol. Així mateix, s'ha observat l'efecte de la transparència del sistema de gènere gramatical en L2 i l'efecte de la llengua nadiua dels aprenents d'L2. En concret, el grup d'L2 assigna el gènere gramatical significativament millor als substantius transparents que als opacs. A més a més, els aprenents d'L2 utilitzen el gènere gramatical amb els substantius opacs significativament millor quan aquests noms tenen el mateix gènere gramatical en la seva llengua nadiua.

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Paraules clau: concordància de gènere gramatical, adquisició de segones llengües, espanyol L2, russoparlants.

Abstract. Exploring grammatical gender in L2 Spanish: is a transparent gender system easy to use for Russian-speaking students? This paper reports on the results of a pilot study investigating grammatical gender assignment to transparent and opaque inanimate Spanish nouns by Russian-speaking learners with an intermediate-advanced level in L2. 29 Russian natives and 28 native speakers of Spanish completed three gender assignment tasks. Participants had to assign correct gender to inanimate real nouns with transparent (-o, -a) and opaque (-e, consonants) endings, and to nonce words with transparent (-o, -a) or opaque endings. The results revealed that, although the L2 group obtained high accuracy scores in gender assignment tasks, there were significant differences compared to the native speakers. The effects of transparency of the L2 gender system and of the native language of L2 students were also found. Specifically, the L2 students used transparent nouns significantly better than opaque nouns. Furthermore, the L2 group assigned grammatical gender to opaque nouns significantly better when these nouns have the same gender in Russian.

Keywords: grammatical gender agreement, second language acquisition, Spanish L2, Russian speakers.

1. Introduction

Grammatical gender is considered a problematic area in Second Language Acquisition (SLA). Previous research has shown that establishing correct gender agreement between nouns and determiners may cause difficulties for L2 learners. It is reported to be especially problematic for students whose first language (L1) has no morphological gender assignment rules, such as English, or gender system at all, such as Chinese (Ellis, Conradie, & Huddleston, 2012; Grüter, Lew-Williams, & Fernald, 2012; Martoccio, 2019; Montrul et al., 2008; Quinn, 2018). Studies with German learners whose native language was Dutch, English or a Romance language have shown that L2 acquisition of grammatical gender is affected by the morphological similarity of gender marking in the L1 and L2 (Sabourin, Stowe, & de Haan, 2006). Although the majority of studies suggest that gender assignment difficulties are persistent even at advanced levels, there is some evidence that gender may be almost completely acquired by L2 students (Paquet, 2018; Sagarra & Herschensohn, 2011).

From a theoretical perspective, two main proposals account for morphosyntactic variability in L2 grammar. One of them, the Failed Functional Features Hypothesis (Hawkins & Chan, 1997), claims that L1 and L2 are fundamentally different. That is why only L1 learners have access to Universal Grammar (UG) and are able to acquire grammatical features, including gender. Thus, L2 learners can transfer morphosyntactic

features from the L1 but might not be able to add new functional features into the interlanguage system they have developed, remaining permanently impaired (Franceschina, 2005; Hawkins & Franceschina, 2004; Tsimpli & Mastropavlou, 2007). Although most studies demonstrate that grammatical gender remains impaired for most adult L2 learners, there is some evidence this feature can be acquired at later ages. This is especially true if gender is present in the first language. For instance, according to Franceschina (2005) the differences between Spanish natives and L2 students whose L1 has gender were insignificant. However, the gap between native speakers and L1 learners without gender in their native language was significant.

Other studies claim there are similarities between L1 and L2 acquisition, such as the Full Transfer/Full access Hypothesis (Schwartz & Sprouse, 1996). According to Schwartz and Sprouse (1996), L2 learners are able to fully acquire grammatical characteristics absent in their L1, including gender. Referring to mental representation, gender is considered to be acquired despite occasional errors, which are considered performance rather than competence errors (Alarcón, 2006, 2011). A study with two groups of intermediate and advanced L2 learners, one of whose L1 uses gender (French) and one whose does not (English), showed that they behaved similarly to native Spanish speakers (White et al., 2004). In a recent study conducted by Martoccio (2019) gender assignment strategies were compared between Spanish native speakers and intermediate and advanced English-speaking learners of Spanish. Martoccio (2019) found differences in gender assignment in high frequency known nouns, both L2 learner groups made mistakes in this task. Low frequency nouns were specifically difficult for the intermediate learners who achieved 80% accuracy rates compared with 98.16% of native speakers.

The present article reports on a pilot study addressing grammatical gender use in L2 Spanish by Russian-speaking learners. Specifically, this study aims to explore: 1) whether native Russian speakers with an intermediate-advanced level of Spanish assign gender to inanimate transparent and opaque nouns in a similar way to that of native speakers; 2) whether L2 Spanish learners are able to extract linguistic cues to gender and assign a correct gender to novel nouns. To date, there are few studies exploring the acquisition of Spanish gender agreement by L1 Russian learners, thus the present research tries to contribute to the field. The findings will then help to elaborate new didactic methods and materials for the Russian-speaking population.

2. Gender in Spanish and in Russian

Both Spanish and Russian are gendered languages (Corbett, 1991). In Spanish, nouns are classified into two gender classes: masculine and feminine. In Russian, nouns are masculine, feminine or neuter. Gender is assigned according to two criteria: semantic and formal (Corbett, 2013). Semantic criterion claims that gender of sex-distinguishable nouns (i.e. animate) is established in terms of biological sex of the referent (Corbett, 1991). For example, nouns such as *tío* 'uncle' (Spanish) or *brat* 'brother' (Russian) will

have masculine grammatical gender, as they denote males. Nouns denoting females such as *abuela* ‘grandmother’ (Spanish) or *tjotja* ‘aunt’ (Russian) will be feminine.

Gender of inanimate nouns, as they do not refer to living creatures, is established according to a formal criterion which is different in Spanish and Russian. In Spanish, inanimate nouns can be roughly subdivided into two groups: transparent and opaque. Transparent nouns are those that provide a clear morphophonological cue that helps to extract their gender. In other words, nouns ending in -o are masculine (e.g. *libro* ‘book’), whilst those ending in -a are feminine (e.g. *botella* ‘bottle’) (Anderson, 1961; Harris, 1991). There are quite a few exceptions to this rule. For example, nouns like *mano*-(F) ‘hand’ or *problema*-(M) ‘problem’ are feminine and masculine respectively, even though their phonological forms state the opposite. Hence, these nouns may provoke difficulties for L2 learners.

Spanish opaque nouns do not provide any phonological cue to gender and they frequently end in a consonant or in -e. These can be either masculine or feminine, for example, *llave* ‘key’ is feminine, whereas *coche* ‘car’ is masculine (Harris, 1991). Gender of opaque nouns can be identified using the preceding article that normally accompanies the noun. In this case, nouns preceded by the definite article “el” or by the indefinite article “un” are masculine, whereas those preceded by the definite article “la” or by the indefinite article *una* are feminine.

In Russian, nouns form four inflectional paradigms and gender is marked morphologically in a regular manner (Corbett, 1991). Nouns of declension type I are masculine and end in a non-palatalized consonant. Nouns of declensional type II and III are feminine. Their endings are -a and a palatalized consonant, respectively. Nouns of declensional type IV are neuter, and usually end in -o (Rodina, 2008). Thus, it may appear that the Russian gender system is quite transparent, and considering nominative singular form of a noun is enough to predict its gender.

Agreement is a characteristic feature of grammatical gender which reflects the features of the controller (a noun or a pronoun) on the target items (e.g. adjectives, pronouns, etc.) (Corbett, 2006; Hockett, 1958). In Spanish, agreement affects determiners (definite and indefinite articles and adjectives), participles, pronouns and numerals. Examples of agreement in Spanish are illustrated in (1).² In (1a) both definite article and adjective adopt a masculine form, since the noun *tío* ‘uncle’ is masculine. A similar situation is presented in (1b) with feminine agreement.

- (1) a. *el tío viejo*
 the-M uncle-(M) old-M
 ‘the old uncle’

2. The abbreviations used in glosses are the following. M stands for masculine, F for feminine. Inherent gender of a noun is indicated in the parenthesis, whereas gender of a dependent item is indicated without parenthesis.

- b. *una mujer extranjera*
 a-F woman-(F) foreign-F
 'a foreign woman'

In summary, the major similarity between gender systems in Spanish and Russian is that feminine nouns have -a endings, which may facilitate gender use for Russian natives in L2 Spanish. On the other hand, the fact that Russian masculine nouns end in a consonant may have the opposite effect. L2 learners can transfer this information to the language they learn and assign masculine gender to all opaque nouns that end in a consonant.

3. Gender acquisition in L2 Spanish

Grammatical gender use and acquisition in L2 Spanish has been well addressed in both offline (e.g. grammaticality judgment task or picture description) and online studies (e.g. studies using reaction times).

Studies in L2 Spanish acquisition indicate that grammatical gender provokes difficulties and is acquired relatively late in the learning process. Even advanced learners are reported to exhibit problems with gender agreement (Montrul et al., 2008). Previous findings on grammatical gender acquisition in L2 Spanish show that learners are more accurate establishing agreement with masculine gender, suggesting that feminine gender is mostly problematic (Alarcón, 2010; Montrul et al., 2008; Montrul et al., 2014; White et al., 2004). Agreement between articles and nouns tends to occur earlier than agreement between adjectives and nouns (Alarcón, 2011). Some studies claim that L2 learners are significantly less accurate in gender agreement with adjectives than with determiners (Bruhn de Garavito & White, 2002). Regarding transparency, findings suggest that L2 learners of Spanish assign grammatical gender more accurately when nouns provide a morphological cue to gender (Alarcón, 2010; Alarcón, 2011; Franceschina, 2005; Montrul et al., 2008).

Grammatical gender use by Russian-speaking students has not been widely explored. Polinsky (2008) ran two experiments with heritage speakers of Russian who were raised in the USA. In the first experiment, participants had to say an adjective after having a noun being spoken to them. In the second one, subjects saw stimuli of three noun-adjective pairs. Two pairs presented incorrect agreement, whereas one pair was correct. Subjects were asked to press a button when they heard a correct noun-adjective pairing. Results of Polinsky's study (2008) indicate that some heritage speakers develop a two-way gender system, where all consonant ending nouns are masculine, whilst all vowel endings are feminine. Other heritage speakers seem to distinguish between neuter nouns (those ending in a stressed -o) and all other nouns, which are interpreted as feminine.

Batiukova (2018) suggested that, since both Spanish and Russian share gender characteristics, acquisition of gender should not be problematic for Russian speakers

who learn Spanish as L2. Nonetheless, Batiukova (2018) has provided some interesting insights from a corpus-based study. Specifically, it seems that the majority of the errors Russian students made were related to identification of feminine gender (e.g. **los-M respuestas-(F)* instead of *las-F respuestas-(F)* ‘the answers’, **motos-(F) tan hermosos-(M)* instead of *motos-(F) tan hermosas-(F)* ‘beautiful motorbikes’), rather than of masculine gender (e.g. **la-F coche-(M)* instead of *el-M coche-(M)* ‘the car’). These results coincide with findings in studies carried out with native speakers of non-gendered languages, such as English.

Online studies on gender assignment and agreement provide evidence about real time language processing. Findings from these studies have shown that even advanced and near-native L2 learners have difficulties with Spanish gender assignment in production (Alarcón, 2009, 2011; Montrul et al., 2008; White et al., 2004). For example, using an eye-tracking procedure, Lew-William and Fernald (2010) run an experiment with L2 intermediate learners. Participants were shown two pictures of objects. The names of these objects were either the same or different gender (e.g. *la pelota* ‘the-F ball-(F)’ and *la galleta* ‘the-F cookie-(F)’ or *la pelota* ‘the-F ball-(F)’ and *el zapato* ‘the-M shoe-(M)'). At the same time, participants were given the instruction to look at one of the objects, as *encuentra la pelota* ‘find the-F ball-(F)’. Results showed that native speakers were significantly faster than L2 learners in finding the target objects on trials in which gender of the nouns was different. It means that for native speakers a determiner is an informative cue to gender, but not for L2 intermediate learners. Grüter et al. (2012) repeated this study with advanced L2 learners. Evidence from this study suggests that L2 advanced learners exhibit weaker use of gendered articles as a facilitator during online comprehension task.

In sum, previous findings suggest that, regardless the L1, L2 Spanish learners tend to have difficulties with feminine gender, frequently overgeneralizing masculine in the agreement process. Furthermore, studies show that students are more accurate with nouns that provide clear morphological cues to gender.

4. The present study

4.1. Research questions and general predictions

The present study examines grammatical gender use in L2 Spanish by Russian-speaking adults. In contrast to previous studies available with Russian natives, this research uses an experimental approach in which both real and nonce words are employed. This approach allows us to explore what mechanisms Russian natives use to assign gender in L2 Spanish. This study addresses the following main research questions:

1. Do Russian speakers with an intermediate-advanced level of L2 Spanish assign gender to real nouns with transparent and opaque ending as Spanish natives do?

2. Is there any difference between L1 and L2 groups in gender assignment to novel words?

As only little information is available on Spanish gender use by Russian adults, the following predictions are based on previous findings. Considering that the L2 students in this study have an intermediate-advanced level of Spanish, they are probably familiar with gendered endings. Thus, it is possible that transparent nouns ending in -o will be considered masculine, and nouns with -a endings will be feminine. In turn, nouns ending in -e may be classified as either masculine or feminine. Nouns ending in a consonant are interesting, since in Spanish these can be either masculine (*jardín* ‘garden’) or feminine (*nariz* ‘nose’), whereas in Russian nouns ending in a consonant are typically masculine (e.g. *dom* ‘house’). It is considered then that this feature may infer in gender assignment task. This strategy is illustrated in Figure 1.

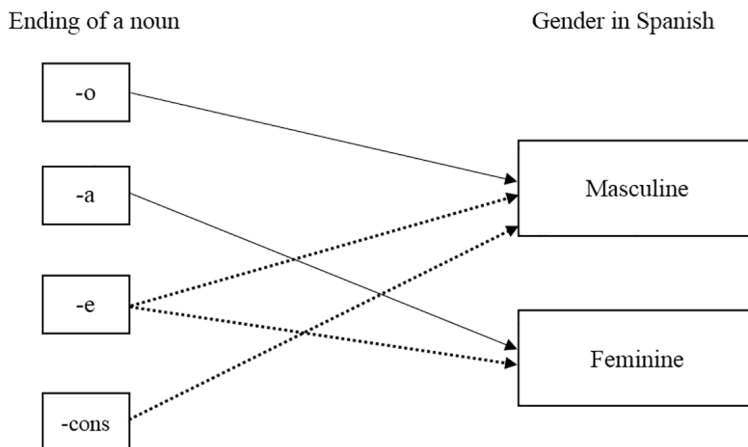


FIGURE 1. POSSIBLE GENDER ASSIGNMENT STRATEGY FOR RUSSIAN NATIVES.
CONTINUOUS LINE INDICATES GENDER ASSIGNMENT STRATEGY FOR TRANSPARENT
NOUNS. DASHED LINE INDICATES GENDER ASSIGNMENT FOR OPAQUE NOUNS.

Based on the previous research, it is expected that transparency will facilitate gender assignment for the L2 group, i.e. the L2 learners will be more accurate in assigning gender to transparent than to opaque nouns. It is also expected to observe language transfer on opaque Spanish nouns which have a different gender in Russian, as opaque nouns do not provide a gender cue, so the L2 group may assign gender to these nouns as in their native language. Furthermore, transparent masculine and feminine nonce words will be accurately identified by the L2 learners, as they provide a relatively informative morphological cue to gender (-o ending for masculine and -a ending for feminine). However, opaque nouns will be classified as neuter, i.e. they can be either masculine or feminine, as they do not provide a cue to gender.

4.2. Participants

A total of 57 participants were recruited for this study. The L2 group consisted of 29 Russian monolingual natives.³ L2 learners were originally from Russia and Ukraine and had different backgrounds in learning Spanish. Some of the participants live (1-3 years) or used to live in Spain for some time (6 months-1 year) but currently reside in Russia and Ukraine. The L1 group included 28 Spanish native speakers who were from the region of Galicia and Extremadura. All participants were recruited online through social networks (e.g. Facebook and Twitter) and mailing lists (e.g. the LINGUIST list).

Participants were aware of the general aim of the study, i.e. to explore grammatical gender use in L2 Spanish, which appeared in the consent form. Before starting the experiment, the participants gave their consent, confirmed they were older than 18, and had no cognitive, neurological or psychiatric impairment.

In a short initial questionnaire, both groups of participants self-evaluated their language proficiency in both English and Spanish according to the following scale: beginner (A1-A2), intermediate (B1), upper-intermediate (B2), advanced (C1) and near-native (C2). Students also gave information on their backgrounds, indicating the age they started their Spanish acquisition and their daily use of the language. In order to ensure a diverse spread of participants we took note of students whose jobs were related to language teaching and whom had backgrounds in linguistics, making sure to include an equal number of “naïve” (those whose job were not linguistics related) and “non-naïve” participants.⁴ Table 1 summarizes the characteristics of the participants.

TABLE I. CHARACTERISTICS OF THE PARTICIPANTS*

	L2 (Russian natives)	L1 (Spanish natives)
Mean age	25 (3.45)	30 (9.57)
Mean age of the start of acquisition of Spanish	18 (4.46)	-
Mean self-assessed proficiency in Spanish (out of 5)	3.14 (1.23)	-
Mean daily use of Spanish (out of 10)	5.03 (3.15)	-
Mean self-assessed proficiency in English (out of 5)	3.3 (1.19)	2.78 (1.1)
N of naïve participants	15 (51.7%)	14 (48.3%)

*Standard deviations are indicated in parenthesis.

3. Initially, there were 31 participants in L2 group, 2 of whom were excluded, since they were Estonian-Russian and German-Russian bilinguals.

4. It is true, though, as suggested by one of the anonymous reviewers that all participants possess knowledge of gender, independent of their professions.

4.3. Method and procedures

Participants were asked to complete the background questionnaire and three gender assignment tasks. Two different questionnaires were provided to each group of participants. The experiment for the Spanish group is available at <https://goo.gl/forms/lk7JuB52WKeYUXoq2>. The experimental task for the Russian group is available at <https://goo.gl/forms/kzGL0E3JFlayFdZ23>. All experimental items were presented in a fixed order for all participants, ensuring that masculine and feminine nouns were mixed so to avoid an order effect. Generally, participants completed the tasks within 10-15 minutes on average.

4.3.1. Experiment 1: gender assignment task with real words

The first experiment consisted of two tasks. These tasks included 64 inanimate real words (40 in the first task and 24 in the second). The wordlist used in both tasks was partially adapted from Imaz Agirre (2016). Real nouns were grouped into four experimental conditions: feminine transparent (ending in -a), feminine opaque (any ending but -a), masculine transparent (ending in -o) and masculine opaque (any ending but -o) nouns. Half the nouns were masculine, and the other half feminine. In order to find out whether the learner's L1 had any effect on the gender assignment process, half the Spanish nouns in each group coincided in grammatical gender with the Russian nouns (congruent), whereas the other half did not (incongruent). A complete list of the used items is available in Appendix 1. Examples of items and conditions are shown in Table 2.

TABLE 2. EXAMPLES OF ITEMS USED IN THE FIRST TASK AND THE SECOND TASKS

Condition*	Gender Spanish/Russian	Spanish word	Russian word
MTC	m/m	viento	<i>veter</i>
MTI	m/f m/n	piso plato	<i>kvartira</i> <i>bljudo</i>
MOC	m/m	bosque	<i>les</i>
MOI	m/f m/n	pincel cristal	<i>kist'</i> <i>steklo</i>
FTC	f/f	lámpara	<i>lampa</i>
FTI	f/m f/n	silla manta	<i>stul</i> <i>odejalo</i>
FOC	f/f	torre	<i>bašnja</i>
FOI	f/m f/n	clase nube	<i>urok</i> <i>oblako</i>

*M (masculine), F (feminine), T (transparent), O (opaque), C (congruent), I (incongruent).

The first task consisted of deciding the correct gender of an inanimate noun in a sentence. Specifically, participants were instructed to choose the correct determiner (article) or modifier (adjective) to complete a sentence. The instruction used was: “Please choose an adjective or an article that best fits each phrase. Some elements of the phrases are eliminated (...)” (see examples 2 and 3).

- | | |
|---|---------------------------|
| (2) <i>Este hombre tiene ... nariz grande</i> | This man has ... big nose |
| a. <i>un</i> | a. a-M |
| b. <i>una</i> | b. a-F |
| (3) <i>Tengo dos relojes ...</i> | I have two ... watches |
| a. <i>antiguos</i> | a. old-M |
| b. <i>antiguas</i> | b. old-F |

The second task consisted of translating English words or short phrases to Spanish. Participants saw the following instruction: “Please translate the following phrases/ words from English to Spanish, e.g. the map = el mapa”. The target nouns were always presented with a determiner, “the”, “a”, “this” or an adjective, e.g. “the cold shower”. Since the participants indicated their level of English proficiency as intermediate, it was assumed they knew all the items, as only high frequency nouns were used in this task.

4.3.2. Experiment 2: gender assignment task with nonce words

The second experiment was run in order to test whether the L2 learners were able to extract morphological regularities of the Spanish gender system by paying attention to noun endings and the gender-ending congruency (-o ending = masculine, -a ending = feminine). Furthermore, using nonce words allowed us to partially avoid frequency effects.⁵

The experiment included 30 nonce words. Nonce words were created to have two or three syllables. Novel nouns were created accordingly with Spanish phonological rules and were grouped into feminine transparent (e.g. *fella*), masculine transparent (e.g. *nodo*), and opaque pseudonouns (e.g. *bante*). The opaque nonce words either end in -e or any other consonant, thus, do not provide any morphological cue to gender. The full list of items is available in Appendix 2.⁶

In this task, participants had to assign grammatical gender to nonce words. They saw a list of pseudowords, and a scale from 1 to 7, where 1 is feminine and 7 is masculine. 4 meant that a word could be either feminine or masculine (see Figure 2). The instruction used in this task was “In the following task, decide what grammatical gender these

5. As pointed out by one of the reviewers, these effects are not completely avoided, since a nonce word “loriz” is assigned feminine gender, given its phonological similarity to “nariz”.

6. Prior to the experiment, three native Spanish speakers were asked to judge whether these words could be considered to be Spanish-like.

nonce words have, 1 – feminine, 7 – masculine, 4 – the word can be either feminine or masculine”. This type of a Likert scale (LS) was used in order to evaluate quantitative differences between the groups and conditions (Schütze & Sprouse, 2013). As Schütze and Sprouse (2013) point out, the LS is numerical and intuitive, and is used to provide information on the size of the difference.

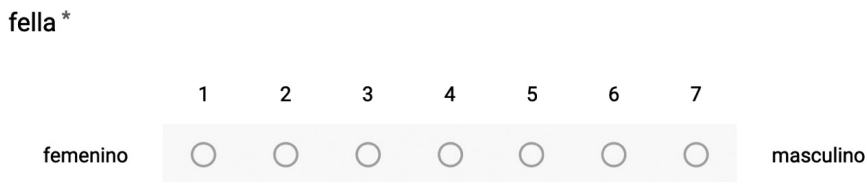


FIGURE 2. EXAMPLE OF A PSEUDOWORD USED IN THE EXPERIMENT 2

5. Results

5.1. Experiment 1: gender assignment task with real words

For the statistical analyses, the data was coded in the following manner: correct answers were coded as 1, incorrect answers were coded as 0. First, mean accuracy scores were calculated. The maximum score a participant could obtain was 8, according to the number of items in each condition. Participants assigned gender at high level of accuracy. The mean accuracy rate for the Spanish group was 98.87%, and 87.46% for the Russian group. Mean accuracy scores for each group of participants and per condition are summarized in Table 3.

TABLE 3. MEAN ACCURACY SCORES FOR THE L1 AND L2 GROUPS

	L1 Spanish		L2 Spanish	
	Accuracy mean score	Accuracy in %	Accuracy mean score	Accuracy in %
Masculine transparent congruent	7.96 (0.19)	99.55%	7.48 (0.99)	93.54%
Masculine transparent incongruent	7.96 (0.19)	99.55%	7.62 (0.82)	95.09%
Masculine opaque congruent	7.86 (0.45)	98.21%	7.45 (0.99)	93.10%
Masculine opaque incongruent	7.82 (0.39)	97.77%	6.66 (1.37)	83.19%
Feminine transparent congruent	7.86 (0.36)	98.21%	7.24 (1.18)	90.52%
Feminine transparent incongruent	8 (0.00)	100%	7.52 (1.09)	93.96%
Feminine opaque congruent	7.82 (0.39)	97.77%	6.52 (1.53)	81.47%
Feminine opaque incongruent	8 (0.00)	100%	5.76 (2.05)	71.98%
Total accuracy score	7.91 (0.08)	98.87%	6.99 (0.67)	87.46%

Mean accuracy scores were submitted to a mixed ANOVA with gender (masculine, feminine), transparency (transparent, opaque) and congruency (congruent, incongruent) as within-subjects variables, and group (native speakers and L2 learners) as between-subjects variable.

Findings revealed a main effect for gender ($F(1,55) = 11.684, p < 0.001$) and gender x group interaction ($F(1,55) = 13.327, p < 0.001$). Overall accuracy in the gender assignment task with real words, therefore, was significantly higher for masculine nouns, as shown in Figure 3. Concerning gender x group interaction, the accuracy scores with masculine and feminine nouns were 98.8% and 99% for the L1 group, but for the L2 group the gap was significantly wider, 91.3% and 84.4%.

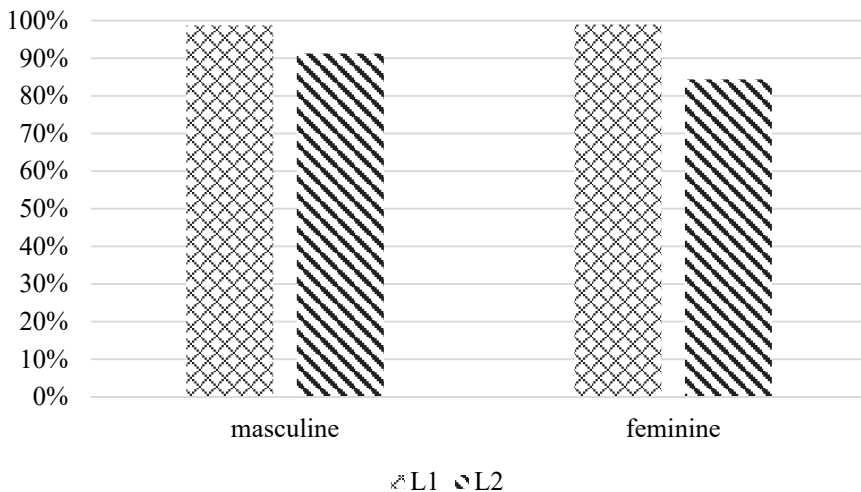


FIGURE 3. ACCURACY RATES FOR MASCULINE AND FEMININE NOUNS.

Regarding nouns' morphology, a main effect of transparency ($F(3,165)=11.616, p < 0.001$) was found, and there was a significant interaction with group ($F(3,165)=9.692, p < 0.001$) and with gender ($F(3,165)=4.086, p = 0.011$). The main effect indicated that the participants were more accurate when assigning gender to transparent nouns rather than to opaque nouns. As observed in Figure 4, native speakers' accuracy scores for transparent and opaque nouns were 99.3% and 98.4% respectively, whereas for the L2 group the scores were 91.3% and 90.5%. The analysis also showed a three-way interaction between gender, transparency and group ($F(3, 165)=3.329, p = 0.002$).

Referring to congruency, a main effect ($F(7,385)=5.476, p < 0.001$) for this condition was found. Considering secondary effects, congruency interacted with gender ($F(7,385)=5.764, p < 0.001$) and with transparency ($F(21,1155)=2.437, p < 0.001$) but no interaction with group was observed ($F(7,385)=1.604, p = 0.157$). Regarding to the

absence of interaction between congruency and group, the respective accuracy scores with congruent and incongruent nouns were 98.4% and 99.3% for the L1 group, and 89.7% and 86% for the L2 group. It is observed that the L1 Spanish group assigned gender more accurately to incongruent nouns. This is a predictable result, as we do not expect Russian gender to affect gender assignment for the L1 group. As for the L2 Spanish group, congruent nouns were assigned gender more accurately, suggesting that language transfer takes place.

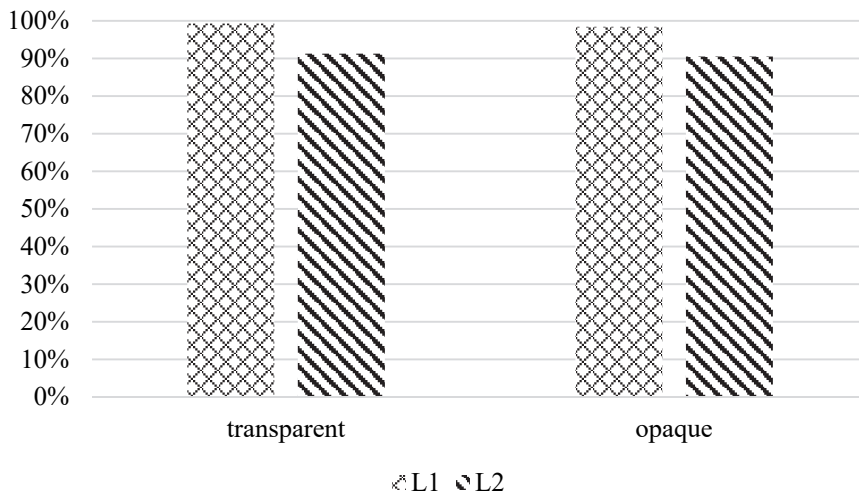


FIGURE 4. ACCURACY RATES IN TRANSPARENT AND OPAQUE NOUNS.

Finally, the following three-way interactions were found: transparency x congruency x group ($F(21,1155)=2.470, p=0.009$), gender x congruency x group ($F(7, 385)=3.472, p<0.001$), and gender x transparency x congruency ($F(7,385)=5.489, p<0.001$). A four-way interaction between gender, transparency, congruency and group was also observed ($F(21,1155)=3.219, p=0.001$).

Subsequent ANOVA analyses were conducted for each group. These analyses showed statistically significant differences in accuracy scores of masculine and feminine nouns ($F(1,28)=13.582, p<0.001$) in the L2 Spanish group, indicating that the learners were more accurate with masculine gender than with feminine gender. Furthermore, a main effect of transparency was observed ($F(3,84)=10.668, p<0.001$), indicating that transparent nouns are easier to use for the Russian learners of L2 Spanish. Moreover, congruency effect was also found ($F(7,196)=4.803, p=0.002$), suggesting that the native language of the L2 group helps learners to acquire nouns of the same gender in their L1 and L2, whereas in cases when gender does not coincide, language transfer is observed. Gender interacted significantly with transparency ($F(3,84)=3.631, p=0.026$) and with congruency ($F(7,196)=5.625, p<0.001$). A three-way interaction between gender,

transparency and congruency was found ($F(21,588)=3.164, p<0.05$). No interaction was observed between transparency and congruency ($F(21,588)=2.706, p=0.075$).

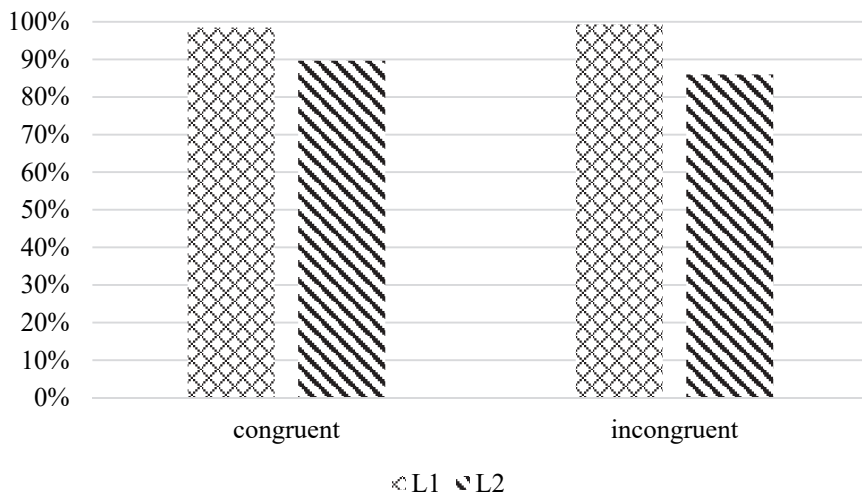


FIGURE 5. ACCURACY RATES IN CONGRUENT AND INCONGRUENT NOUNS.

Referring to the L1 Spanish group, no significant differences were found for gender ($F(1,27)=0.278, p=0.602$) and transparency ($F(3,81)=1.875, p=0.160$). However, gender interacted significantly with transparency ($F(3,81)=3.003, p<0.05$). No other interactions between conditions were observed. This result indicated that the native speakers assign gender equally to masculine and feminine but are more accurate with transparent rather than with opaque nouns.

5.2. Experiment 2: gender assignment task with nonce words

In the third task participants had to assign gender to nonce words. This task was used in order to explore if the L2 students were sensitive to gender cues (-o ending = masculine gender, -a ending = feminine gender). Mean ratings were calculated for each item and for each group of items. As illustrated in Figure 6, the pattern of gender assignment for nonce words is similar in both groups. These results show that L2 Spanish students are able to recognize feminine and masculine nonce words due to the transparent morphophonological cue (-o and -a endings). Considering opaque nonce words, both L1 and L2 groups indicated that these nouns could be either feminine or masculine. Nonetheless, it is noteworthy to mention that both groups showed a tendency to assign masculine gender to the nonce words that ended in a consonant. The only exception was the nonce word *loriz* which was situated on the scale closer to

the feminine gender. This suggests that the ending *-iz* is more associated with feminine gender by both native and non-native groups.

Mean scores per each condition (feminine, masculine, opaque) were submitted to one-way ANOVA. No significant differences were observed for feminine ($F(1,55)=0.687$, $p=0.411$), masculine ($F(1,55)=3.680$, $p=0.060$) or opaque ($F(1,55)=1.862$, $p=0.178$) nonce words. These results indicate that the L2 group identify and use gender cues in a similar manner that native speakers do.

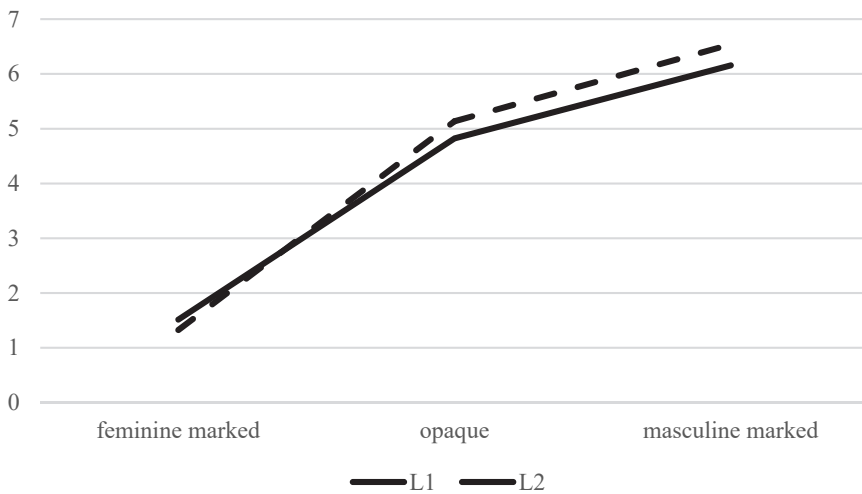


FIGURE 6. NONCE WORDS GENDER ASSIGNMENT BY L1 (CONTINUOUS LINE) AND L2 (DASHED LINE) GROUPS.

6. Discussion and conclusion

In the present study we address grammatical gender use by Russian-speaking students of L2 Spanish, aiming to answer the following two main questions:

1. Do Russian speakers with an intermediate-advanced level of L2 Spanish assign gender to real nouns with transparent and opaque endings as native speakers of Spanish do?
2. Is there any difference between L1 and L2 groups in gender assignment to novel words?

Findings in the present study with Russian-speaking adults seem to confirm previous research that reported that gender is acquirable by L2 learners (Sagarra and Herschensohn, 2011; White et al., 2004). Although the L1 group performed significantly better in gender assignment tasks, gender assignment pattern of the L2 group is similar to that of Spanish speakers. The very high accuracy in all tasks shown

by L2 learners may indicate that, as gender features are present in Russian, it is possible that in higher levels of language proficiency Russian-speaking students may reach full gender acquisition (Alarcón, 2009, 2011; Franceschina, 2005). Generally, the L2 Russian-speaking students have a mental representation of gender, and occasional errors may be attributed to performance limitations. These results, thus, support Schwartz and Sprouse's Full Transfer/Full access hypothesis.

Regarding gender, the higher accuracy rates for masculine compared to feminine nouns can be explained by a preference for a masculine default form in Spanish, which had already been reported in previous research (Alarcón, 2010; Montrul et al., 2008; Montrul et al., 2012; White et al., 2004). In Spanish the masculine form has been proposed to be featureless or unspecified just as it also acts as a default form in Russian (Corbett, 1991; Foote, 2014; Harris, 1991). Considering this, Russian-speaking learners of L2 Spanish may be influenced by these language characteristics.

With respect to the transparency, the L2 group were less precise with both transparent and opaque nouns in comparison with the L1 group. Globally, the L2 students assigned gender better to transparent nouns than to opaque ones, suggesting that noun endings are informative cues which help students assign grammatical gender more accurately. These findings are also in line with previous research where a transparency effect was found (Alarcón, 2011; Franceschina, 2005). The main problematic area for L2 learners seems to be feminine opaque nouns which do not provide morphological cues to gender, as it had been previously shown in a corpus-based study by Batiukova (2018). Also, as they frequently end in consonants (e.g. *nariz* 'nose-F'), these nouns can be mistakenly identified as masculine, given the resemblance to masculine forms in Russian. Data analysis revealed gender and transparency interaction for the L2 group. That is, the L2 learners assigned gender better to transparent masculine nouns rather than to opaque masculine and to feminine transparent than to feminine opaque nouns. The transparency effect is greater for feminine than for masculine nouns.

In terms of the language transfer from the L1 of the Spanish learners, the analysis revealed the main effect of congruency. This result indicates that, generally speaking, congruency facilitates gender assignment for the L2 students. That is, if a Spanish noun has the same gender as in Russian, students are more accurate when assigning grammatical gender to it. The analysis also showed interaction between transparency and congruency. In case of opaque nouns, the L2 group is more accurate with congruent nouns, whereas in transparent condition incongruent nouns are assigned more correctly. This result indicates that congruency helps the L2 students only with opaque nouns, whilst transparency remains a stronger cue, as was previously claimed (Alarcón, 2011; Bates et al., 1995).

With respect to the second research question and turning now to the nonce word task, gender has a relatively overt morphological expression in Spanish nouns through the markers -o and -a (Harris, 1991). These markers are reported to be an important source of information for children acquiring Spanish as L1 (Pérez-Pereira, 1991). Conducting a nonce word gender assignment task, it was found that the L1 and L2

groups assign gender to invented words in a similar manner. This provides evidence that L2 students are able to identify gender cues in masculine and feminine transparent nouns and successfully use them. In case of opaque nonce words, both groups of participants showed a tendency to assign masculine gender to these nouns. This finding also supports previous research idea about general preference for masculine gender (Alarcón, 2014; Foote, 2014; Montrul et al., 2014).

As the present research is a pilot study on grammatical gender acquisition in L2 Spanish by Russian-speaking students, future research is necessary to test groups with different levels of Spanish language, especially the elementary and pre-intermediate levels in order to explore the differences in gender assignment strategies used by different groups. Furthermore, using a self-rating scale of the language level is one of the limitations of this study. Future research should employ a more objective strategy, such as a language level test.

To sum up, findings from this research provide evidence that the intermediate-advanced Russian-speaking learners of L2 Spanish were able to assign grammatical gender in a similar manner as the native speakers from a qualitative perspective. From a quantitative point of view, there were differences in accuracy rates, suggesting that the L2 group is yet to fully acquire grammatical gender system in Spanish. Especially, these differences are observed in opaque feminine nouns which are possibly the most problematic class of nouns in Spanish for Russian-speaking learners. Furthermore, results in this study suggest that Russian adults learning L2 Spanish are able to use gender cues embedded in nouns (i.e. gender markers -a, -o). Future research is needed to test if L2 learners are able to use these markers in comprehension tasks and if this transparency facilitates gender processing, as reported for native speakers (Caffarra, Janssen, & Barber, 2014; Caffarra & Barber, 2015). Regarding didactic implications, it is possible that a stronger focus on distributional co-occurrence of nouns' ending and their grammatical gender in the L2 classroom may help students to improve their gender assignment accuracy on both known and novel nouns (Gariano, 1984; Martoccio, 2019).

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Appendix 1. Complete list of items and their Russian equivalents

Condition	Gender Sp/Ru	Spanish	Russian (Cyrillic)	Russian (Transliterated)	English
Transparent	f/f	cama	кровать	<i>krovat'</i>	bed
	f/f	falda	юбка	<i>yubka</i>	skirt
	f/f	camisa	рубашка	<i>rubashka</i>	shirt
	f/f	botella	бутылка	<i>butylka</i>	bottle
	f/f	vela	свеча	<i>sveča</i>	candle
	f/f	nota	оценка	<i>ocenka</i>	mark
	f/f	cesta	корзина	<i>korzina</i>	basket
	f/f	lámpara	лампа	<i>lampa</i>	lamp
	f/m	silla	стул	<i>stul</i>	chair
	f/m	copa	бокал	<i>bokal</i>	glass
	f/m	fruta	фрукт	<i>frukt</i>	fruit
	f/m	mesa	стол	<i>stol</i>	table
	f/m	casa	дом	<i>dom</i>	house
	f/m	sopa	суп	<i>sup</i>	soup
	f/m	ducha	душ	<i>duš</i>	shower
	f/n	manta	одеяло	<i>odejalo</i>	blanket
	m/m	viento	ветер	<i>veter</i>	wind
	m/m	ruido	шум	<i>šum</i>	noise
	m/m	baño	туалет	<i>tualet</i>	toilet
	m/m	vuelo	полёт	<i>poljot</i>	flight
	m/m	barco	корабль	<i>korabl'</i>	ship
	m/m	armario	шкаф	<i>škaf</i>	wardrobe
	m/m	banco	банк	<i>bank</i>	bank
	m/m	globo	шар	<i>šar</i>	balloon
	m/f	piso	квартира	<i>kvartira</i>	flat
	m/f	turno	очередь	<i>očered'</i>	turn
	m/f	cuello	шея	<i>šeja</i>	neck
m/f	bolso	сумка	<i>sumka</i>	bag	
m/f	grupo	группа	<i>gruppa</i>	group	
m/f	libro	книга	<i>kniga</i>	book	
m/n	plato	блюдо	<i>bljudo</i>	dish	
m/n	vino	вино	<i>vino</i>	wine	

Opaque	f/f	canción	песня	<i>pesnja</i>	song
	f/f	noche	ночь	<i>noch'</i>	night
	f/f	torre	башня	<i>bašnja</i>	tower
	f/f	sartén	сковорода	<i>skovoroda</i>	frying pan
	f/f	sangre	кровь	<i>krov'</i>	blood
	f/f	calle	улица	<i>ulica</i>	road
	f/f	razón	причина	<i>pričina</i>	reason
	f/f	pared	стена	<i>stena</i>	wall
	f/m	clase	урок	<i>urok</i>	class
	f/m	llave	ключ	<i>ključ</i>	key
	f/m	nariz	нос	<i>nos</i>	nose
	f/m	fuente	фонтан	<i>fontan</i>	fountain
	f/m	crisis	кризис	<i>krizis</i>	crisis
	f/n	salud	здоровье	<i>zdorovje</i>	health
	f/n	nube	облако	<i>oblako</i>	cloud
	f/n	carne	мясо	<i>mjaso</i>	meat
	m/m	bosque	лес	<i>les</i>	forest
	m/m	jardín	сад	<i>sad</i>	garden
	m/m	álbum	альбом	<i>al'bom</i>	album
	m/m	baile	танец	<i>tanec</i>	dance
	m/m	traje	костюм	<i>kostjum</i>	suit
	m/m	norte	север	<i>sever</i>	north
	m/m	ordenador	компьютер	<i>kompjuter</i>	computer
	m/f	coche	машина	<i>mašina</i>	car
	m/f	peine	расческа	<i>rasčjoska</i>	hair comb
	m/f	papel	бумага	<i>bumaga</i>	paper
m/f	pincel	кисть	<i>kisti</i>	paintbrush	
m/f	manual	инструкция	<i>instrukcija</i>	handbook	
m/n	crystal	стекло	<i>steklo</i>	glass	
m/n	sillón	кресло	<i>kreslo</i>	arm-chair	
m/plur	reloj	часы	<i>časy</i>	clock	

Appendix 2. Complete list of non-words

	Feminine transparent	Masculine transparent	Opaque
1	fella	uplo	ucudón
2	ñona	nodo	sione
3	ulaca	leto	loriz
4	meja	irtopo	plalán
5	futa	ñalono	vidín
6	arlana	julo	bante
7	gala	cotolo	care
8	tuca	rozoco	alote
9	cinaca	ceboto	ruacal
10	misisa	lepo	ploche