

## Article

# Effects of Adjective Type on Position and Interpretation in Native Polish Classroom Learners of Spanish

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**Abstract:** This study examines the effect of adjective type on distribution and interpretation of Spanish adjectives in native Polish classroom learners of Spanish. A native Spanish group ( $n = 16$ ), an advanced Spanish learner group ( $n = 24$ ), and an intermediate Spanish learner group ( $n = 25$ ) completed one task examining knowledge of the syntactic distribution of intensional and classifying adjectives and two tasks examining interpretive knowledge of the syntax–semantic distribution of qualifying adjectives in Spanish. While native-like convergence largely obtained for the interpretive tasks, statistically significant differences obtained between native and learner groups on the syntactic task, perhaps a by-product of overgeneralization of the postnominal position resulting from explicit instruction. The main import of this study is that examination of an understudied and typologically–distinct language pairing allows for syntactic and syntax–semantic microvariations to inform the L2 learners’ outcomes on the tasks.

**Keywords:** syntax; syntax–semantics; qualifying; classifying; intensional; adjectives; Spanish; Polish



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## 1. Introduction

Functionalist and formal approaches have contributed to our understanding of adjectives in Spanish, with the former focusing more on distribution and the latter on interpretation. Though fewer in number, variationist studies on adjective position reveal that postnominal adjectives are more frequent in spoken and written Spanish (Centeno-Pulido 2012), and that the relative syllabic weight of the adjective (File-Muriel 2006), style of speech (Hoff 2014), and lexical frequency (Kanwit and Terán 2020) influence placement of alternating adjectives in native Spanish, which constitutes some of the input L2 learners receive. Generative interest in microvariation (Baker 2008; Kayne 2005) has surfaced more frequently in recent formal acquisition studies, and for fruitful reasons. Microvariation places differences among languages and dialects in the lexicon (Biberauer et al. 2010; Borer 1984; Chomsky 2008). As described below, the field of Second Language Acquisition (SLA) is steadily moving from larger-scale questions (e.g., new feature acquisition in post-pubescent learners) to narrower questions affecting language acquisition. Purposefully including language pairings that vary in micro, as opposed to macro, ways facilitates this goal, and necessarily requires the examination of a wide array of language combinations. In addition to benefiting our general understanding of linguistic typologies, seeking a more precise understanding of them can be applied to language acquisition scenarios, including differences between the native (L1) and second (L2) language, the acquisition task faced by learners, how input may be parsed, and explanations of (non-)convergence. Ultimately, more encompassing comparisons across varying language pairings increase the explanatory adequacy of the field’s theorizing. As stated by Judy and Perpiñán (2015) regarding non-primary language acquisition:

[i]t is only through a systematic comparison of different language combinations that we can tease apart what comes from first language transfer (whether facilitative or non-facilitative) and what comes from other sources such as Universal Grammar, frequency of input, or general cognition. (p. 2)

The first formal studies to examine adult acquisition of the syntactic and syntax–semantic distribution of adjectives focused mostly on Spanish and French<sup>1</sup> and were largely couched in terms of the theoretical debate surrounding post-pubescent acquisition of properties/features absent in the L1. Non-convergence accounts, whether due to representational differences (e.g., [Hawkins and Chan 1997](#)) or interface difficulties ([Sorace and Filiaci 2006](#)), predict that adult L2 learners will be non-native-like in all domains<sup>2</sup>. Conversely, convergence accounts assume, generally, that acquisition is possible given access to linguistic input that would trigger acquisition ([Manzini and Wexler 1987](#); [Schwartz and Sprouse 1996](#)). Given this theoretical context, early studies logically examined language pairings that differed significantly. While earlier studies ([Bruhn de Garavito and White 2002](#); [Parodi et al. 1997](#)) examined language production, a second wave of studies focused on interpretive knowledge of adjectival placement said to result from acquisition of underlying syntax. For example, [Judy et al. \(2008\)](#) found that intermediate L1 English, L2 Spanish speakers showed evidence of new DP *phi*-features, but non-native-like interpretations of adjectival placement. Their advanced proficiency peers, however, performed more in line with native speakers, highlighting proficiency as an important factor. Similar findings obtained in [Rothman et al. \(2010\)](#), although some intermediate L2 Spanish speakers demonstrated knowledge of adjectival syntax and interpretation. For French, [Gess and Herschensohn \(2001\)](#) reported that L1 English, L2 French learners showed knowledge of nominal gender features not instantiated in the L1, but fell short of native-like knowledge of adjectival placement. [Anderson \(2008\)](#) also reported L1 English, L2 French learner convergence on interpretive constraints related to French noun-raising: result and process nominals, and unique- and non-unique-denoting adjectives. Like the aforementioned studies, Anderson reported that true acquisition is demonstrated via syntax–semantic knowledge.

[Bruhn de Garavito and White \(2002\)](#) is the first known adjective study to explicitly examine typologically similar languages, L1 French and L2 Spanish. Since the study examined elicited production data alone, the nature of the participants' underlying grammar is unclear under a generative perspective. Still, the authors reported that adjectival word order was unproblematic for the participants, which is unsurprising "since both the L1 French and the L2 Spanish have N Adj word order" (2000, p. 173). [Androutsopoulou et al. \(2008\)](#) examined L1 French, L2 Spanish convergence on evaluative (i.e., qualifying) adjectives. French and Spanish share similar adjective distribution overall and each allows (some) evaluative adjectives to appear pre- and postnominally. Nevertheless, French permits fewer evaluative adjectives prenominally than Spanish, a property the authors claim is tied to the Focus/Degree feature of evaluative adjectives. The partial overlap between the languages creates a less straightforward acquisition task than that faced by L1 English learners of other studies. Nonetheless, some participants showed native-like intuitions. This study is especially informative, not only for larger-scale questions regarding adult transfer and UG-accessibility, but particularly because it highlights the importance of considering micro-differences between closely related and similar languages.

Follow-up studies in Spanish examined participants whose L1s display varying degrees of overlap with Spanish adjectives under the same methodology. [Guijarro-Fuentes et al. \(2009\)](#) tested L1 transfer effects by comparing L1 English with L1 Italian participants, while [Rothman et al. \(2009\)](#) included a Germanic group comprising English and German L1 speakers and an L1 Italian group. Results showed that intermediate and advanced L1 Italian participants provided direct (*phi*-features) and indirect (adjectival interpretation) evidence of underlying Spanish values. However, only advanced L1 English participants demonstrated evidence of acquisition of new functional features and subsequent knowledge of the semantics that fall out from it, a difference that points to the deterministic nature of L1 transfer.

These studies informed an important domain of inquiry (DP acquisition), contributed to relevant SLA debates, and advanced the field's research agenda. Nevertheless, two final aspects merit discussion as they bear directly on the current study's design. First, [Androutsopoulou et al. \(2008\)](#) is the first and only known study to explicitly examine

and compare adjective type in L2 Spanish speakers (or French, for that matter). While some previous experiments on L2 acquisition of Spanish included alternating qualifying adjectives in the semantic tasks, and [Judy et al. \(2008\)](#) included strictly prenominal (i.e., intensional) and strictly postnominal (i.e., classifying) adjectives in the syntax task, the value in [Androutsopoulou et al.’s](#) approach is that consideration of adjective type and its relationship to adjective position allows us to disentangle specific ways L1 values can influence subsequent language acquisition. This approach can also reveal important insights regarding acquisition that may be masked if only adjective position is considered. Furthermore, [Rothman et al. \(2009\)](#) failed to exploit, perhaps due to few L1 German participants, a potentially illustrative component of the languages examined therein. German and English have similar nominal word order and lack noun-raising, while German and Spanish both have rich nominal agreement systems including gender and number. Teasing apart subtle differences between English and German may have proven informative, as in [Liceras and Alba de la Fuente \(2015\)](#). Upon reviewing several properties examined in the L1 French, L2 Spanish acquisition literature, the authors argue that, although both are Romance languages, Spanish and French display subtle differences best defined via a feature analysis, as compared to a parametric one (2015, p. 352).

Due to the nature of its fundamental aim—to determine if convergence on the syntactic and semantic distribution is possible for L1 Polish learners of Spanish, the current study adopts a generative approach. Its contributions include that it is the first known study examining L1 Polish speakers’ knowledge of adjectival distribution in Spanish. In fact, few studies explore Spanish in the context of Polish, two typologically dissimilar languages. The property itself is also of experimental and theoretical value precisely because adjectival distribution in Spanish is considered a *poverty-of-the-stimulus* property ([Anderson 2007](#); [Chomsky 1980](#)). The full gamut of semantic differences obtained from adjective position are not deducible from the input alone, nor are they taught<sup>3</sup>; rather, knowledge of them purportedly falls out from acquisition of gender and number features readily available in the input. Furthermore, while some similarities exist between Polish and Spanish DPs, L1 transfer alone cannot result in native-like convergence, thus creating a real acquisition task. Finally, as [Androutsopoulou et al. \(2008\)](#) highlighted, this study provides a more fine-grained analysis of adjectival convergence via separate treatment of three adjective types—intensional, classifying, and qualifying—contributing to our understanding of microvariation across languages.

## 2. Adjectives in Spanish and Polish

This section examines the syntactic and syntax–semantic distribution of adjectives in Spanish and Polish with emphasis on relevant similarities (obligatorily prenominal intensional adjectives and alternating pre- and postnominal adjectives) and differences (adjective type allowed in each position).

### 2.1. Syntactic Distribution

In Spanish, most adjectives are postnominal (1–2) ([Zagona 2002](#)). Qualifying and classifying adjectives appear postnominally, the latter type obligatorily so.

(1) Spanish qualifying adjective	
una casa roja	*una roja casa
a house-n red-adj	a red-adj house-n
“a red house”	
(2) Spanish classifying adjective	
un director general	*un general director
a director-n general-adj	a general-adj director-n
“a general director”	

One exception is intensional adjectives, such as *presunto* “presumed”, which must appear prenominally (3).



languages also differ with respect to the entailment (intersective vs. non-intersective) and the denotation (object-level vs. kind-level) of the adjectives in each position.

According to McNally and Boleda, “[T]he term ‘intersective’ refers to the fact that the semantic composition of the adjective and noun can be characterized in terms of the intersection of their extensions” (2004, p. 179). Regarding adjective type, two sub-types of qualifying adjectives appear both pre- and postnominally in Spanish, the first of which includes adjectives like *bueno* “good” and *pobre* “poor”. Since these adjectives are generally presented as “meaning-changing adjectives” in Spanish textbooks, they are labeled as such herein. The second type includes qualifying adjectives such as *exitoso* “successful” and *lindo* “beautiful”, which are labeled as “alternating qualifying adjectives”.

To illustrate the entailment differences between the two languages, we return to Spanish examples (4) and (5) and compare them with Polish examples (9) and (10). The prenominal alternating qualifying adjective of (4) (*los cómicos actores* “the comical actors”) has the non-intersective entailment characteristic of prenominal adjectives in Spanish (Demonte 2008, p. 72). Differently, the postnominal adjective in (5) (*los actores cómicos*) is ambiguous<sup>7</sup>: postnominal *cómicos* is non-intersective since it describes a type of actor (comedy actors as opposed to melodrama actors); postnominal *cómicos* is intersective since the entities referred to are both *actors* and *comical*.

Likewise, the Polish counterparts show that syntactic position affects DP interpretation. The prenominal adjective in (9) (*komiczny aktor*) is intersective in that the person referred to is both an *actor* and *funny*. However, the postnominal adjective (*aktor komiczny*) of (10) is classificatory in nature and, therefore, is interpreted as a type of actor, “the comedic actor”, resulting in a non-intersective entailment<sup>8</sup> where the actor referred to might hold the professional title of “comedic actor”, yet have a reputation for being quite unfunny!

The final semantic difference between Spanish and Polish adjectives is the type of entity modified, either object-level or kind-level. Demonte (2008) claims that, in languages that allow for alternating word orders, the syntactic position of an adjective is linked to its denotation. In Spanish, prenominal alternating qualifying adjectives denote kind-level entities while postnominal alternating qualifying adjectives largely denote object-level entities (they can also denote kind-level entities). Polish prenominal classifying adjectives, in contrast, denote object-level entities (9), while postnominal adjectives denote kind-level entities ((10); Wagiel 2014). McNally and Boleda (2004), Cornilescu (2009), and Wagiel (2014), among others, provide more detail for Romance and Slavic languages. Table 1 summarizes the semantic differences between Spanish and Polish pre- and postnominal adjectives.

**Table 1.** Semantic differences between Spanish and Polish adjectives.

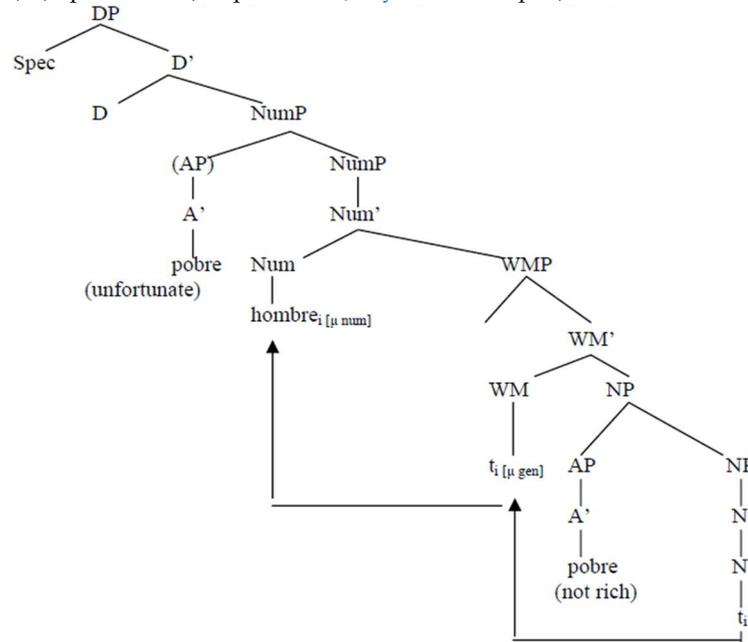
	Spanish		Polish	
	Prenominal	Postnominal	Prenominal	Postnominal
Alternating Adjective	Qualifying	Qualifying	Classifying	Classifying
Entailment	Non-intersective	Intersective/Non-intersective	Intersective	Non-intersective
Property Denotation	Kind	Kind/Object	Object	Kind

### 2.3. Acquisition Task

While various analyses of the Spanish DP have been proposed (e.g., the roll-up account of Cinque (2010), or the FocP account of Demonte (2008)), the structure seen in (15) is assumed herein (Bernstein 1993, 2001<sup>9</sup>). In this structure, two functional categories reside between DP and NP: Num(ber) Phrase (NumP) and Word Marker Phrase (WMP). The uninterpretable Number and Word Marker features in the head of each phrase, respectively, trigger obligatory noun-raising, moving first to WMP then to NumP, resulting in postnominal adjectives (Bernstein 1993, 2001; Carstens 1991; Zagona 2002). Prenominal

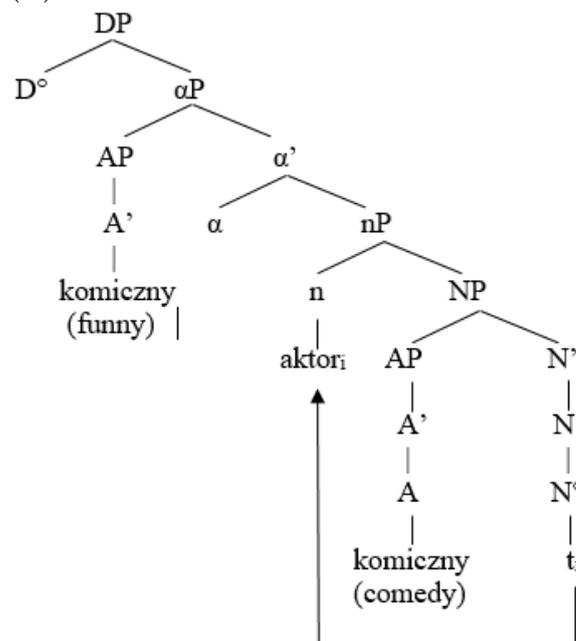
adjectives result from Adjective Phrase (AP) adjoining to NumP instead of merging in NP. Furthermore, it is assumed that the different positions available to adjectives are related to the semantic characteristics of the adjectives themselves (Bernstein 1993; Demonte 2008).

(11) Spanish DP (adapted from Judy et al. 2008, p. 3)



While Rutkowski and colleagues propose a similar structure for Polish (16), comparison reveals a difference: Spanish requires two feature-checking movements (to WMP, then to NumP), while Polish requires just one (to ClassP in early instantiations and, more recently, to nP).<sup>10</sup> Rutkowski (2012) claims that the formal feature of nP can be checked in several ways, for example, N-raising when a postnominal classifying adjective is present.

(12) Polish DP



The syntactic trees in (11) and (12) uncover at least one important similarity between Spanish and Polish DPs: feature-checking (of Gender and Number in Spanish, or Class, according to Rutkowski (2012), for Polish) is associated with noun-raising and results in relatively predictable semantic changes depending on adjective position. A fair question to consider is whether transfer of Polish would result in convergence in Spanish. While

Spanish learners could certainly transfer the Class feature akin to Gender and Number in Spanish, doing so does not immediately garner them knowledge of the semantic differences between the DPs of both languages shown in Table 1 above, revealing a real acquisition task, and one that differs from previous studies. Namely, for Polish-speaking Spanish learners to converge on the syntactic and semantic properties of Spanish DPs, they must learn that while adjectives are largely postnominal in Spanish, there are exceptions. Importantly, intensional adjectives are obligatorily prenominal, some qualifying adjectives can appear pre- and postnominally, resulting in a distinct semantic configuration (see Table 1), and classifying adjectives are obligatorily postnominal, leaving them with only one interpretation. Differently from Polish, the internal structure of Spanish DPs results in prenominal alternating qualifying adjectives having non-restrictive interpretations, while allowing for postnominal alternating adjectives to have both restrictive and non-restrictive interpretations. Since Spanish does not provide the necessary unambiguous linguistic input for learners to infer the semantic subtleties of adjectival distribution via frequency or linear learning alone (Rothman et al. 2010), it is assumed herein that this knowledge obtains from convergence on the underlying structure (see Anderson (2007) for similar claims for French).

### 3. Research Questions and Predictions

Based on the acquisition task, the following research question is examined:

RQ: Do the experimental groups display native-like distribution and interpretation of adjectives in Spanish?

It is assumed that a language learner of any background can come to acquire a native-like underlying grammar provided they are exposed to sufficient meaningful input and that said input triggers grammatical restructuring, via parsing failures, where necessary (Manzini and Wexler 1987). Following Schwartz and Sprouse (1996), full transfer of the Polish DP is assumed for the initial state of Spanish learning. Full transfer of the Polish DP provides the Spanish learner with a DP structure that correctly places intensional and (largely) classifying adjectives since these occupy the same position in both languages. Nonetheless, a parsing failure is required for convergence on qualifying adjectives since they appear in different positions in Spanish and Polish. When Polish speakers encounter Spanish qualifying adjectives in postnominal position, their Polish grammar cannot accommodate the structure, causing a parsing failure. It is assumed that the input Spanish learners are exposed to contains instances of postnominal qualifying adjectives as they occur frequently, and especially because explicit instruction on this difference is typically provided for classroom learners.

Due to the unique nature of each adjective type examined, the predictions for convergence are presented individually. First, intensional adjectives are predicted to be correctly accepted in their prenominal position, since they are prenominal in both languages. Similarly, postnominal intensional adjectives are predicted to be correctly rejected as they are ungrammatical in both Spanish and Polish. Second, postnominal classifying adjectives are predicted to be correctly accepted since they appear postnominally in both languages, obligatorily in Spanish and alternatingly in Polish. Nonetheless, prenominal classifying adjectives are predicted to be incorrectly accepted precisely because no positive evidence is present in the input that would trigger restructuring<sup>11</sup>. Finally, for alternating qualifying adjectives (e.g., *cómico* “comical/comedy”), both pre- and postnominal alternating qualifying adjectives are predicted to be correctly accepted since the input provides positive evidence that grammatical restructuring is necessary (i.e., the presence of an alternating qualifying adjective in postnominal position, which cannot be parsed in Polish). Table 2 summarizes the predictions for each adjective type.

**Table 2.** Convergence predictions according to adjective type and position.

	Prenominal	Postnominal
Intensional	√	*√
Classifying	*X	√
Alternating Qualifying	√	√

√ = native-like convergence possible; X = native-like convergence unlikely; \* = ungrammatical in Spanish.

Summarizing, distinct predictions obtain for each adjective type and position given differences between Polish and Spanish. Importantly, while convergence on the Spanish DP is predicted to be largely possible, with the two remnants from Polish described above, previous research has shown that even in typologically similar languages, L2 learners encounter difficulties mapping features present in their grammar onto new morphological forms (e.g., [Lardiere 2007](#); [Prévost and White 2000](#)). Consequently, it is essential to not simply consider feature acquisition or DP word order, but rather to also examine interpretation.

## 4. Materials and Methods

### 4.1. Participants

Three groups completed the experimental tasks. The first consisted of 16 Native Spanish speakers (NSs) residing in Spain. Of the NSs, 15 reported Spanish and one reported Galician as their dominant language. Two NSs reported having exposure to both Galician and Spanish, and one reported having exposure to both Catalan and Spanish in their childhood home. All but two were born in Spain (one was born in Colombia, the other in Mexico)<sup>12</sup>. The average age of the NSs was 19.8 years (range 18–30 years). The second and third groups consisted of 49 classroom learners of Spanish, native speakers of Polish who were born and currently live in Poland. Each Spanish learner reported having grown up in a Polish-speaking home and each reported Polish as their dominant language. Their average age was 24.24 years (range 21–58).

Proficiency level was determined via a shortened version of the *DELE* (2002), which is composed of 50 items. Table 3 shows the average and range for each group. Proficiency scores for NSs and the advanced Spanish learners (AdvSLs) are similar (46.44 and 43.33, respectively), while that of the intermediate Spanish learners (IntSLs) is lower (36.04).

**Table 3.** Average and range proficiency scores for DELE.

	Total (/50)	
	Average	Range
NS ( <i>n</i> = 16)	46.44	41–49
AdvSL ( <i>n</i> = 24)	43.33	41–46
IntSL ( <i>n</i> = 25)	36.04	30–40

### 4.2. Experimental Tasks

Three experimental tasks, completed on a computer with the researcher present in the order presented herein, tested for knowledge of syntactic and syntax–semantic properties of adjective order in Spanish.

#### 4.2.1. Grammaticality Judgment with Correction Task

The first task was an 80-token (16 adjective tokens + 64 fillers) Grammaticality Judgment with Correction Task (GJCT) testing for knowledge of the distribution of strictly prenominal (intensional) and strictly postnominal (classifying) adjectives. The 16 adjective tokens of the GJCT were divided into 4 conditions with 4 tokens each (13)–(16).

(13) Grammatical postnominal (classifying) adjective ( $n = 4$ )

Las chicas tienen amigas españolas.

The girls have.3pl.pres friends Spanish

"The girls have Spanish friends."

(14) Ungrammatical prenominal (classifying) adjective ( $n = 4$ )

\*Las casas tienen españolas cortinas.

The houses have.3pl.pres Spanish curtains

"The houses have Spanish curtains."

(15) Grammatical prenominal (intensional) adjective ( $n = 4$ )

Leo investiga un supuesto delito.

Leo investigate.3sg.pres a supposed crime

"Leo investigates an alleged crime."

(16) Ungrammatical postnominal (intensional) adjective ( $n = 4$ )

\*Alberto investiga un asesinato supuesto.

Alberto investigate.3sg.pres a assassination supposed

"Alberto investigates an alleged assassination."

Participants read each token and decided if it was grammatical or ungrammatical; for grammatical tokens, participants continued on; for ungrammatical tokens, they were instructed to correct the token. Responses were coded as accurate under two conditions: acceptance of a grammatical token ((13), (15)) or correction of adjective position of ungrammatical tokens ((14), (16)).

#### 4.2.2. Semantic Interpretation Task

The Semantic Interpretation Task (SIT) tested for interpretation of the semantically constrained distribution of meaning-changing adjectives. Five prenominal (17) and 5 postnominal adjectives (18) were included<sup>13</sup>.

(17) Prenominal qualifying ( $n = 5$ )

Sus vecinos son unos pobres hombres.

Their neighbors are some poor men

"Their neighbors are some unfortunate men."

<p>Los vecinos son desafortunados.</p> <p>"The neighbors are unfortunate."</p>
--

<p>Los vecinos no tienen dinero.</p> <p>"The neighbors do not have money."</p>
--

(18) Postnominal qualifying ( $n = 5$ )

Mar es la persona única de quien te hablé.

Mar is the person only of whom you I spoke.

"Mar is the only person I spoke to you about."

<p>No te hablé de nadie más, aparte de Mar.</p> <p>"I didn't speak to you about anyone but Mar."</p>
--

<p>No hay nadie (tan especial) como Mar, la de que te hablé.</p> <p>"There is no one (as special as) like Mar, the person who I spoke to you about."</p>
--

Participants marked one of two boxes to indicate their interpretation (expected responses are bolded). Responses were simply tallied.

#### 4.2.3. Semantic Collocation Task

Lastly, a Semantic Collocation Task (SCT) tested for adjectival placement in 16 short contexts favoring either a non-restrictive (19) or a restrictive reading (20). The SCT employed alternating qualifying adjectives such that context determined placement.

(19) Prenominal qualifying (non-restrictive) ( $n = 8$ )

No hay super-héroe que no sea conocido por su bondad, coraje y fuerza. Los VALIENTES super-héroes \_\_\_\_\_ del mundo no tienen miedo de nada. (valientes)

"All superheroes are known for their goodness, courage and strength. The \_\_\_\_\_ superheroes \_\_\_\_\_ of the world aren't scared of anything." (courageous)

(20) Postnominal qualifying (restrictive) ( $n = 8$ )

Algunos padres son más involucrados en la vida de sus hijos que otros. Los \_\_\_\_\_ padres CARIÑOSOS juegan con sus hijos por la noche antes de que se duerman. (cariñosos)

"Some parents are more involved in their kids' lives than others. The \_\_\_\_\_ parents \_\_\_\_\_ play with their kids at night before bedtime." (affectionate)

Participants read the context and placed the adjective either prenominally or postnominally (expected responses are inserted in all caps). Responses were simply tallied.

#### 4.3. Data Analysis

The data were submitted to a binary logistic mixed model in SPSS with pairwise contrasts and Sidak corrections applied as indicated by the model. The final model presented for each task showed the highest model accuracy and lowest information criterion. Due to the research question, the fixed effects that remain in the GJCT analysis are group, adjective type, and position. For the SIT, the fixed effects that remain in the analysis are group and position, while for the SCT they are group and condition. Relevant two- and three-way interactions are included. Finally, planned Sidak comparisons ( $\alpha = 0.05$ ) based on the fixed effects remaining in each model (e.g., group, adjective type, and position for the GJCT) were conducted to determine if significant differences between the three participant groups, for the adjective type/condition, and for position. Teasing apart these variables allows for a more fine-grained analysis of the differences/similarities that obtain between the groups, their treatment of each adjective type/condition, their treatment of position, and the interaction of these variables.

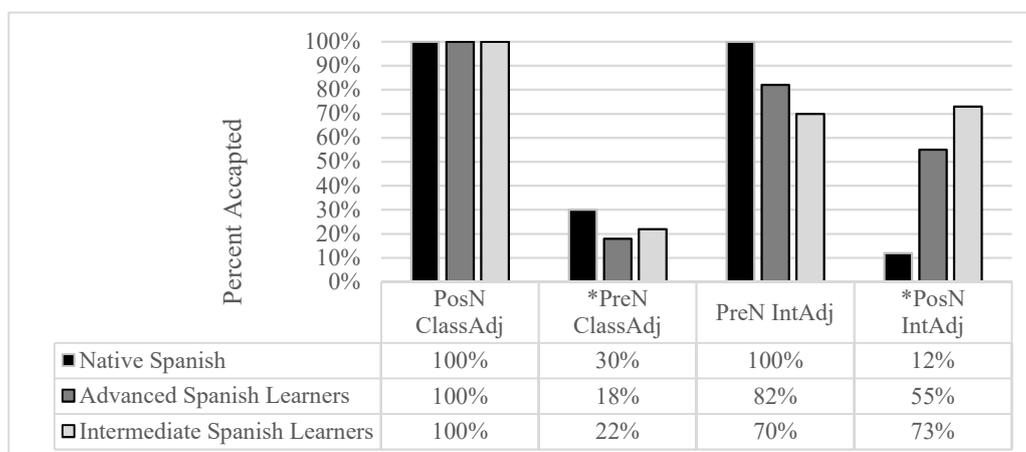
## 5. Results

### 5.1. GJCT Results

The first two columns in Figure 1 display the percent of classifying adjectives accepted in each position. While the participant groups correctly accepted all grammatical classifying adjectives, different acceptance rates are seen for ungrammatical classifying adjectives. The latter two columns display the percent of intensional adjectives accepted in each position. Here, only NSs perform at ceiling, with the learner groups showing gradient acceptance as a function of proficiency. A similar pattern is observed for the ungrammatical postnominal adjectives.

The GJCT data were analyzed via a binary logistic mixed model with pairwise contrasts and Sidak corrections applied as indicated by the model. Random intercepts were included for participant and trial, while the fixed effects in the final model included group (NSs, AdvSLs, or IntSLs), adjective type (classifying or intensional), and position (pre- or postnominal), the two-way interactions group\*adjective type and group\*position, and the three-way interaction group\*adjective type\*position. No main effects were found for group ( $F(2,1028) 0.000, p < 1.000$ ), adjective type ( $F(1,1028) 0.001, p = 0.974$ ), or position ( $F(1,1028) 0.002, p = 0.968$ ). No two-way interactions were found between group\*adjective type ( $F(2,1028) 0.000, p < 1.000$ ) and group\*position ( $F(2,1028) 0.001, p = 0.999$ ). Nonetheless, the three-way interaction for group\*adjective type\*position was significant ( $F(3,1028) 18.401,$

$p < 0.000$ ). Model estimates of the probability of acceptance, along with the confidence intervals, are provided in Table 4.



**Figure 1.** GJCT group results. PosN ClassAdj = grammatical postnominal classifying adjectives; \*PreN ClassAdj = ungrammatical prenominal classifying adjective; PreN IntAdj = grammatical prenominal intensional adjective; \*PosN IntAdj = ungrammatical postnominal intensional adjective.

**Table 4.** Model estimates (probability of acceptance).

			Mean	95% Confidence Interval	
				Lower	Upper
NSs	Intensional	pre	0.011	0.001	0.086
		post	0.898	0.759	0.961
	Classifying	pre	0.731	0.533	0.867
		post	0.012	0.001	0.089
AdvSLs	Intensional	pre	0.153	0.075	0.287
		post	0.439	0.276	0.616
	Classifying	pre	0.847	0.712	0.925
		post	0.000	0.000	1.000
IntSLs	Intensional	pre	0.273	0.153	0.439
		post	0.245	0.134	0.405
	Classifying	pre	0.810	0.663	0.902
		post	0.000	0.000	1.000

Planned Sidak comparisons revealed no statistically significant differences between any of the groups regarding their acceptance of classifying adjectives overall or of intensional adjectives overall. However, IntSLs and AdvSLs accepted statistically significantly more intensional adjectives overall than classifying adjectives ( $p = 0.017$ ;  $p = 0.030$ , respectively), while no statistically significant difference obtained for NSs. For the group\*position interaction, no statistically significant difference obtained between the groups regarding their acceptance of postnominal adjectives overall; nonetheless, both IntSLs and AdvSLs accepted statistically significantly fewer prenominal adjectives than NSs ( $p < 0.001$ ;  $p = 0.001$ , respectively). The IntSLs and AdvSLs accepted statistically significantly more postnominal adjectives overall than prenominal adjectives ( $p < 0.001$ ;  $p < 0.001$ , respectively), while no statistically significant difference obtained for NSs.

Lastly, for the group\*adjective type\*position interaction, no statistically significant differences obtained between NSs and either learner group regarding their accuracy on

pre- or postnominal classifying adjectives. However, NSs accepted statistically significantly more grammatical prenominal intensional adjectives than AdvSLs (Odds Ratios (OR)<sup>14</sup> = 13.78,  $p = 0.015$ ) and fewer ungrammatical postnominal intensional adjectives (OR = 0.488,  $p < 0.001$ ). Likewise, NSs accepted statistically significantly more grammatical prenominal intensional adjectives than IntSLs (OR = 24.59,  $p = 0.001$ ) and fewer ungrammatical postnominal intensional adjectives (OR = 0.272,  $p < 0.001$ ). The IntSLs accepted statistically significantly more ungrammatical postnominal intensional adjectives than did the AdvSLs (OR = 1.79,  $p = 0.041$ ). No differences obtained between the learner groups for the grammatical prenominal intensional adjectives. Statistically significant differences obtained for each groups' treatment of adjective type according to position; each group accepted statistically significantly more prenominal intensional adjectives than prenominal classifying adjectives ( $p < 0.001$ ), as well as statistically significantly more postnominal classifying adjectives than postnominal intensional adjectives ( $p < 0.001$ ). Finally, NSs and AdvSLs accepted statistically significantly more classifying adjectives in postnominal position than in prenominal position ( $p < 0.001$ ), as well as statistically significantly more intensional adjectives in prenominal position than in postnominal position ( $p < 0.001$ ). The Intermediate Learner group also accepted statistically significantly more classifying adjectives in postnominal position than in prenominal position ( $p < 0.001$ ), but did not make a statistically significant difference in their acceptance of pre- and postnominal intensional adjectives.

### 5.2. SIT Results

Figure 2 displays the percent accuracy of pre- and postnominal meaning-changing adjectives employed in the SIT. As compared to the GJCT and some previous studies examining adjectival interpretation in Spanish (Guijarro-Fuentes et al. 2009; Rothman 2008; Rothman et al. 2009), a lower accuracy rate is evidenced by NSs on postnominal tokens. Still, similar rates were found for native Argentine Spanish speakers (Judy 2018) as well as native French speakers (Anderson 2007). AdvSL interpretations were more native-like than those of the IntSLs for postnominal adjectives.

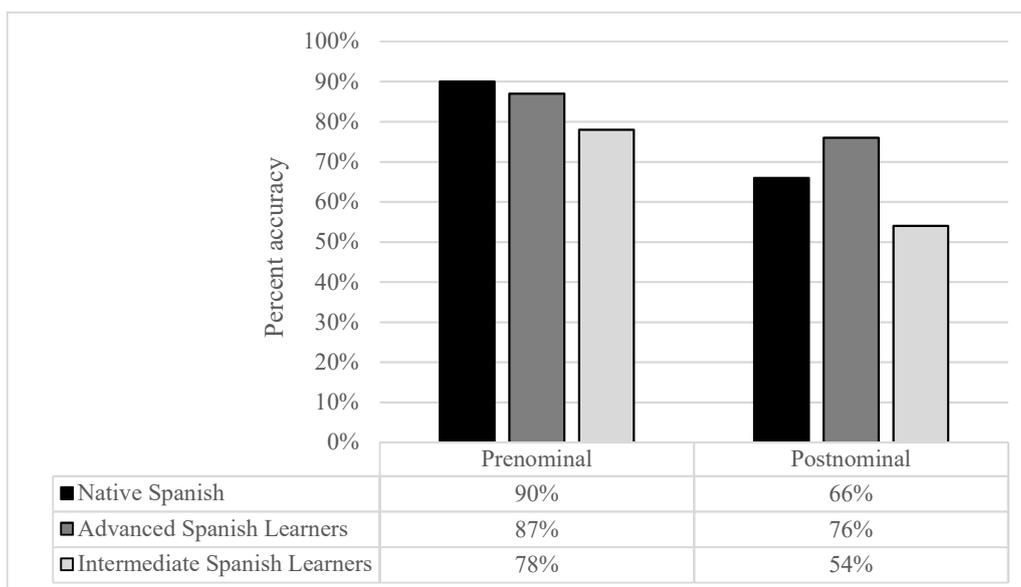


Figure 2. SIT group results.

The SIT data were submitted to a binary logistic mixed model with pairwise contrasts and Sidak corrections applied as indicated by the model. Random intercepts were included for participant and trial, while the fixed effects in the final model included group (NSs, AdvSLs, or IntSLs), position (pre- or postnominal), percent daily Spanish, and the two-way

interaction group\*position. A main effect was found for group ( $F(2,621) 7.804, p < 0.001$ ), but not for position ( $F(1,621) 1.900, p = 0.169$ ) or percent daily Spanish ( $F(1,621) 0.083, p = 0.774$ ). No interaction was found between group\*position ( $F(2,621) 1.855, p = 0.157$ ). Model estimates of the probability of accuracy, along with the confidence intervals, are provided in Table 5.

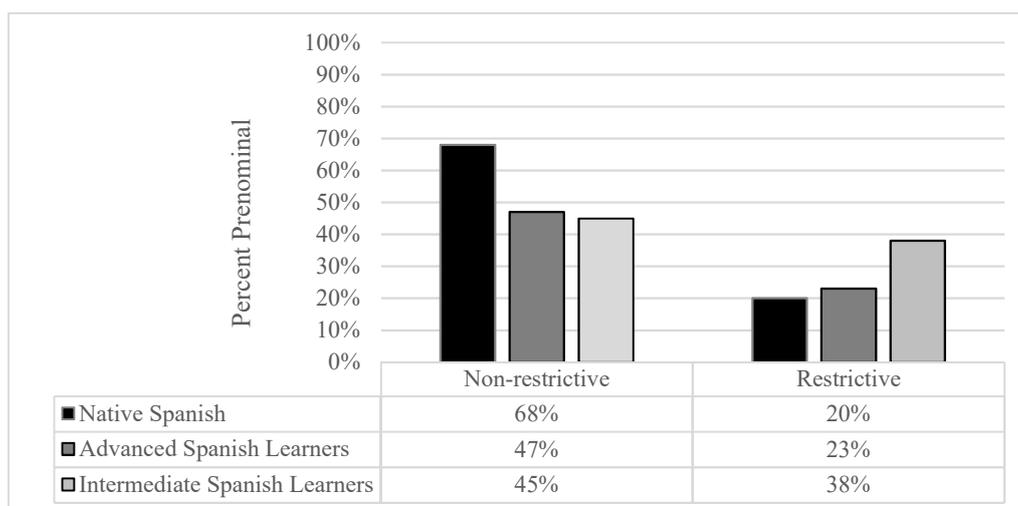
**Table 5.** Model estimates (probability of accuracy).

		Mean	95% Confidence Interval	
			Lower	Upper
NSs	Prenominal	0.205	0.075	0.450
	Postnominal	0.452	0.208	0.722
AdvSLs	Prenominal	0.122	0.040	0.316
	Postnominal	0.185	0.065	0.425
IntSLs	Prenominal	0.082	0.019	0.289
	Postnominal	0.309	0.099	0.645

Planned Sidak comparisons ( $\alpha = 0.05$ ) revealed no statistically significant differences between NSs and either learner groups regarding their responses to pre- or postnominal adjectives. However, AdvSLs performed statistically better on the postnominal adjectives than IntSLs ( $OR = 1.67, p = 0.004$ ). Finally, no participant group made a statistically significant distinction between pre- and postnominal adjectives, indicating equal performance on both positions.

5.3. SCT Results

Figure 3<sup>15</sup> displays the percent prenominal placement of the alternating qualifying adjectives employed in the SCT. While a higher percentage of prenominal placement for all participant groups is seen for the restrictive condition, participants prefer postnominal placement for the restrictive condition, a finding also reported in previous studies (Gujarro-Fuentes et al. 2009; Judy 2018; Rothman et al. 2009).



**Figure 3.** SCT group results.

The data were submitted to a generalized linear mixed model with pairwise contrasts and Sidak corrections applied as indicated by the model. Random intercepts were included for participant and trial, while the fixed effects in the final model included group (NSs, AdvSLs, or IntSLs) and condition (restrictive or non-restrictive), and the two-way interac-

tion group\*position. While no main effect obtained for group ( $F(2,1016) 1.885, p = 0.152$ ), a main effect obtained for condition ( $F(1,1016) 6.356, p = 0.012$ ). An interaction obtained between group\*condition ( $F(2,1016) 10.930, p < 0.001$ ). Model estimates of the probability of prenominal placement, along with the confidence intervals, are provided in Table 6.

**Table 6.** Model estimates (probability of prenominal placement).

		Mean	95% Confidence Interval	
			Lower	Upper
NSs	non-restrictive	0.289	0.141	0.501
	restrictive	0.842	0.675	0.932
AdvSLs	non-restrictive	0.520	0.316	0.718
	restrictive	0.817	0.648	0.915
IntSLs	non-restrictive	0.562	0.355	0.750
	restrictive	0.652	0.443	0.815

Planned Sidak comparisons ( $\alpha = 0.05$ ) revealed that the learner groups differed from NSs for the non-restrictive condition in that they both placed statistically significantly fewer adjectives prenominally than NSs (OR = 0.555,  $p = 0.001$ ; OR = 0.514,  $p = 0.004$ , respectively). For the restrictive condition, no statistically significant difference obtained between AdvSLs and NSs. However, IntSLs placed statistically significantly more adjectives prenominally than AdvSLs and NSs (OR = 1.29,  $p = 0.022$ ; OR = 1.29,  $p = 0.019$ , respectively). Finally, both NSs and AdvSLs distinguished between the conditions to a statistically significant degree (OR = 2.91,  $p < 0.001$ ; OR = 1.57,  $p = 0.021$ ), while IntSLs did not.

Summarizing, the statistical analyses applied to the GJCT and SCT data reveal differences between NSs and learner groups congruent with L1 transfer and overgeneralization of postnominal adjectives in Spanish. Nonetheless, evidence of convergence on adjectival interpretation obtained via the SIT for both learner groups, and, to some degree, on the SCT for AdvSLs only.

### 6. Discussion

The discussion begins by interpreting the data in light of the research question, which asked whether native Polish-speaking learners of Spanish demonstrate native-like knowledge of the syntactic and syntax-semantics of adjectives. Table 7 below summarizes specific predictions for each adjective type and position considering L1 transfer and availability of linguistic data that would prompt restructuring. Knowledge of syntactic position was tested on the GJCT via pre- and postnominal intensional and classifying adjectives. Spanish learners were predicted to correctly accept prenominal intensional adjectives while correctly rejecting postnominal intensional adjectives, and to correctly accept postnominal classifying adjectives while incorrectly accepting ungrammatical prenominal adjectives.

**Table 7.** Convergence predictions according to adjective type and position with result.

	Prenominal	Postnominal	Prediction Born Out
Intensional	✓	*✓	no/no
Classifying	*X	✓	yes/yes
Alternating Qualifying	✓	✓	no/yes

✓ = native-like convergence possible; X = native-like convergence unlikely; \* = ungrammatical in Spanish.

Statistical results applied to this task indicate some differences between NSs and learner groups, and that only the learner groups treat classifying vs. intensional adjectives differently, and the pre- and postnominal position differently. Specifically, and against

the predictions, the learner groups accepted statistically significantly more intensional adjectives overall than classifying adjectives, regardless of grammaticality in Spanish, revealing that they permit intensional adjectives in both positions to some degree, while largely restricting classifying adjectives to postnominal position. The learner groups were sensitive to position, accepting more adjectives overall postnominally than prenominally.

Comparing groups, no statistically significant differences obtained between either learner group and the NSs regarding pre- or postnominal classifying adjectives, indicating convergence. However, against the predictions, neither learner group demonstrated convergence on intensional adjectives in that, as compared to NSs, both learner groups accepted statistically fewer grammatical prenominal intensional adjectives and rejected fewer ungrammatical postnominal intensional adjectives (cf. [Judy 2018](#)). Furthermore, IntSLs accepted statistically more ungrammatical postnominal intensional adjectives than AdvSLs, showing developmental progress with intensional adjectives. While the learner groups did not demonstrate uniform native-like syntactic knowledge of the adjectives tested in the GJCT, each group accepted statistically more prenominal intensional adjectives than prenominal classifying adjectives as well as statistically more postnominal classifying adjectives than postnominal intensional adjectives. These results indicate that the learner groups distinguish between adjective type in each position, although not to a native-like degree. Lastly, only AdvSLs distinguished between adjective type in both positions, indicating overall knowledge of syntactic distribution; IntSLs did not restrict intensional adjectives to prenominal position.

Although position of alternating qualifying adjectives was not explicitly tested, the interpretation data allow us to indirectly examine knowledge of alternating qualifying adjectives, for which convergence was predicted possible. First, the statistical analyses from the SIT, which employed alternating meaning-changing adjectives, revealed no significant difference between NSs and either learner groups in their interpretation of the pre- or postnominal adjectives. Moreover, no participant group performed significantly differently on either position, indicating equal interpretive knowledge of both positions. Results varied, however, on the SCT in that the learner groups differed from NSs on placement of adjectives in the non-restrictive condition, placing statistically fewer adjectives prenominally. Nonetheless, developmental progress may be seen in the restrictive condition since AdvSLs did not differ from NSs. Furthermore, like NSs, AdvSLs made a statistically significant distinction between the two conditions, indicating knowledge of interpretive differences.

Thus, the data support a mixed answer to the research question. On one hand, results from the GJCT revealed both learner groups rejected grammatical prenominal intensional adjectives while simultaneously accepting them in the ungrammatical postnominal position. This result is especially surprising because intensional adjectives are obligatorily prenominal in both languages. Likewise, on the SCT, both learner groups placed significantly fewer adjectives prenominally in non-restrictive conditions than NSs did. While these two differences point to non-convergence, some evidence suggests native-like knowledge. Specifically, on the GJCT, both learner groups performed native-like in their acceptance of grammatical postnominal classifying adjectives and their rejection of ungrammatical prenominal classifying adjectives, a result that was only partially predicted since the learner groups were expected to allow ungrammatical prenominal classifying adjectives. Additionally, the results from the SIT revealed that the learner groups demonstrated native-like interpretations of meaning-changing adjectives in both positions, and developmental progress was seen by AdvSLs on the SCT in that their adjectival placement matched that of the NSs in the restrictive condition. Finally, AdvSLs, like NSs, made a statistically significant distinction between the two conditions, indicating knowledge of interpretive differences. Previous research examining syntactic properties and related syntax-semantics properties have taken native-like interpretation as the benchmark for a native-like syntactic representation ([Slabakova 2008](#)).

## 7. Conclusions

To conclude, we must ask why the study's predictions, products of the language pairing and each language's distribution of the three adjective types examined, were not entirely born out. Perhaps most perplexing, due to the similarity across Polish and Spanish, is the learner groups' performance on intensional adjectives in the GJCT. Recall that both learner groups rejected grammatical prenominal intensional adjectives and accepted ungrammatical postnominal intensional adjectives, a result that primarily points to learners overgeneralizing the postnominal position in Spanish, and perhaps secondarily, to lack of familiarity with these particular adjectives, which are fewer in number and less frequent. Support for the claim that the learners assume Spanish adjectives appear postnominally is bolstered when we return to the fact that the only grammatical position for intensional adjectives is prenominal in both languages, meaning that L1 transfer and L2 ambiguity alike can be ruled out as influencing factors. This finding is in line with previous research examining language pairings and properties for which L1 transfer would be facilitative, but that demonstrated some non-facilitative results (Androutopoulou et al. 2008; Bel and García-Alcaraz 2015; Licerias and Alba de la Fuente 2015) and against those that found that L2 acquisition was facilitated by L1 transfer (Gujarro-Fuentes et al. 2009; Montrul and Gürel 2015).

Next, both learner groups correctly rejected ungrammatical prenominal classifying adjectives, which was predicted unlikely since adjectives largely appear prenominally in Polish (some classifying adjectives are allowed in prenominal position), and the absence of prenominal classifying adjectives in Spanish is not evidence enough to eliminate this possibility. Thus, whether relying on transfer of L1 adjective position or the availability of some prenominal classifying adjectives in Polish or L2 primary linguistic data, classifying adjectives in prenominal position would not necessarily be discarded. In line with the explanation of the unanticipated intensional adjective results, it is argued that the learner groups correctly rejected ungrammatical prenominal classifying adjectives due to overgeneralization of the postnominal position. Finally, the statistical analyses revealed that both learner groups were more accurate on classifying adjectives overall compared to intensional adjectives overall. Although not explicitly stated, this finding is unexpected due to the similarity in position across both languages for intensional adjectives and the differences among them for classifying adjectives. Here again the overgeneralization of the postnominal position explains this finding: since classifying adjectives are obligatorily postnominal while intensional adjectives are obligatorily prenominal in Spanish, rejecting prenominal adjectives while accepting postnominal adjectives results in better performance on classifying adjectives only. Thus, a unified explanation for the unexpected GJCT results can be reasonably traced back to the learner groups assuming that adjectives are postnominal in Spanish. This point brings us to the two experimental tasks purposefully included as a means of tapping interpretive knowledge. While the predictions obtained for the SIT, in that both learner groups showed native-like understanding of the interpretive differences resulting from the position of meaning-changing adjectives, a stronger preference for postnominal adjectives was seen with the learners in the SCT. Both learner groups differed from NSs when the context favored prenominal placement of the alternating qualifying adjectives. Only the AdvSLs were native-like in their adjective placement in the condition that calls for postnominal adjectives (restrictive condition). The difference in behavior evidenced between the two learner groups may be explained by AdvSLs assuming a postnominal position of Spanish adjectives, presumably because they have more experience with and knowledge of Spanish, whereas IntSLs who have less experience with Spanish may rely on L1 adjectival position.

The assumption that Spanish adjectives appear postnominally may result from two plausible sources. First and simply put, adjectives occur in postnominal position more frequently in Spanish, a distribution learners may be sensitive to. The second plausible explanation does not exclude the first, but rather adds an explicit layer of metalinguistic knowledge to it. Recall that the Spanish learners tested herein are all classroom learners. As

such, their primary exposure to Spanish has been via coursework and explicit instruction that likely highlighted the differences between Polish and Spanish, pointing out that most adjectives appear postnominally in Spanish<sup>16</sup>. While many SLA studies have reported positive effects of explicit instruction (for review see [Norris and Ortega 2000](#); [Ellis 2002](#); [Spada and Tomita 2010](#)), it is unclear if the effects are permanent ([Bitchener and Knoch 2008](#); [Endo et al. 2016](#); [Umeda et al. 2017](#); [White 1991](#)), or if the reported benefits constitute more than metalinguistic knowledge ([Schwartz and Gubala-Ryzak 1992](#); [Umeda et al. 2017](#)). Furthermore, no consensus has been reached as to the benefits of explicit instruction ([Ellis 2002](#); [Krashen 1993](#); [Norris and Ortega 2000](#); [Rothman and Long 2013](#)). In fact, on the basis that classroom instruction is often simplified, [Rothman \(2008\)](#) postulated and tested the Competing Systems Hypothesis (CSH), which claims that classroom learners develop both a learned metalinguistic system and an acquired implicit linguistic system. Since the learned system may not accurately represent the entirety of any given linguistic property, the filters of each system compete in production but not comprehension. Accordingly, the CSH offers a tenable explanation compatible with generative assumptions as to why the Spanish learners tested herein largely demonstrate interpretive knowledge (SIT) while simultaneously demonstrating overt syntactic errors (GJCT): the Spanish classroom learners are relying on the learned rule that most Spanish adjectives are postnominal; nonetheless, their underlying grammar is such that they interpret pre- and postnominal qualifying adjectives on the SIT in a native-like fashion. Further support is found in [Bowles and Montrul \(2008\)](#), which discovered that 10% of the classroom Spanish learners who received explicit instruction on Differential Object Marking overgeneralized its use to [-animate, +specific] direct objects.

Lastly, while the predicted performance on intensional and classifying adjectives did not obtain in the GJCT, perhaps for the aforementioned reasons, the merit of this study's design is clear. Notably, careful selection of a language pairing that allows for separate predictions according to adjective type, and importantly, *not* simply adjective position, revealed what would have otherwise been lost: an interplay between each adjective type and position, L1 transfer, available primary linguistic data, and the effects of overgeneralizing adjective position, whether due to frequency or explicit instruction. To provide a tangible example, a comparison is made between the participants of the current study and those of [Judy et al. \(2008\)](#) because they are L1 speakers of English who faced a different acquisition task. The acquisition task of L1 English, L2 Spanish speakers was to acquire (1) the DP-internal WMP and its associated gender feature to be checked therein; (2) the number feature that requires overt raising to be checked in the NumP; (3) mapping of semantic features onto different adjective types as a function of position. L1 Polish speakers, on the other hand, have a DP that marks gender, number, and Case, and that allows for pre- and postnominal adjectives, with different semantics according to position. Non-convergence by the L1 English participants of [Judy et al. \(2008\)](#) resulted from learners who had not yet acquired the Spanish *phi*-features and their associated values. The differences found between the learner groups and NSs of the current study, however, require a different explanation as Polish marks gender, number, and Case. Thus, examining different L1s while holding the L2 constant under similar methodologies uncovered two distinct learning tasks and explanations for non-convergence that would have otherwise been missed. As one goal of generative SLA is to explain the lack of universal success in adult acquisition studies as compared to child language acquisition, the field benefits from crosslinguistic studies examining microvariation.

Future replication work including unstudied/ understudied language pairings will allow acquisitionists to more precisely home in on the cause(s) behind (non-)convergence, to more accurately explain non-convergence, and to more reliably demonstrate true acquisition (as opposed to surface-level convergence). Functionalist insights regarding relative syllabic weight, lexical frequency, and speech style may be fruitfully included to broaden our understanding of these constraints as applied to SLA (for summary, see [Kanwit and Terán 2020](#)). Further, it is often suggested that studying naturalistic learners would mitigate

the potential effects that explicit instruction may have on acquisition. While this suggestion is certainly valid, procurement of a sizeable number of such participants is difficult and may limit the testable language pairings. This is not to say that acquisitionists should forgo naturalistic learner studies; to the contrary, they should be vigorously pursued, and the field at large benefits from accepting smaller sample sizes when appropriate statistical adjustments are applied to the data. To do otherwise is to exclude from scientific inquiry unique language pairings and linguistic realities that are as equally elucidatory and worthy of investigation as common language pairings with sizeable populations. Even so, it may also be beneficial and more practical to purposefully include highly proficient speakers who are no longer enrolled in language courses, but who are living in the non-native language environment, since temporal distance from explicit instruction may mollify the effects of instruction.

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**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** Data will be available upon request without undue reservation.

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## Notes

- 1 See Parodi et al. (1997) for consideration of similar issues in L2 German.
- 2 Differently from earlier versions, the Interface Hypothesis (Sorace 2011) currently makes no predictions about the underlying syntactic representation of L2 learners.
- 3 Communication with three Spanish instructors in Poland confirm mention of “meaning-changing adjectives”, but not restrictive/non-restrictive interpretations.
- 4 While Cetnarowska et al. (2011) and Cetnarowska (2014) claim that classifying adjectives can appear prenominal *without* changing their meaning to a non-inherent, gradable property of the noun, they concede that the position change is used as a rhetorical device to cause “subtle differences in the interpretation of the resulting noun phrases” (Cetnarowska 2014, p. 222).
- 5 Pawlik (2001) claims that, in very limited instances, Polish allows qualifying adjectives such as *biedny* “poor” to appear pre- and postnominally: *biedny człowiek* “pitiful man” vs. *człowiek biedny* “penniless man”.
- 6 Cornilescu (2009, p. 39) argues that qualifying adjectives denote properties of kinds and objects, while classifying adjectives mostly denote properties of kinds, which offers insight into the seemingly qualifying nature of prenominal adjectives like *komiczny* “comical” in Polish.
- 7 See Demonte (2008) for more examples of ambiguous postnominal adjectives.
- 8 See McNally and Boleda (2004) and Wągiel (2014) for differing approach.
- 9 See Kramer (2015) and Cinque (2010) for critique.
- 10 See Willim (2001, p. 93) for an alternate account involving two nominal raises.
- 11 The absence of prenominal Spanish classifying adjectives does not trigger restructuring.
- 12 These participants remain in the study since the DP of these languages and Spanish varieties is not known to differ from that of Peninsular Spanish for the properties tested.
- 13 No fillers were included in task 2 or 3 due to their interpretive nature.
- 14 Odds ratios serve as a measure of effect size in logistic regressions. Here, the odds ratio is interpreted as the NSs’ acceptance of prenominal intensional adjectives being 13.78 times higher than that of AdvSLs.
- 15 One IntSL participant did not complete the SCT. Therefore, the data in Figure 3 emanates from 24 IntSLs participants.
- 16 Personal communication with three Spanish language instructors in Poland confirms this.

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