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Ideas Buenas o Buenas Ideas: Phonological, Semantic, and Frequency Effects on Variable Adjective Ordering in *Rioplatense* Spanish

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Abstract: Although linguistic research has often focused on one domain (e.g., as influenced by generative prioritization of the Autonomy of Syntax), critical findings have been uncovered by exploring the interaction of multiple domains (e.g., the link between morphological status and lateralization of /r/; the syntactic–pragmatic interface's constraints on subject expression). The position of adjectives relative to the nouns they modify is a good test case in this discussion because multiple areas of the grammar are implicated, including syntax, phonology, and semantics. Moreover, research on this structure has yielded small cells, which prevented the use of statistical tests to convey the relative importance of multiple factors. Consequently, our study used a controlled, 24-item contextualized preference task to assess the roles of semantics (i.e., adjective class), phonology (i.e., noun–adjective syllable length differences), and lexical frequency on variable adjective ordering for 100 speakers of *rioplatense* Argentinean Spanish. Mixed-effects regression revealed that each factor was significant, with shorter, high-frequency, evaluative adjectives most favoring pre-position. Individual adjective analysis confirmed the greater effect of lexical frequency than semantic class, with additional corpora analyses further elucidating these trends. The study adds to the growing body of research on the role of factors across linguistic domains, while arguing for the importance of the relative frequency of adjective–noun collocations and complementing recent research on lexical effects.

Keywords: adjective position; sociolinguistic variation; linguistic interfaces; noun phrases; lexical frequency; multiple domains; usage-based approaches; Argentinean Spanish

1. Introduction

Adjectives, cross-linguistically, are an open class of words known primarily for attributing certain semantic characteristics to the nouns they modify. From a syntactic standpoint (i.e., constituent order), adjectives may occupy different positions cross-linguistically with respect to the modified noun. For example, whereas English adjectives are typically placed before the noun (i.e., in pre-nominal or pre-position; Quirk 1991), in Spanish the default (i.e., least restricted) position has been argued to be immediately after the noun (i.e., post-nominal or post-position; e.g., Real Academia Española RAE 2009). The following examples illustrate these positions in the aforementioned languages.

Default pre-nominal position (English)
(1) *A* ***serious*** *problem*

Default post-nominal position (Spanish)
(2) *Un problema* ***grave***

Nevertheless, the term "default" requires additional introduction. Panini noted the prominence of defaults in the systematicity of language, contending that there was a default ordering to express systematic relations among linguistic patterns through an organized system of rules (Aronoff 2013). The idea of default status was originally applied to phonology, with default allophones occurring in the elsewhere environment and more specific allophones limited to particular phonetic contexts. Bybee (2007) thus noted that default patterns apply when all else fails, as they have the most open phonological and lexical definitions. Default patterns are often still productive, as degrees of productivity (i.e., application to new items) are highly correlated with the number of forms that bear the relevant pattern (i.e., its type frequency). Regular patterns exhibit the least base allomorphy (i.e., irregularity) and also often demonstrate a high type frequency. Thus, the default is the least restricted pattern and may yield productivity and regularity. Although these three constructs are independent (Bybee 2007), they may reveal similar findings for a given pattern (e.g., English *-ed* is regular, productive, and the default [i.e., least restricted] past pattern). In the area of morphosyntactic variation and grammaticalization, default is generally defined in the context of two forms competing within a functional domain, with the default expression being "more usual, more normal, less specific" than the alternative form (Dahl 1985, p. 19; Schwenter and Cacoullos 2008). We apply this conceptualization of default to the placement of the adjective with respect to the modified noun in Spanish, contending that post-nominal position is the overall default, as it is the most widely used and least restricted across all registers (Delbecque 1990; Real Academia Española RAE 2009).

In Spanish, the variation between post-nominal adjective position and the less-common pre-nominal variant has been found to respond in part to semantic constraints (e.g., Centeno-Pulido 2012; Delbecque 1990; File-Muriel 2006). Descriptive accounts have argued that certain semantic classes favor one position over the other. For example, whereas post-nominal adjectives include restrictive adjectives, qualifying, relational, and descriptive adjectives, pre-nominal adjectives include non-restrictive adjectives, determinative, quantifying, and figurative ones (Real Academia Española RAE 2009). In a similar vein, Demonte (1999) argued that post-nominal adjectives are all qualitative restrictive modifiers and proposed a four-way classification of adjectives in pre-nominal position consisting of: modal epistemic (*posible solución* 'possible solution'), intensional 'privative' (*único hijo* 'only child'), circumstantial or eventive (*frecuentes preguntas* 'frequent answers'), and qualitative non-restrictive (*la blanca nieve* 'the white snow'). Delbecque's (1990) more detailed taxonomy lists the aforementioned four classes of typically pre-posed adjectives along with eight classes of typically post-posed adjectives (i.e., color, relational, temporal, shape/space, physical property, modality, evaluation, and personality).

Moreover, some adjective types show stronger restrictions in terms of variable position than others, as is the case for relational adjectives (Delbecque 1990), which primordially occur in post-position, with pre-position considered ungrammatical, as illustrated in (3) and (4):

(3)	Me	gusta	mucho	la	comida	**argentina**. (post-position)
	me	like.3SG	a lot	DET	food	Argentinian
'I like Argentinian food a lot.'						
(4)	*Me	gusta	mucho	la	**argentina**	comida. (pre-position)
	me	like.3SG	a lot	DET	Argentinian	food
('I like Argentinian food a lot.')						

On the other hand, different semantic classes of adjectives (e.g., evaluative) may variably occur after or before the noun they modify, as in (5) and (6), respectively (Delbecque 1990, p. 350), with ascribed differences for the restrictiveness of the referent of the modified noun (Jacob 2005).

(5) *Un problema **grave*** (post-position, restrictive reference: a problem that is serious)

(6) *Un **grave** problema* (pre-position, non-restrictive reference: a problem, which by the way is serious)
'a serious problem'

Despite canonically entailing divergent interpretations, differences in meaning regarding restrictiveness may be neutralized in discourse. Specifically, the hypothesis of neutralization-in-discourse argues that although contexts with different forms or orderings usually have different meanings, there are variations "in which the full accompaniment of semantic distinctions is not pertinent either for the speaker or the interlocutor" (Torres Cacoullos 2011, p. 2). Furthermore, although certain categories of adjectives can variably occur in pre- or post-position, such an option may yield meaning differences for a subset of these adjectives (e.g., *pobre* as 'giving pity' or 'poor', respectively, Demonte 1999). Nevertheless, stark semantic differences are not evoked for most adjectives (e.g., *unas mansiones grandes* and *unas grandes mansiones* similarly translate as 'some big mansions').

We have noted semantic and grammatical constraints that may regulate the different positions adjectives can take. Moreover, for adjectives that allow both positions, even if the different orderings do not provide identical interpretations, the two variants would still be subsumed under the envelope of variation of a noun being modified by an adjective that may variably succeed or precede it. Thus, in line with Sankoff and Thibault's (1981) notion of functional equivalence, we do not claim that the orderings will always convey identical meanings, but instead that the adjective fulfills the same grammatical function (i.e., as the dependent modifying the head noun, Tallerman 2015), and that all adjectives tested have been documented in both positions across prior literature and our subsequent corpus searches. Furthermore, analyses of functional equivalence help elucidate additional factors that may play an important role in constraining variation—factors that would otherwise be ignored due to concerns of semantic equivalence (Aaron 2010). This elucidation is valuable, since typically linguistic variation is probabilistic, regulated by multiple linguistic and social features, along with speaker attributes (Walker 2010).

As will be demonstrated in Section 2.2, adjective position is constrained not only by semantics but by other factors such as style, adjective and noun lengths, lexical frequency, and by pragmatic factors. Therefore, adjective position presents a good test case for the interaction of multiple domains in a single study (e.g., sociophonetic research that considers the morphological status of /r/ undergoing lateralization, Medina-Rivera 1999) or the similar investigation of interfaces (e.g., inquiry into the syntactic–pragmatic interface in consideration of subject expression, where syntactic rules are obeyed but pragmatics may (dis)favor overt subject usage, Linford and Shin 2013; Sorace and Filiaci 2006). These considerations diverge from traditional accounts within generative perspectives that privilege the Autonomy of Syntax and are therefore less likely to consider additional domains that may yield repercussions on syntax, such as its link to semantics (Tomasello 1998). Despite the potential contributions of adjective ordering to a multiple-domain approach, relatively few studies have attempted to address Spanish variable adjective position by implicating the areas of syntax, phonology (e.g., syllable length), and semantics, with the few exceptions either failing to provide empirical data or eliciting few tokens across the relevant categories, as we will now review.

2. The Research Context

2.1. Usage-Based Approaches and Lexical Frequency

According to usage-based approaches to language development, frequency is a key determinant of emerging linguistic structure. Grammar is extracted from language use and experience, which contain information about the frequency of use of linguistic elements and their associations and most likely contexts of occurrence (Brown and Raymond 2012; Bybee 2006, 2010; Goldberg 2013). Language rules are structural regularities present in the distributional features of the language in question. Lexical frequency is of central importance, since highly frequent words have stronger mental representations and are thus more easily accessed during production (Bybee 2010). In this sense, high token frequency (i.e., repeated use of a linguistic form) promotes the representational strength of a form, which may in turn lead to entrenchment or conservation (Bybee 2017). For example, high-frequency irregular verbs in English (e.g., "keep–kept") have resisted a process of regularization (e.g., "weep–wept/weeped")

due to the conserving effect of frequency, granting greater autonomy and resistance to analogical change (Bybee 2002, 2006). Similarly, nouns with high token frequency in Brazilian Portuguese resist assimilating to the highest type frequency pattern of plural expression, whereas less autonomous, infrequent forms do not (Huback 2011).

High or increasing frequency of form usage can also be indicative of grammaticalization (Bybee et al. 1994). Grammaticalization theory examines how lexical items gain grammatical functions (e.g., through semantic bleaching, or generalization of meaning) and how grammatical meanings further develop. Thus, it attends to the increasing frequency of a certain grammatical item in contexts outside of canonical uses, and tracks how the particular item diachronically develops new grammatical functions and thus becomes more grammaticalized (Bybee et al. 1994; Hopper and Traugott 2003). For example, in numerous Romance varieties the present perfect, whose archetypical functions (e.g., persistent situation: *he vivido en Francia desde el año pasado* 'I have lived in France since last year') subsumed under 'current relevance' have broadened through increased frequency of use and a spread to new contexts, incorporating the canonical semantic realm of the preterit (i.e., perfective meaning: *he visto a mi madre esta mañana* 'I saw my mother this morning'; Schwenter and Cacoullos 2008).

Lexical frequency plays a critical role in accounts of language change (Bybee 2006, 2010) and models that do not involve changes in progress (Goldberg 2013). Consequently, the effect of adjective frequency is important to consider as a possible constraint on speakers' choice of phrase ordering. Although post-position is generally the default location for adjectives in Spanish (i.e., more frequent and less restricted across semantic classes), a frequent adjective could, after substantial use over time, extend its contexts of use to the more restricted and less frequent position (i.e., pre-position) in an example of syntactic generalization, one of the processes associated with grammaticalization (Bybee et al. 1994). Thus, highly frequent adjectives may be the best candidates to occupy more innovative syntactic positions. Accordingly, a highly frequent adjective that is usually post-posed can extend to pre-position through layering, a common phenomenon in grammaticalization, as both the newer and traditional variants co-exist synchronically (Hopper 1991; Torres Cacoullos 2011).

Usage-based approaches have analyzed token and type frequencies to explain language emergence and production (Bybee 2017). The former frequency is the number of occurrences of a particular construction in a given corpus. The latter refers to the number of lexical items that participate in a particular pattern (e.g., verb lexemes with an *-ed* past), which further determines a construction's productivity. The number of words that typically associate with the construction strengthen its representational schema, which makes it more accessible for use with new lexical items (Bybee 2007). The default adjective position (i.e., post-position) has a high type frequency, occurring with numerous classes of adjectives (e.g., quantitative, color, relational, evaluative, shape). Moreover, due to the autonomy of high token frequency forms (Bybee 2007), an especially frequent adjective may extend use to the pre-nominal position over time, as it exhibits independence from similar (but lower-frequency) adjectives, which may retain the position of higher type frequency (i.e., the more common position). Furthermore, since adjective use does not occur in a vacuum, it is important to consider the frequency of use of the adjective in conjunction with the nouns it modifies. High representational strength may result from the high relative frequency of one ordering as opposed to another for a particular noun–adjective collocation, as network models posit lexical connections that reflect information regarding contexts of use and that account for the storage of constructions with multi-word lengths (Bybee 2007; Goldberg 2013). Thus, collocations may be perceived as a chunk (i.e., a meaningful bundle of strings), since constructions that frequently co-occur are stored together in a single node and show great memory strength and entrenchment, thus effectively blocking potential competitors (i.e., variants) through statistical preemption when speakers select forms (Bybee 2010; Goldberg 2013). Consequently, an adjective that has become frequently pre-posed in a common noun–adjective combination may resist regularization to the default post-position, whereas an infrequent adjective or pairing should be less resistant.

Finally, research on morphosyntactic variation has also demonstrated that lexical frequency may mediate other independent linguistic variables (Erker and Guy 2012). Thus, lexical frequency may constrain positioning on the whole, and it may also amplify the conditioning of another factor group (e.g., semantic class), revealing, for example, that only the more frequent members of a particular class favor pre-posing. To date, no previous research has examined lexical frequency as a predictor of variable adjective position or as a mediator of other factors affecting adjective order (e.g., Linford and Shin 2013, for subject expression), despite its important role in constraining native speaker grammars for a range of structures (e.g., Díaz-Campos and Zahler 2018, for negative word + *más* 'more' constructions; Edmonds and Gudmestad 2014, for amplifier collocations; Kanwit and Geeslin 2018, for mood interpretation).[1] The following section details relevant research on adjective placement in Spanish, followed by the remaining gaps that motivated the study.

2.2. Adjective Position in Spanish

In Spanish, the position of the adjective relative to its modified noun has been considered from both functional (Dam 2018; Delbecque 1990; Jacob 2005) and formal approaches (Demonte 1999; Judy 2018; Ticio 2010). Among the former is the rather recent body of empirical variationist analyses on adjective placement (e.g., Centeno-Pulido 2012; File-Muriel 2006; Hoff 2014), which have been fewer in number.

Early research explained Spanish adjective position with regard to the semantic constraints on the adjective, including restrictiveness, specificity, and focus. This work adjudicates differing semantic functions to pre- and post-nominal adjectives (Bello [1847] 1981; Ramsey [1894] 1956; Salvá [1931] 1988). Specifically, whereas the former position was considered to assign inherent meaning, the latter position was regarded as providing specifying (i.e., restrictive) information (Bosque 1996, 2001; Demonte 1999). However, Jacob (2005, p. 71) argued that there is not a one-to-one relationship between adjective position and specificity. While noun phrases (NPs) with pre-nominal adjectives normally assign a [+specific] reading (7), NPs with a post-nominal adjective may variably assign a specific or non-specific reading (8).[2]

(7)	*Debemos*	*ayudar*	*a*	*los*	*hambrientos*	*niños.*	[+specific]
	have.1PL	to help	prep	DET	hungry	children	
'We have to help the hungry children.'							
(8)	*Debemos*	*ayudar*	*a*	*los*	*niños*	*hambrientos.*	[±specific]
	have.1PL	to help	prep	DET	children	hungry	
'We have to help the children, who are hungry.'							

Thus, whereas (7) specifies all the children in the referential domain, who happen to be hungry, (8) may single out a subset of children, with the post-nominal adjective variably restricting the noun referent (Jacob 2005). Accordingly, Jacob contended that adjective position is thus triggered only indirectly by factors related to specificity, such as relevance and information structure. More recent theoretical accounts have proposed that restrictiveness and specificity contribute to the concept of focus– the highlighting of particular elements in an utterance (Dam 2018). Dam argued that, given the descriptive meaning of adjectives, an additional meaning (i.e., focus or focal meaning) helps determine placement: a post-nominal adjective receives focus whereas a pre-nominal adjective does not. This supports the principle of unmarked end-focus (Quirk et al. 1985, p. 1357): elements at the end of an utterance are highly informative (i.e., generally new to the addressee) and thus are considered to be in

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[1] Research operationalizing lexical frequency has often used large-scale, external measures (i.e., global frequency, Bybee 2002), although smaller, corpus-internal measures may alternatively be used (i.e., local frequency, Erker and Guy 2012).

[2] When containing a determiner, these phrases may be considered NPs or determiner phrases, depending upon theoretical orientation (see Tallerman 2015, Ch. 4 for discussion).

focus. According to the authors, information is generally structured from low to high information value; thus, informational focus is "the principal new information in the clause and the constituent carrying the main (i.e., nuclear) stress" (p. 589), as underlined in (9).[3] Therefore, Dam (2018) noted that adjective placement is correlated with receiving unmarked focus for post-nominal adjectives and not receiving it for pre-nominal adjectives. This focal argument is further tied to restrictiveness: a post-nominal adjective is usually regarded as restricting the meaning of the modified noun, and it thus receives unmarked focus. Conversely, a pre-nominal adjective does not canonically mark restrictive meaning and thus would not be regarded as highly informational, which explains its lack of informational focus.

(9) *Susana* *prefirió* *la* *versión* ***original.***
Susana prefer.PRET.3SG DEF.ART version original
'Susana preferred the original version'.

Turning to variationist empirical analyses, File-Muriel (2006) applied the notion of syllable weight to Spanish adjective position. Namely, prior research on on-line processing and performance constraints on constituent ordering (e.g., Arnold et al. 2000; Hawkins 1994) had supported the principle of end-weight, which proposed that lengthy and morphosyntactically complex constituents receive final clausal position in order to facilitate processing and production (Quirk et al. 1985). Drawing on the notion of grammatical weight, in which the weightier constituent relative to its sister constituent is usually placed at the end of the phrase or utterance to avoid processing and performance issues (Wasow 1997), File-Muriel (2006) extended the idea of weight to the difference in syllable counts between the adjective and noun. File-Muriel thus predicted that post-position would be filled by adjectives that were syllabically longer than the modified noun.[4] He compared the semi-informal speech of five university-level male students in San José, Costa Rica, with formal written letters and editorials from the local newspaper *La Nación*. Overall results showed a preference for post-position in oral speech (95%) and written language (76%). Adjective position was significantly predicted by syllable weight, semantic class, and style. In particular, pre-position was favored by adjectives equal to or shorter than the noun they modified in both styles, supporting the hypothesized role of this phonological factor. Regarding semantics, pre-position was favored by the evaluation, shape/space, and temporal semantic categories of adjectives. Finally, pre-position was favored in the written data, upholding the sociolinguistic tenet that variable structures are often conditioned by style (e.g., register, see Walker 2010).

Another multimodal study of variable adjective position is Centeno-Pulido (2012), who compared the effects of syllable weight and style (i.e., a formal, planned Fidel Castro speech versus semi-informal interviews with unplanned responses in Spain) through descriptive statistics. Post-position was similarly frequent in both styles (i.e., 73–79%), unlike in File-Muriel (2006), where post-position was significantly more common in semi-informal speech. Results also indicated a preference for pre-posing shorter adjectives in both pre-planned and unplanned speech. The semi-informal interviews yielded an even higher rate of pre-posed light as opposed to heavy adjectives, supporting the processing and production burden that long adjectives require of interlocutors when used in pre-position across semi-informal, unplanned registers. With regard to adjective semantics, relational adjectives were always post-posed in Castro's speech (i.e., formal language). Only two temporal adjectives were post-posed in the speech, while most temporal adjectives occurred post-nominally in the semi-informal

[3] Informational focus or non-contrastive focus expresses new information without explicitly contrasting it with an element in the discourse. Contrastive focus is the element chosen from a set of mutually known entities to the exclusion of the other elements (Lee 2011).

[4] For an argument against the effect of syllable length on adjective placement in Spanish, see Prado (1980) and Terker (1985).

interviews. The author concluded that phonology and semantics play integral roles in Spanish adjective position.

The most recent variationist work is Hoff (2014), who examined adjective position across Spanish corpora by comparing three modes (i.e., novels, presidential speeches, and spontaneous speech). Although the adjective's semantic category was not considered, the adjectives analyzed were the 17 most frequent in the data. In logistic regression, syllable weight and mode were the strongest predictors. Adjectives equal to or lighter than the modified noun as well as the presidential speech mode most favored pre-position. Accordingly, Hoff supported File-Muriel's (2006) explanation that spontaneous/informal speech places production constraints on the speaker that favor the post-position of heavy adjectives.

In sum, previous research on variable adjective placement in Spanish has commonly found significant effects for syllable weight, semantic class, and style (Centeno-Pulido 2012; File-Muriel 2006; Hoff 2014). Specifically, pre-nominal position is favored by short evaluative and temporal adjectives across formal language (either written or pre-planned speech). This supports the notion that adjective placement in Spanish is at the syntax, phonology, and semantics interfaces.

2.3. Remaining Gaps in the Study of Variable Adjective Position

The present study was motivated by the need to examine lexical frequency, a critical construct in usage-based approaches, which posit that grammars do not exist *a priori* and are instead built from the frequent use of particular structures (Bybee 2010). Consequently, our study is the first to examine the effects of lexical frequency on variable adjective positioning in Spanish, with a particular consideration of adjectives' frequency relative to the frequency of the nouns they modify. This contributes to research demonstrating the significant effects of lexical frequency in conditioning morphosyntactic variation as a main factor (Bayley et al. 2017; Li and Bayley 2018; Linford and Shin 2013) and/or a mediator of other variables (Erker and Guy 2012; Linford and Shin 2013; Solon et al. 2018). Moreover, we further account for frequency by implementing independent corpus measures to elucidate how often our task's adjectives are used overall (i.e., their token frequency), how often they are used in adjective–noun as opposed to noun–adjective collocations (i.e., their relative frequency in each construction), and how often in corpora they are pre-posed with the specific nouns used in our task.

Our study was also motivated by the need for research that elicited speaker preference for these competing variants and for the use of a controlled task that would provide sufficient data to avoid low token counts across combinations of the targeted variables. For example, File-Muriel (2006) found only 12 cases of pre-posed adjectives in his corpus, yielding few tokens across different syllable weights and the variable semantic classes. Therefore, we adopted an elicitation method that has targeted numerous morphosyntactic variable structures, namely, a written contextualized task (Geeslin 2010). This instrument elicits preference through a contextualized story written in informal language that resembles spontaneous speech.

Finally, no research on variable adjective position has investigated the *rioplatense* Spanish of Argentina, a variety known for linguistic innovations that at times diverges from other Latin American dialects (Colantoni and Louro 2013). We thus expand the dialectological mapping of Spanish adjective placement that has primarily focused on Caribbean varieties (e.g., Centeno-Pulido 2012; File-Muriel 2006). Overall, our study adds to the growing body of research on the role of multiple factors across linguistic domains, and our consideration of whether adjectives within the same semantic class pattern differently (according to frequency) complements recent research on lexical and frequency effects across linguistic structures (e.g., Kanwit and Geeslin 2020 for the copula contrast; Li and Bayley 2018 for subject expression).

3. Materials and Methods

Informed by usage-based approaches to language development, our study investigates the variable position of adjectives with respect to the nouns they modify in *rioplatense* Spanish. Unique in its

consideration of lexical frequency, its methods implemented, and its population sampled, our study was designed to answer two principal research questions:

a. What is the frequency of selection of pre-posed adjectives on a written contextualized preference task in *rioplatense* Spanish?
b. What linguistic and extralinguistic variables predict pre-position? Is pre-position favored by shorter adjectives, high-frequency adjectives, and a particular semantic class? Do a particular age group and gender favor pre-position?

We now describe the participants we recruited and methods we utilized to address these questions. Hypothesized results for the occurrence of pre-position and the effects of our independent variables are detailed in Section 3.2.

3.1. Participants

A total of 100 individuals participated in our study, all born or having spent the majority of their lives in the *Ciudad Autónoma de Buenos Aires* (CABA) or its suburbs. The participant group contained substantially more women than men (i.e., 75 women and 25 men), with a mean age of 41.17 years (range: 18–76). Greater participation by women is commonly found in survey responses of linguistic research (e.g., Agostini and Schwenter 2018). One female participant's data were subsequently removed from the regression analysis due to her categorical choice of adjective position, as reported in our results section. All subjects gave their informed consent for inclusion before they participated in the study. The protocol was approved by the University of Pittsburgh Institutional Review Board (PRO17040384).

3.2. Tasks, Variables, and Hypotheses

All participants completed a language background questionnaire and a 24-item written contextualized preference task. The background questionnaire contained questions that elicited the demographic information provided in the prior section and helped ensure the inclusion of only participants who met the aforementioned residential requirements.

The preference task conveyed the contextualized story of two friends discussing the current socioeconomic and political situation of Argentina and remembering old times of joint travel. Participants read a 1–3 sentence context prior to each integrated item and then selected whether they preferred a sentence with a pre-posed adjective, a post-posed adjective, or whether both positions were equably desirable for a particular context. The pre-posed and post-posed options were randomized throughout the task to encourage participants to read all responses.

The task manipulated three linguistic variables: semantic class, syllable weight, and adjective frequency (see Table 1 for a summary). For the first variable, the three semantic types of adjectives manipulated were those that obtained statistical significance in File-Muriel (2006): evaluation, shape/space, and temporal adjectives. Two bi-syllabic plural adjectives were used within each semantic class, yielding the six adjectives that we tested. Although the three classes allow variation, past research did not suggest that any of the classes would be more amenable to pre-position than the others. Pre-position may be favored by evaluative adjectives since their use conveys more subjective meaning; the other classes seem to assign more objective characteristics to the noun modified, which could be more dependent on restrictiveness constraints (Jacob 2005). We also hypothesized that semantic class could be affected by adjective frequency, in which case adjectives in a particular class that are more frequent than those of another could demonstrate greater syntactic viability across contexts and thus favor pre-positioning for that class.

Table 1. Summary of independent linguistic variables, with categories and examples.

Independent Linguistic Variables		
Semantic Class	**Syllable-Weight Difference (ADJ Relative to N)**	**Adjective Frequency**
Evaluation: *Buenos* 'good' *Rudos* 'tough'	−2 syllables: e.g., *Buenas bibliotecas* 'good libraries'	Higher (ranked 62–115): *Buenos* 'good' *Grandes* 'big' *Nuevos* 'new'
Shape/Space: *Grandes* 'big' *Llanos* 'flat'	−1 syllable: e.g., *Nuevos parajes* 'new places'	Lower (2124–4859): *Frescos* 'fresh' *Llanos* 'flat' *Rudos* 'tough'
Temporal: *Nuevos* 'new' *Frescos* 'fresh'	0 syllables: e.g., *Calles llanas* 'flat roads'	
	+1 syllable: e.g., *Grandísimas montañas* 'very big mountains'	

Note: Adjective frequency values refer to rankings in Davies and Davies (2018). The higher-frequency adjectives were among the most frequent 115 words ranked, with the lower-frequency banded 2000 to 5000. The higher-frequency adjectives occurred between 87,256 and 127,404 times in the Web/Dialects Argentinean section of the *Corpus del Español* (Davies 2016), whereas the lower-frequency occurred 237 to 2181 times.

With respect to syllable weight, we included a subset of File-Muriel's (2006) categories for the weight differences between the adjective and the modified noun (i.e., +1, 0, −1, −2 syllables). Each of our six adjectives was used across the four weight differences. Since we aimed to create items that permitted variable responses, we did not include adjectives two or more syllables longer than their accompanying nouns, as this context yielded nearly categorical post-position in File-Muriel (2006). Moreover, to avoid introducing further variation beyond the three variables that we manipulated, we controlled two other variables that could affect positioning: all NPs were plural (see Table 1) and each adjective and noun carried penultimate stress.[5] These controlled variables further contributed to our need to manipulate syllabic differences no greater than two. Since our referents were plural and our adjectives bi-syllabic, for the adjective to be longer than the noun in the +1 category, the elative form was used (e.g., *grandísimas montañas* 'very big mountains'). We hypothesized, in line with previous research, that adjectives lighter than the modified noun would favor pre-position for processing reasons.

Our study is unique in its consideration of lexical frequency as a possible predictor of Spanish adjective position, and we account for this construct in two ways. On the one hand, since relative frequency plays an important role in how speakers process complex linguistic forms (e.g., the greater importance of relative than absolute frequency in constraining processing in Hay 2001), we analyzed the effect of the frequency of the adjectives relative to the nouns they modified. Therefore, based on the lexical frequency rankings in Davies and Davies (2018), we classified adjectives as having higher frequency than the modified noun (i.e., belonging to the most frequent 115 words listed: ranked 62–115) or lower frequency than the modified noun (i.e., the adjectives ranked 2124–4859). Half of our adjectives had higher frequency than the noun, whereas the other half were lower frequency.[6]

[5] One noun was an exception. *Líder* 'leader' carries penultimate stress in the singular but antepenultimate stress in the plural. Nevertheless, *buenos líderes* patterned with other −1 syllable weight difference forms in our results.

[6] Along with meeting the syllable-difference guidelines above, each noun was chosen so that it would be more frequent or less frequent than the modifying adjective, in the case of the lower- and higher-frequency adjective pairings, respectively. The most frequent noun used ranked 88 (*vidas* 'lives'), with the least frequent ranked noun 4998 on the top 5000 list (*jugadas* 'tricks'), along with four unranked nouns (*montañas* 'mountains', *traumas* 'traumas', *vivencias* 'experiences', *tropiezos* 'mistakes'). Relative frequency is further considered in Section 5.2.

We hypothesized that adjectives with a higher relative frequency would favor the more innovative position (i.e., pre-position), based on the syntactic generalization that may occur for frequent forms as part of grammaticalization (Bybee et al. 1994) and/or greater autonomy (Bybee 2007). On the other hand, we wanted to verify that the more global frequency rankings of Davies and Davies (2018) supported data for Argentinean Spanish and for plural collocations in this set of varieties, and that the six adjectives indeed permitted variable ordering. Consequently, we searched the Argentinean section of the two billion-word Web/Dialects corpus of the *Corpus del Español* (Davies 2016) for the adjectives' plural forms (inclusive of masculine and feminine, where differing) and all forms of the adjective lemma (i.e., all combinations of number and gender). The left side of Table 2 provides the results for the plural adjectival forms while the right side indicates the lemma results, with the adjectives listed in order of pre-position percentage in their plural form. *Grande*, *nuevo*, and *bueno* all were pre-posed over 85% of the time in their plural form and overall (i.e., lemma results), whereas the less frequent adjectives *llano and fresco* were pre-posed at much lower rates, and *rudo* fell between these extremes, although its rates were closer to the latter pair's. Each adjective revealed a slightly lower rate of pre-position in the PL than overall (i.e., thus less than in SG), although for *llano* the difference was more pronounced. This difference according to number meant that *rudo* was under the 50% mark for pre-position in the PL, but slightly above it overall, albeit with rates still closer to *llano* than *nuevo*.[7] The three adjectives that were pre-posed at the highest rates were much more frequent than the other adjectives, both in PL and overall (e.g., approximately 90,000 to 140,000 tokens overall, compared to roughly 250 to 2200 tokens). Nevertheless, the rates of pre-position in the corpus did not completely align with token frequency, as, for example, the most frequent adjective (*nuevo*) was slightly eclipsed in pre-position rates in both searches and the least frequent adjective (*rudo*) showed higher pre-position rates than, for example, *fresco,* which yielded more tokens than *rudo* and *llano* and yet still was pre-posed at the lowest rates both in PL and overall.

Table 2. Positions of adjectives in the Argentinean section of *Corpus del Español* (Web/Dialects, Davies 2016).

	Pre-Posed (PL)		Post-Posed (PL)		Total (PL)		Pre-Posed (Lemma)		Post-Posed (Lemma)		Total (Lemma)	
ADJ	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Grande	28,691	91.7	2585	8.3	31,276	100	118,878	93.3	8526	6.7	127,404	100
Nuevo	45,335	88.1	6099	11.9	51,434	100	123,443	89.0	15,247	11.0	138,690	100
Bueno	10,436	85.9	1717	14.1	12,153	100	86,094	93.9	5639	6.2	91,733	100
Rudo	29	46.8	33	53.2	62	100	124	52.3	113	47.7	237	100
Llano	6	9.0	61	91.0	67	100	82	26.4	229	73.6	311	100
Fresco	59	7.5	733	92.6	792	100	201	9.2	1980	90.8	2181	100

Our 24 task items were the result of factorial design, uniting all possible combinations of our three semantic classes, four syllable-weight differences, and two adjective frequencies ($3 \times 4 \times 2 = 24$). Accordingly, each of our six adjectives was used with four different nouns, producing 24 distinct adjective–noun combinations. A sample item from the task and how it was coded is presented in (10).[8]

[7] *Rudo* reveals lower rates of pre-position in corpora if we focus on the nouns used on our task, as Table 6 will demonstrate.
[8] The full task is in IRIS at https://www.iris-database.org/iris/app/home/detail?id=york%3a938555&ref=search.

(10) *Hernán: A mí me impresiona el paso del tiempo. ¡Hace 20 años de esto! Pero como si hubiera sido ayer.* ('Hernán: I'm impressed by the passing of time. It's been 20 years now! But it feels as if it were yesterday.') _____.

a. *Igual todos esos momentos parecen experiencias frescas.*
b. *Igual todos esos momentos parecen frescas experiencias.*

('Anyway, all those moments seem like fresh experiences.')

c. *Las dos son igualmente aceptables.*

('Both are equally acceptable'.)

This item was coded as: [lower-frequency adjective, *frescas*], [−2 syllable weight difference for the adjective *frescas* compared to the noun *experiencias*], and [temporal adjective].

In line with sociolinguistic research, we also examined the possible roles of age and gender in constraining pre-position. Social variables have largely been excluded in past studies on this topic, although if this form of variation is stable and not particularly stigmatized, then we would expect women and older speakers to select pre-position at rates similar to men and young speakers.[9]

4. Results

4.1. Rates of Selection

We first consider the overall rates of selection of the pre- and post-position responses, before turning to the role of independent variables in conditioning selection. Overall, adjective post-position was the most popular response, although it was only selected in slightly more than half of responses (Table 3). As one participant categorically selected that both orders were possible for the set of adjectives we used, her responses were excluded from our multivariate analysis, since they did not vary. Excluding that individual, post-position was selected 53.7% of the time, pre-position 35.0%, and the response that both orders were possible 11.3%. If we exclude the "both" response and focus on only the contexts in which participants indicated that one order was clearly preferable, pre-position was selected in 39.4% of cases.

Table 3. Rates of selection of adjective positions in *rioplatense* Spanish.

Buenos Aires Group	Pre-Position		Post-Position		Both		Total	
	#	%	#	%	#	%	#	%
100 respondents	831	34.6	1277	53.2	292	12.2	2400	100
99 non-categorical respondents	831	35.0	1277	53.7	268	11.3	2376	100
99 non-categorical respondents ("both" response removed)	831	39.4	1277	60.6	–	–	2108	100

4.2. Independent Variables

We now consider the role of independent variables in constraining adjective position selection. We performed a one-level binary logistic regression in Rbrul (Johnson 2009), inputting our three linguistic variables and two extralinguistic variables as main effects and the individual participant

[9] Future work may consider additional variables such as social class or educational level, which have received little attention for this structure. Our sample did not permit analysis of these variables, as our participants generally had higher educational levels.

as a random effect.[10] We compared the pre-posed and post-posed adjective responses, discarding the "both" response in order to identify the contexts of clear ordering preference.[11] Pre-position was our input value, meaning that factor weights closer to 1 indicate a favoring of pre-position, whereas weights closer to 0 demonstrate a disfavoring of this response (i.e., favoring of post-position). Bracketed factor weights indicate that a factor group was not significant, based on a *p*-value of 0.05 or greater (Table 4). Positive log odds similarly reveal favoring effects on pre-position, whereas negative values demonstrate disfavoring. Ranges (i.e., the difference in factor weights between the most and least favorable factors within a factor group) are provided for significant variables. Larger ranges indicate a greater effect for a particular variable and are usually accompanied by lower *p*-values.

Table 4. Factors contributing to the selection of pre-position in *rioplatense* Spanish.

	Log Odds	N	% (of Pre-Position)	Factor Weight
Adjective Frequency ($p = 2.77 \times 10^{-146}$)				
Higher (62–115)	1.392	1016	65.7	0.801
Lower (2124–4859)	−1.392	1092	14.9	0.199
				Range 60
Syllable-Weight Difference (Adjective Relative to Noun) ($p = 7.54 \times 10^{-23}$)				
−2 syllables	0.695	526	49.8	0.667
0 syllables	0.201	529	41.8	0.550
−1 syllable	0.055	540	40.6	0.514
+1 syllable	−0.951	513	25.1	0.279
				Range 39
Semantic Class ($p = 4.64 \times 10^{-8}$)				
Evaluation	0.466	676	46.9	0.614
Shape/space	−0.228	719	36.2	0.443
Temporal	−0.238	713	35.6	0.441
				Range 17
Age Group ($p = 0.0419$)				
55+	0.314	464	45.7	0.578
35–54	−0.028	891	39.7	0.493
18–34	−0.286	753	35.2	0.429
				Range 15
Gender ($p = 0.908$)				
Women	0.011	1548	39.5	[0.503]
Men	−0.011	560	39.3	[0.497]
	Total N = 2108		Overall rate 39.4% pre-position	
Participant (random)				
Random St. Dev.			0.645	
Fixed $R^2 = 0.399$, Random $R^2 = 0.067$, Total $R^2 = 0.466$; log likelihood −1017.634				

[10] We consider the role of the individual adjective in our second regression. Presenting two different regression models was more illustrative of the roles played by our independent variables and the adjectives therein than displaying only one. The second analysis thus helps reveal patterns that may be absconded by the initial one.

[11] For comparison's sake, we ran an additional regression that combined "both" with the pre-posed response to determine where pre-position was allowed. The hierarchy of factor groups and constraint rankings within groups were identical to those of Table 4, although age group missed significance ($p = 0.101$).

Our mixed-effects regression revealed that all three linguistic variables were significant, with adjective frequency playing the largest role in constraining adjective position (based on its having the largest range), as high-frequency adjectives strongly favored pre-position. The next most important variable was the difference in syllable weight between the adjective and the noun, with lighter adjectives generally favoring pre-position and heavier adjectives disfavoring it. For semantic class, evaluative adjectives favored pre-position to a greater extent than shape/space and temporal adjectives.

Our extralinguistic variables generally played a lesser role, although age group yielded significance, with a *p*-value just below 0.05. Older participants selected pre-position more often than middle-aged and younger participants, with 5–6 percentage points separating each group in descending order. Women and men selected pre-position at nearly identical rates, thus generating similar factor weights and a high *p*-value for gender.

4.3. Individual Adjective Analysis

Based on the predictiveness of both adjective frequency and the adjective's semantic class, we more closely examined how our study's six adjectives constrained responses. Namely, we aimed to determine whether individual adjectives might group according to frequency, semantic class, or somewhat diverge from both variables; thus, we ran an additional regression with the individual adjective as a main effect rather than the adjective's frequency or semantic class. This regression otherwise contained the same elements as the prior one, thus also including syllable weight and the two social variables as main effects and the individual participant as a random effect. We present the results according to the individual adjective, along with noting its semantic class and frequency (Table 5).

Table 5. Individual adjective analysis.

Individual Adjective ($p = 3.63 \times 10^{-159}$)						
Adjective	**Semantic Class**	**Frequency**	**Log Odds**	**N**	**% (of Pre-Position)**	**Factor Weight**
Grandes	Shape/Space	Higher (62–115)	1.669	345	69.6	0.841
Buenos	Evaluation	Higher (62–115)	1.517	331	66.5	0.820
Nuevos	Temporal	Higher (62–115)	1.250	340	61.2	0.777
Rudos	Evaluation	Lower (2124–4859)	−0.369	345	28.1	0.409
Frescos	Temporal	Lower (2124–4859)	−1.542	373	12.3	0.176
Llanos	Shape/Space	Lower (2124–4859)	−2.524	374	5.3	0.074
						Range 77
			Total N = 2108		Overall rate 39.4% pre-pos.	
Participant (random)						
Random St. Dev.				0.674		
Fixed R^2 = 0.449, Random R^2 = 0.067, Total R^2 = 0.516; log likelihood −988.836						

The new regression indicated that the individual adjective variable was indeed significant.[12] Moreover, within this variable, forms patterned according to frequency rather than semantic class or a more haphazard distribution. Specifically, the three adjectives that favored pre-position were higher-frequency adjectives, thus each coming from a different semantic class (i.e., shape/space, evaluation, and temporal).

This analysis aids in explaining why frequency played a larger role in the prior model than semantic class, despite the significance of both factors (Table 4), as we will further discuss in Section 5.2. We also note that the lower-frequency evaluative adjective *rudos* disfavored pre-position to a lesser

[12] The full regression table can be found in Appendix A. Because the values for the other independent variables were nearly identical to those of Table 4, only the new variable (i.e., individual adjective) and the model summary information are presented in Table 5.

extent than the other two lower-frequency adjectives, which helps to elucidate why evaluative adjectives were the most favorable to pre-position in the prior analysis. Moreover, participant preferences largely matched the adjectives' tendency of being pre-posed with any noun in the larger corpus data of Argentinean Spanish (reported in Table 2).

Nevertheless, although the six adjectives reflected their general positioning tendencies in terms of the responses they favored, we performed additional corpus searches to determine whether our 24 adjective–noun collocations (i.e., four for each adjective) also supported these tendencies. We first searched the two billion-word Web/Dialects portion of the *Corpus del Español* to ascertain the relative rates of pre-position for each adjective lemma with its four nouns (i.e., in both singular and plural), as presented in the left side of Table 6. Then, to better approximate the Argentinean context, we searched only that portion of the corpus, yielding the values in the center of the table. Thirdly, to establish whether these 24 collocations exhibited a similar pattern when only considering the plural, we expanded our search to include both the Web/Dialects corpus and Davies' 5.5 billion-word NOW (i.e., News on the Web) magazine and newspaper corpus (2018) in order to provide more robust representation of the relevant plural forms.[13] This combination also enabled the inclusion of plural forms in both oral data and written periodical data, which together offer a reasonable approximation of our written task that featured rather informal language meant to mirror vernacular speech.

Table 6. Positions for the 24 adjective–noun collocations of the preference task according to the *Corpus del Español* (Davies 2016, 2018).

	Web/Dialects				**Web/Dialects, Argentina**				**Web/Dialects + NOW**			
	Pre-Posed (Lemma)		**Post-Posed (Lemma)**		**Pre-Posed (Lemma)**		**Post-Posed (Lemma)**		**Pre-Posed (PL)**		**Post-Posed (PL)**	
ADJ Lemma	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Grande	1792	97.7	42	2.3	130	98.5	2	1.5	1620	98.4	27	1.6
Bueno	2505	97.5	65	2.5	167	97.7	4	2.3	2177	96.3	84	3.7
Nuevo	425	91.4	40	8.6	49	89.1	6	10.9	589	93.0	44	7.0
Rudo	49	27.1	132	72.9	6	37.5	10	62.5	28	24.6	86	75.4
Fresco	16	10.7	133	89.3	2	25.0	6	75.0	12	8.3	132	91.7
Llano	3	0.8	388	99.2	0	0.0	23	100.0	4	2.0	199	98.0

All three of these searches uncovered an interesting similarity to our individual adjective analysis (in Table 5). When considering the 24 adjective–noun collocations of our task, the six adjectives ranked in the same order as our preference task results with respect to favorability of pre-positioning, which slightly diverged from the more general tendencies for these adjectives presented in Table 2, in which *bueno* was pre-posed more than *nuevo*, and *fresco* less than *llano*. Thus, patterns of co-occurrence for these adjective–noun collocations according to independent corpus measures offer compelling similarity to how participants treated the adjectives in the task, also revealing that, as in the task, *rudo* is more conducive to pre-posing than *fresco* and *llano*, although it is still pre-posed in the minority of cases. As in the preliminary corpus analysis, relative frequency appears to be more important than token frequency, as *grande* yields the highest relative rates of pre-position in the three corpora and on the task despite having a lower token frequency with the task's adjectives than *bueno* (and a lower token frequency with all adjectives than *nuevo*, Table 2). Similarly, *llano* has greater token frequency with these nouns than do *fresco* and *rudo* but has a lower relative rate of pre-position in the corpora and on the task. Thus, it is not how many times the adjectives are used overall, or even with the nouns

[13] Searching only the Web/Dialects corpus for the plurals yielded the same ranking as the combined Web/Dialects and NOW corpora reported in Table 6.

featured on the task, but rather whether they are relatively more pre-posed when used (and specifically with the relevant set of nouns) that best matches the results of our task.

5. Discussion

5.1. Answers to Research Questions

The present study was designed to answer questions regarding the rates and predictors of adjective pre-positioning in *rioplatense* Spanish. Consistent with prior research on Spanish, adjective post-position was overall the most common preference (Centeno-Pulido 2012; File-Muriel 2006; Hoff 2014). The relatively higher rate of pre-position in the present study (i.e., 35%, or 39% when the "both" response was removed), compared to previous work (e.g., 27% in Centeno-Pulido 2012; 24% in File-Muriel 2006), likely resulted from multiple causes. On the one hand, the adjectives used in our task only hailed from classes shown to permit both pre- and post-position (File-Muriel 2006). Moreover, the use of a preference task also likely yielded higher rates of pre-position, as prior studies have shown this ordering to be more prevalent in written, as opposed to oral, data (Centeno-Pulido 2012; File-Muriel 2006; Hoff 2014). These results support Jacob's (2005) contention that pre-posed adjectives may provide a picturesque, poetic tone amenable to written genres. Additionally, half of our items included highly frequent adjectives, which also favor pre-posing, and only one-fourth of our items included the disfavoring context of heavier adjectives than nouns. Consequently, our task, through manipulating significant variables from previous findings, created contexts where pre-position would be generally more viable than in a less-controlled task.

Our three linguistic variables significantly affected positioning according to mixed-effects regression, with adjective frequency playing the most formidable role, as highly frequent adjectives (all among the 115 most frequent words in Davies and Davies 2018) strongly favored pre-position. This variable had not yet been manipulated in research on Spanish noun–adjective ordering and will be considered in greater detail in the next section. Regarding syllable weight, adjectives two syllables shorter than the nouns they modified were the most likely to be pre-posed, which supports findings that lighter adjectives favor pre-position due to production and processing constraints (Centeno-Pulido 2012; File-Muriel 2006; Hoff 2014). Moreover, although a −2-syllable difference most favored pre-posing and +1 difference most disfavored it, our results did not pattern purely according to length, as a 0-syllable difference permitted slightly higher pre-position (48%) than did −1 (46%). Nevertheless, both of these more intermediate categories clearly fell between the extremes of the other two categories, with the latter two differing by over 20 percentage points.[14] Semantic class revealed that evaluative adjectives most frequently favored pre-position, whereas shape/space and temporal adjectives played a similar role in yielding it comparatively less.[15] Analysis of individual adjectives demonstrated that the three adjectives that most favored pre-posing were the three most highly frequent, based on corpus data (Davies and Davies 2018), each coming from one of our three different semantic classes. Thus, at least for our tested adjectives, frequency played a stronger role than semantics in constraining positioning.

Regarding extralinguistic variables, respondents were significantly constrained by age, with the oldest participants selecting pre-position to the greatest extent, the youngest doing so the least, and middle-age participants patterning between these poles. Women and (especially) older participants

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[14] Recall that our +1 category required use of the elative form of the adjective (e.g., *grandísimas montañas* 'very big mountains'), since our task otherwise consisted of bi-syllabic plural nouns and adjectives. It is likely that both the greater length and lower frequency of elative forms contributed to the tendency for post-position. Future research that includes longer adjectives (or shorter nouns) will help disambiguate these factors.

[15] An anonymous reviewer inquired whether *grandes* might invoke different readings as a pre-posed versus post-posed choice, especially with nouns that are more figurative/less concrete. Although pre-position was favored when *grandes* modified the abstract nouns *tropiezos* 'mistakes' and *decepciones* 'disappointments', these were also its −1 and −2 syllable-difference pairings, which again were favorable contexts for pre-position across the task. Future work will benefit from manipulating figurativeness/concreteness.

selected pre-posed adjectives slightly more than men and younger individuals, which likely means that this phenomenon is not stigmatized in *rioplatense* Spanish. In fact, pre-position may contain some level of prestige, at least in the format of the task, as women and adults in the work force tend to favor prestigious forms (Labov 2001; Walker 2010). Greater pre-positioning as age group increased may also reflect this order's more formal or poetic nature (Centeno-Pulido 2012; File-Muriel 2006; Hoff 2014; Jacob 2005).

5.2. Interpreting the Roles of Lexical Frequency, Semantics, and Syllable Weight

Although both the lexical frequency and semantic class of adjectives yielded significance in our initial regression, analysis of individual adjectives revealed that the three most frequent adjectives patterned together, as opposed to those of the same class. These findings support the notion that speakers use a combination of categories of co-occurrence (i.e., tendencies based on membership in a semantic class) and lexical properties (e.g., of individual adjectives) in crafting and interpreting messages (Bybee 2006; Díaz-Campos and Zahler 2018; Edmonds and Gudmestad 2014; Goldberg 2013; Kanwit and Geeslin 2020). What is more, our results support the role of lexical effects: the higher-frequency adjective within a semantic class (e.g., evaluative adjectives) was treated differently from the lower-frequency adjective in that same class, with the former permitting greater divergence from the default Spanish noun–adjective order. This result is consistent with Díaz-Campos and Zahler's (2018) observation that, for example, more frequent negative words (e.g., *nada* 'nothing') allowed greater variability in ordering with *más* 'more' than less frequent negators did, which were largely invariant. Regarding semantic class, our first regression indicated that evaluative adjectives favored adjective pre-position, supporting prior findings (File-Muriel 2006). Possible links between evaluative adjectives and animate evaluators may explain this propensity for the innovative and more restricted pre-position (e.g., animacy effects on word ordering, Buckle et al. 2018). This is further supported by our less frequent evaluative adjective's (i.e., *rudos*) yielding of pre-position at rates much higher than the other two lower-frequency adjectives.

Syllabic weight differences between the adjective and the noun also significantly constrained our data. At least two causes may contribute to this effect, with bases in phonology and semantics, respectively. From a phonological perspective, the Heaviness Shift Rule predicts that light material will be placed at the front of an utterance (Wilmet 1980), which may help facilitate processing for the interlocutor (Hawkins 1994) and production for the speaker (Wasow 1997). Nevertheless, semantic classes will participate in this form of variable positioning differentially (Prado 1980). Important propositions are placed in the back of the utterance, which would be the case for more information-rich adjectives (Terker 1985). Accordingly, newer (in terms of information status) and heavier material receives focus and is generally post-posed (Arnold et al. 2000; Dam 2018; File-Muriel 2006).

Patterns associated with grammaticalization processes (Bybee et al. 1994) also help explain why heavier material may be more informative. For example, use of a linguistic form at high rates contributes to semantic bleaching, or loss of specificity of meaning (Hopper and Traugott 2003). As a form becomes more bleached, it can be used in additional discourse contexts, since a more general meaning applies to more scenarios. This extension is accompanied by use in expanded linguistic contexts, known as syntactic generalization (Bybee et al. 1994). Thereafter, the cycle is further perpetuated, as a more semantically bleached form that can be used in numerous syntactic contexts will support increased use, demonstrated in Figure 1. Bleaching and generalization occur during grammaticalization, as lexical items subsume a grammatical role. For example, *ir* + *a* + infinitive 'to be going to' grammaticalized from conveying motion on a path toward a goal to indicating the more semantically bleached function of futurity, which permitted generalization to co-occurrence with a wider range of infinitives across different semantic classes, and thus a higher overall rate of use (Aaron 2010; Bybee et al. 1994; McColl Miller 2007). Nevertheless, the processes described can also occur with meaning changes for a particular lexical item that do not entail gaining a new grammatical function. More generally, frequent lexical items expand to, for example, modify new nouns as their meanings become less specific. For instance,

'awesome' in English now modifies a diverse range of nouns beyond those that traditionally 'inspire awe' (Watson 1996). Similarly, the Spanish phrase *a poco* 'in a short extent' generalized to new syntactic and semantic contexts diachronically (Escalona Torres 2020). In sum, although the aforementioned processes occur with grammaticalization, the same principles can apply to lexemes that maintain purely lexical use, albeit with frequent, not highly specified meanings. Since such forms subsequently also tend to experience phonetic reduction based on especially frequent use (e.g., English "idunno" for "I don't know" and Spanish pre-posed adjectives like *buen* 'good', Bybee 2006), they are particularly good candidates for occurring earlier in an utterance, based on weight constraints (Wasow 1997).

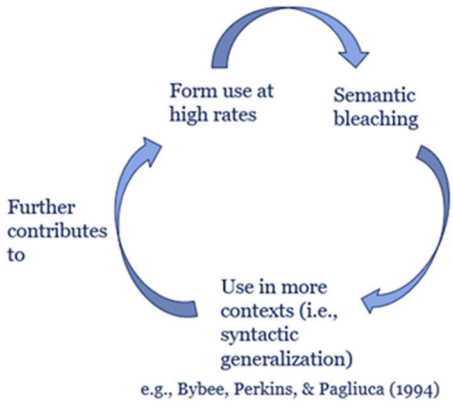

Figure 1. The cyclical relationship among frequency, semantic bleaching, and syntactic generalization.

Moreover, significantly greater selection of pre-position for high-frequency adjectives, compared to low-frequency adjectives, may reveal an important aspect of our task design: these two sets of adjectives were chosen based on their relative frequency compared to the noun they modified (i.e., the high-frequency adjectives were also more frequent than the modified noun, whereas the low-frequency adjectives were always less frequent than the noun). The cycle described above in which highly frequent adjectives have less detailed semantic meaning makes them good candidates for pre-posing, based on their rather low level of informativity (Terker 1985), but they are even better candidates when relatively less informative than the noun they modify, as occurs when modifying a less frequent, more specific noun (i.e., *aparato* 'apparatus' instead of *cosa* 'thing'). Thus, the frequency of the modified noun competing to be in the more informative (i.e., post-posed) position plays an important role in constraining ordering, and it is useful in partially indicating the level of semantic detail, as highly frequent nouns will necessarily be quite general.

Although prior noun–adjective ordering studies did not manipulate frequency or code a range of frequencies, patterns elucidated in the present data support research on a robustly studied morphosyntactic variable (i.e., subject expression) that has shown lexical frequency to play a critical role as a main effect (Bayley et al. 2017; Linford and Shin 2013; Solon et al. 2018) and/or as a mediator of other variables (Erker and Guy 2012; Linford and Shin 2013). In our data, lexical frequency yielded significance as a main effect. Because frequency was highly predictive on its own, subsequent examination unsurprisingly revealed patterning according to lexical frequency within semantic classes, demonstrated in the individual adjective analysis. Thus, the more frequent evaluative adjective favored pre-posing, similar to the more frequent shape/space and temporal adjectives, with lexical frequency therefore offering stronger predictions than semantic class for the six adjectives under investigation. Nevertheless, this also supports research that has shown an amplifying effect for the more frequent members of a given independent variable (Erker and Guy 2012) and research that has shown both a main effect and this mediating effect (Linford and Shin 2013). Moreover, corpus analyses of the relative pre-position frequencies of our adjectives in collocation with all nouns (Table 2) and with the specific nouns used on the task (Table 6) uncovered a clear pattern in which greater relative use in pre-position was matched by pre-position selection on the task. Adjectives with greater relative rates of pre-position

in the corpora were also the higher-frequency adjectives, although more than token frequency, our task items patterned according to the relative rates of these particular adjective–noun collocation orderings. Consequently, the ranking of the adjectives in the individual adjective regression precisely matched the ranking according to relative frequency of collocation order but showed slight divergence from that of token frequency.

Finally, based on the importance of relative frequency in constraining our results, the significant effect yielded for semantic class in our first regression may be epiphenomenal. Our evaluative adjectives, which most favored pre-position, included an adjective with a high relative frequency of pre-position in corpus data (i.e., *buenos*) and an adjective more amenable to pre-position (i.e., *rudos*) than the other adjectives that disfavor this order. Thus, the significant result for semantic class may reflect these distributional differences more than any particular feature of evaluative compared to temporal or shape/space adjectives, at least for the adjectives and variety under study.[16] Such a tendency would reflect variationist research that has shown effects for certain variables (e.g., lexical class, word boundary, grammatical conditioning, phonetic environment) to be more attributable to distributional differences in discourse (i.e., relative frequency in relevant contexts) than the particular features of the purportedly conditioning variable (e.g., Brown 2013; Brown and Raymond 2012; Bybee 2017). Future work will do well to examine the frequency in favorable conditioning (e.g., relative rate of occurrence with heavier nouns) for a range of adjectives participating in pre-position in order to further account for the distributional differences captured in the corpus searches.

6. Conclusions

As higher-frequency, syllabically shorter, and evaluative adjectives favored pre-position in our data set, variable adjective positioning demonstrated the confluence of syntax, phonology, and semantics on language variation, as predicted by usage-based approaches to grammar building. Additional analyses with two measures of frequency revealed that lexical frequency played an especially important role in constraining adjective ordering, as has been evinced for other forms of morphosyntactic variation cross-linguistically (e.g., subject pronominal expression in Bayley et al. 2017). We appealed to processes associated with grammaticalization, including semantic bleaching and syntactic generalization (Bybee et al. 1994), to help explain the occurrence of adjectives in positions where they are not typically expected in Spanish, in addition to phonological and semantic explanations that would privilege lighter and less information-rich material, respectively (Arnold et al. 2000; Buckle et al. 2018; File-Muriel 2006; Terker 1985; Wasow 1997).

Despite the contributions of the study, many productive routes for investigation remain. We constructed a task to incorporate semantic classes and syllable length differences known to participate in variable ordering, but subsequent research will determine whether spontaneous speech supports these findings. Inclusion of additional noun–adjective pairings will contribute to the discussion of relative frequency that we have raised, in conjunction with other frequency measures to assess possible differences in global (Bybee 2002) versus local frequency (Erker and Guy 2012) for the variable and population under consideration. Future work should further investigate the potential roles of restrictiveness and discourse constraints (e.g., information focus) that may contribute to variation (Dam 2018). In addition to extending investigation of variable adjective ordering to a South American variety, the study has shed light on ways in which numerous domains contribute to linguistic variability, a helpful expansion from work that has traditionally been more restricted, based on concerns of syntax proper (Tomasello 1998). Subsequent research will determine the extent to which variation at these interfaces holds across different elicitation methods, populations, and collocations.

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[16] Nevertheless, we certainly do not claim that semantic class is unimportant overall in conditioning pre-position, since only some classes participate in this phenomenon.

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Appendix A

Table A1. Full mixed-effects regression results for individual adjective analysis.

***Rioplatense* Spanish**				
	Log Odds	**N**	**% (of Pre-Position)**	**Factor Weight**
Individual Adjective ($p = 3.63 \times 10^{-159}$)				
Grandes 'big' (shape/space, higher-freq.)	1.669	345	69.6	0.841
Buenos 'good' (evaluation, higher-freq.)	1.517	331	66.5	0.820
Nuevos 'new' (temporal, higher-freq.)	1.250	340	61.2	0.777
Rudos 'tough' (evaluation, lower-freq.)	−0.369	345	28.1	0.409
Frescos 'fresh' (temporal, lower-freq.)	−1.542	373	12.3	0.176
Llanos 'flat' (shape/space, lower-freq.)	−2.524	374	5.3	0.074
				Range 77
Syllable-Weight Difference (Adjective Relative to Noun) ($p = 5.18 \times 10^{-23}$)				
−2 syllables	0.719	526	49.8	0.672
0 syllables	0.190	529	41.8	0.547
−1 syllable	0.043	540	40.6	0.511
+1 syllable	−0.952	513	25.1	0.278
				Range 39
Age Group ($p = 0.0363$)				
55+	0.329	464	45.7	0.582
35–54	−0.024	891	39.7	0.494
18–34	−0.305	753	35.2	0.424
				Range 16
Gender ($p = 0.932$)				
Women	0.009	1548	39.5	[0.502]
Men	−0.009	560	39.3	[0.498]
	Total N = 2108		Overall rate 39.4% pre-position	
Participant (random)				
Random St. Dev.			0.674	
Fixed $R^2 = 0.449$, Random $R^2 = 0.067$, Total $R^2 = 0.516$; log likelihood −988.836				

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