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Russell Simonsen

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## RESEARCH REPORT

### Exploring similarities in ‘seem’ constructions with experiencers in English and Spanish

RUSSELL SIMONSEN

*Miami University*

Sentences that contain the verb ‘seem’, an experiencer, and an embedded infinitival phrase (e.g. *Jill seems to me to be smart*) have traditionally been considered acceptable in English, but not in Spanish. However, a corpus analysis reveals that such sentences are produced in both languages, most commonly with the embedded infinitives ‘be’ and ‘have’. Acceptability judgment tasks completed by fifty English speakers and fifty Spanish speakers further reveal that the embedded verbs ‘be’ and ‘have’ render this sentence structure most acceptable in both languages, and that the degree of contextual subjectivity in a sentence significantly affects acceptability. This study demonstrates how multiple data types can be used to uncover novel crosslinguistic patterns that have gone unnoticed in previous research that was based primarily on informal introspective judgments.\*

*Keywords:* acceptability judgments, corpus analysis, experiencers, *parecer* ‘seem’, *seem*, subjectivity, subject raising

**1. INTRODUCTION.** The English verb *seem* and the Spanish verb *parecer* ‘seem’ have received a significant amount of attention in syntactic research. One reason for this is that they are part of a class of verbs that can take infinitival complements, resulting in multiverb sequences. For instance, *seem* and *parecer* can respectively embed the verbs *love* and *amar* ‘love’, as shown in 1 and 2.

- (1) Juan seems to love Mario.
- (2) Juan parece amar a Mario.  
Juan seem.3SG to.love Mario  
‘Juan seems to love Mario.’

Although *seem* and *parecer* ‘seem’ are similar in many ways, scholars have pointed out that English and Spanish do not pattern together when an experiencer argument, such as *me* ‘to me’, is added to the equation (Ausín & Depiante 2000, Torrego 1996, 1998). Compare 3 and 4.

- (3) Juan seems **to me** to love Mario.
- (4) \*Juan **me** parece amar a Mario.  
Juan to.me.DAT seem.3SG to.love Mario  
intended: ‘Juan seems to me to love Mario.’

It has been assumed that the sentence structure in 3 is acceptable, while that in 4 is unacceptable. In the generative literature (e.g. Ausín & Depiante 2000, Torrego 1998), it is the structural syntax of 3 and 4 that is thought to be responsible for their (un)acceptability, so the context of the sentence, including the specific embedded infinitive (e.g. *love*), has not been explored as a significant factor.

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In what is a noteworthy contradiction, the premiere Spanish language academy, the Real Academia Española (RAE; 2010), discusses in their grammar the sentence structure in 4 and provides examples of how it can be used acceptably, as in example 5.

(5) Juan me parece ser un buen escritor.

Juan to.me.DAT seem.3SG to.be a good writer

‘Juan seems to me to be a good writer.’

(RAE 2010:2827)

This raises two important questions: If this structure can be used acceptably in Spanish, what are the factors that condition its acceptability? And do these factors also affect the acceptability of the equivalent English structure in 3?

To answer these questions, I conducted a corpus analysis to gather data about the usage of sentences with the syntactic structure of 3 and 4 in English and Spanish. Previously unreported crosslinguistic similarities were identified. For example, it was found that speakers of both languages tend to use similar experiencers and embedded verbs in these constructions. Using a cognitive approach (Cornillie 2007, Nuyts 2001a,b, 2005, Porroche 1990), I discuss the factors that appear to motivate the crosslinguistic similarities, focusing particularly on the interaction between the experiencer, the embedded infinitive, and the level of subjectivity in a sentence. Subjectivity is relevant because the combination of the verb ‘seem’ and an experiencer in the main clause signals a context of high subjectivity (Cornillie 2007, Nuyts 2005), which entails that the proposition in the embedded infinitival phrase should be one that can be viewed with high subjectivity as well. In other words, sentences that have a continuity of high subjectivity between clauses will be most natural. I argue that not all verbs are equally suitable for creating propositions with high subjectivity, which explains why certain verbs are favored as infinitival complements of ‘seem’. The analysis in this paper follows Langacker (1995) in placing high importance on the meaning that a syntactic structure conveys in pursuit of understanding its acceptability. It is a partial analysis, however, given that only two main factors are explored.

Second, in an attempt to understand the relationship between usage and acceptability, I also conducted acceptability judgment experiments in both English and Spanish. Fifty monolingual English speakers and fifty monolingual Spanish speakers judged sentences with ‘seem’, an infinitival complement, and an experiencer. The factors manipulated in the experiments were the specific embedded infinitive and the level of subjectivity in the infinitival proposition. I compare judgment data with corpus data to provide a meaning-based crosslinguistic comparison of ‘seem’ constructions.

Finally, it is important to comment on the significance of this research. The employment of a methodology that combines corpus and experimental data diverges from the majority of the foundational work on ‘seem’ verbs, which relied solely on introspective informal acceptability judgments. Although informal acceptability judgments are an important tool and have been shown to be experimentally replicable for many linguistic phenomena (Sprouse et al. 2013), there is no way to know in advance which informal judgments will be experimentally replicable (Gibson et al. 2013). Additionally, experimental data that have been statistically scrutinized are more likely to evince subtle and potentially gradient phenomena that might be undetectable with informal introspection (Hitz & Francis 2016). The current study provides an example of how to utilize ‘converging evidence from multiple data types’ (Sprouse 2018:219) as part of a linguistic investigation and presents previously undetected similarities in ‘seem’ constructions in English and Spanish.

2. BACKGROUND ON ‘SEEM’ VERBS WITH AND WITHOUT EXPERIENCERS. The main foci of this paper are the patterns in acceptability of ‘seem’ constructions that were described in examples 1–4 above, repeated as 6–9 for convenience. Both 6 and 7 are acceptable, but when an experiencer (*to me* or *me* ‘to me’) is added in 8–9, only 8 is assumed to be acceptable.

- (6) Juan seems to love Mario.  
 (7) Juan parece amar a Mario.  
     Juan seem.3SG to.love Mario  
     ‘Juan seems to love Mario.’  
 (8) Juan seems to me to love Mario.  
 (9) \*Juan me parece amar a Mario.  
     Juan to.me.DAT seem.3SG to.love Mario  
     intended: ‘Juan seems to me to love Mario.’

Torrego (1996, 1998) and Ausín and Depiante (2000) have both proposed accounts for the patterns in 6–9. Because their works have been influential and continue to serve as part of the theoretical foundation of recent studies (Campos-Dintrans, Pires, & Rothman 2014, Cabrelli Amaro, Amaro, & Rothman 2015, Mateu & Hyams 2019, Mateu Martin 2016), I discuss them briefly. Although some of the details are not highly relevant to subsequent discussions in this paper, readers may find it helpful to understand the theoretical basis that scholars have used to compare the acceptability of English and Spanish ‘seem’ constructions.

2.1. THE ACCEPTABILITY OF ‘SEEM’ CONSTRUCTIONS: TORREGO 1996, 1998. In the generative literature, the verbs *seem* and *parecer* ‘seem’ have traditionally been considered RAISING VERBS, motivated by the assumption that their subjects raise from a lower position (Torrego 1996). For example, see 10–11. In these sentences, *Juan* is thought to originate in the lower clause as the subject of *love* and *amar* ‘love’, and then raise to the subject position of *seem* and *parecer* in the matrix clause. This is known as SUBJECT-TO-SUBJECT RAISING. After *Juan* raises, it leaves a copy or a trace (*t*) in its original lower position. However, when a dative experiencer is present, such as *me*, subject-to-subject raising is allowed in English but not in Spanish (Torrego 1998:154). All of these characteristics are summarized in the examples below.

- (10) [<sub>TP</sub> Juan<sub>i</sub> seems (to me) [<sub>TP</sub> t<sub>i</sub> to love Mario]].  
 (11) [<sub>TP</sub> Juan<sub>i</sub> (\*me) parece [<sub>TP</sub> t<sub>i</sub> amar a Mario]].  
     Juan (to.me.DAT) seem.3SG to.love Mario  
     ‘Juan seems (\*to me) to love Mario.’

To explain the Spanish data, Torrego (1996) posits that the Spanish experiencer *me* ‘to me’ is linked to an underlying expletive pronoun in the matrix subject position (SpecTP). Problematically, this position is also where *Juan* must raise in order to acquire case. Because this matrix SpecTP position is already occupied with an expletive pronoun, *Juan* cannot raise there to acquire case, and the sentence is ungrammatical. In English, however, Torrego suggests that the experiencer *to me* originates lower—below the verb *seem* or adjoined to the lower clause—and does not interfere with the matrix subject position; the subject *Juan* can therefore raise over the experiencer to the vacant matrix SpecTP position. Torrego (1998) additionally concludes that the position of Spanish experiencers causes a violation of the minimal link condition, while that of English experiencers does not. Torrego’s (1996, 1998) conclusion that subject-to-subject raising is not allowed in structures with a dative experiencer in Spanish has become predominant in generative

syntax, to the point that is uncontroversial to say that ‘an overt experiencer blocks raising’ in this language (Collins 2005:290).

**2.2. THE ACCEPTABILITY OF ‘SEEM’ CONSTRUCTIONS: AUSÍN & DEPIANTE 2000.** Ausín and Depiante (2000) agree with Torrego (1996, 1998) that sentences with *parecer*, an experiencer, and an embedded infinitive are unacceptable in Spanish, but for different reasons. They argue that the presence or absence of an experiencer changes the nature of the verb *parecer* ‘seem’. Specifically, they argue that it is a main (lexical) verb when used with an experiencer (e.g. *me* ‘to me’), but a modal verb when used without an experiencer, as summarized in 12–13.

(12) *parecer* + experiencer: main verb

(13) *parecer* without experiencer: modal verb (Ausín & Depiante 2000:162)

Ausín and Depiante use the distribution in 12–13 to posit that *parecer* selects different types of phrasal complements, depending on whether it is a lexical or modal verb. As a modal verb (without an experiencer), *parecer* selects a VP, as in 14. As a lexical verb (with the experiencer *me* ‘to me’), *parecer* selects a TP, as in 15.

(14) [<sub>TP</sub> Juan<sub>i</sub> T<sub>nondef</sub> parece [<sub>VP</sub> t<sub>i</sub> amar a Mario]].

Juan seem.3SG to.love Mario

‘Juan seems to love Mario.’

(15) \*[[<sub>TP</sub> Juan<sub>i</sub> me parece [<sub>TP</sub> t<sub>i</sub> T<sub>nondef</sub> amar a Mario]].

Juan me.DAT seem.3SG to.love Mario

‘Juan seems to me to love Mario.’

Ausín and Depiante argue that the ungrammaticality of 15 stems from case assignment. They hold that T—the syntactic projection that assigns case—is always nondefective in Spanish, which means that *Juan* receives its case in a nondefective case position in the lower clause and consequently does not need to raise to the higher TP to acquire case. However, in 14 the modal *parecer* embeds a VP, resulting in a monoclausal sentence that contains only one case-assigning position in the highest phrase. It follows that *Juan* can freely raise from the lower non-case-assigning position to a higher case-assigning one (i.e. from SpecVP to SpecTP).

Contrary to Spanish, Ausín and Depiante (2000) assume that in English the T in the lower clause of raising constructions is defective, which allows the subject *Juan* to raise and receive nominative case from *seem* in the higher TP, as in 16.

(16) [<sub>TP</sub> Juan<sub>i</sub> seems to me [<sub>TP</sub> t<sub>i</sub> T<sub>def</sub> to love Mario]].

The presence of an experiencer is therefore thought to be inconsequential in terms of syntactic well-formedness in English.

**3. CONFLICTING CHARACTERIZATION FROM THE REAL ACADEMIA ESPAÑOLA.** Both Torrego (1996, 1998) and Ausín and Depiante (2000) describe problems with the syntax of complex Spanish sentences with *parecer* ‘seem’ and experiencers. Because the authors do not discuss factors that may attenuate the unacceptability of such sentences, the standard assumption has been that they are always unacceptable. However, the RAE (2010) does not reject all sentences of this type, offering 17 as an acceptable example.

(17) Juan me parece ser un buen escritor.

Juan to.me.DAT seem.3SG to.be a good writer

‘Juan seems to me to be a good writer.’

(RAE 2010:2827)

The RAE adds that this particular *parecer* construction is ‘characteristic of the classical language, is today more frequent in American Spanish than European, and much more

[frequent] in literary language than in other registers' (2833; translation mine). The RAE also provides the following literary example.

- (18) Los toros reproducidos en los tapices de variados colores,  
 the bulls reproduced on the tapestries of varied colors  
 le parecían alzar sus terribles testuces  
 him.DAT seem.PST to.raise their terrible napes  
 'The bulls reproduced on the tapestries of various colors seemed to him to  
 be raising their terrible napes.'

(Pérez Galdós 2013 [1871]; cited in RAE 2010:2833)

The information above suggests that the use of this *parecer* construction might be variable and conditioned by multiple factors. Nevertheless, because the RAE provides only two examples and a very general characterization, a more thorough analysis is needed. As a first step, I conducted a corpus analysis to better understand the precise conditions in which the construction is used. Because Spanish is often contrasted with English when discussing this topic (e.g. Torrego 1996, 1998), I additionally conducted a corpus analysis of the comparable sentence structure in English. This methodology allows for a crosslinguistic comparison of the target constructions in the two languages (see examples 8 and 9).

#### 4. CORPUS ANALYSES.

**4.1. SPANISH CORPUS ANALYSIS.** A search for the structure of 9 was conducted in the Corpus de Español: Web/Dialects (CdE; Davies 2016–), which contains 2 billion words of Spanish from a variety of countries. The format of the search is shown in 19, in which the experiencers are translated as follows: *me* 'to me', *te* 'to you', *le* 'to you (formal)/to him/to her', *nos* 'to us', *os* 'to you all' (Spain), *les* 'to you all (Latin America)/to them'.

- (19) Any noun + *me/te/le/nos/os/les* + any form of *parecer* + infinitive

A total of 120 relevant examples were found. The two most common verbs in the embedded infinitival position were *ser* 'be' ( $n = 48$ ) and *tener* 'have' ( $n = 8$ ). Thirty-nine less common verbs were also found in this position, with one to six tokens each. The most common experiencer was the first-person singular *me* 'to me' ( $n = 77$ , 64%). Example sentences with the two most commonly embedded Spanish verbs are provided in 20 and 21.

- (20) Esta cuestión le parecía **ser** el objeto más importante  
 this issue him.DAT seem.3SG.PST to.be the object most important  
 de la psicología.  
 of the psychology  
 'This issue seemed to him to be the most important object of study in  
 psychology.'  
 (CdE)

- (21) Esta opción me parece **tener** una bastante limitada esfera  
 this option me.DAT seem.3SG to.have a very limited sphere  
 de aplicación.  
 of application  
 'This option seems to me to have a very limited scope of applicability.'  
 (CdE)

**4.2. ENGLISH CORPUS ANALYSIS.** The Corpus of Contemporary English (COCA; Davies 2008–), which contains over 560 million words of American English, was searched for the base sentence structure of 8. The search formula can be seen in 22.

- (22) Any noun + any form of *seem* + *to* + *me/you/him/her/them/us* + infinitive

A total of 212 results were returned. Of these, 154 sentences contained one of the following two verbs as the embedded infinitive: *be* ( $n = 139$ ) and *have* ( $n = 15$ ). The contextualized examples 23a–b are from the corpus.

- (23) a. Don seemed to me to **be** a very laid-back kind of individual.  
 b. Mr. Mazurok seems to me to **have** the most beautiful baritone voice in the world.

In the fifty-eight cases in which *be* or *have* was not one of the embedded infinitives, no other verb was found more than three times. With regard to experiencers, the first-person singular *to me* was found in 164 of 212 cases (77%). A different experiencer, such as *to you*, *to him*, *to her*, *to us*, was used in the remaining sentences.

**5. DISCUSSION OF CORPUS DATA.** The parallel findings in Spanish and English demonstrate the need to reexamine the traditional view that ‘seem’ constructions with an experiencer and infinitival complement are acceptable in English but not in Spanish. There appear to be at least two crosslinguistic similarities. In both languages, the constructions are most frequently attested with a first-person singular experiencer and the embedded infinitives ‘be’ and ‘have’. In an attempt to uncover the motivations for these patterns, I examine the meaning of the sentences in conjunction with the syntax. I use a cognitive-functional approach to discuss the two variables that stand out in the corpus data in both languages: the experiencer and the embedded infinitive. Specifically, these variables are discussed in terms of how they interact to convey subjectivity in sentences with ‘seem’ and how this interaction might be related to sentence acceptability. This discussion lays the groundwork for the subsequent acceptability judgment experiments in §6.

**5.1. EXPERIENCERS AND SUBJECTIVITY.** In several previous syntactic analyses of *parecer* ‘seem’, experiencers such as *me* ‘to me’ were discussed as syntactic objects that either structurally interfered with raising (Torrego 1996) or fundamentally changed the nature of *parecer* (Ausín & Depiante 2000). Nevertheless, in addition to its function as a syntactic object, a dative experiencer (*me* ‘to me’) is a meaningful constituent that speakers use to emphasize specific individuals’ perspectives (usually their own) or experiences (Bermúdez 2002). Experiences or perspectives are commonly subjective and not universally shared, so it is often discursively relevant to highlight whose perspective is being described. A person may seem intelligent *to me*, but unintelligent *to you*. Similarly, a food may taste good *to me*, but taste bad *to you*. Because experiencers play an important role in expressing subjectivity, Bermúdez (2002) considers them *marcador[es] de subjectividad* ‘subjectivity markers’, and Nuyts (2005:82) refers to them as ‘subjectifiers’. Nuyts (2001a:34) explains that a subjective view is one in which a speaker suggests ‘that (s)he alone knows the evidence and draws a conclusion from it’. Therefore, an experiencer is an important tool that speakers use to signal a subjective view and indicate the accessibility to the evidence that supports their view.

Experiencers are often compatible with ‘seem’ + infinitive because this multiverb construction is ‘inherently speaker-oriented’ (Cornillie 2007:82) and used to express subjective views about propositions based on first-hand evidence or direct reasoning/inference (Cornillie 2007). The role of the experiencer is to highlight the subjectivity even more from the perspective of one or more people. Therefore, ‘seem’ constructions with experiencers would be expected to be most felicitous in contexts of high subjectivity, and least felicitous in contexts of low subjectivity. The level of contextual subjectivity has never been formally examined as a possible factor that would affect the acceptability of such constructions, however. This gap is addressed in §§6–7.

**5.2. THE EMBEDDED INFINITIVE AND COHERENCE BETWEEN CLAUSES.** In the previous section, it was argued that ‘seem’ + infinitive constructions are used to make subjective comments about propositions in Spanish and English (Cornillie 2007), and that an experiencer increases the level of subjectivity even more (Nuyts 2005). The question at hand is now the following: In terms of meaning, what is the relationship between the main clause with ‘seem’ and the embedded infinitival clause? According to Porroche (1990:167), ‘the main predicate expresses, in relation to *factivity*, or in other words, in relation to the modal axis of probable-possible-improbable, the attitude of the speaker toward the proposition contained in the embedded predicate’ (translation mine; italics in original). This significantly constrains the nature of propositions that can appear in the infinitival phrase. For example, if a high degree of subjectivity is established in the main clause with ‘seem’ and an experiencer, the proposition in the embedded phrase should only be one that can be viewed with a high level of subjectivity. It follows that if an experiencer is present in the main clause and the embedded proposition does not lend itself to subjective views, the sentence might be less acceptable. For example, observe the contrast between 24a–b, which contain propositions that would be viewed subjectively under normal circumstances, and 25a–b, which contain propositions that would not typically be viewed subjectively.

- (24) a. Peter seems to me to drink too much.  
       b. Peter seems to me to be an intelligent person.  
 (25) a. ?Peter seems to me to drink coffee every morning.  
       b. ?Peter seems to me to be a biology teacher.

In 24a, the perception that Peter drinks too much might be based on an observer’s personal drinking habits or even culture, leading to variable perceptions of what constitutes ‘drinking too much’; this makes the proposition compatible with an experiencer. In Nuyts’s (2005) terms, the experiencer indicates that the evidence upon which the observer is basing this perception is unshared and unique. Now, contrast 24a with 25a. In 25a, the perception that Peter drinks coffee every morning is more specific and less subjective: either he does or he does not, and this perception would probably not change based on an observer’s own coffee-drinking habits or culture. As a result, the inclusion of an experiencer is unusual. The two sentences with an embedded *be* follow the same pattern. In 24b, the perception that Peter is intelligent might be based on an observer’s own intelligence and personal standards of what constitutes intelligence (i.e. unshared evidence), which results in high contextual subjectivity and makes the sentence appropriate for an experiencer. In contrast, in 25b, the perception that Peter is a biology teacher is binary (either he is or he is not), so the use of an experiencer is odd. These contrasts suggest that the acceptability of ‘seem’ constructions is influenced by the harmony/continuity of meaning between the main and embedded clauses, which has been argued to be relevant to the acceptability of other complex sentences (Bolinger 1967, Langacker 1995).

Based on the discussion above, it is now possible to speculate as to why ‘be’ and ‘have’ were the most commonly embedded infinitives in ‘seem’ constructions with experiencers in the corpus searches. In addition to being common verbs in general, both ‘be’ and ‘have’ are very useful for expressing views related to qualities of people or things, which tend to be inherently subjective. Consider perceptions related to ‘being’ (e.g. being attractive/intelligent), which are often abstract and based on intangible factors. Someone may find another person to be attractive without even being able to explain why. There is just something about that person. The previous data from the RAE (2010) and corpora provide additional examples of high subjectivity in descriptions of



qualities. In 17, *Juan* is judged to be a good writer, but he may be considered only a mediocre writer by someone else. In 20, the issue in question may seem to be the most important object of study to one scholar, but not to another. The same reasoning could be applied to the English example in 23b; the person who produced this sentence has a very positive perception of Mr. Mazurok's voice, but almost certainly there would be people who dislike his voice or find it to be only average.

Verbs other than 'be' and 'have' may be compatible as infinitives in 'seem' constructions with experiencers in contexts of high subjectivity, but they may not necessarily be EQUALLY compatible. Take the verb *drink*, for example. Even though the naturalness of *drink* is argued to be greater in contexts of high subjectivity (24a), perceptions of 'drinking' (e.g. drinking too much/drinking too quickly) are often based on relatively straightforward and tangible criteria that are not difficult to articulate, even if these perceptions are influenced by personal differences. As a result, this verb is less commonly used in contexts of high subjectivity. In sum, even though many verbs may in principle be compatible with a 'seem' construction with experiencers, verbs that can be used to create the most subjective propositions (especially ones regularly used to describe qualities, like 'be' or 'have') would be expected to be the most natural as an infinitival complement of *seem* or *parecer* 'seem'.

**6. HOW DO SUBJECTIVITY AND THE EMBEDDED VERB AFFECT SENTENCE ACCEPTABILITY?** I have provided an account of the crosslinguistic similarities in the corpus data by explaining how an experiencer, the verb 'seem', and an embedded infinitive interact to create a harmonious multiclausal construction in English and Spanish. My assumptions have specific entailments for sentence acceptability. These constructions would be expected to be more acceptable when the proposition in the infinitival phrase is highly subjective as opposed to minimally subjective. Additionally, not all verbs in the infinitival phrase would be expected to result in the same level of acceptability. Verbs that are especially well suited for commenting on subjective qualities (e.g. 'be' and 'have') are predicted to result in higher sentence acceptability. In the next section, these predictions are put to the test with acceptability judgment tasks in English and Spanish.

**6.1. ACCEPTABILITY JUDGMENT TASKS IN ENGLISH AND SPANISH.** The first two research questions that motivated the acceptability judgment tasks were the same for both English and Spanish, and they pertain only to sentences that contain the verb 'seem', an experiencer, and an embedded infinitival phrase. Following the suggestion of a referee, a third question was added to directly compare and contrast acceptability patterns in the two languages. The three research questions are as follows.

- RQ1: Does the specific embedded infinitive affect sentence acceptability?
- RQ2: Does the level of subjectivity in the embedded proposition affect sentence acceptability?
- RQ3: Do the embedded infinitive and level of subjectivity affect sentence acceptability in a similar way in English and Spanish?

Because the English and Spanish acceptability judgment tasks had the same motivation and design, they are described together in the following subsections.

**METHODS.** An acceptability judgment task was created in both languages using Qualtrics. The first manipulated variable was the embedded infinitive, which varied between six different verbs: 'be', 'have', 'drink', 'make', 'speak', and 'wear'. The verbs 'be' and 'have' were included because they appeared with regularity in corpus data in both languages, and it was important to investigate whether the more frequent appearance of these verbs was also related to acceptability. The other verbs were selected for

two reasons. First, they are highly frequent in both languages—all fall within the top 350 most common words (Davies 2008–, 2017–). Selecting high-frequency verbs was intended to reduce the influence of verb frequency on acceptability, given that ‘be’ and ‘have’ are very common. Second, these six verbs were optimal because they could be used fairly naturally in contexts of both high and low subjectivity. This was an important consideration for the second manipulated variable in the study, the level of subjectivity in the embedded proposition (high or low). Propositions that have high subjectivity are those that generally allow for gradient views, and propositions with low subjectivity are those that are typically viewed in a binary way. For example, the proposition of someone being intelligent is more subjective than the proposition of someone being a biology teacher. Similarly, the proposition of someone having a beautiful voice is more subjective than the proposition of someone having black hair.

Overall there were twelve different conditions: each of the six verbs appeared in sentences within the two levels of subjectivity, high [+] and low [–]. Two target sentences per condition resulted in twenty-four target sentences. One target sentence from each condition in both languages is included in Table 1, and the other half of the target sentences can be found in the supplementary material.<sup>1</sup>

VERB	ENGLISH +SUBJ	ENGLISH –SUBJ	SPANISH +SUBJ	SPANISH –SUBJ
‘be’	Laura seems to me to be an intelligent person.	Peter seems to me to be a biology teacher.	Laura me parece ser una persona inteligente.	Pedro me parece ser un profesor de biología.
‘have’	Lucas seems to me to have a beautiful voice.	Diana seems to me to have black hair.	Lucas me parece tener una voz preciosa.	Diana me parece tener pelo negro.
‘drink’	Patricia seems to me to drink too much beer.	Richard seems to me to drink coffee every morning.	Patricia me parece tomar demasiada cerveza.	Ricardo me parece tomar café todas las mañanas.
‘make’	Samuel seems to me to make very good cookies.	Carol seems to me to make her bed every day.	Samuel me parece hacer muy buenas galletas.	Carol me parece hacer la cama todas las mañanas.
‘speak’	Mark seems to me to speak without thinking.	Natalie seems to me to speak with her brother in French.	Marcos me parece hablar sin pensar.	Natalia me parece hablar con su hermano en francés.
‘wear’	Susana seems to me to wear beautiful clothes.	Paul seems to me to wear black boots when he works.	Susana me parece llevar ropa muy bonita.	Pablo me parece llevar botas negras cuando trabaja.

TABLE 1. Set of target sentences from acceptability judgment tasks in English and Spanish.

Because subjectivity can be a somewhat nebulous concept, I requested that two other linguists who are fluent in English and Spanish review the target sentences in order to confirm that there was a clear contrast in subjectivity between the +Subjective and –Subjective sentences for each verb. These linguists provided additional feedback to make the sentences as equivalent as possible between the two languages.

In addition to the twenty-four target sentences, thirty-two filler sentences were included to distract participants from the focus of the experiment. Half of the filler sentences were grammatical, and half ungrammatical. In total, there were fifty-six sentences in the tasks in each language.

Finally, it is important to mention that only first-person singular experiencers (*to me/me* ‘to me’) were used in target sentences. This was done purposely because the effect of variation in experiencers was not related to the research questions, and first-per-

<sup>1</sup> The supplementary material is available at <http://muse.jhu.edu/resolve/178>.

son singular experiencers were predicted to result in the most natural sentences, since they were most abundant in the corpus data. The effect that different experiencers have on sentence acceptability can be explored in future research.

**PARTICIPANTS.** Fifty Spanish speakers from Mexico and fifty English speakers from the US were recruited as participants using the online platform Prolific (prolific.co). Because Prolific allows for advanced screening of participants, only those who had an overall approval rating of 98% or higher as research participants were invited to participate. Participation was also restricted to monolingual speakers (self-identified) who were residing in their country of origin (Mexico or US) at the time of the experiment.

**EXPERIMENTAL PROCEDURES.** Once participants read a description of the study on Prolific and agreed to participate, they were redirected to a Qualtrics survey that contained the acceptability judgment task. Participants were asked to read sentences at a normal pace and indicate their acceptability using a Likert scale labeled from 1 (least acceptable) to 7 (most acceptable), a design common in experimental syntax (Marty et al. 2020). Sentences appeared one at a time in a pseudo-randomized order, which means that sentences were randomized for each participant, yet no target sentences appeared back to back. Participants completed the task in roughly eight to ten minutes and were compensated for their time.

**STATISTICAL ANALYSIS.** Given that the raw data in this study were based on acceptability ratings on a seven-point Likert scale, they needed to be standardized for analysis, because participants do not use Likert scales uniformly. For example, one person might use the whole range of the scale, while another might gravitate mostly toward the higher end. One way to preserve judgment contrasts between conditions while minimizing the undesirable effect of individual habits in the use of a Likert scale is to transform data into  $z$ -scores. This was done following Schütze and Sprouse (2013). The  $z$ -scores were then analyzed with a mixed-effects model using R (R Core Team 2022). For the two separate analyses in English and Spanish, the fixed effects were Verb and Subjectivity. To account for natural variability between participants, the random effect Participant was added to the model. Additionally, because the tasks included two different items per condition, it was important to account for condition-internal variability separately from variability due to the fixed effects. For this reason, Item was added as an additional random factor. For all significant main effects and interactions in the analyses, the omega-squared ( $\omega^2$ ) was calculated to determine the effect size. This effect-size calculation is considered to be less biased than the more common eta-squared (Field 2013). The following benchmarks were set for  $\omega^2$  values: 0.01 = small effect, 0.06 = medium effect, 0.14 = large effect (Field 2013).

Finally, after each language was analyzed separately, the data from both languages were combined and a new fixed effect was added to the model: Language. The purpose of this final analysis was to address RQ3 by determining whether Verb and Subjectivity affect sentence acceptability in a significantly different way between English and Spanish.

## 7. RESULTS.

**7.1. ENGLISH RESULTS.** The raw means and standard deviations for the English acceptability judgment task are presented by condition in Table 2. The data are also presented in standardized form ( $z$ -scores) in a violin plot in Figure 1.

The analysis of the standardized results revealed that sentence acceptability differed depending on the verb ( $F(5,1139) = 20.18, p < 0.0001, \omega^2 = 0.08$ ). Additionally, sentence acceptability was affected by the level of subjectivity ( $F(1,1139) = 78.09, p < 0.0001, \omega^2 = 0.06$ ); sentences with low subjectivity were judged to be less acceptable overall. Fi-

VERB	+SUBJ		-SUBJ	
	mean	SD	mean	SD
be	4.39	1.67	3.45	1.56
have	4.06	1.51	3.01	1.55
drink	3.26	1.41	2.89	1.40
make	3.37	1.49	3.03	1.34
speak	3.39	1.54	2.84	1.45
wear	3.13	1.38	3.19	1.40

TABLE 2. Summary of raw data from English acceptability judgment task.

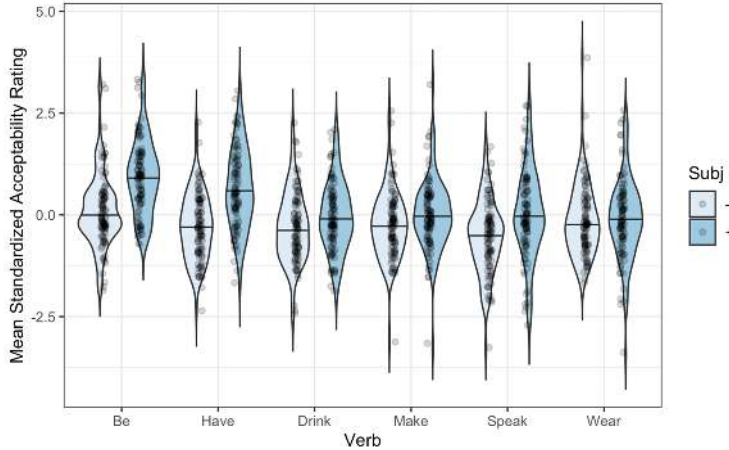


FIGURE 1. Standardized results (z-scores) from English acceptability task.

nally, there was a significant interaction between Verb and Subjectivity ( $F(5,1139) = 7.34, p < 0.0001, \omega^2 = 0.03$ ).

In order to better understand the interaction between Verb and Subjectivity, pairwise comparisons of verbs are presented within each level of subjectivity. See Table 3 for comparisons between verbs within +Subjectivity conditions.

	be	have	drink	make	speak	wear
be	–	ns	****	****	****	****
have	–	–	****	****	****	****
drink	–	–	–	ns	ns	ns
make	–	–	–	–	ns	ns
speak	–	–	–	–	–	ns
wear	–	–	–	–	–	–

TABLE 3. Pairwise comparisons for verbs in +Subjectivity conditions (English). ns = not significant, \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ , \*\*\*\* $p < 0.0001$ .

The verb *be* was judged to be more acceptable than *drink*, *make*, *speak*, and *wear* as an embedded infinitive in +Subjectivity conditions. No significant difference was found between *be* and *have*, however. The verb *have* was also judged to be more acceptable than *drink*, *make*, *speak*, and *wear*. No other significant differences were found.

In Table 4, pairwise comparisons between verbs within the –Subjectivity conditions are provided. The differences between verbs were fewer and less pronounced in the –Subjectivity contexts. The verb *be* received higher ratings than *have*, *drink*, and *speak*, but not *make* and *wear*. The verb *wear* was also judged to be more acceptable than *speak*. No other significant differences were found.

	be	have	drink	make	speak	wear
be	–	*	*	ns	****	ns
have	–	–	ns	ns	ns	ns
drink	–	–	–	ns	ns	ns
make	–	–	–	–	ns	ns
speak	–	–	–	–	–	*
wear	–	–	–	–	–	–

TABLE 4. Pairwise comparisons for verbs in –Subjectivity conditions (English). ns = not significant, \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ , \*\*\*\* $p < 0.0001$ .

The first two research questions for the English acceptability judgment task can be answered in the affirmative: (i) yes, the specific embedded infinitive affects sentence acceptability, and (ii) yes, the level of subjectivity in the embedded proposition affects sentence acceptability. Additionally, sentence acceptability is affected by the interaction between the embedded infinitive and level of subjectivity.

**7.2. SPANISH RESULTS.** The raw results from the Spanish acceptability judgment task are shown by condition in Table 5, and the standardized ratings are provided graphically in Figure 2.

VERB		+SUBJ		–SUBJ	
		mean	SD	mean	SD
ser	‘be’	4.88	1.91	3.42	1.59
tener	‘have’	3.28	1.82	2.41	1.40
tomar	‘drink’	2.41	1.55	2.25	1.51
hacer	‘make’	2.50	1.63	2.01	1.31
hablar	‘speak’	2.85	1.66	2.18	1.40
llevar	‘wear’	2.61	1.58	2.44	1.40

TABLE 5. Summary of raw data from Spanish acceptability judgment task.

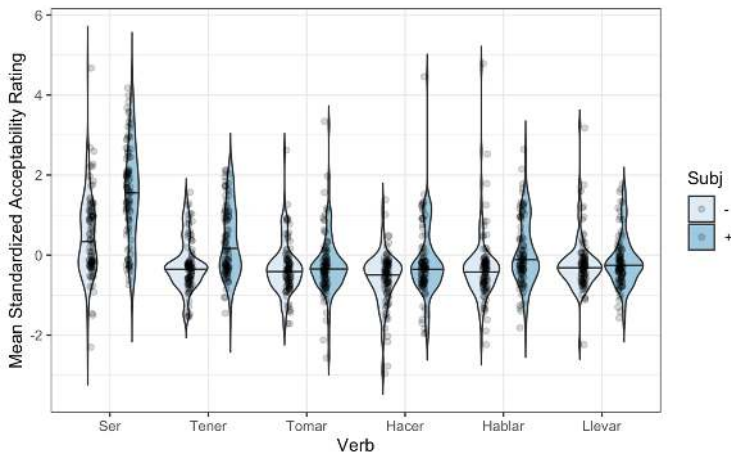


FIGURE 2. Standardized results ( $z$ -scores) from Spanish acceptability task.

The analysis of the standardized results revealed that sentence acceptability differed depending on the verb ( $F(5, 1140) = 73.91, p < 0.0001, \omega^2 = 0.24$ ). It was additionally affected by the level of subjectivity ( $F(1, 1140) = 80.67, p < 0.0001, \omega^2 = 0.07$ ); sentences with low subjectivity were judged to be less acceptable overall. Finally, there was a significant interaction between Verb and Subjectivity ( $F(5, 1140) = 10.21, p < 0.0001, \omega^2 = 0.04$ ).

In order to better understand the interaction between Verb and Subjectivity, pairwise comparisons of verbs are presented within each level of subjectivity. Table 6 gives pairwise comparisons between verbs within +Subjectivity conditions.

	ser	tener	tomar	hacer	hablar	llevar
ser	–	****	****	****	****	****
tener	–	–	****	***	ns	***
tomar	–	–	–	ns	ns	ns
hacer	–	–	–	–	ns	ns
hablar	–	–	–	–	–	ns
llevar	–	–	–	–	–	–

TABLE 6. Pairwise comparisons for verbs in +Subjectivity conditions (Spanish). ns = not significant, \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ , \*\*\*\* $p < 0.0001$ .

The verb *ser* ‘be’ was judged as more acceptable than all other verbs as an embedded infinitive in +Subjectivity conditions, at a significance level of  $p < 0.001$ . A pattern of increased acceptability was also apparent with the verb *tener* ‘have’, which received higher ratings than *tomar* ‘drink’, *hacer* ‘make’, and *llevar* ‘wear’. The acceptability of *hablar* ‘speak’ was also greater than that of *tomar* ‘drink’ ( $p = 0.04$ ). No other significant differences were found.

In Table 7, pairwise comparisons between verbs within the –Subjectivity condition are provided.

	ser	tener	tomar	hacer	hablar	llevar
ser	–	****	****	****	****	****
tener	–	–	ns	ns	ns	ns
tomar	–	–	–	ns	ns	ns
hacer	–	–	–	–	ns	*
hablar	–	–	–	–	–	ns
llevar	–	–	–	–	–	–

TABLE 7. Pairwise comparisons for verbs in –Subjectivity conditions (Spanish). ns = not significant, \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ , \*\*\*\* $p < 0.0001$ .

There were fewer differences between verbs in the –Subjectivity contexts. The only observable pattern was found with *ser* ‘be’. Sentences with this verb received higher ratings than those with any other verb, at a significance level of  $p < 0.0001$ . The verb *llevar* ‘wear’ was also rated as more acceptable than *hacer* ‘make’. No other significant differences were found.

The first two research questions related to the Spanish acceptability judgment task can be answered in the affirmative: (i) yes, the specific embedded infinitive affects sentence acceptability, and (ii) yes, the level of subjectivity in the embedded proposition affects sentence acceptability. Additionally, sentence acceptability is affected by the interaction between the embedded infinitive and level of subjectivity.

**7.3. A COMPARISON OF ENGLISH AND SPANISH RESULTS.** To directly compare the effect of Verb and Subjectivity on acceptability ratings between English and Spanish, the standardized data from both languages were combined, and Language was added as a fixed effect alongside Verb and Subjectivity. Because there was a two-way interaction between Verb and Subjectivity independently in each language, the addition of the fixed effect Language could reveal whether the two-way interaction was significantly different between the languages (a three-way interaction). The results did not show a three-way interaction ( $F(5,2279) = 1.44, p = 0.21$ ), which suggests that the interaction

between Verb and Subjectivity is not significantly different between the two languages. To support this conclusion, the factor Language was removed from the combined English and Spanish model, and the interaction between Verb and Subjectivity was once again significant ( $F(5,2279) = 11.78, p < 0.001, \omega^2 = 0.03$ ).

While the three-way interaction was not significant, two-way comparisons involving Language were still explored, and the results were mixed. There was significant evidence that the effect of Verb changes depending on the language ( $F(5,2279) = 9.49, p < 0.001, \omega^2 = 0.02$ ). However, the effect of subjectivity was not significantly different between the languages ( $F(5,2279) = 0.25, p = 0.62$ ).

Based on the crosslinguistic comparison, RQ3 can be answered in the following way: yes, the embedded infinitive and level of subjectivity affect sentence acceptability similarly in English and Spanish (i.e. the interaction between the two variables is not significantly different). A caveat is that the isolated effect of Verb does not appear to be the same between the languages.

**8. DISCUSSION.** With regard to Spanish specifically, this investigation helps resolve conflicting views that have existed for some time (see §§2 and 3). Complex sentences with *parecer* ‘seem’ and an experiencer appear to be variably acceptable, rather than categorically unacceptable. The variable use and acceptability of these ‘seem’ constructions is not limited to Spanish, however. The corpus analyses of both English and Spanish show that the embedded verbs ‘be’ and ‘have’ and first-person singular experiencers are most common. The results from the judgment tasks additionally show that the acceptability of these sentence constructions is affected by the level of subjectivity and the specific embedded infinitive in both languages. The significance of these findings is discussed in what follows.

Both English and Spanish speakers prefer the proposition in the embedded phrase of ‘seem’ constructions with experiencers to be highly subjective. This maximizes coherence between the main clause—in which an experiencer and the verb ‘seem’ signal that a subjective view will be expressed—and the embedded infinitival phrase (Bermúdez 2002, Cornillie 2007, Nuyts 2005, Porroche 1990). With regard to the embedded infinitive, it is clear that not all verbs result in the same level of sentence acceptability, which can be explained by the idea that not all verbs are equally suitable for expressing highly subjective propositions. This relationship between specific verbs and subjectivity is precisely the source of the interaction between these factors. Within the +Subjectivity contexts, participants found sentences with ‘be’ and ‘have’ to be most acceptable, which I interpret to support the idea that the perception of someone ‘being’ or ‘having’ a certain quality is inherently more subjective than the perception of someone ‘drinking’, ‘making’, ‘speaking’, or ‘wearing’. In the –Subjectivity contexts, acceptability is diminished overall, as expected, but there is still evidence of the effect of the specific embedded verb: ‘be’ leads to the most acceptable sentences in both languages. An additional isolated contrast was found between two other verb pairs in the –Subjectivity contexts in each language (*speak* vs. *wear* in English; *hacer* ‘make’ vs. *llevar* ‘wear’ in Spanish), but this is not considered to be a significant theoretical finding because it is not part of a pattern.

One might wonder why Verb still has an effect in the context of low subjectivity. Shouldn’t all sentences be equally bad due to a clash between the high subjectivity in the main clause and low subjectivity in the embedded phrase? Not necessarily. Recall that the two ends of the spectrum of subjectivity were high and low, not 100% subjective and 0% subjective (or objective). This is because epistemic evaluations involving

the verb ‘seem’ are rarely 0% subjective (Nuyts 2001b). Therefore, in the current study, although the –Subjectivity conditions were designed to evoke perceptions that are typically binary in nature with low subjectivity, it is not surprising that ‘be’ still led to higher acceptability. I assume that propositions with this verb were still interpreted to be more subjective relative to propositions with other verbs. This relative effect was lost with the verb ‘have’, however. Although it received the second highest mean acceptability ratings in all conditions in both languages, it was no longer systematically distinguishable from other verbs in –Subjectivity contexts.

The crosslinguistic comparison of English and Spanish data revealed another important finding. Not only do the factors Verb and Subjectivity affect sentence acceptability independently within each language, but they do so in a similar way between the languages as well. For example, no significant difference was found with respect to the effect of subjectivity: in both languages, ‘seem’ constructions with experiencers are most acceptable in contexts of high subjectivity for reasons outlined above. Additionally, the interaction between Subjectivity and Verb is not significantly different between the languages, given that the same verbs, namely ‘be’ and ‘have’, interact with subjectivity differently from other verbs. A post-hoc analysis did indicate that the isolated effect of Verb is significantly different between the languages, however. In other words, the distribution of mean acceptability ratings for the six different verbs was not the same. There are several potential explanations for this; one is that the contrast between certain verbs is simply more extreme in Spanish than in English, even if qualitatively similar. Based on this finding, the effect of Verb should be explored more in future studies. A more complex study design in which verbs are organized more clearly into different classes could potentially reveal additional similarities or differences between the languages.

On a final note, it is important to mention that the findings should not be used to make the claim that ‘seem’ constructions with experiencers are equally acceptable in English and Spanish. In other words, the results do not necessarily challenge Torrego’s (1996, 1998) and Ausín and Depiante’s (2000) intuitions that there is something different about the English and Spanish constructions. A more direct comparison between the languages could have been executed using raw data, but standardized *z*-scores were used instead due to the potential for confounding influences stemming from the use of a Likert scale by different participants and participant groups (Schütze & Sprouse 2013). Additionally, the scope of this study was narrow and examined acceptability based on only two factors—the embedded verb and the level of subjectivity. Based on the findings, I speculate that the contrast in acceptability of these ‘seem’ constructions between English and Spanish is not so obvious in some contexts, but the opposite may be true in others. Many other factors still need to be explored, among them dialect and register (RAE 2010). Against this backdrop of questions for future exploration, the main take-away of this study is that the acceptability of the ‘seem’ constructions in question is variable in both languages, and this variability is conditioned in similar ways by at least two shared factors.

**9. CONCLUSION.** The variable acceptability of sentences with *parecer* ‘seem’, an experiencer, and an embedded infinitival phrase had gone unexplored, likely due to the assumption that such sentences contained syntactic violations (Ausín & Depiante 2000, Torrego 1996, 1998). However, corpus and experimental data show that sentences with these characteristics are produced and that the embedded infinitive and the continuity of subjectivity across clauses are important factors in their acceptability. What is more, the same factors appear to condition the use and acceptability of comparable English sen-



tences with *seem*. Sprouse (2018) suggests that the most convincing arguments in linguistic research are those for which there is converging evidence supported by multiple data types. The present study demonstrates what can be gleaned from combining corpus and experimental acceptability judgment data and incorporating it into a discussion that had been guided primarily by informal acceptability judgments.

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[simonsrl@miamioh.edu]

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