The role of intonation in Construction Grammar: on prosodic constructions.

Abstract:

In constructionist approaches, constructions are defined as pairings of phonological, morphological and syntactic form, and semantic, pragmatic or discursive meaning. However, in practice very few constructional analyses deal specifically with the intonational properties of constructions. Moreover, constructional approaches are not clear about the ontological status of intonation in a constructional model of language. Combining insights from Construction Grammar and Intonational Studies, specifically the Autosegmental Metrical framework of intonational phonology and the Tones and Breaks Indices (ToBI) transcription model, this paper discusses the role of prosody in a construction-based approach to language, through the analysis of the insubordinate conditional construction (ICC) in Spanish. Building on the analysis of the prosody of 90 tokens of the ICC uttered by 14 native speakers of Peninsular Spanish, we argue that the best way to account for the relationship between intonational patterns and (lexicogrammatical) constructions is to treat intonational patterns as constructions that pair a phonological form with a semantic-pragmatic meaning, which are then inherited by sentence-level constructions as long as their meanings are compatible.

Keywords: Construction Grammar, prosody, prosodic constructions, intonation, insubordinate conditionals, Spanish.

1   Introduction

Construction Grammar emerges as a reaction to modular linguistic models (Croft & Cruse 2004: 225), prototypically represented by Generative Grammar, especially in the model of Principles and Parameters (Chomsky 1981) and its continuation in the Minimalist Program (Chomsky 1995). In constructionist approaches, grammatical

constructions –like lexical items in the lexicon—are multidimensional units, that include features that in modular models belong to different linguistic levels: phonology, morphology, syntax, semantics, pragmatics and discourse. This is explicitly acknowledged in several definitions of the notion of grammatical construction:

"A construction is a set of formal conditions on morphosyntax, semantic interpretation, pragmatic function, and phonology, that jointly characterize or license certain classes of linguistic objects." (Fillmore 1999: 113)
"A construction grammar consists of a large number of constructions of all types, from schematic syntactic constructions to substantive lexical items. All of the constructions possess properties of form (syntactic and phonological) and meaning (semantic and pragmatic)." (Croft & Cruse 2004: 256)

The concept of grammatical construction in constructional approaches challenges the autonomy of syntax, explicitly or implicitly assumed in modular models. On the one hand, it connects syntax and (semantic, pragmatic or discursive) meaning; on the other hand, it connects syntax and sound. Indeed, in Cognitive Grammar[1] (Langacker 1987), grammatical constructions are defined as the pairing of a phonological pole and a semantic pole. More than three decades after the publication of the seminal works of Construction Grammar (Fillmore, 1985; Fillmore et al., 1988; Lakoff, 1987; Langacker, 1987), it seems appropriate to assess the impact of this theoretical positioning in the practice of constructional analyses.

From the perspective of meaning, the incorporation of the meaning dimension in the analysis of syntactic phenomena has become the most distinguishable feature of constructional approaches (for an overview, see Kay & Michaelis 2012, Michaelis 2017). By contrast, the sound dimension of constructions has not been equally explored. Constructional analyses of particular phenomena do not tend to incorporate phonological information. Moreover, there is a lack of theoretical research that addresses the general role of phonological information in Construction Grammar: (i) which phonological features are relevant to explain the phonological dimension of grammatical constructions and (ii) what is the role of phonological knowledge in a construction-based model of grammar.

---

[1] According to Langacker (2005), Cognitive Grammar can be considered a constructional model.

The lack of the sound dimension in the practice of constructional analyses is not due to theoretical limitations, since most definitions of the concept of grammatical construction include systematically phonology as one of the dimensions of a construction form. In our view, this absence is the result of the current organization of our field, in which there are limited exchanges between constructional grammarians and phonologists. This paper is an attempt to bring together current research in Construction Grammar and intonation, specifically the Autosegmental Metrical framework of intonational phonology and the Tones and Breaks Indices (ToBI) transcription model, to discuss how to systematically incorporate intonation in a construction-based model of grammar.

It is possible to identify three potential scenarios regarding the relationship between a grammatical construction and its prosody:

- Scenario 1. The construction is prosodically neutral: it can combine with any intonational pattern in the language.
- Scenario 2. The construction is prosodically idiosyncratic: it has its own intonational pattern, which does not occur outside the construction.
- Scenario 3. The construction inherits its intonation from independently existing prosodic constructions, which pair a prosodic form with a pragmatic meaning.

This paper provides evidence for the third scenario through the analysis of a particular construction in Spanish: the insubordinate conditional construction (IIC) with a rebuttal function (Montolío, 1999; Schwenter, 2016). This construction, exemplified in (1), occurs typically as the dispreferred second part of an adjacency pair stating a reason why the speaker considers the previous turn to be inappropriate. In this case, by stating that the addressee is wearing their glasses, the previous question by the addressee is regarded as pragmatically inappropriate.

(1) A: ¿Has visto mis gafas?
      have.PRS.IND.2SG seen my glasses
      'Have you seen my glasses?'

   B: ¡Si las llevas puestas!
      If them wear.PRS.IND.2SG put
      'But you are wearing them!'

This is an interesting case study for two main reasons. First, the ICC clearly qualifies as a grammatical construction in that it pairs an idiosyncratic form –a self-standing conditional protasis—with a non-compositional meaning –the contrast with previous context. And second, previous studies have pointed to the existence of prosodic restrictions (Montolío, 1999; Schwenter, 2016), though not detailed prosodic research was conducted.

The intonational analysis of ICCs in Spanish shows that (i) the construction presents prosodic restrictions, but these are not idiosyncratic: the same intonational pattern can be found in other constructions in the language which express similar meanings/functions. Building on these results, we argue in favor of the existence of abstract prosodic constructions (cf. Ogden 2010, Ward 2019), understood as the pairing of a prosodic form and a pragmatic meaning, which are inherited by specific grammatical constructions as long as their meanings are compatible.

This paper is organized as follows. Section 1 reviews existing literature on the relationship between grammar, prosody and meaning, both from the perspective of Construction Grammar and prosodic studies. Section 2 offers a constructional analysis of ICCs in Spanish, providing evidence in favor of its constructional status. Section 3 describes the methodological bases of the intonational analysis of the construction, while section 4 presents the results. In section 5 we discuss the relevance of the results from a constructional perspective and we propose the concept of prosodic construction. Finally, section 6 presents our conclusions.

2   Prosody, meaning and grammar

This section reviews existing literature on the relationship between grammar, prosody and meaning from the perspective of Construction Grammar (2.1) and phonological studies (2.2).

2.1   Constructional approaches

The *Oxford Handbook of Construction Grammar* (Hoffmann & Trousdale 2013), the most complete overview of constructional research, does not contain any chapter dealing specifically with phonological information in Construction Grammar, in contrast with

chapters dealing with other linguistic levels, such as morphology (Booij 2013), lexicon (Wulff 2013, Stefanowitsch 2013), syntax (Hoffmann 2013), pragmatics (Leino 2013) and discourse (Östman & Trousdale 2013). In his contribution on this collective work, Boas gives the following explanation:

> "While constructional research has focused primarily on the role of semantic, pragmatic and syntactic factors in licensing constructions, very few studies address the influence of phonological factors. Historically speaking, this tendency may perhaps be explained by the primary focus of constructional research on showing that there exists no strict separation between the lexicon and syntax, semantics, and pragmatics." (Boas 2013: 239-240)

The scarce references to prosody in constructional analyses can be organized in two groups, depending on whether they treat prosody as a feature of a construction or as a construction on itself. As for the first group, prosody is treated as an attribute of a construction, which is normally defined by its lexico-grammatical form. In their survey of the types of linguistic information that a construction may specify, Fried & Östman (2004: 20) include information about prosody or phonetic shape: "[t]he interpretation of a particular linguistic expression may depend on the prosodic contour conventionally associated with it." Thus, depending on intonation, a syntactic string like *Is a sauna hot* may receive an interrogative or exclamative interpretation, and therefore be an instance of an interrogative or exclamative construction.

In the same vein, in their analysis of the discourse marker use of *jestli* (`whether, if')[2] in Czech, Fried & Östman (2005) relate the interpretations of this particle with different intonational patterns: 'question intonation', 'assertion/declarative intonation' and pleading. Similarly, in an attempt to model the polysemy of the Greek particle *ela* (derived from the 2nd person imperative of the verb *erxome* 'come'), Nikiforidou, Marmaridou & Mikros (2015) represent the different interpretations as a network of constructions, with different formal and interpretive features, including intonation, which can take two values: fall and rise. Interestingly, the impact of intonation on interpretation was experimentally tested. Finally, Kaltenböck (2016) uses intonation (terminal vs. non-terminal contour, i.d. falling vs. continuation rise) to set apart insubordinate if-requests (*If you could open the door*), which have a final position, from regular conditional protases (*If we have time, we*

---

2 In its use as a discourse marker, the particle could be glossed as 'I think' or 'I doubt' depending on the context (Fried & Östman 2005).

will pass by later) that are non-final. In particular, directive insubordinate constructions tend to have a terminal contour (falling), whereas conditional constructions tend to end with a non-terminal contour (continuation rise).

In sum, the contribution of these studies to the relationship of prosody and constructions can be summarized as follows: (i) prosodic features tend to be fairly general (question vs. assertion, Fried & Östman 2005; falling vs. rising, Nikiforidou, Marmaridou & Mikros 2015; focus, Michaelis & Lambrecht 1996), as compared with the fairly detailed grammatical and semantic-pragmatic features used in these same analyses; (ii) the ontological status of prosody in a constructional model of linguistic knowledge is not explicitly discussed.

On the other hand, other studies have suggested that prosodic contours can be modelled as constructions that pair a prosodic form with a semantic-pragmatic meaning (Marandin 2006, Sadat-Tehrani 2008, Ogden 2010, Ward 2019). Sadat-Terahni (2008) analyzes a Persian construction that conveys a causal meaning without the presence of any lexical item, like a causal conjunction: "The central meaning of this construction, which is the conveyance of the reason of something, is encoded in its specific intonation pattern, which is an integral part of the construction and basically makes it what it is. […] In this way, the Reason Construction is compatible with the view that the meaning comes from the tune." (Sadat-Tehrani 2008: 5). The prosodic shape of the construction, "characterized by an early nuclear pitch accent on the first noun phrase followed by deaccentuation up to the utterance end" (Sadat-Tehrani 2008: 1), is similar to narrow focus constructions but not identical, therefore, the Reason Construction pairs an idiosyncratic prosodic form with a non-compositional meaning.

Marandin (2006) makes a general proposal of the constructional organization of prosodic contours in French. Adopting an autosegmental metrical approach (see next section), he distinguishes (non-stylized) contours and stylized contours (Ladd 1996) and compares them with regular syntactic rules and idiomatic expressions. Non- stylized contours pair a prosodic form –falling vs. non- falling contours—with discourse-pragmatic meaning – speakers' vs. addressee's commitment with the propositional content. In this sense, prosodic constructions are related to basic speech acts: "Prototypical speech acts are uttered with a falling contour; prototypical speech acts are assertions, questions and commands that are expressed by declarative, interrogative and imperative sentences

respectively, the acceptance of which is taken for granted by the speaker" (Marandin 2006: 17). On the other hand, stylized contours run parallel to basic contours: they add to these a formal feature --pitch level — that pairs with a pragmatic feature --the speaker mentions the corresponding basic contour (Marandin 2006: 15).

Finally, though not endorsing a constructional approach to language, there is a growing body of research around the concept of prosodic construction in Interactional Linguistics (e.g. Ogden 2010, Ward 2019). In this approach, prosodic constructions are defined as associations between prosodic features (including pitch, but also duration, voice quality and other prosodic dimensions) and interactional meanings and functions, such as turn taking, topic management or stance. Unlike construction-based proposals, these studies make no assumptions regarding the correspondence between prosodic and grammatical units, since prosodic units may involve linguistic material of any size, produced by a single speaker or even by different speakers in talk-in-interaction.

In sum, the contribution of these studies to the relationship of prosody and constructions can be summarized as follows: (i) they are informed by current research on prosody, both theoretically and methodologically and (ii) they open the possibility of modeling prosodic contours as constructions. At the same time, some questions remain unsolved: (i) Can grammatical constructions have an idiosyncratic prosody (Sadat-Tehrani 2008) or do they need to accommodate to the regular contours in the language (Marandin 2006)?, (ii) can grammatical constructions combine with different prosodic constructions –contours—or are they restricted to a specific one? Does this depend on formal or semantic features, and (iii) are prosodic constructions common to all varieties of the same language or do they show regional variation?

2.2. Phonological approaches
From a phonological perspective, prosody has been largely known for encoding meaning in intonational languages, and more specifically speech acts (O'Connor and Arnold 1961, Bolinger 1989). Several authors have sustained that pitch contours have an inherent meaning. For example, the calling contour or vocative chant has been attested in a wide variety of languages (e.g. English, Dutch, Hungarian, Spanish, Catalan, Portuguese…) and there is also abundant bibliography on the contradiction contour (Gussenhoven and Rietveld 1997; Liberman and Sag 1974, Ladd 1980, Ladd 1978, Prieto 2015, Vandepitte, 1989, Hedberg et al 2003, Goodhue & Wagner 2018). Among these studies, some have

defended that intonational meaning is modular, and a tune is built up from the meaning of its smaller units or tonal morphemes (Bartels 1999) and others prefer a non-compositional approach in which tones combine in a predictable way and the resulting tune has a specific meaning (Dainora, 2002).

Among the several functions that intonation can assume, there are non-linguistic meanings, such as attitudinal, emotional, indexical and social, and some of them that are linguistic. Intonation serves, basically, three major functions in intonation languages: serving as a cue to prosodic constituent structure (i.e. phrasing), marking focus and expressing pragmatic function/illocutionary force. However, each language can differ in the way that they express these functions. For example, not all languages mark focus using prosody; focus can be marked morphologically as in Japanese (Koopman, 2005) or syntactically using word order as in Basque (Kaltzakorta Mentxaka 2007).

In Spanish, prosody serves all the three major functions, being the pragmatics/intonation interface especially productive. Therefore, we will deal mainly with intonation in this paper. At the same time, and, although we currently know that the initial part of intonation can serve to correctly identify for example the modality of the sentence (van Heuven et ál 2002 for Dutch; Vion & Colas 2006 for French; Face 2007 for Spanish; Petrone 2010 for Italian; among others), we also know that nuclear contour alone is enough for the correct identification of sentence types (Pierrehumbert & Hirschberg 1990). Specifically, pragmatic meaning is best encoded by the combination of pitch movements that occur between the last stressed syllable and the end of the intonational phrase.

Estebas-Vilaplana & Prieto (2009) have described the inventory of these final contours (often called in the Spanish tradition *tonemes* following Navarro Tomás, 1918) in the Castilian Spanish variety. Each one of the contours (called nuclear configuration in the Autosegmental Metrical framework) consists of a pitch accent (the tones beared by the last stressed syllable in the utterance) and a boundary tone. And the 14 nuclear configurations described have an associated meaning. This combination of tones is called nucleus, *toneme* or nuclear configuration. In this paper, the last name will be used.

In order to determine the influence of pragmatic meaning in contour choice, the results of this paper will detail the nuclear configuration of the construction studied through its transcription. Even though there are many systems of transcribing intonation, ToBI notation systems have become the most popular conventions for transcribing intonation as it proves the growing number of languages that have adopted it (Jun, 2005, 2014). Its

broad use eases typological comparison and aids the mutual understanding among researchers from different fields.

ToBI systems are language specific leading to a number of independent conventions such us MAE_ToBI (for Mainstream American English) (Silverman et al., 1992), ToDI (Gussenhoven, 2005) (for Dutch) or Sp_ToBI (for Spanish) (Hualde & Prieto, 2015). Notwithstanding, all of them share the same general characteristics. They are based in the AM model (Pierrehumbert, 1980). They propose the existence of Break Indices (from 0 to 4), which are used to mark prosodic separation. They use a tone level-based approach where intonation is understood as a series of high (H) and low (L) tones. Finally, they mark stressed syllables with a star (*), intermediate boundaries with a dash (-) and final boundaries with a percentage (%). That said, Sp_ToBI differs to the general system in some characteristics. As far as Break Indices (BI) are concerned, Spanish uses level 0 for clitics, 1 for prosodic words, 3 for intermediate phrases, and 4 for the end of an intonational group or phrase. Likewise, in Spanish there are 4 levels of pitch height, low (L), mid (!H), high (H) and extrahigh (¡H).

Pitch accents, what is to say possible pitch contours occurring around stressed syllables, can be monotonal or bitonal. This way, a low stressed syllable will be marked as L*, a high stressed syllable as H* and a rising with its peak within the stressed syllable as L+H*. Boundary tones can be also monotonal or bitonal and are made by successions of H and L tones. Currently, 12 different nuclear configurations are distinguished for Castilian Spanish[3], and they express basic speech act distinctions (assertions, questions and commands) and several pragmatic distinctions that combine with illocutionary forces (e.g. reiterated commands, contrastive focus or obvious assertions). Just to give a few examples, the pattern L* L% corresponds to a low last stressed syllable and low boundary tone and expresses neutral (broad focus) assertions; L* H%, that consists of a low stressed syllable and a high boundary tone expresses yes/no questions; and L+H* L%, a rising stressed syllable and low boundary tone, expresses contrastive focus assertions.

3   Insubordinate conditionals in Spanish

---

[3] The current and old Sp_ToBI conventions and its complete tonal inventory can be consulted in Beckman et al. (2002), Estebas-Vilaplana & Prieto (2008), Hualde & Prieto (2015) and Prieto & Roseano (2010).

This paper focuses on the analysis of insubordinate conditional constructions in Spanish, which consists on what superficially resembles a conditional protasis used as a main clause to express some sort of contrast with the previous turn[4] (Contreras 1960, Almela 1985, Porroche 1998, Schwenter 1998, Montolío 1999), as example (2) shows:

(2) A: ¿Vamos   a   la   playa?
            go-PRS.IND.1PL   to   the   beach
            'Let's go to the beach!'
      B1:   ¡Si está   lloviendo!
            If to.be.PRS.IND.3SG   raining
            `But it's raining!'

In the previous example, the *si*-clause introduces an argument ('It's raining') that questions the interlocutor's proposal of going to the beach. This construction is consistent with the phenomenon of insubordination, the main clause use of formally subordinate clauses (Evans 2007).

ICCs should not be confused with suspended *si*-constructions (Schwenter 2016), conditional protases whose main clause has to be inferentially reconstrued by the addressee, like (3):

(3) A: ¿Vamos a la playa?
            go-PRS.IND.1PL   to   the   beach
            'Let's go to the beach!'
      B2:   Si quieres…
            If want.PRS.IND.2SG.
            If you want to…'

In the example (3), *si* functions as a conditional marker that introduces a protasis, whose apodosis has been left open for reconstruction: *si quieres, vamos a la playa* ('If you want, we go to the beach'). The difference between regular bi-clausal constructions and suspended constructions, thus, has to do with the explicit or implicit character of the apodosis: explicit in bi-clausal constructions; implicit in the suspended ones.

---

[4] Insubordinate conditionals in Spanish differ from insubordinate conditionals in Germanic languages, that tend to express directive speech acts, e.g. If you could lend me 50 cents. See, for instance, Kaltenböck (2016), D'Hertefelt (2018) and Lastres-López (2020). Insubordinate conditionals with rebuttal function are also found in other Romance languages, like Catalan (Salvador 2002) and Italian (Lombardi Vallauri 2016).

ICCs have idiosyncratic formal features that set them apart from conditional constructions –either regular bi-clausal or suspended ones (Montolío 1999; Schwenter 1998). First, they reject subjunctive verb forms, as version B1 from example (4) shows. Second, they reject coordination with other clauses, as the ungrammaticality of B2 shows. And finally, they do not combine with "continuation rise" intonation[5]; on the contrary, previous studies have suggested they have exclamative intonation (Montolío 1999, Schwenter 2016).

(4) A: ¿Vamos a la playa?
            Let's go to the beach!
   B1:   *¡Si   esté   lloviendo!
            If   to.be.PRS.SBJV.3SG raining
   B2:   *¡Si   está   lloviendo y si hace   frío!
            If   to.be.PRS.IND.3SG   raining and if make.PRS.IND.3SG   cold
            * It's raining and it's cold!

As for their meaning, most authors tend to identify a constrastive meaning[6] (Contreras 1960, Almela 1985, Porroche 1998, Schwenter 1998, Montolío 1999), that could be analized as a conventional implicature that can be glossed along the lines 'If it is raining, why do you suggest to go to the beach?'. Schematically, the implicature would be: if p [the si-clause] → q [a previous utterance] is inappropriate (Montolío 1999).

From a discourse-structural perspective, this construction typically occurs as a dispreferred second part of an adjacency pair (Montolío 1999). The discourse distribution cannot be modeled a formal restriction, equivalent to the selection of indicative verb forms, but it is a strong tendency: in a corpus study of ICCs in colloquial conversation, 77,3% of the data were dispreferred responses. Other contexts include the justification

---

[5] Kaltenböck (2016) founds similar results in English. Both regular bi-clausal and suspended conditionals show continuation rise intonation (author et al. 2016): in regular bi-clausal conditionals continuation rise is motivated by syntactic factors (non final utterance position), whereas in suspended constructions, prosody it is motivated by pragmatic factors, as an instruction to the addressee to reconstruct a compatible main clause ('We can go to the beach' in example B2 in the text). Suspended clauses keep their rising intonation even when they are not followed by any linguistic material, like in turn B2 in example (3). Therefore, their prosodic marking cannot be explained in pure syntactic terms, but in pragmatic ones. Similarly, ICCs do not accept continuation rise, whether they are followed by any other utterance in their turn or not.

[6] For an alternative analysis of *si* as an epistemic marker, see Schwenter (2016).

of a previous speech act, in turn internal position (5a); or the mirative reaction to a non-linguistic stimulus (5b)

(5) a.   Tenemos   que comprarlo. ¡Si   es   una   ganga!
          Have.PRS.IND.1PL   that buy.it   if tobe.PRS.IND.3SG a bargain
          'We have to buy it. It's a bargain!'
    b. [After looking for my glasses]
          ¡Si   las   llevo   puestas!
          If   them   wear.PRS.IND.1SG put
          '[I just realized] I'm wearing them!'

The constructional status of this pattern is clear. On the formal side, the construction exhibit properties that cannot be predicted from the knowledge of conditional constructions, especially mood selection and clause combining. On the interpretive side, the construction expresses an interactional contrastive meaning that cannot be attributed to any lexical item. The question that remains open is the status of the prosody of the construction: is it unmarked (accepts any prosodic pattern), idiosyncratic (accepts a unique prosodic pattern which does not occur outside the construction) or inherited (accepts a pattern which exists outside the construction)?

4   Method

In order to offer an answer to the question just sketched, we have conducted an experiment to analyze the prosodic features of Spanish ICCs. This section details the method used in the analysis. Section 0 describes the speaker and recordings, while section 4.1 deals with the corpus used and data elicitation.

4.1   Speakers and Recordings

All the recordings were made by 14 native speakers of Peninsular Spanish. The average age of the participants was 24.44 (σ=2.10). They were speakers from four provinces of Spain: Madrid, Barcelona, Cantabria and Seville. Therefore, the selection of participant was done trying to include the more Spanish variants possible, therefore it is a comprehensive description of the realizations of the construction in Peninsular Spanish. The distribution of the participants was as follows: Madrid, two speakers (one male, one

female); Barcelona, four speakers (two male, two female; 2 Catalan dominant, 2 Spanish dominant); Seville, four speakers (two male, two female; two from the city center, two from the provinces); and Cantabria, four speakers (two male, two female; two from the city, two from the provinces). Figure 1. Map showing speakers origin Figure 1 depicts the geographical origin of the speakers.

Figure 1. Map showing speakers origin

All recordings were made with a Marantz PDM60 recorder and a SHURE SM58 microphone. The files were digitized with a sampling rate of 22,050 Hz and encoded in a format without compression (wav). Each utterance was saved in a separated file and annotated in Praat. The annotation consisted of a first tier in which the utterance was transcribed orthographically by words a second one with a syllable segmentation and phonetic transcription and a third tier with Break Indices. This annotation was done manually and it was used as the input of an automatic transcriber of intonation (Elvira-García et al., 2016) which uses the contour extraction implemented in Praat, autocorrelation algorithm (Boersma, 1993; Boersma & Weenink, 2015). All the annotations were manually corrected. The results used in this paper are the Sp_ToBI

transcriptions of the nuclear configuration of the sentence. Since all the patterns attested are rising-falling patterns, the distinction of L+H* L% and L* HL% is especially relevant. The automatic transcriber used applies the following rules for these nuclear configurations:

- L+H* L%: there is a 1.5 semitone rise within the stressed syllable (from start point to end) and a falling greater than 1.5 until the end. This results in a rising-falling pattern with the peak within the stress syllable.
- L* HL%: there is a 1.5 semitone rise from the mid-point of the stressed syllable to the mid-point of the poststressed syllable, then a falling boundary tone. This results in a rising-falling pattern with the peak in the poststressed syllable.

4.2   Materials and elicitation

The recorded sentences correspond to the construction described in section 3 and they have been recorded with 2 constituents <*si*+V+O>, which means that all the recorded utterances have 2 lexical accents. The verb is always paroxytone and the object can be paroxytone or proparoxytone. No sentences stressed in the last syllable were included. Not including oxytone words in last position answers to the necessity of avoiding certain phonetic phenomena that occur in these words in Spanish, e.g. truncation (Colina, 2009). All the words included in the corpus were only constituted by voiced segments in order to ease the pitch contour analysis. As a result, two sentences were obtained (see (6a) and (6b)).

(6)

(6a)

(pero/anda)	si	merienda	verdura
but/wow	if	eat.PRS-IND.3SG	vegetables
			'But she eats vegetables'

(6b)

(pero/anda)	si	merienda	médula
but/wow	IF	eat.PRS-IND.3SG	bone marrow
			'But she eats vegetables'

The constructions were obtained by means of elicitation. The method used is a variation of the classic Discourse Completion Task (DCT) (Vanrell, Feldhausen, Astruc, 2018). In this approach, the researcher proposes the respondent a context and the lexical content

of the sentence that they must produce. Therefore, the result is a type of "acted" speech were the participant assumes a role and answers to the situation in the most resemble way to the actual speech act that they can perform. This type of elicitation was possible only because the most usual contexts in which the construction is produced had been previously described[7].

In order to keep the experiment controlled while still accounting for discourse-structural variation, two discourse contexts were included in the study: a rebuttal context (7) and a mirative context (8). The first situation was recorded by all the participants, the second one only by Madrid female speaker, in order to check if it had a different prosodic realization.

(7) You are with a close friend, and you are talking about a third person that has put on weight after a pregnancy. Your friend tells you that is obvious that she has put on weight because she eats chocolate every day, but you both have seen her eating vegetables and you say to your friend: *¡(Pero) si merienda verdura!* ('But she eats vegetables!')

(8) You are with a close friend that has recently had a child. You think that the child only drinks formula, but you see that his mother is preparing vegetables. When you realize the vegetables are for the baby, you say: *¡(Anda) si merienda verdura!* (`(Wow) She eats vegetables!')

For each context we included sentences with the last lexical stressed in the penultimate syllable (paroxytone words) and proparoxytone words. The task was performed three times by each speaker, therefore 84 sentences were recorded in rebuttal contexts and 6 in a mirative context (6% of the corpus). In other words, 3 locales (Cantabria, Seville and Barcelona) have 4 speakers per 1 context per 2 final words per 3 repetitions, hence 72 sentences. And Madrid has 2 speakers per 2 final words per 3 repetitions, hence 12 rebuttal sentences and 6 mirative sentences. Although we had also oxytone sentences recorded in the same session, we decided to not include those in this paper in order to simplify the analysis. Given that if we had included these, we would have needed to take into account and explain some truncation effects that result in contours that have a L+H* H% surface structure being, phonologically, a L+H* L% contour.

---

[7] In a corpus-based study, they report the following distribution: dispreferred second parts of adjacency pairs constitute 77,3% of the cases, followed by turn-internal (13%) and mirative contexts (9,2%).

5   Results

The general results of the analysis can be observed in Figure 2. The contours observed in mirative clauses are L* HL% and L+H* L%. The contours observed in Madrid for rebuttal clauses are also L* HL% and L+H* L%. Therefore, we will present the results of rebuttal and mirative clauses together.

The majority pattern is L+H* L% (59%), followed by L*HL% (39%) and a token presence of ¡H*L% (2%). All the contours can appear in both contexts analyzed (rebuttal and mirative).
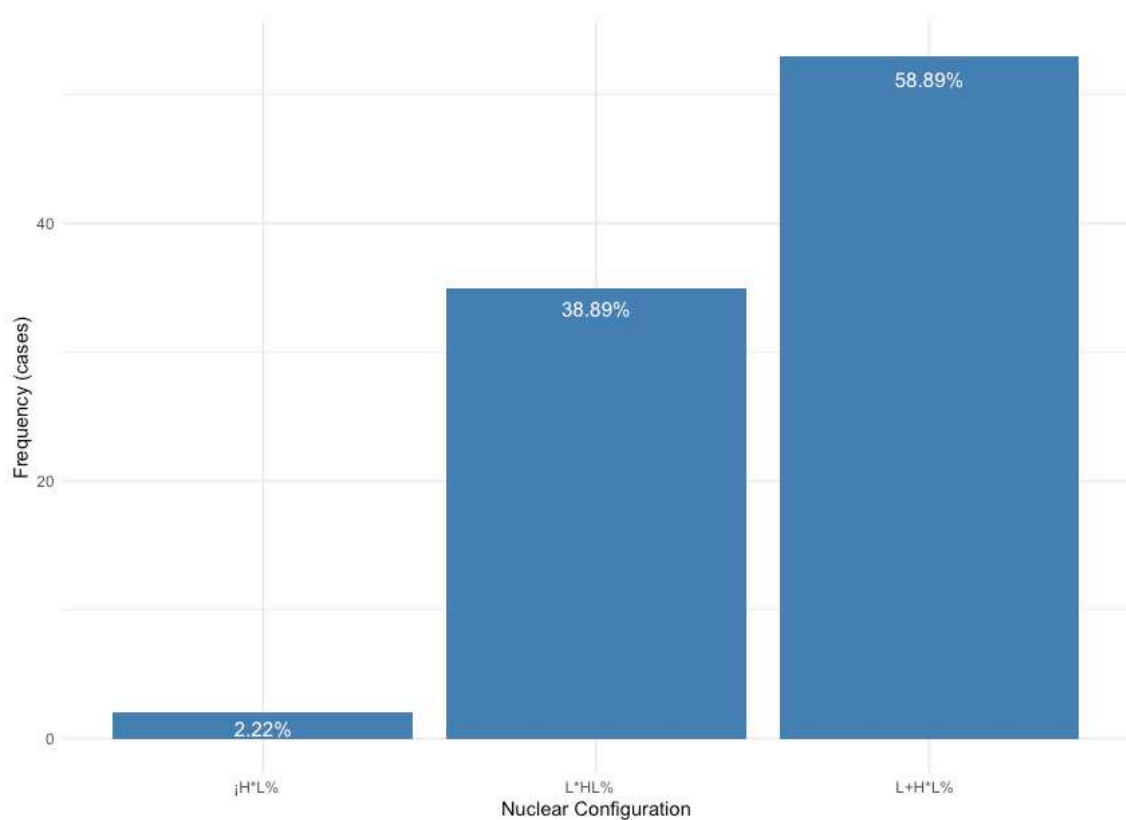

Figure 2. Attested nuclear configurations cases and percentages.

The pattern L+H*L% consist of a rising stressed syllable and a low boundary tone (Figure 3). It has been attested in almost all the domain of Spanish as the typical contour of contrastive focus (Hualde & Prieto, 2015).
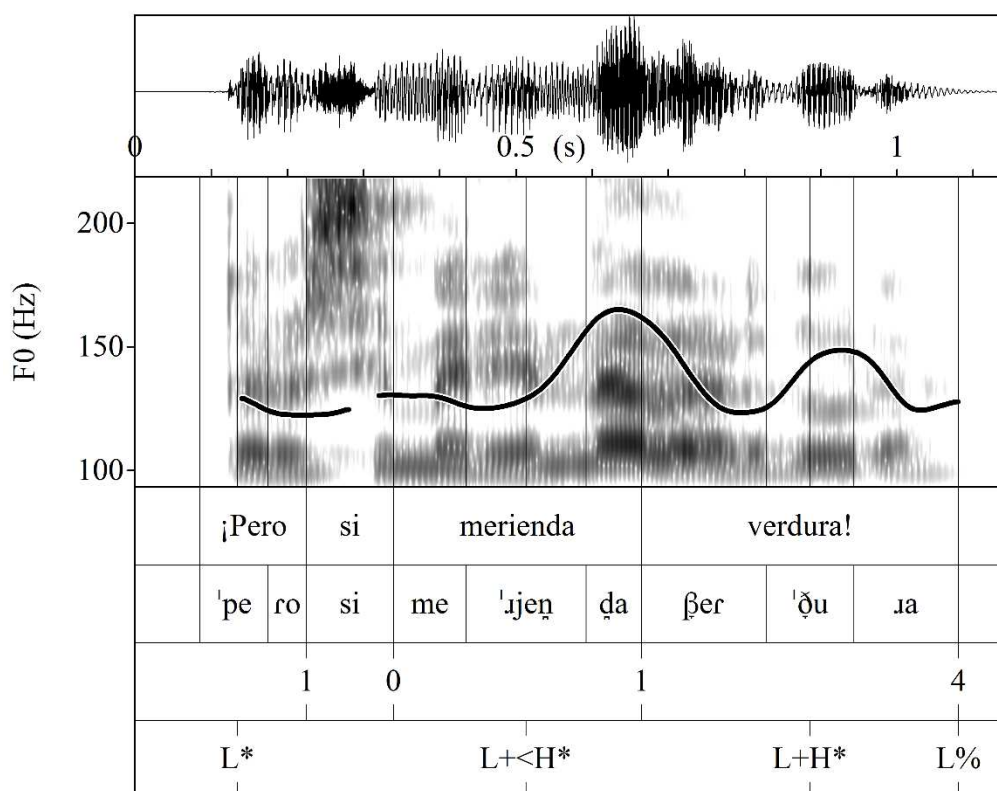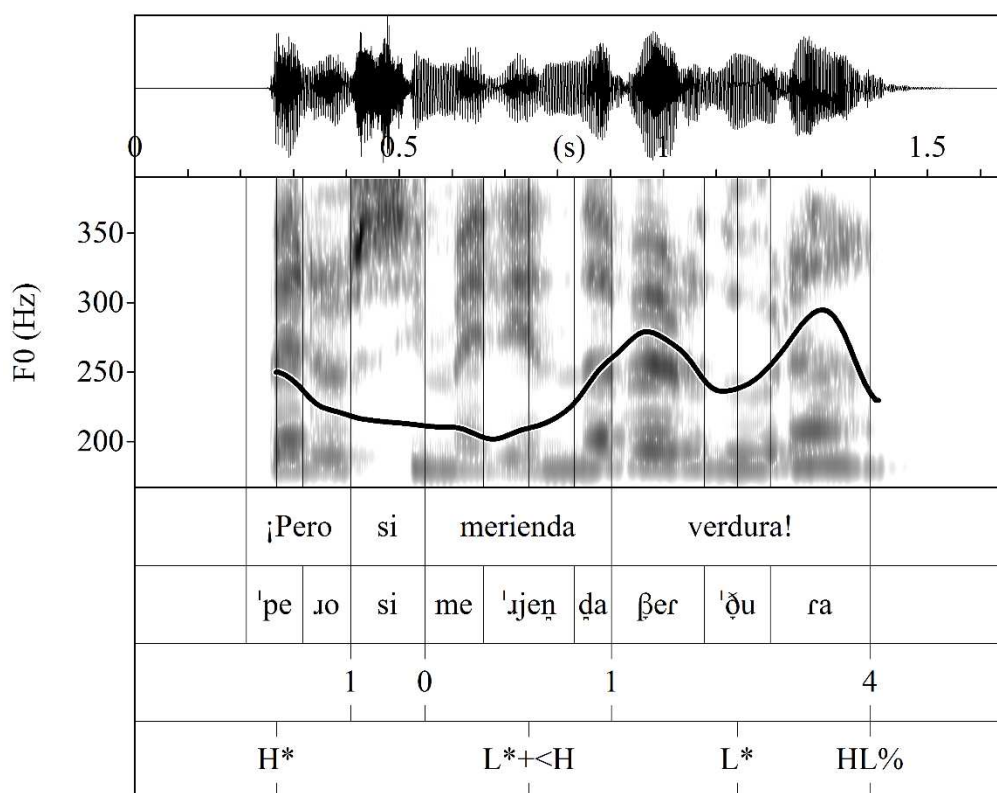
Figure 3 Waveform, spectrogram and pitch contour of the sentence *¡Pero si merienda verdura!* ('But she eats vegetables!') produced by a male speaker from Cantabria with the nuclear configuration L+H*L%

L* HL% consist in a low last stressed syllable and a rising-falling boundary tone (Figure 4). And it has been described as the intonational pattern of narrow focus (corrective)[8] (Prieto & Roseano, 2010).

---

[8] In Prieto & Roseano (2010) is referred as narrow focus and contradiction statements.

Figure 4. Waveform, spectrogram and pitch contour of the sentence *¡Pero si merienda verdura!* ('But she eats vegetables!') produced by a female speaker from Barcelona with the nuclear configuration L* HL%.

The ¡H* L% consist in a rising stressed syllable from a high target to an extrahigh one (Figure 5). This is a dialectal pattern attested in Canarian yes/no questions. However, it has also been attested in Seville as a dialectal solution for refutational statements.
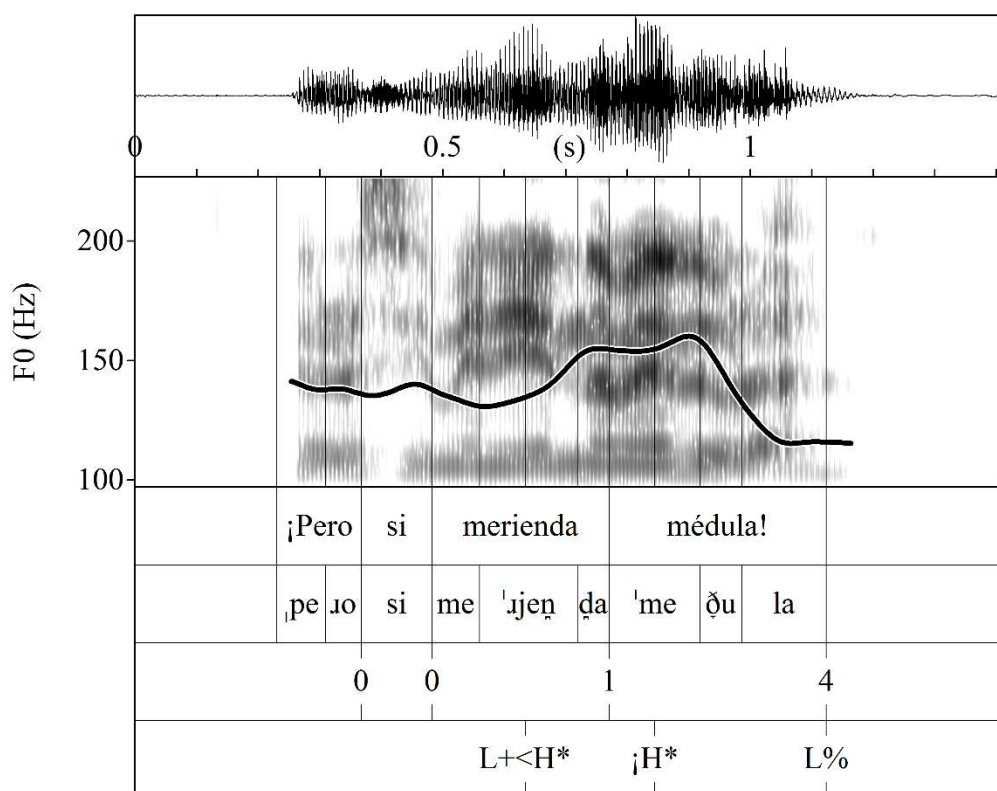
Figure 5. Waveform, spectrogram and pitch contour of the sentence *¡Pero si merienda médula!* ('But she eats marrow!') produced by a male speaker from Seville with the nuclear configuration ¡H*L%

The results of the analysis split by region can be observed in Figure 6. The data allows confirming that ¡H* L% only occurs in Seville speaker's data. In addition, it can be observed that, despite L+H* L% and L* HL% appearing in every survey point, they appear in different proportions. L* HL% is the preferred final contour for ICCs in Madrid, whereas in Cantabria and in Seville the preferred pattern is L+H*. Both of them were tested against chance proving significant ($\chi^2(1,18)$= 43.56, p=0.001 and Cantabria $\chi^2(1, 24)$= 16.667, p=< 0.001). In contrast, Barcelona has not a clear preference for one of the patterns $\chi^2(1, 24)$= 0.167, p= 0.683). The phonological difference between L* HL% and L+H*L% is not clear, since it has not been experimentally proved (at least yet) whether listeners can perceive the difference between the two contours and relate them to two different meanings. The current version of Sp_ToBI states that both contours are possible in exclamatory contexts and explains that, whereas L+H* L% is used in every Spanish variety, L* HL% is more geographically restricted. As for their difference in meaning, they say that, when both contours are possible, L* HL% expresses "a greater emphatic, contradictory force" (Hualde and Prieto, 2015: 369).
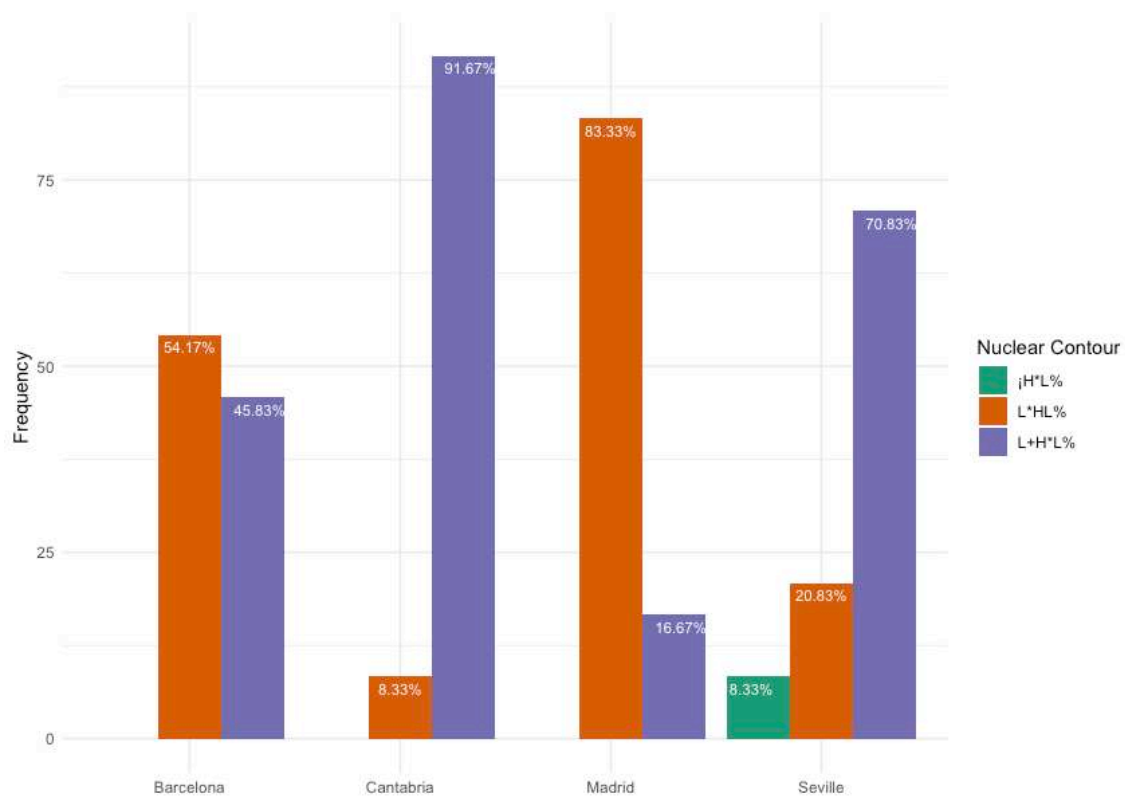
Figure 6. Attested nuclear configurations split by region.

The summary of the attested prosodic patterns, its schematic contour and pragmatic meaning can be observed in Figure 7.
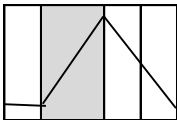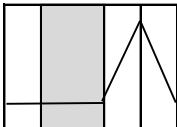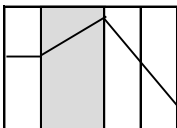
Pitch contour	Transcription	Meaning
	L+H* L%	Narrow focus, exclamative statements
	L*HL%	Narrow focus, contradiction statements
	¡H* L%	Narrow focus (dialectal pattern)

Figure 7. Schematic pitch contour representations of the attested nuclear configurations (left) and their reported meaning in bibliography (right).

6   Discussion

Building on the analysis just presented, in this section we offer an answer to the following questions:

(i)   Relationship between constructions and prosody. Can grammatical constructions have an idiosyncratic prosody (Sadat-Tehrani 2008) or do they need to accommodate to the regular contours in the language (Marandin 2006)? Can grammatical constructions combine with different prosodic constructions – contours—or are they restricted to a specific one? Does this depend on formal or semantic features?

(ii)   Variation of prosodic constructions. Are prosodic constructions common to all varieties of the same language or do they show regional variation?

As for the first aspect, there are three potential scenarios of the relationship between (lexico-grammatical) constructions and prosodic patterns: prosody is unmarked (i.e. the construction accepts any prosodic pattern in the language), idiosyncratic (i.e. the construction accepts a unique prosodic pattern) or inherited (i.e. the construction accepts a pattern which exists outside the construction). As it was shown in the previous section, ICCs only combine with focus prosodic patterns, with a special regional variant in Seville. Therefore, the prosodic behavior of this construction is consistent with the third scenario: the construction inherits an already existing prosodic pattern. We argue that the best way to account for the relationship between prosodic patterns and (lexicogrammatical) constructions is (i) to treat prosodic patterns as constructions, (ii) to identify regional variation of prosodic constructions when relevant, and (iii) to represent prosody as a feature of sentence-level constructions.

In line with current research on Interactional Linguistics (Ogden 2010, Ward 2019), the first theoretical possibility is that prosodic patterns can be modeled as constructions that pair a phonological form —an intonational contour— and a pragmatic meaning — illocutionary force or information structure status—. Evidence for this possibility comes from the fact that the same prosodic patterns occur in constructions with different formal marking, but similar meaning-function. In the results section, we have seen that through the data of the experiment, rebuttal constructions share pattern with narrow focus. But the same is true for other Spanish insubordinate constructions with a rebuttal function

(dispreferred responses), like *ni que* 'not even that' or *como si* 'as if' followed by past subjunctive verb forms[9] (9), that also inherit focus prosodic patterns, as represented in Figure 8 (left and right).[10]

(9) A: ¿Me   preparas   la   cena?

     Me   prepare.PRS.IND.2SG   the   dinner

     'Can you cook me dinner?'

    B: ¡Ni   que   fuera   tu   madre!

         Not.even   that   to.be.PST.SBJV.1SG   your   mother

         'As if I was your mother!'

    B':   ¡Como si   fuera   tu   madre!

         As   if   that   to.be.PST.SBJV.1SG   your   mother
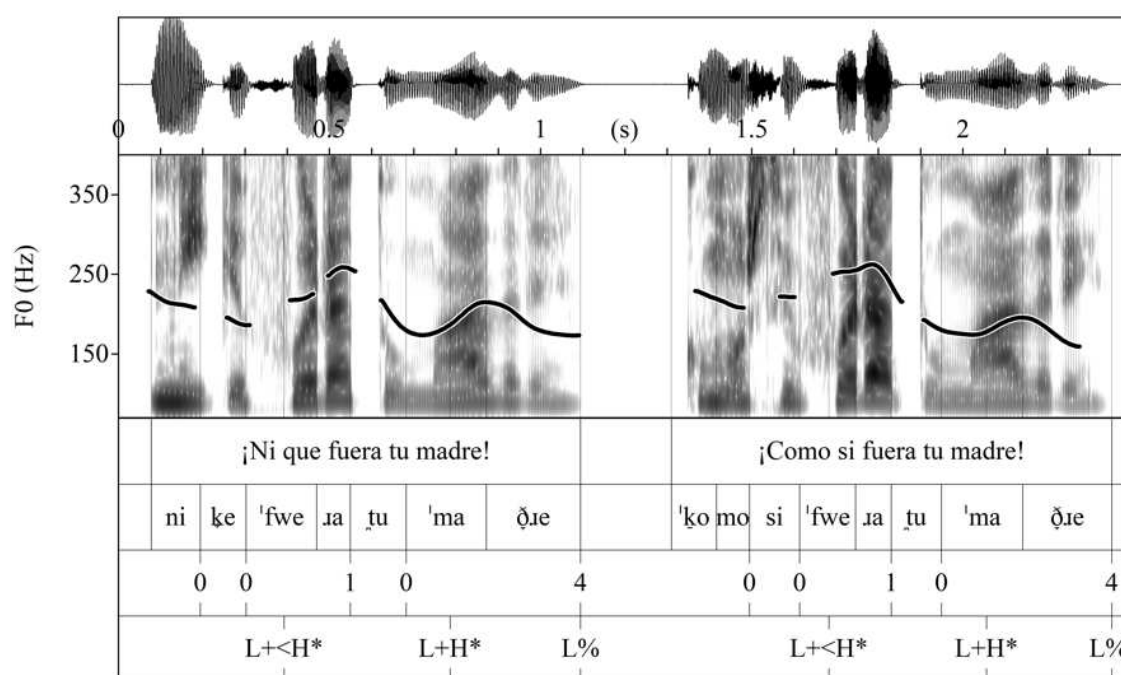
         'As if I was your mother!'

Figure 8. Waveform, spectrogram and pitch contour of the sentences *¡Ni que fuera tu madre!* and *¡Como si fuera tu madre!* ('As if I were your mother!') produced with a focus intonational pattern (L+H* L%).

These insubordinate constructions differ from ICCs in terms of their form: they are introduced by different subordinating conjunctions (*ni que* 'not even that', *como si* 'as if')

---

and they select subjunctive verb forms. However, they coincide in their pragmatic function: they tend to occur in dispreferred second parts of adjacency pairs to express some correction of a previous statement, usually uttered by the interlocutor, by describing an extreme or absurd situation in which the previous turn would be appropriate.

Furthermore, the same prosodic pattern is also found in simple declarative clauses, with no specific marking, as long as they express the same pragmatic function, as in (10), prosodically analyzed in figure (9):

(10)   A: ¿Me preparas la cena?
           Me   prepare.PRS.IND.2SG   the   dinner
           'Can you cook me dinner?'
       B: ¡No   soy   tu   madre!
            Not   to.be.PRS.IND.1SG   your   mother
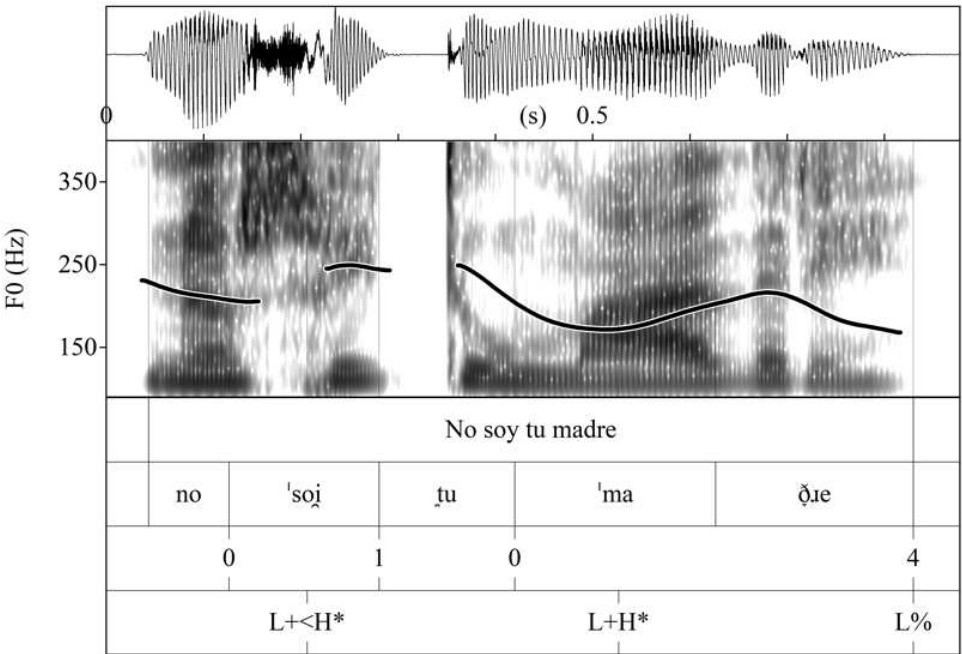   ¡I'm not your mother!

Figure 9. Waveform, spectrogram and pitch contour of the sentence *No soy tu madre* ('I am not your mother') produced with a focus intonational pattern (L+H* L%).

Therefore, prosody does not mainly depend on lexicogrammatical form, but on meaning-function. Prosodic constructions —pairings of an intonational contour with a meaning-

function— can also have *allostructions[11]*. Specifically, the data can display changes in the contour caused by truncation or compression effects derived from tonal crowding. Also, as we have explained above, it is not clear whether the changes in peak alignment that the data displays in the alternation of L+H* L% and L* HL% are phonological, since they do not not convey a dramatic change in meaning, the contours could be allotonic[12]. Moreover, intonational constructions are subject to dialectal variation. This is proved in our data by a specific pattern found in Seville.

The second possibility is that prosody must be treated as a feature of sentence-level constructions. Lexical and phrasal constructions that can license sentences must inherit a prosodic construction, depending on the meaning-function of the construction and the prosodic patterns available in the language. The range of prosodic constructions compatible with a specific construction depends on the functional specialization of that construction. Some constructions, like ICC, are only compatible with a specific prosodic construction, due to their highly specialized pragmatic function. In other cases, a sentence-level construction can inherit more than one prosodic pattern because they can receive different pragmatic interpretations. This is the case of insubordinate quotative *que* constructions[13], that can be used to repeat an utterance by the same speaker, as in (11). This construction can inherit two prosodic constructions (Figure 10): (i) declarative prosodic construction, if the speaker simply repeats his previous statement, and (ii) focus prosodic construction, if the speaker tries to convey that his interlocutor did not react accordingly to his previous statement.

(11)   A: Son   las   nueve.
          to.be.PRS.IND.3PL   the   nine
          'It's 9.'
          B: ¿Qué?
          'What?'
          A: Que   son   las   nine.
          That   to.be.PRS.IND.3PL   the   nine
          'I said, it's 9.'

---

[11] Capelle (2006) introduces the term allostruction to describe structural variants of constructions that do not encode different meanings.

[12] Allotony in Spanish intonation has been addressed by Hualde (2006), Willis (2009) and Armstrong-Abrami, (2017), among others.
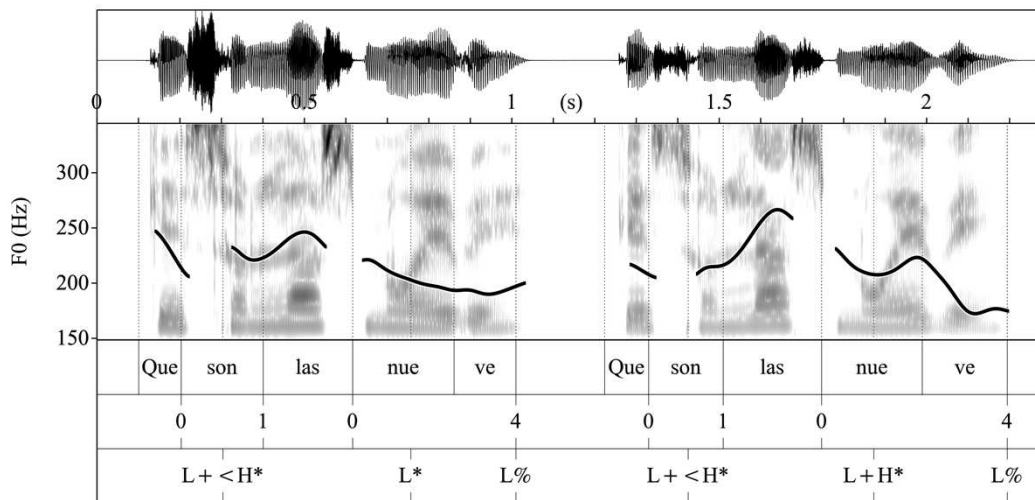
Figure 10. Waveform, spectrogram and pitch contour of the sentence *Que son las nueve* ('I said, it's nine) produced with a declarative intonational pattern (L* L%; left) and with a focus intonational pattern (L+H* L%; right).

7   Conclusions

One of the most attractive aspects of constructional approaches is that the notion of grammatical construction is flexible enough to represent whatever linguistic information is needed to explain how a pattern is used, regardless of whether the relevant information belongs to phonology, morphology, syntax, semantics, pragmatics or discourse. While the meaning potential of constructions has been fruitfully developed in constructional literature, the phonological dimension of constructions has received little attention.

On the other hand, intonational theories, especially those developed within the framework of Metrical Autosegmental models, are compatible with a constructional approach. In fact, prosodic studies have been identifying pairings of a prosodic pattern (form) and its pragmatic function (meaning) for decades. Understanding those prosodic patterns as grammatical constructions is a natural step if one adopts a constructional approach to language.

Constructional models attempt to represent the grammar of a language as an organized repertory of grammatical constructions and a set of principles that regulate the combination of constructions to form actual linguistic expressions. The theoretical

possibility explored in this paper is that the prosodic patterns of a language (or language variety) can be represented as schematic constructions that pair a prosodic contour (form) with a pragmatic function (meaning) (Ogden 2010, Ward 2019), that are inherited by sentence-level constructions as long as their meaning is compatible. Therefore, a constructional analysis of a linguistic expression like *What did she tell you?* involves the combination of several constructions: lexical constructions (to account for the lexical items involved, like *tell*), argument structure constructions (the ditransitive), sentence level constructions (wh-interrogative and subject-auxiliary inversion), and, according to our preferred possibility, a prosodic construction, that describes the prosodic pattern of this expression.

Finally, we believe that further collaboration between constructional grammarians and phonologists is needed in order to fully incorporate intonation in Construction Grammar, and to refine pragmatic distinctions used in intonational studies. We leave for future research the possibility of treating the inventory of meanings-functions used in intonational studies (e.g. ToBI situational tests) as a structured paradigm of prosodic constructions.

Funding

References

ANONIMOUS (2020)

ANONIMOUS (2016)

ANONIMOUS (2011)

ANONIMOUS (in press)

ANONIMOUS (2016)

ANONIMOUS (2017)

Almela, Ramón (1985): El *si* introductor de oraciones independientes, *Lingüística Española Actual*, 7/1, pp. 5-13.

Armstrong-Abrami, Meghan E. (2017). Accounting for intonational form and function in Puerto Rican Spanish polar questions. *Probus*, *29*(1), 1-40.

Bartels, C. (1999). Towards a Compositional Interpretation of English Statement and Question Intonation. New York: Garland.

Beckman, M. E., Díaz-Campos, M., McGory, J. T., & Morgan, T. A. T. A. (2002). Intonation across Spanish, in the Tones and Break Indices framework. *Probus*, *14*(1), 9–36. https://doi.org/10.1515/prbs.2002.008

Boas, Hans (2013): Cognitive Construction Grammar. In Thomas Hoffman and Graeme Trousdale (eds.), *The Oxford Handbook of Construction Grammar*. Oxford: Oxford University Press.

Boersma, Paul (1993). Accurate short-term analysis of the fundamental frequency and the harmonics-to-noise ratio of a sampled sound. In: IFA Proceedi. *IFA Proceedings 17*, 97–110. http://www.fon.hum.uva.nl/paul/papers/Proceedings_1993.pdf

Boersma, Paul, & Weenink, David (2015). *Praat: doing phonetics by computer* (5.4.04). http://www.praat.org/

Bolinger, Dwight (1989): *Intonation and its uses: Melody in grammar and discourse*. Stanford: Stanford University Press.

Booij, Geert (2013): Morphology in Construction Grammar. In Thomas Hoffman and Graeme Trousdale (eds.), *The Oxford Handbook of Construction Grammar*. Oxford: Oxford University Press.

Brinton, Laurel J. (2014): The Extremes of Insubordination: Exclamatory as if!, Journal of English Linguistics, Volume: 42 issue: 2, page(s): 93-113.

Capelle, Bert (2006): "Particle placement and the case for "allostructions"", *Constructions* SV1-7/2006 (www.constructions-online.de).

Chomsky, Noam (1981): *Lectures on Government and Binding*. Dordrecht: Foris.

Chomsky, Noam (1995): *The minimalist program*. Cambridge: MIT press.

Colina, Sonia (2009). Spanish truncation processes: the emergence of the unmarked. *Linguistics*, *34*(6), 1199–1218. https://doi.org/10.1515/ling.1996.34.6.1199

Contreras, Lidia (1960): Oraciones independientes introducidas por *si*. *Boletín de Filología*, (12), 273-290.

Croft, William & David Cruse (2004): *Cognitive Linguistics*. Cambridge: Cambridge University Press.

D'Hertefelt, Sarah (2018): *Insubordination in Germanic: A Typology of Complement and Conditional Constructions*. Amsterdam: John Benjamins.

Dainora, A. (2002). Does intonational meaning come from tones or tunes: evidence against a compositional approach. In B. Bel & I. Marlien (Eds.), Proceedings of the Speech Prosody (pp. 47-57). Aix-en-Provence: Université de Provence.

Estebas-Vilaplana, Eva, & Prieto, Pilar (2008). La notación prosódica del español: una revisión del Sp-ToBI. *Estudios de fonética experimental*, *17*, 264–283. http://www.raco.cat/index.php/EFE/article/view/140072/0

Face, T. (2007). The role of intonational cues in the perception of declaratives and absolute interrogatives in Castilian Spanish. Estudios de Fonética Experimental, 16, 185-225.

Fillmore, Charles J. (1985). «Syntactic intrusions and the notion of grammatical construction», *Berkeley Linguistics Society*, 11, pp. 73-86.

Fillmore, Charles J. (1999): Inversion and constructional inheritance. In Webelhuth, G., J.-P. Koenig & A. Kathol (eds.), *Lexical and constructional aspects of linguistic explanation*. Stanford: CSLI publications, 113-128.

Fillmore, Charles J., Kay, Paul, & O'Connor, Mary Catherine (1988). Regularity and idiomaticity in grammatical constructions: The case of let alone. *Language*. http://www.jstor.org/stable/414531

Fried, Miriam & Östman, Jan-Ola (2004): Construction Grammar: A thumbnail sketch. In Fried, Mirjiam & Östman, Jan-Ola (eds.), *Construction Grammar in a cross-language perspective*. Amsterdam: John Benjamins, 11-86.

Fried, Miriam & Östman, Jan-Ola (2005) Construction Grammar and spoken language: The case of pragmatic particles. *Journal of pragmatics*, 37(11), 1752-1778.

Gussenhoven, Carlos and Rietveld, Toni (1997): Empirical evidence for the contrast between L* and H* in Dutch rising contours. In *Intonation: Theory, models and applications*. ISCA Speech, 169-172.

Gussenhoven, C. (2005). Transcription of Dutch Intonation. In S. (ed). Jun (Ed.), *Prosodic Typology: The Phonology of Intonation and Phrasing* (pp. 118–145). Oxford University Press.

Hadding-Koch, K., & Studdert-Kennedy, M. (1964). An experimental study of some intonation contours. Phonetica, 11, 175-185.

Hedberg, Nancy, Sosa, Juan M., and Fadden, Lorna. 2003. The intonation of contradictions in American English. In: Prosody and Pragmatics Conference. Goodhue, Daniel & Michael Wagner. 2018. Intonation, yes and no. Glossa 3.5.1-45.

Hoffmann, Thomas (2013). Abstract Phrasal and Clausal Constructions. In Hoffmann, Thomas & Trousdale, Graeme (eds.): *The Oxford Handbook of Construction Grammar*. Oxford: Oxford University Press.

Hoffmann, Thomas & Trousdale, Graeme (eds.) (2013). *The Oxford Handbook of Construction Grammar*. Oxford: Oxford University Press.

Hualde, José Ignacio (2006). Remarks on word-prosodic typology. In *Annual Meeting of the Berkeley Linguistics Society* (Vol. 32, No. 1, pp. 157-174).

Hualde, José Ignacio & Prieto, Pilar (2015). Intonational variation in Spanish: European and American varieties. In S. Frota & P. Prieto (Eds.), *Intonational Variation in Romance* (pp. 350–391). Oxford University Press.

Jun, Sun-Ah (2005). *Prosodic typology: the phonology of intonation and phrasing*. Oxford University Press.

Jun, Sun-Ah (2014). *Prosodic Typology II: The Phonology of Intonation and Phrasing*. Oxford University Press.

Kaltenböck, Gunther. 2016. 'On the grammatical status of insubordinate if-clauses.' In Kaltenböck, G., Keizer, E. & Lohmann, A. (eds.), Outside the Clause: Form and Function of Extra-Clausal Constituents. Amsterdam: John Benjamins, pp. 341–78.

Kaltzakorta Mentxaka, M. (2007). The focus of the information or galdegaia in introductory sentences (I): In the book Hamaika abere-ipuin. Euskalingua,10, 63-68.

Koopman, H. (2005). Korean (and Japanese) morphology from a syntactic perspective. Linguistic Inquiry, 36(4), 601-633.

Kay, Paul and Laura A. Michaelis. 2012. Constructional Meaning and Compositionality. In C. Maienborn, K. von Heusinger and P. Portner (eds.), Semantics: An

International Handbook of Natural Language Meaning. Vol. 3. Berlin: de Gruyter. 2271-2296.

Ladd, Robert. 1980. The Structure of Intonational Meaning: Evidence from English Bloomington, London: Indiana University Press.

Ladd, Robert (1978). Stylized intonation. *Language*, 54(3), 517-540.

Ladd, Robert (1996). *Intonational phonology*. Cambridge: Cambridge University Press.

Lakoff, George (1987). *Women, fire and dangerous things: what categories reveal about the mind*. University of Chicago Press.

Langacker, Ronald W. (1987). *Foundations of cognitive grammar: Theoretical prerequisites* (Vol. 1). Stanford university press.

Langacker, Ronald W. (2005) Construction grammars: Cognitive, radical, and less so. In Peña, Sandra & Francisco J. Ruiz de Mendoza (eds.): *Cognitive linguistics: Internal dynamics and interdisciplinary interaction*, 101-159. Berlin: De Gruyter.

Lastres-López, Cristina (2020): Subordination and insubordination in contemporary spoken English: *If*-clauses as a case in point, *English Today* 36:2, 48-52.

Leino; Jakko (2013): Information Structure. In Hoffmann, Thomas & Trousdale, Graeme (eds.): *The Oxford Handbook of Construction Grammar*. Oxford: Oxford University Press.

Liberman, Mark & Sag, Ivan (1974): Prosodic form and discourse function. In The Proceedings of the Chicago Linguistics Society (CLS) (Vol. 10, pp. 416-427).

Lombardi Vallauri, Edoardo (2016): Insubordinated conditionals in spoken and non-spoken Italian. In Nicholas Evans and Honoré Watanabe (eds.), Insubordination. Amsterdam: John Benjamins, 145-170.

Marandin, Jean-Marie (2006) : Contours as constructions. SV1-7/2006 (www.constructions-online.de).

Michaelis, Laura (2017): Meanings of Constructions. *Oxford Online Research Encyclopedia of Linguistics*. DOI: 10.1093/acrefore/9780199384655.013.309

Michaelis; Laura & Lambrecht, Knud (1996): Toward a construction-based theory of language function: The case of nominal extraposition. *Language*, 215-247.

Montolío, Estrella (1999). ¡Si nunca he dicho que estuviera enamorada de él! Sobre construcciones independientes introducidas por si con valor replicativo. *Oralia: Análisis Del Discurso Oral*, *2*, 37–70.

Navarro Tomás, Tomás (1918). *Manual de pronunciación española*. Junta para Ampliación de Estudios e Investigaciones Científicas. Centro de Estudios Históricos.

Nikiforidou, Kiki, Sophia Marmaridou & George Mikros (2015): What's in a dialogic construction? A constructional approach to polysemy and the grammar of challenge. Cognitive Linguistics, 25:4, 655-699.

O'Connor, Joseph and Gordon Arnold (1961): *Intonation of Colloquial English*. Harlow: Longman.

Ogden, Richard (2010): Prosodic constructions in making complaints. In Dagmar Barth-Weingarten, Elisabeth Reber and Margret Selting (eds.): *Prosody in interaction*. Amsterdam: John Benjamins, 81-104.

Östman, Jan-Ola & Graeme Trousdale (2013): Dialects, Discourse, and Construction Grammar. In Hoffmann, Thomas & Trousdale, Graeme (eds.): *The Oxford Handbook of Construction Grammar*. Oxford: Oxford University Press.

Petrone, C. (2010). At the interface between phonetics and pragmatics: Non-local F0 effects on the perception of Cosenza Italian tunes, In Proceedings of the 5th International Conference of Speech Prosody, (11-14 May, Chicago), 100966: 1-4. ISBN:978-0-557-51931-6

Pierrehumbert, J. & Hirschberg, J. (1990). The meaning of intonational contours in interpretation of discourse. In P. Cohen, J. Morgan & M. Pollack (Eds.), Intentions in Communication. Cambridge, MA: MIT Press.

Pierrehumbert, Janet (1980). *The Phonology and Phonetics of English Intonation*. Cambridge: MIT.

Porroche Ballesteros, Margarita (1998): «Sobre algunos usos de que, si y es que como marcadores discursivos», en Martín Zorraquino, M. Antonia y Montolío,

Estrella, eds., *Marcadores del discurso. Teoría y análisis*, Madrid: Arco-Libros, 229-241.

Prieto, Pilar & Roseano, Paolo (eds.). (2010). *Transcription of Intonation of the Spanish Language*. Lincom Europa.

Prieto, Pilar. (2015). Intonational meaning. Wiley Interdisciplinary Reviews: Cognitive Science 6(4). 371-381.

Sadat-Tehrani, Nima (2008): An intonational construction. Constructions. Online: https://journals.linguisticsociety.org/elanguage/constructions/issue/view/23.html

Salvador, Vicent (2002): Les construccions condicionals i les concesives. In Joan Solà (ed.), *Gramàtica del català contemporani*. Barcelona: Empúries, vol. III, 2977-3025.

Schwenter, Scott (1998): «Sobre la sintaxis de una construcción coloquial: oraciones independientes con *si*», *Anuari de Filologia*, F9, pp. 87-100.

Schwenter, Scott (2016): «Meaning and interaction in Spanish independent *si*-clauses», *Language Sciences*, 58, pp. 22–34.

Silverman, K., Beckman, M., Pitrelli, J., Ostendorf, M., Wightman, C., Price, P., Pierrehumbert, J., & Hirschberg, J. (1992). ToBI: A Standard for Labeling English Prosody. In M. M. H. and G. E. W. J. J. Ohala, T. M. Nearey, B. L. Derwing (Ed.), *ICSLP 92 Proceedings 1992 International Conference on Spoken Language Processing. Volume 2* (pp. 867-870.). Department of Linguistics, University of Alberta.

Stefanowitsch, Anatol (2013): Collostructional Analysis. In Hoffmann, Thomas & Trousdale, Graeme (eds.): *The Oxford Handbook of Construction Grammar*. Oxford: Oxford University Press.

Van Heuven, V. J., Haan, J., Gussenhoven, C., & Warner, N. (2002). Temporal distribution of interrogativity markers in Dutch: A perceptual study. Laboratory Phonology 7, 4(1), 61.

Vandepitte, Sonia (1989): A pragmatic function of intonation: Tone and cognitive environment. *Lingua*, 79(4), 265-297.

Vanrell, Maria del Mar, Ingo Feldhausen, & Lluïsa Astruc. (2018). The Discourse

Completion Task in Romance prosody research: Status quo and outlook. In Ingo Feldhausen, Jan Fliessbach & Maria del Mar Vanrell (eds.), Methods in prosody: A Romance language perspective, 191–227. Berlin: Language Science Press.

Vion, M. & Colas, A. (2006). Pitch Cues for the Recognition of Yes-no Questions in French. Journal of Psycholinguistic Research, 35, 427-445.

Ward, Nigel. 2019. Prosodic Patterns in English Conversation. Cambridge: Cambridge University Press.

Willis, Erik W. (2009). The role of abstraction in Spanish phonology: a laboratory perspective. *Studies in Hispanic and Lusophone Linguistics*, *2*(1), 207-220.

Wulff, Stefanie (2013): Words and Idioms. In Hoffmann, Thomas & Trousdale, Graeme (eds.): *The Oxford Handbook of Construction Grammar*. Oxford: Oxford University Press.