Research Article

Gorka Basterretxea Santiso*

‘Aquí toman mucho sopa’: Linguistic variables as predictors of non-standard gender agreement production in Basque Spanish

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Abstract: The language contact between Basque and Spanish in the Basque Autonomous Community (BAC) gives rise to the production of specific linguistic features such as non-standard gender agreement (N-SGA). N-SGA in BAC Spanish has been traditionally attributed to elder Basque native speakers without much access to education, but this affirmation is not based on any empirical study. In addition, although several scholars have explored N-SGA in other language contact situations, there is no agreement on the linguistic factors that favor this production. Taking this knowledge gap as the point of departure, the present study explores 73 individual sociolinguistic interviews by a diverse population from the BAC in order to delimit (i) the community that produces N-SGA and (ii) the linguistic factors that condition it. Results follow Basterretxea Santiso’s (2022, “A triangulation study on gender agreement in Spanish by native Basque speakers.” *Revista Española de Lingüística (RSEL)* 52(1): 7–37) suggestion that N-SGA in BAC Spanish is present across generations: it is a well-established feature present in BAC Spanish as a result of language contact. Results also support the existence of a local gender agreement system that depends on the gender of the controller, inflectional form, number, distance, and whether the target is a clitic or adjective.

Keywords: grammatical gender, language contact, linguistic factors, Basque, Spanish

1 Introduction

The language contact situation gives rise to specific linguistic features that may not be present in non-contact varieties of the same language. This is, for example, the case of the language contact between Basque (Euskara) and Spanish in the Basque Autonomous Community (BAC): the Spanish spoken in this territory (henceforth BAC Spanish[1]) presents certain linguistic features that may not be found in non-contact varieties of Spanish. Among others, one such feature is the production of non-standard gender agreement (N-SGA): these are gender agreement (GA[2]) cases that do not adhere to the Spanish prescriptive rules, different from standard gender agreement (SGA) cases that do adhere to Spanish prescriptive rules. One example of N-SGA is *Un montón de caseríos estaban quedándose viejas* ‘A lot of farms [masc.] were becoming old [fem.]’ where the expected SGA

1 BAC Spanish refers here to the variety of Spanish spoken in the three provinces that form part of the BAC: Bizkaia, Gipuzkoa, and Araba (Rodríguez-Ordóñez 2021b).

2 GA has been defined as “the covariance or matching of feature specifications between two separate elements” (Corbett, 1998, 191).

* **Corresponding author: Gorka Basterretxea Santiso,** World Languages Center, Northeastern University, Boston, MA, United States of America, e-mail: g.basterretxeasantiso@northeastern.edu

would be *Un montón de caseríos estaban quedándose viejos* 'A lot of farms [masc.] were becoming old [masc.]' (example from Basterretxea Santiso 2022, 21). The language contact situation between Basque and Spanish has been found to be the reason for N-SGA production: while Spanish contains grammatical gender (Real Academia Española [RAE] 2016), Basque does not have this feature (Euskaltzaindia 2002, Zubiri and Zubiri 2012).

N-SGA production is not exclusive to BAC Spanish, and it has been extensively studied in language contact situations involving other languages (e.g., English and Spanish, Italian and German, Arabic heritage speakers, or Spanish and Dutch), but mainly through language acquisition lenses and their theoretical frameworks (e.g., Albirini et al. 2013, Avelino Sierra 2021, Balam et al. 2021, Grey et al. 2015, Issa et al. 2020). Thus, the need for variationist sociolinguistic studies exploring N-SGA production in language contact situations is evident. This is also particular to BAC Spanish, as no previous empirical study can be found to delimit the population producing N-SGA or the sociolinguistic factors that impact its production. A previous non-empirical study has associated N-SGA in BAC Spanish with elder native speakers of Basque without much access to education (Fernández Ulloa 1997). A possible reason to assign N-SGA to this population may be that elder BAC inhabitants are believed to produce more linguistic features associated with Basque for historical limitations in education (Camus Bergareche 2021). However, as argued by Basterretxea Santiso (2022), Fernández Ulloa's (1997) affirmation is not based on an empirical study as he demonstrated that N-SGA in BAC Spanish is also present among young Basque native speakers with access to education. Therefore, we are unaware of the population that produces N-SGA in BAC Spanish neither of the linguistic contexts where N-SGA may be present in this community. By conducting a synchronic variationist study, the aim of this article is not to report potential GA 'errors' in BAC Spanish, but rather to investigate the underlying linguistic reasons why N-SGA is produced in language contact situations in general (previous investigations have reported some contradictory results) and in BAC Spanish in particular.

2 Background literature

2.1 Basque Country: Language contact between Basque and Spanish

Basque and Spanish are two languages that influence each other through the language contact situation that they have experienced since Latin arrived at the Iberian Peninsula, and particularly, after the Middle Ages (Camus and Gómez Seibane 2018). This is the linguistic situation in the Basque Country, which can be divided into three areas: BAC (formed by the provinces of Bizkaia, Gipuzkoa, and Araba), Nafarroa, and Iparraldea (formed by Lapurdi, Nafarroa Beherea, and Zuberoa). However, in Iparraldea Basque is not in contact with Spanish, but with French.

Currently, the highest number of Basque speakers can be found in the BAC, probably due to the fact that this is the area where the highest number of linguistic policies that support Basque have been carried. One such linguistic policy is the 1982 Act of Normalization of the Basque Language (Law 10/1982) by which Basque was introduced in the education system (it was forbidden to speak any other language but Spanish during Francisco Franco's dictatorship: 1939–1975). From the 2.1 million inhabitants that form part of the BAC, 41% are categorized as Basque native speakers, 15% are supposed to understand Basque but cannot speak it, and 44% cannot understand nor speak it (Eusko Jaurlaritza 2020). When divided into the three provinces that form part of the BAC, Gipuzkoa is the area in which most Basque is spoken (31%), followed by Bizkaia (9%), and then Araba (5–6%) (Altuna Zumeta et al. 2022). In terms of linguistic profiles, the number of monolingual Spanish speakers has decreased in the last 30 years (from 65.9 to 44.3%; Gómez Seibane 2020) particularly among younger generations due to, for instance, the introduction of Basque in education. The same applies to monolingual Basque speakers, who are practically non-existent.

Although Spanish and Basque are two distinct languages (Spanish is a Romance language while the origin of Basque is unknown), they linguistically influence each other. On the one hand, one of the most perceived influences of Spanish into Basque is the use of loanwords (Camus Bergareche 2011). On the other hand, while

Basque is a minoritized language, it also influences Spanish with the presence of characteristics such as the doubling of adjectives as an intensifier, use of conditional where in other varieties the subjunctive is employed, or the SOV order (Fernández Ulloa 1997). This influence of Basque into Spanish gives rise to a particular variety of Spanish (BAC Spanish), sometimes categorized as somewhat complex (Camus 2013), for being formed by a continuum of linguistic modalities conditioned by history, geography, and sociolinguistic factors (Camus and Gómez Seibane 2018).

2.2 Gender in Basque

Basque is a language that does not contain grammatical gender (Euskaltzaindia 2002, Trask 2003, Zubiri and Zubiri 2012). Nevertheless, it has certain linguistic features through which social gender identity can be expressed: for instance, words such as *ama* 'mom,' and *aita* 'father' (Gómez Seibane 2008). In addition, there are certain varieties of Basque that do actually express gender by using verb agreement morphemes: *-k* for male addressees as in (1), and *-n* for female addressees as in (2) (Alberdi 1995, Euskaltzaindia 2002). This is present only in the varieties that employ the familiar second-person singular pronoun *hi* (Euskaltzaindia 2002, Gómez Seibane 2008, Pérez-Tattam et al. 2019).

(1) *Hik ez Duk erosi hori.*
You not have bought that
"You haven't bought that."

(2) *Hik ez dun erosi hori.*
You not have bought that
"You haven't bought that."

Although the general rule is that Basque does not contain grammatical gender, scholars have mentioned that currently, in spontaneous speech, speakers might be producing Romance-style gender marking by distinguishing, for instance, *gixajo* 'poor fellow [masc.]' and *gixaja* 'poor fellow [fem.], while in reality *-o* and *-a* in Basque do not inherently indicate gender (Gómez Seibane 2008, Parafita Couto et al. 2015). Since this is supposed to be part of oral language, it has been categorized as a minimal phenomenon (Euskaltzaindia 2002, Gómez Seibane 2008, Trask 2003, Zubiri and Zubiri 2012).

2.3 Gender in Spanish

Grammatical gender has been described as a distinguishing characteristic used to classify nouns into at least two distinct groups (Kramer 2020). This is the case in Spanish as grammatical gender is divided into masculine[3] and feminine[4] (Real Academia Española [RAE] 2016). In fact, GA in Spanish has been categorized as 'a permanent characteristic of nouns' (Carroll 1989). The grammatical gender system of Spanish, similar to other Romance languages, is partly based on social gender identity: feminine nouns typically refer to females (e.g., *madre* 'mother,' *hermana* 'sister'), while masculine nouns typically refer to males (e.g., *padre* 'father,' *hermano* 'brother') (Corbett 2013, Kramer 2020). Nevertheless, this is not the case in the totality of nouns in Spanish, as both genders include nouns that are not based on social gender identity (Corbett 2013), which means that their gender is arbitrarily assigned (Kramer 2020).

3 Masculine is the default (or unmarked) gender in Spanish due to, for instance, its use to refer to both females and males (Roca 1989, 2005, Harris 1991).

4 Originally, it also included the neuter gender (Poplack et al. 1982).

The singular determiner for the masculine gender is *el*, and its canonical inflectional form is *-o* (Anderson 1999, Harris 1991, Teschner and Russell 1984). This canonical inflectional form accounts for 99.9% of masculine nouns in Spanish (Teschner and Russell 1984). Regarding feminine gender, its singular determiner is *la* and the canonical inflectional form is *-a* (Anderson 1999, Harris 1991, Teschner and Russell 1984). This inflectional form accounts for 96.3% of feminine nouns in Spanish (Teschner and Russell 1984). Taking this into consideration, GA in Spanish is syntactically manifested within the nominal phrase by establishing an agreement between the controller[5] and targets[6] such as determiners and adjectives, be that adjacent, as in (3), or non-adjacent, as in (4[7]) (Balam et al. 2021, Boers et al. 2020, Clegg 2011, Cuza and Pérez-Tattam 2016, Horáková and Gomar 2014, Montrul and Potowski 2007, Poplack et al. 1982).

(3) *Una* *casa*[8] *pequeña* *cuesta* *mucho*.
DET-FEM house-FEM small-FEM costs a lot
"A small house costs a lot."

(4) *Las* *casas* *son* *bastante* *pequeñas*.
DET-FEM houses-FEM are quite small-FEM
"The houses are quite small."

The nominal suffix for each gender in Spanish is normally a reliable gender marker or predictor (Gonzalez et al. 2019, Green 1988, Parafita Couto et al. 2015, Teschner and Russell 1984). Nevertheless, no strict relation between nominal suffix and gender assignment exists in this language, as there are words such as *luz* 'light [fem.]' or *coche* 'car [masc.]' that are different from the canonical ending that corresponds to their gender (Eddington 2002).

While gender in Spanish is categorized as a permanent characteristic of nouns (Carroll 1989), exceptions to this rule exist (Alarcos Llorach 2017):

- Homonyms or words that are pronounced the same but have different meanings depending on the gender of the article that accompanies them (e.g., *el frente* 'front' vs *la frente* 'forehead,' *el editorial* 'editorial' vs *la editorial* 'publisher,' *el cura* 'priest' vs *la cura* 'cure') (Escobar and Hualde 2021, Travis 2020).
- Ambiguous nouns that maintain their meaning regardless of the gender of the article that accompanies them (e.g., *el mar* 'sea' vs *la mar* 'sea,' *el calor* 'heat' vs *la calor* 'heat,' *el maratón* 'marathon' vs *la maratón* 'marathon') (Alarcos Llorach 2017). The use of one gender over the other may be based on regional varieties of Spanish (Montero Curiel 2019).
- Heteronymy: some animal nouns distinguish between females and males by using different stems (e.g., *el caballo* 'horse' vs *la yegua* 'mare,' *el toro* 'bull' vs *la vaca* 'cow,' and *el carnero* 'ram' vs *la oveja* 'ewe' (Alarcos Llorach 2017, Escobar and Hualde 2021).
- Epicene nouns: non-human nouns that employ the same agreement to refer to both female and male animals (e.g., *la mosca* 'the fly [male or female],' *la hormiga* 'the ant [male or female]') (Alarcos Llorach 2017, Corbett 1991, Escobar and Hualde 2021; Ogneva 2020). Epicene nouns also include unsexed human nouns (e.g., *la víctima* 'the victim' or *la persona* 'the person') (Kramer 2020). Additional terms such as *macho* 'male' or *hembra* 'female' can be used to specify the sex of epicene nouns (Escobar and Hualde 2021, Ogneva 2020).

5 This is the element that defines GA (Corbett 1991, 2009).
6 This is the element that varies in form based on the controllers' gender (Corbett 1991, 2009).
7 These two examples were extracted from the study by Gonzalez et al. (2019).
8 All controllers present in the sentence will be underlined. Absent controllers will be included in square brackets.

The description of Spanish GA included above refers to prescriptive rules, and they do not consider the possible production of N-SGA in language contact situations, nor the use of inclusive gender forms such as *-x*, *-e*,[9] and -@[10].

2.4 GA production in language contact situations: Linguistic factors

N-SGA production is typically explained by the language contact situation between languages with different GA systems, or the absence of GA in one of the languages involved (Anderson 1999, Baetens Beardsmore 1971, Jahr 2001). Several scholars have already explored the factors that influence N-SGA production in diverse language contact situations. These factors include both social (e.g., age, language of schooling, level of education, bilingual profile, and origin) and linguistic predictors, but this article is focused on the impact of the latter ones.

Controllers' gender has been declared to be one influential factor for N-SGA production in language contact situations. For instance, Balam et al. (2021) revealed that masculine gender was employed as the default gender among Spanish-English bilinguals when codeswitching (e.g., *un rock* for 'rock', which is a feminine noun in Spanish). Pfaff (1979) also found similar patterns among the same population.

Not only controllers' gender has been found to be influential when producing N-SGA in language contact situations, but the controllers' inflectional form (or canonicity) too. Previous studies have found that more N-SGA is produced in Spanish in contact with other languages when the controller is a non-canonical noun for its gender (e.g., *la pared* 'the wall' or *el lápiz* 'the pencil'), compared to canonical nouns (Alarcón 2011, Bianchi 2012, Boers et al. 2020, Cruz Rico et al. 2021, Foote 2015, Goebel-Mahrle and Shin 2020, Hur et al. 2021, Ramírez Cruz 2009, Tarova et al. 2023). However, Alarcón (2021) contradicts this generalization as they did not find significant differences in N-SGA production regardless of the controllers' inflectional form.

Speakers' familiarity with words has also been found to be a prominent predictor for N-SGA production. Delgado (2018) in Spanish/English mixed DPs and Husein (2021) in Arabic found more N-SGA instances with less familiar words. Nevertheless, Goebel-Mahrle and Shin (2020) did not find a frequency to predict N-SGA production in sociolinguistic interviews and picture books narrated in Spanish by children. This lack of influence may be related to speakers only using words they were familiar with.

Another linguistic factor that has been explored as a predictor for N-SGA production is the distance between the controller and the targets: the bigger the distance, the higher the N-SGA rates (Díaz Barajas and Orozco 2019, Goebel-Mahrle and Shin 2020, Lipski 2015, Pinta 2022, Ramírez Cruz 2009).

The next linguistic factor is controllers' animacy. Although some authors have not found this linguistic factor to predict N-SGA production (e.g., Avelino Sierra 2021, Lipski 2015), others have found very different rates based on animacy: more N-SGA is produced when the controller is inanimate (e.g., Albirini et al. 2013, Balam 2016, Díaz Barajas and Orozco 2019; Otheguy and Shin 2003).

Number of the controllers (singular vs plural) is another linguistic factor that has been discovered to affect N-SGA production. It has been concluded that speakers produce more SGA with singular controllers in a number of different language contact situations (e.g., Albirini et al. 2013, Díaz Barajas and Orozco 2019, Di Pisa and Marinis 2021, Gonzalez et al. 2019, Gudmestad and Edmonds 2021).

The second to last most common linguistic factor that has been identified to be influential in different publications is a type of agreement, or in other words, the category of the target elements that agree with the controller (e.g., clitic, determiner, adjective). Despite a number of studies exploring N-SGA production did not consider the possible effect of this linguistic factor due to the nature of their methodology,[11] others have

9 This ending existed in Spanish, but not as an inclusive use.

10 For more information on inclusive gender language use in Spanish, refer to Papadopoulos (2022).

11 For instance, limiting the number of variables considered in an experimental task or the analysis of sociolinguistic interviews (e.g., Alarcón 2011, 2021, Albirini et al. 2013; Di Pisa and Marinis 2021; Shin et al. 2019).

discovered N-SGA to be more prominent with clitics and adjectives (e.g., Cuza and Pérez-Tattam 2016, Goebel-Mahrle and Shin 2020, Jin et al. 2007). For instance, it is common to see an overuse of the masculine pronoun *lo* 'it' when referring to masculine and feminine controllers (Goebel-Mahrle and Shin 2020, Torres Sánchez 2021). Similarly, higher N-SGA production rates were found with adjectives, rather than determiners (Gonzalez et al. 2019, Gudmestad et al. 2019, White et al. 2004).

The last linguistic feature that has been found to usually influence N-SGA production is the type of clause in which the agreement is produced. For instance, Díaz Barajas and Orozco, in their study on Purépecha Spanish, found that predicative sentences exhibited the highest N-SGA production rates, followed by direct objects, subjects, indirect objects, and adverbial phrases. However, authors such as Torres Sánchez (2021) did not identify nominal phrase (NP), adjectival phrase (AP), and predicate clause to be different when predicting N-SGA production.

2.5 GA production in BAC Spanish

The origin of N-SGA in BAC Spanish has been attributed to the absence of grammatical gender in Basque (Echaide 1968). Its presence cannot be categorized as a recent linguistic phenomenon as it has been discovered in the texts that were written in Spanish in the fifteenth and sixteenth centuries in Bizkaia, and eighteenth-century Nafarroa (Etxague Burgos 2012, Gómez Seibane 2008). Previous publications have explored this linguistic phenomenon in BAC Spanish through longitudinal studies on bilingual children (e.g., Ezeizabarrena 2009, Idiazabal 1995), or Basque–Spanish speakers learning English as their L3 (Imaz Agirre and García Mayo 2013), but not through variationist sociolinguistics' perspectives focusing on language contact.

Based on the need for more linguistic studies exploring N-SGA in BAC Spanish (Badiola and Sande 2018), it is widely believed that this linguistic feature is mainly prominent among elder *euskaldun zaharrak*[12] who had limited access to education (Fernández Ulloa 1997). Nevertheless, this generalization lacks empirical support. The first empirical study exploring N-SGA in BAC Spanish (not codeswitching[13]) is Basterretxea Santiso (2022): by exploring 45-min-long spontaneous conversations between friends or family members in Spanish, a grammatical choice test, and a written metalinguistic questionnaire, results contradict the generalization by Fernández Ulloa (1997). Basterretxea Santiso (2022) found that N-SGA is also present among young adult (age range: 21–29) native speakers of Basque who have had access to (higher) education. Nevertheless, further studies that delimit the population producing N-SGA and the linguistic factors that favor this production are needed since Basterretxea Santiso (2022) constitutes an initial study that included 12 participants.

3 Research question

Taking into consideration the information presented above, this article aims to answer the following research questions:

1. Is the production of N-SGA limited to elder Basque native speakers with limited educational opportunities as suggested by Fernández Ulloa (1997)?
2. To what extent do speakers of BAC Spanish produce N-SGA based on the following list of linguistic variables?

a) Controllers' gender;
b) Inflectional form;

12 A term used to refer to Basque native speakers (Ortega et al. 2015; Rodríguez-Ordóñez 2021a).

13 Refer to Badiola and Sande (2018), Munarriz-Ibarrola et al. (2021), and Parafita Couto et al. (2015) to learn about N-SGA production in BAC Spanish codeswitching.

c) Familiarity with the agreeing words;
d) Distance between targets;
e) Noun animacy;
f) Number of the controller;
g) Type of agreement;
h) Type of clause.

Based on what scholars analyzing GA have previously found, the following are the anticipated hypotheses:

1. As suggested by Palacios (2021), and opposing the generalization made by Fernández Ulloa (1997), N-SGA is expected not to be exclusive to elder Basque native speakers without much access to education, but a widely distributed linguistic feature present among all participants.
2. More N-SGA will be produced when the controller's ending is non-canonical (e.g., Alarcón 2011, Bianchi 2012, Tarova et al. 2023). When speakers are less familiar with the words, more N-SGA will be produced (Delgado 2018, Hur et al. 2021, Husein 2021). Similarly, as the distance between targets increases, the likelihood of producing more N-SGA will increase (e.g., Díaz Barajas and Orozco 2019, Goebel-Mahrle and Shin 2020, Lipski 2015). More N-SGA is also expected when the controller is an inanimate noun due to its gender being acquired later (e.g., Andersen 1984, Casado et al. 2021, Finnemann 1992). Additionally, more N-SGA is anticipated with singular controllers (e.g., Albirini et al. 2013, Di Pisa and Marinis 2021), with clitics (Goebel-Mahrle and Shin 2020, Torres Sánchez 2021), and in relative clauses.

In order to answer the research questions of the present article, a synchronic variationist study that considers the effect of Basque into Spanish has been conducted. This will contribute to the understanding of N-SGA production in language contact situations and the functioning of GA systems in these situations.

4 Methodology

Participants have been recruited in the three provinces that form part of the BAC where Basque is in contact with Spanish: Bizkaia, Gipuzkoa, and Araba. As mentioned earlier, Basque is also in contact with Spanish in Nafarroa and it is an official language both in the BAC and Nafarroa. Nevertheless, Basque and Spanish are in contact to a lesser extent in Nafarroa (5–6%; Altuna Zumeta et al. 2022) and the sociolinguistic situation is more complex than in the BAC (Basque is only co-official in Nafarroa in the areas where Basque is spoken). Consequently, no participants were gathered in Nafarroa for the present study.

The final sample for the analysis is formed of 73 participants that were contacted through the researcher's personal contacts, cultural associations, and groups across the three territories in the BAC, and other institutions such as *Euskaltegiak* (centers for adults to learn Basque). In addition, the snowball sampling method was also employed as participants used their contacts to help the researcher gather more data (Milroy and Milroy 1985). With these participants, a randomly filled judgment sample was created (Hoffman 2014, Meyerhoff et al. 2015, Schilling 2013, Silva-Corvalán and Enrique-Arias 2017). The background information of the 73 participants can be observed in Table 1: all are 18 years or older (age range: 18–90; age median: 41), and have lived in the BAC since their childhood. Something to note is the absence of monolingual Basque or Spanish speakers in the analysis. As it was introduced in Section 2, monolingual Basque speakers are practically non-existent nowadays. Similarly, the number of Spanish monolingual speakers has decreased importantly in the last 30 years, mainly among younger speakers due to the implementation of Basque in education (Gómez Seibane 2020). That explains why no participant in this project identified as being a Spanish monolingual speaker, and vice versa.

Following scholars who have urged for the necessity of analyzing spontaneous and authentic speech in language contact situations (Palacios 2021), and as part of a bigger research project, individual sociolinguistic interviews were conducted (based on Labov's thematic framework, 1972). Due to geographical distance and

Table 1: Background information

Gender		Age		Language of schooling		Highest education		Bilingual Profile		Origin		Province	
Female	45	Young adults	39	Model A = Span	20	Secondary	12	L1 Basque and L2 Spanish	24	Urban	60	Gipuzkoa	51
Male	28	Adults	19	Model B = Bas and Span	17	Vocational	13	2L1: Basque and Spanish	23	Rural	13	Bizkaia	17
Non-binary	—	Retired	15	Model D = Bas	36	University	48	L1 Spanish and L2 Basque	26			Araba	5
Total	73	Total	73	Total	73	Total	73	Total	73	Total	73		73

COVID-19 pandemic, most of the interviews were conducted online.[14] The interviews lasted at least 45 min and a maximum of 60 min. A total of 59 h and 40 min of recordings were collected, of which 47 h, and 10 min are analyzed in this article.[15]

In terms of statistical analysis, the type of GA produced by the participants is the dependent variable: this is any linguistic item that displays GA in Spanish. For this, automatic orthographic transcriptions obtained through YouTube were reviewed and edited by the research team members and re-read to identify GA tokens. This dependent categorical variable is subdivided into three categories: SGA or instances in which standard Spanish rules are followed as in (5), N-SGA or GA instances that do not follow Spanish standard rules as in (6), and NA or GA instances that do not allow to determine whether it is SGA or N-SGA as in (7) (non-canonical adjectives).

(5) *Tiene* *aviones* *que* *son* *muy* *bajitos.*
(it) has planes-MASC that are very small-MASC
"That company has planes that are very small."

(6) *Tazas* *también* *cogimos* *uno* *para* *cada* *uno.*
Cups-FEM also (we) took one-MASC for each one.
"We also took cups one for each one."

(7) *Hay* *viajes* *que* *son* *especialmente* *difíciles.*
There are trips-MASC that are particularly difficult-MASC
"There are trips that are particularly difficult."

Regarding independent variables, linguistic predictors previously found to be important in N-SGA production in language contact situations have been included in the analysis, and Table 2 presents a summary list.

The first linguistic predictor is the Gender of the principal noun (controller), subdivided into masculine or feminine. Since masculine is considered to be the default gender in Spanish (Harris 1991), it is expected that more N-SGA will be produced when the controllers' gender is feminine as they will overuse the masculine gender (e.g., Tarova et al. 2023).

The second linguistic predictor considered in the analysis is the controllers' Inflectional form. This follows previous studies that have revealed that more N-SGA is produced when the ending of the controller is non-canonical for its gender (e.g., Hur et al. 2021, Tarova et al. 2023). This predictor is subdivided between nouns with canonical endings (*-o* for masculine and *-a* for feminine) and nouns with non-canonical endings (nouns that do not end in *-o* for masculine and nouns that do not end in *-a* for feminine).

The third linguistic predictor is the Frequency of the words that agree in gender. In other words, this would be the proxy for speakers' familiarity with the words they are using to produce GA. In order to use this variable, a corpus internal measure of frequency was created in *R* (R Core Team, 2022): a list of the 50 most repeated words across participants, after excluding Spanish stopwords (e.g., *además* 'in addition,' *ahora* 'now,' *aquí* 'here,' *tú* 'you,' *en* 'in'). The 50 most repeated words are considered as familiar or frequent for the speakers. This includes not only the singular or plural versions of the words, but also variations in morphology (e.g., diminutives; *viaje*, *viajes*, *viajecito* 'trip,' *año*, *años*, *añitos* 'year,' or *cosa*, *cosita*, *cosilla* 'thing').

Another linguistic predictor that is considered is the Distance between the agreeing elements. Some scholars have coded distance in terms of linearity or the number of words between the targets (e.g., Paquet 2018, Pinta 2022), while others have coded it in terms of syntactic distance (e.g., Díaz Barajas and Orozco 2019). In this article, Distance is coded in terms of linearity and adjacency between targets, following Goebel-Mahrle

14 Scholars have suggested that there are no significant differences between online and in-person interviews (Hunt Gardner and Kostadinova 2024).

15 The excluded minutes pertain to participants excluded from the final analysis for not finishing the entire participation or for being educated in French. The initial sample was formed by 76 participants.

Table 2: Independent linguistic variables

Controller gender	Masculine
	Feminine
Inflectional form	Canonial
	Non-canonical
Frequency	Frequent
	Non-frequent
Distance	Immediately adjacent
	Non-adjacent: same clause
	Non-adjacent: different clause
	Absent controller
Animacy	Animate
	Inanimate
Number	Singular
	Plural
Type of agreement	Clitic
	Determiner
	Adjective
Type of clause	NP
	PA
	Relative clause

and Shin (2020) and Pinta (2022). Therefore, Distance is divided between (i) immediately adjacent agreement, (ii) non-adjacent but in the same clause, (iii) non-adjacent but in different clause, and (iv) absent controller.

The fifth linguistic variable is nouns' Animacy: animate vs inanimate nouns. The consideration of this linguistic predictor is based on the fact that inanimate nouns' gender is typically later acquired when compared to the acquisition of animate nouns' gender in Spanish (Andersen 1984, Casado et al. 2021, Fernández-García 1999, Finnemann 1992, Hernández-Pina 1984).

The next linguistic predictor is the controllers' Number: singular vs plural. Scholars have previously found opposing results based on this linguistic variable in terms of N-SGA production. For instance, Di Pisa and Marinis (2021) found no difference based on Number when producing GA in Italian. In this sense, Gonzalez et al. (2019) and Gudmestad and Edmonds (2021) for Spanish, and Albirini et al. (2013) for Arabic, have reported contrasting findings.

The second to last linguistic variable is Type of agreement, or in other words, word class (e.g., Goebel-Mahrle and Shin 2020, Martinez-Nieto and Restrepo 2022, Valdés Kroff et al. 2019). This independent predictor is subdivided into (i) object clitic, (ii) determiner, and (iii) adjective.

The last linguistic variable is Type of clause (similar to, for instance, Torres Sánchez 2021). This variable is subdivided between (i) NP (nominal phrase), (ii) PA (Predicate Adjective), and (iii) relative clause.[16]

5 Results

Before conducting descriptive and statistical analyses, NA GA instances (744) were excluded because these are word usages that have the same form for both genders with non-canonical adjectives as in *el pueblo* [masc.] *es grande* 'the town [masc.] is big' or *la ciudad* [fem.] *es grande* 'the city [fem.] is big.' In addition, following previous scholars who had made the same decision (e.g., Alarcón 2011, Paquet 2018, Pinta 2022, Trawick and Bero 2021), GA instances with animate controllers were excluded from the final analysis because, different from inanimate nouns,[17] the gender of animate nouns is determined by their semantic information or social

16 These categories represent the most common types of clauses in which GA was produced in the interviews.

17 With the exception of some examples such as *la mosca* 'the fly,' whose grammatical gender is always feminine.

Table 3: Final GA production

N-SGA	SGA	Total
650	9,453	10,103
6.43%	93.57%	100%

gender identity (Harris 1991). Consistent with this fact, only four instances of N-SGA with animate controllers (0.61%) were found in the interviews, illustrated by examples (8) and (9). On the contrary, 650 N-SGA instances (99.39%) were produced with inanimate controllers. It is also notable that no participant employed non-binary GA forms with animate controllers (e.g., *-e*, *-x*, and -@).

(8) *Pues de pequeño iba a cerámica.* [*yo*-FEM]
So at child-MASC went to pottery [me-FEM]
"I used to go to pottery during the childhood."

(9) *La gente ya no es... no está tan aferrada a ser tan autóctono.*
DET-FEM people already not is... not is so resistant to be so autochthonous-MASC
"People are not already so... they are not so resistant to being so autochthonous."

Then, after the aforementioned exclusions, Table 3 presents the final GA numbers.

The results reveal that, in general, participants exhibited a low frequency of N-SGA production. However, all participants demonstrated this type of instance in their speech, as introduced in Figure 1.[18] This means that no participant was excluded from the N-SGA analysis.

Before conducting statistical analyses, and in order to test for possible collinearity between independent linguistic variables introduced in this article, a collinearity test with the performance package (Lüdecke et al. 2021) was conducted in *R* (R Core Team 2022). Results of this test in Table 4 demonstrate a weak correlation[19] between the linguistic variables, with an exception: Distance and Type of clause. This is a logic result as descriptive statistics below show that SGA in NP is more common when the distance is shorter, followed by PA, and then, relative clauses. Considering that Distance shows a more comprehensive breakdown with four subcategories, Type of clause variable is omitted from further statistical analyses.

Taking the results from the collinearity test into consideration, stepwise binary logistic regressions were performed to statistically assess the impact of the linguistic predictors: Gender of the controller, Inflectional form, Frequency of the controller, Distance between targets, Number of the controller, and Type of agreement. The analysis included random effects for participants, as in the study by Goebel-Mahrle and Shin (2020), because this enables to explore the impact of the independent variables in the dependent variable (type of GA). Interactions between the dependent variable and independent variables were manually added following a stepwise procedure (Crawley 2007). Then, the independent variables that improved the model according to ANOVAs (<0.05) were kept for the final model.

Table 5 presents the results of the final model,[20] in which, previously, a factor identified as non-significant was excluded: Frequency. According to Ferguson's (2009) criteria, a strong effect was found for this model (R^2 = 0.513), which indicates that a large amount of the variation is accounted for by this model.

Following the results in Table 5, the ANOVAs obtained suggest that there is a main effect for the Distance between the agreeing elements ($X^2[3] = 657.22$, $p \leq 2.2 \times 10^{-16}$), and the controllers' Gender ($X^2[1] = 259.48$, $p \leq 2.2 \times 10^{-16}$).

18 Since the number of GA instances produced by each participant varies among them, ratios were calculated (Guy 2014).

19 Multicollinearity is obtained when the VIF values are equal to or greater than 10 (Szmrecsanyi 2005).

20 As this is part of a bigger research project, Table 7 also includes the consideration of a number of social independent variables for N-SGA production. However, as earlier mentioned, and for limitation purposes, only the impact of the linguistic predictors will be considered in this article.

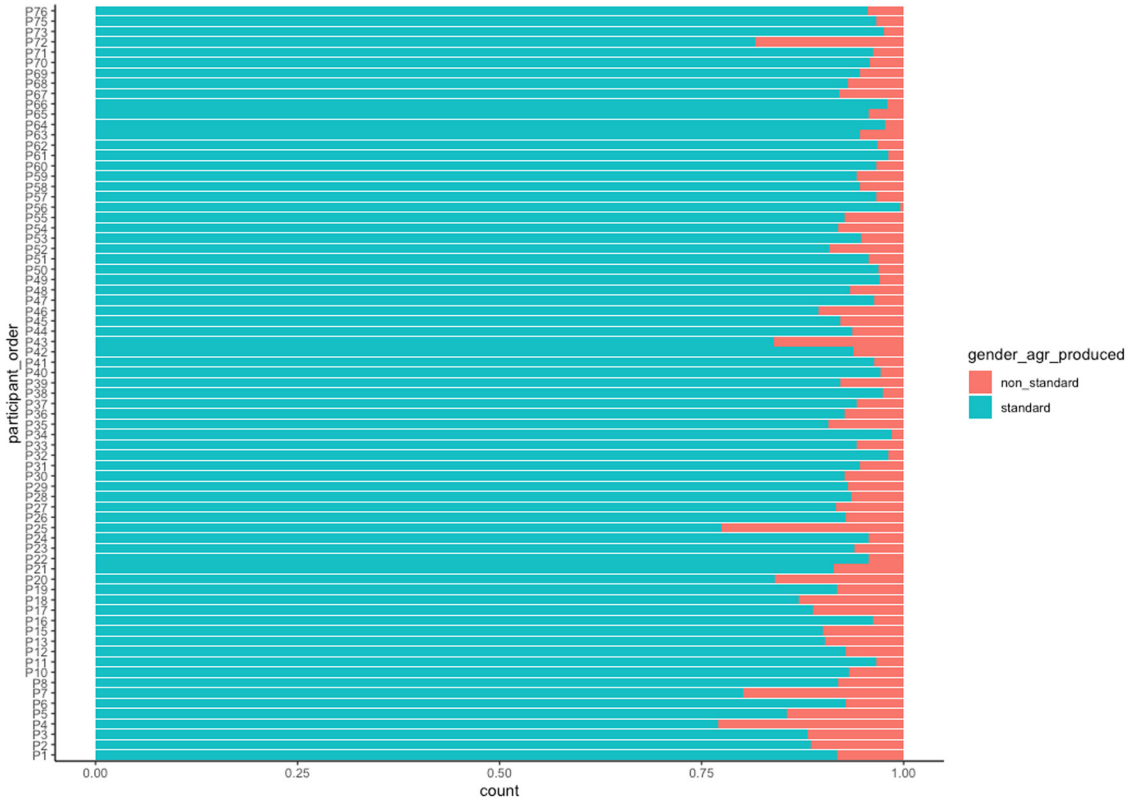

Figure 1: GA production by each participant.

Table 4: Collinearity test of independent linguistic variables

	VIF	Increased SE
Gender of the controller	1.01	1.00
Inflectional form	1.09	1.04
Frequency	1.12	1.06
Number	1.03	1.01
Type of agreement	1.15	1.01
Distance	2902944.68	1703.80
Type of clause	2804753.42	1674.74

Indeed, these are the two variables that most affect variation. Table 5 and results from the ANOVAs also indicate that there is a main effect for Number ($X^2[1] = 54.91$, $p \leq 1.259 \times 10^{-13}$). Finally, the two linguistic independent significant variables that affect N-SGA production are Type of agreement ($X^2[2] = 6.59$, $p \leq 0.037$), and Inflectional form ($X^2[1] = 4.91$, $p \leq 0.026$).

In what follows, significant linguistic predictors' effects are explored in more depth to better understand their effect on N-SGA production, following the order in which they have been shown to impact N-SGA production. As it was aforementioned, the first one is Distance. According to descriptive statistics in Table 6, higher rates of N-SGA occur when the controller is absent in the sentence, as in (10), followed by when the controller is non-adjacent and in a different clause, as in (11). Then, N-SGA production is almost non-existent when the controller is immediately next to the targets, as in (12). This is similar to when the controller is not immediately next to the targets, but in the same clause, as in (13).

Table 5: Summary of final mixed-effects linear regression model

	Estimate	SE	*z* value	*p* value
Intercept	1.5318	0.1884	8.127	4.40×10^{-16}
Controller gender = M	1.7186	0.1236	13.896	$<2 \times 10^{-16}$
Distance = Different clause, non-adjacent	0.8759	0.1206	7.259	3.91×10^{-13}
Distance = Immediate	3.3168	0.1828	18.141	$<2 \times 10^{-16}$
Distance = Same clause, non-adjacent	2.1977	0.1995	11.014	$<2 \times 10^{-16}$
Inflectional form = Non-canonical	−0.2021	0.0910	−2.220	0.026
Number = Singular	−0.8536	0.1228	−6.949	3.69×10^{-12}
Type of agreement = Clitic	−0.0328	0.1067	−0.307	0.758
Type of agreement = Determiner	0.2849	0.1238	2.301	0.021
Level of education = University	0.3883	0.1242	3.126	0.001
Level of education = Vocational	−0.1409	0.1639	−0.859	0.390
Age = Retired	0.1733	0.1390	1.247	0.212
Age = Young adult	−0.2816	0.1110	−2.537	0.01
Non-Significant Fixed Effects: Language of schooling, Bilingual profile, Origin, Province of residence, Frequency				

Table 6: GA production by distance

	Absent		Non-adjacent – different clause		Non-adjacent – same clause		Immediate	
N-SGA	484	19.88%	102	8.67%	29	1.9%	35	0.7%
SGA	1,950	80.12%	1,075	91.33%	1,494	98.1%	4,934	99.3%

Table 7: Post-hoc pairwise comparisons – distance

	Estimate	SE	*P*
Absent – Different clause but non-adjacent	−0.876	0.121	<0.0001
Absent – Same clause but non-adjacent	−2.198	0.200	<0.0001
Absent – Immediate	−3.317	0.183	<0.0001
Different clause but non-adjacent – Same clause but non-adjacent	−1.322	0.220	<0.0001
Different clause but non-adjacent – Immediate	−2.441	0.205	<0.0001

(10) *Es bastante barato.* [lavadora]
It is quite cheap-MASC [washer-FEM]
"It is quite cheap." [washer]

(11) *La empresa está obligado.*
DET-FEM company-FEM is required-MASC
"The company is required to."

(12) *Es una ciudad muy muy cómodo de vivir.*
It is one-FEM city-FEM very very comfortable-MASC for to live
"It is a very comfortable city to live in."

(13) *Íbamos a aldeas nativos.*
We went to villages-FEM native-MASC
"We used to go to native villages."

Table 8: GA production by gender of the controller

	Feminine		Masculine	
N-SGA	566	10.13%	84	1.86%
SGA	5,023	89.87%	4,430	98.14%

Table 9: GA production by number

	Plural		Singular	
N-SGA	93	3%	557	7.96%
SGA	3,011	97%	6,442	92.04%

After descriptive statistics, post-hoc pairwise comparisons were conducted to further explore the differences between the distance groups. These results are presented in Table 7: there are statistical differences in terms of N-SGA production between the different distances. This indicates a direct correlation between distance and the quantity of N-SGA produced: as the distance increases, N-SGA instances also increase significantly.

The second most affecting independent predictor was controllers' Gender, as shown by descriptive statistics in Table 8. These results indicate that there is a stronger prevalence of N-SGA when the controller is feminine, as in (14), while N-SGA with masculine controllers is nearly non-existent, as in (15).

(14) *Aquí toman mucho*[21] *sopa*.
Here eat lots-MASC soup-FEM
"Here they eat lots of soup."

(15) *Había ciertos días que se llamaban imaginarias*.
Were certain-MASC days-MASC that were called imaginary-FEM
"There were certain days that were called imaginary."

The third most significant independent factor that emerged according to the ANOVAs was controllers' number. Results for this independent variable are presented in Table 9: there is a statistically higher number of N-SGA cases with singular controllers, as in (16), compared to plural controllers, as in (17).

(16) *Llegó un momento de mi vida en la que…*
Arrived one-MASC moment-MASC of my life-FEC in DET-FEM that
"It arrived a moment in my life in which […]"

(17) *Solo completamente con las vistas y disfrutándolos*.
Alone-MASC absolutely with DET-FEM views-FEMS and enjoying-DET-MASC
"Absolutely alone with the views and enjoying them."

Type of agreement was found to be the second-to-last most influential predictor for N-SGA production. The results for this variable in Table 10 indicate that more N-SGA instances are found when the target is a direct object clitic (*lo*, *la*, *los*, and *las*), both when the clitic is attached to the verb as in *pagarla* 'to pay it,' or positioned before the verb, as in (18). This happened mainly with masculine forms *lo* and *los*. Then, N-SGA instances are less common with adjectives, as in (19), and even less frequent with determiners, as in (20).

21 The interpretation of *mucho* 'lots,' as an adverb meaning 'much' or 'on many occasions' is excluded.

Table 10: GA production by type of agreement

	Adjective		Clitic		Determiner	
N-SGA	342	6.97%	196	15.8%	112	2.83%
SGA	4,566	93.03%	1,044	84.2%	3,843	97.17%

Table 11: Post-hoc pairwise comparisons – type of agreement

	Estimate	SE	*p*
Adjective – Determiner	−0.285	0.124	0.05
Clitic – Determiner	−0.317	0.137	0.05
Adjective – Clitic	0.032	0.107	0.949

(18) *Lo* *ponían* *a* *todos.* [guardias]
DET-MASC put to everyone [on guard-FEM]
"They used to put it to everyone."

(19) *Había* *ciertos* *días* *que* *se llamaban* *imaginarias.*
Were certain-MASC days-MASC that were called imaginary-FEM
"There were certain days that were called imaginary."

(20) *Mañana* *me* *hago* *otra.* [antígeno]
Tomorrow I do another-FEM [antigen-MASC]
"Tomorrow I will do another one."

In this case, post-hoc pairwise comparisons in Table 11 reveal a significant difference between adjectives and determiners, and another significant difference between clitics and determiners. However, there is an absence of statistical difference between adjectives and clitics.

Inflectional form emerged as the last significant predictor for N-SGA production. Results for this variable in Table 12 indicate that there is a notably higher frequency of N-SGA instances with non-canonical controllers, as in (21), when compared to canonical controllers, as in (22).

(21) *Como* *dos* *montes,* *una* *más* *pequeña* *que* *la* *otra.*
Like two mountains-MASC one-FEM more small-FEM than DET-FEM DET-FEM
"Like two mountains, one smaller than the other."

(22) *Mira,* *te* *voy* *a* *sacar* *una* *lista* *porque* *lo* *tengo* *en* *el* *móvil.*
Look to you I will to take out one-FEM list-FEM because DET-MASC I have in DET-MASC phone
"Look, I'll take out a list for you because I have it in the phone."

Table 12: GA production by inflectional form

	Canonical		Non-canonical	
N-SGA	335	5.12%	315	8.84%
SGA	6,205	94.88%	3,248	91.16%

In sum, logistic regressions and ANOVAs informed that Distance, Gender of the controller, Number, Type of agreement, and Inflectional form are the significant linguistic factors that predict N-SGA production in BAC Spanish. Conversely, Frequency of the controllers did not emerge as a significant predictor.

6 Discussion

The first research question of this article aimed to delimit the presence of N-SGA production in the BAC Spanish population. According to the results, and confirming the hypothesis (following Palacios 2021, N-SGA would be present among all BAC Spanish speakers and not only among elder Basque native speakers with limited access to education, as suggested by Fernández Ulloa 1997) N-SGA has been found among the three different generations that were included in this research. However, the presence of N-SGA is relatively limited (N-SGA = 6.43%), consistent with previous studies analyzing N-SGA in language contact situations. To introduce a case, Torres Sánchez (2021) found that the N-SGA production rate was 5.27% in the contact between Spanish and O'dam in Mexico, which is 1.16 points lower than the overall result obtained in this article. The reason for the low N-SGA production rate in BAC Spanish might be the transparent nature of gender marking in this language, where almost all masculine nouns end in *-o* and most feminine nouns in *-a* (Teschner and Russell 1984). However, the low rate does not imply that these are random cases of variance. On the contrary, the results support the principal hypothesis: linguistic variables systematically influence N-SGA production in BAC Spanish.

Indeed, the second research question was interested in exploring the extent to which BAC Spanish speakers produce N-SGA in Spanish depending on the linguistic variables considered in the analysis. Specifically, one of the hypotheses was that more N-SGA would be produced if the controller is an inanimate noun due to its gender being acquired later in Spanish. This was confirmed by the results as N-SGA in BAC Spanish is nearly absent when the controller is an animate noun. The initial hypothesis is further confirmed since almost all the considered linguistic variables were found to be significant predictors: controllers' Gender, Inflectional form, Distance, Number, and Type of agreement.

Regarding controllers' Gender, when the controller's gender is feminine, significantly more N-SGA is produced, which aligns with previous research showing masculine as the default gender in Spanish (e.g., Balam et al. 2021, Boers et al. 2020). Therefore, similar to Spanish learners (e.g., Sanz 2016, Tarova et al. 2023), BAC Spanish speakers tend to overgeneralize the use of masculine gender. Nevertheless, this overgeneralization is relevant for inanimate nouns but not animate ones, which resembles other languages where the feminine is mainly relevant for animate nouns (e.g., Diyari/Dieri language: an Australian Aboriginal language spoken in the north of South Australia) (Austin 1981, Corbett 1991, Kramer 2015).

Furthermore, this article anticipated that more N-SGA would be produced when the controller's ending was non-canonical. This was confirmed as in BAC Spanish, more N-SGA instances have been found when the controller is non-canonical. This means that canonical controllers are seen as transparent indicators of gender when compared to non-canonical controllers. This article supports previous studies that found Inflectional form to be a significant predictor for N-SGA production in language contact situations (e.g., Alarcón 2011, Balam et al. 2021, Boers et al. 2020, Pfaff 1979).

It was also hypothesized that as the distance between targets increases, the likelihood of producing more N-SGA increases. In this case, this hypothesis was confirmed as well: when the distance between the targets is bigger, more N-SGA is produced (e.g., Díaz Barajas and Orozco 2019, Goebel-Mahrle and Shin 2020, Lipski 2015, Pinta 2022). This might be explained by accessibility: when the controller is more accessible in the memory of the speakers, there is a lower extent of N-SGA production.

The hypothesis regarding Number of the controllers was also confirmed: this was found to be a significant factor and more N-SGA instances were identified with singular nouns (e.g., Albirini et al. 2013, Gonzalez et al. 2019, Gudmestad and Edmonds 2021). This might be due to the varying number of controllers in each grammatical category: 6,999 singular controllers and 3,104 plural controllers.

Type of agreement was also significant, and the hypothesis was once again confirmed since the highest N-SGA rates were produced when the target was a clitic. This is similar to previous studies that found a big use

of the masculine clitic *lo* 'it' to refer to a feminine controller (e.g., Goebel-Mahrle and Shin 2020, Torres Sánchez 2021). Finally, Frequency was not found to be significant, which might be related to the difficulty in accurately measuring word frequency in spontaneous speech (Goebel-Mahrle and Shin 2020) or for participants only using frequent words or words that are well-known to them.

On another note, and following other recent findings (e.g., Hunt Gardner and Kostadinova 2024), the results in this article support the inclusion of online interviews into language contact analysis as no notable disparities have been observed between online and in-person interviews. However, the fact that not all participants may be familiarized with online platforms may be considered a possible limitation in conducting interviews.

7 Conclusions

The analysis has shown that, following Labov (1966), linguistic variation is not random with regard to N-SGA in language contact situations with one of the languages involved not producing GA. Indeed, contrary to Fernández Ulloa (1997), N-SGA in BAC Spanish would be present among all speakers of the aforementioned Spanish variety. These results imply the existence of a specific GA system in BAC Spanish influenced by the language contact situation between Basque and Spanish: feminine is mainly relevant for animate controllers, and the masculine default gender is more prevalent for inanimate controllers. In addition, this article shows evidence to support the notion of the masculine gender functioning as default in BAC Spanish, consistent with other non-contact Spanish varieties. Therefore, N-SGA instances in BAC Spanish are not isolated cases, but form part of a particular GA system that is influenced by certain linguistic predictors (Gender and Inflectional form of the controllers, the Distance between the target elements, Number, and Type of agreement). This conclusion aligns with those of Palacios (2021) and Ramírez Cruz (2009), who have considered N-SGA production in other language contact situations and support the existence of a local GA system. This does not imply, however, that the GA system in BAC Spanish is at risk of losing its system affected by Basque.

Finally, considering future perspectives, social variables should also be considered as possible predictors for N-SGA (e.g., speakers' origin and province of residence, level of education, bilingual profile) as this article only examined the impact of linguistic variables. In addition, the same linguistic phenomenon should be explored in Nafarroa and Iparraldea: this will enable us to delimit the existence of N-SGA production in the Basque Country with different linguistic situations.

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