TOWARDS AN INTERACTIONAL PERSPECTIVE OF SPANISH PROSODY. GUIDELINES FOR ANALYZING INTONATION[1]

CRISTINA BLEORȚU[2], MIGUEL CUEVAS ALONSO[3]

Abstract. Our goal here is to construct, insofar as possible, a scenario for an intonation methodology in which intonation patterns can be explained taking into account a sociolinguistic perspective. We preferred to start with a description of what happened, a review of the previous Spanish literature, focusing specifically on the methodological developments. The methodology presented here looks at the role of social factors –speaker gender, age, level of education, and at the ways in which social identities and beliefs shape and influence intonation.

Keywords: intonation, sociolinguistics, social factors, methodology.

1. INTRODUCTION

The research question, which this work addresses, is motivated by the vigorously growing recent studies on prosody, which have matured substantially both in the richness of data incorporated, and in the number of scholars taking an interest in the research of intonation. Writing as researchers with first-hand experience of most intonation methodology, several interesting points and questions occurred to us after a thorough investigation. This study outlines what is known about prosody's methodology, the methods that have emerged on the intonation scene and have modernized the way we view it and the advantages and limitations for investigating prosody using these methods. We will outline the principles for gathering data for a description of intonation patterns, including the most important: the proposal of some guidelines for preparing it. We investigate such issues with special attention to Spanish language taking an in-depth look at the methods and processes in creating corpora for sociolinguistic analysis of intonation. We intend to take stock of previous research in intonation (see Anderson *et al.* 1991 – the technique of *map-tasks* –, Clark and Schober 1992, Clark and Wilkes-Gibbs 1986 – *tangramtasks* –, Levelt and Cutler 1983 – route descriptions through *network of nodes* –), which has managed to create conversational tasks that limit the topic of conversation, and

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[2] Universidad de Oviedo/Universidad de Zúrich, cristina.bleortu@uzh.ch.

[3] Universidad de Vigo, mcuevasalonso@gmail.com.

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prosody-in-interaction, as well as to raise some potential further guidelines for a sociolinguistic study of Spanish intonation.

Our methodology undertakes an exploration of prosody through qualitative and quantitative methods, involving observations and sometimes questionnaires. This kind of fieldwork methodology leads to the exploration of intonation diversity as it is firmly embedded in specific aspects of the sociocultural life of our subjects, which gives a better understanding of the data. Various aspects of the sociocultural context such as the speakers' language, gender or socioeconomic class are central to how intonation contours are distributed.

2. ON INTONATION ANALYSIS APPROACH[4]

2.1. Interactional background

Our research has been based upon interactional prosody, sociophonetics and intonation phonology traditions. Firstly, in order to investigate intonation in a detailed manner, we have to turn to interactional methodology. There is a vast amount of literature related to it, so we only want to give a representative and broad perspective of how it could be used in intonation research, which requires a particularly careful judgement (see Couper-Kuhlen 1993, Couper-Kuhlen and Selting 1996, Selting and Couper-Kuhlen 2001, Couper-Kuhlen and Ford 2004, Barth-Weingarten et al. 2010, Szczepek Reed 2011).This calls for new methodologies and approaches from a refreshing range of perspectives, and enables researchers to chart changes in methodology approach. The viewpoint on language has been developed by sociologists such as Sacks, Schegloff and Jefferson (1974) in the early 1970s; they postulated that languages should be studied in the context of their occurrence, not in isolation from natural contexts or where they are experimentally elicited and controlled.

Since the publication of these studies, there have been many research efforts that have employed new techniques to investigate natural speech, which is preferred because "it permits an investigation of F0 variability in the context of linguistic […] paralinguistic and non-linguistic functions of intonation since some components of intonation only surface in natural speech and informal settings" (Leemann 2012: 2).

The point of view that assumes that only spontaneous speech can help us to understand everyday speech has been criticized by various authors who have defended that laboratory approach, is not as invasive. In a recent study, Xu (2010) discusses some myths about lab speech and concludes that science "progresses not by collecting more data, but by 'hypothesis derivation from theory and hypothesis

[4] Methodology of intonation can generally be categorized into *phonetic* or *phonological*, Cutler and Ladd being the first ones who operated this distinction.

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testing" Xu (2010: 334). In our opinion, intonation, due to its nature, is characterized to a great extent by its (semantic and) pragmatic meaning, and requires a more naturalistic approach that allows it to be analyzed from a non-artificially forced communicative situation. The Popperian approach defended by Xu (2010) commonly accepted in segmental analysis, is insufficient to account for the dynamism that bindstogether the intonation forms, its grammatical, semantic and pragmatic meanings and the communicative situation. In addition, the study of spontaneous speech data allows for: a) the idiosyncratic dialectal characteristics to permeate, and b) research on F0, taking into account the linguistic and paralinguistic functions of intonation (Leeman 2012: 4).

Given the complex nature of intonation, we must recognize its dynamic behavior in contact and in interaction with other dynamic systems (social, dialectal, communicative-interactional and pragmatic). This will also allow us to take some additional phenomena into account; something that is very interesting in the sociolinguistic analysis of intonation such as dialectal accommodation and some of the transformations that could be produced between the dialect and its correspondent standard, different dialects and the influences of migration phenomena. Our approach presupposes that intonation is a complex system in interaction with others, and discards simple cause-and-effect models, linearity, determinism, and reductionist analysis. Instead, it [dynamic systems theory] is a science for systems with a history, systems that change over the time, where the novelty can be created, where the end-state is not coded anywhere, and where behavior at the macrolevel can, in principle, be reconciled with behavior at the microlevel (Thelen and Smith, 1994: 49).

2.1. What happens with research on intonation (pragmatic, social and dialectal) variation?

It is true in an elementary and very general sense that a great deal of work has been done on Spanish prosody, and also a good deal on dialectal prosody comparing the intonation systems of related languages and more specifically other Spanish dialects. As the study of prosody is now often integrated into linguistic research, it has become a very productive field of enquiry and an increasing number of scholarly contributions has focused on intonation.

Illustrations of such works are found and discussed by numerous researchers (see, for instance, Beckman *et al.* 2002, Celdrán and Planas 2005, Estebas Vilaplana and Prieto 2009, Face and Prieto 2007, Fernández Planas 2005, Hualde 2003, Prieto and Roseano 2010, Sosa 1999, 2003).Some of them, particularly those from the three atlases, are very relevant to research on Spanish (and other Romance languages') prosody: *The Atlas Multimédia Prosodique de l'Espace Roman* (AMPER), *The Interactive Atlas of Spanish Intonation* and *The Interactive Atlas of Romance Intonation*.

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Although great strides have been recently made in Spanish intonation research, the advances in the sociolinguistic interactional approach to the study of intonation, have arguably been less than satisfactory, as the literature on intonation might lead us to believe.

The references to the necessity of a sociolinguistic approach can be found for example in Quilis (1981: §13.7.2, 1999: 425 and §14.5.3), who rejects the idea that the particularities of intonation are general in each linguistic system, and defends that social and dialectal variation exists. However, the studies that use these variables are very recent. From the sociolinguistic point of view, Moreno Fernández (1998) suggeststhe variables to be taken into account, and concludes that: 1)the sociolinguistic cues can appear in the nuclear configuration and also in the pre-nuclear fraction, 2) these cues are gradual phenomena, 3) these could be recognized in different sociolectal groups, and 4) there exists a correlation between cues and social variables. The same results have been attested by López Bobo and Cuevas Alonso (2014).

In addition, there is the interactional approach omission that might not bea mere happenstance; it can derive from the general willingness of the majority of scholars to treat 'intonation' as"a part of language competence, analyzed in minimal pairs as if they were phoneme- or morpheme-like entities with distinctive functions" (Couper-Kuhlen and Selting 1996:11), ignoring or neglecting important prosodic details.

Some modern linguists have advocate dintrospectively constructed data, and most research on intonation concerning the grammatical function of prosody. This research does not in fact account for any aspects of prosodic patterns in terms of an interactional study. Since the conversational approachesare concerned with the intonation of naturally occurring conversation and "insist on starting from data from natural social interactions, they require both analyzing natural data as well as validating analyses with reference to these data, applying rigorous conversation analytic and phonetic methodology" (Selting 2010: 14).

The impetus for the work undertaken here comes from the extraordinarily interesting research by Couper-Kuhlen and Selting (1996).Their research has played a very important role in initiating the field of prosody in interaction, and with seminal studies on the discursive prosody of Wennerstrom (2001) and Wichmann (2000). Approaches of this type have a great deal to offer, since their promoters have been fundamentally concerned with the analysis of prosody in natural conversation (see Couper-Kuhlen and Selting 1996, Selting 2010: 5).

If the analysis of intonation which uses data from natural speech is desirable, we must deal with the analysis of the pragmatic role of intonation instead of only observing the grammatical meaning conveyed by this prosodic cue. In this sense, Escandell Vidal (2011: 103) states that *es preciso revisar los criterios para asignar estatuto fonológico a un patrón prosódico: el hecho de dar lugar o no a contrastes de categoría gramatical no puede ser el único rasgo determinante del carácter*

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lingüístico de la unidad. The researcher denies that the linguistic aspect of intonation is reduced only to its capacity to establish grammatical contrasts, moving on to discuss that the only criteria is that the linguistic units are involved in the creation of the compositional meaning. She also observes that, in Spanish, these grammatical contrasts could be interpreted like pragmatics ones (see Escandell Vidal 1999, 2002 and 2011; Reber 2010).

One could argue that the most fruitful pragmatic approach to intonation has been achieved by research based upon the Relevance Theory (see Wilsonand Sperber 1993, Sperber and Wilson 1995). It is very convincing that intonation conveys procedural meaning (information about how the message must be interpreted, see Blakemore 1987, 2002). The communication process cannot be produced without a context[5] and it has to be developed within a very concrete communicative situation. It seems that intonation serves to restrict this context, to communicate some kinds of relationships between the speaker and the communicative situation, etc. This function needs to be explained, and related to the sociolinguistic variation, to offer a coherent map of the intonation form-function particularities.

There are some early studies that connect intonation, communicative situation and context. In 1958, Schubiger affirmed that intonation expresses speaker's attitudes. Later, Vandepitte (1989: 268) states that the cognitive function of tone is to manipulate the message, takinginto accountthe speaker's background. Relevance theorists have observed that intonation contextually conducts the deductive reasoning and restricts the interpretation of the message (see Imai 1998; House 1990, 2006, 2007 and 2009; Clark and Lindsey 1990, Fretheim 2002, Wilson and Wharton 2006; Escandell Vidal 2011, etc.).

There is another important decision to be made: should the empirical analysis of the data be undertaken with the use of a previously pragmatic, sociolinguistic and interactional theoretical framework and methodology or should the data lead us to create an appropriate pragmatic, sociolinguistic and interactional framework and methodology for phenomena to be analyzed? In our opinion, these two approaches, top-down and bottom-up, are complementary and must interact to offer enough feedback to each other. This methodology permits an analysis of prosody based on use (see Martín-Butragueño 2014).

Furthermore, with the rising interest in a sociolinguistic approach, we need to elaborate a proposal on how an interactional study could be linked to the sociolinguistic variables. This study sets out to provide an adequate methodology for the description of the intonation contours of spontaneous speech, trying to shed light on the weight of different social variables that interact in order to shape the intonation contours of spontaneous material.

[5] The context is defined here as data which is both very accessible and considered as true to serve as the premises for the interpretation of the message.

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A look at prosody variation shows that it has not been a major concern to sociolinguists. Many investigations have been restricted to dialectal differences, and age, level of education, sex, speaking style, and individual habits are ignored. One project that has provided sufficient evidence for sociolinguistic variation in intonation is the project *English Intonation in the British Isles* (Grabe, Nolanand Post, 1997–2002, http://www.phon.ox.ac.uk/files/apps/IViE/), an investigation that takes into account as the variables dialect, speaking style, gender and individual speaker habits.

As regards this sociolinguistic approach, our study is also important for several reasons. Firstly, it is worth reminding ourselves that although sociolinguistic works are nowadays understood as an important facet of linguistic research, the study of intonation has not reached the same level of development, although there are some studies which provide insight into its field. In seeking to understand the large scale of problems related to a sociolinguistic approach to intonation, there are some scholars in Hispanic linguistics, who have made some significant contributions to it, that deserve to be mentioned: Moreno-Fernández (1998), Martín-Butragueño (2011, 2014). Moreover, it seems that cross-gender variation has received more attention in the research carried out for Spanish and other languages (see, for example, Hasegawa and Hata 1994, Haan and van Heuven 1999, Warren and Daly 2000, Vermillion 2001, Henriksen 2013, López-Bobo and Cuevas-Alonso 2014, Bleorțu 2015 and 2016).

Secondly, as pioneer research, some of these studies have not always seriously faced the approach and the methods by which it was studied. Cepeda's approaches (Cepeda and Roldán 1995, Cepeda 1998) generate some misunderstandings, manifested, for instance, in the techniques used, which might have not been appropriate for this kind of investigation as the corpus was too extensive. Moreover, as we could see, some scholars fitted the interpretation of the results into the descriptive statistical frameworks or based their work on written rather than spoken language, since the speaker has to read from a written text. As Baker (2010: 58) points out "[…] the fact that corpus studies […] have used written rather than spoken texts means that such studies are unable to reveal very much about the origin of an innovation".

On the other hand, this is coupled with clear problems, which stemmed from the great variability (phonetic and phonological) that intonation could offer due to pragmatic variables. This made it difficult to draw relevant conclusions without a previous sociophonetic or sociophonological approach (see Thomas 2011, Yaeger-Dror et al. 2010). Parallel to these issues, a number of these scholars has in one way or another ignored the correlations established between form and function. Such approach would have allowed a much more complex view on the general intonation patterns and configurations and on the variability of cases.

Sociolinguistic variation has not been of major concern to prosodists, which shows the necessity for a sociolinguistic methodology. This study has to signal

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opportunities for minimal responses, such as the discovering of variables that reflect intonation variation.

2.3. The sociolinguistic and sociophonetic studies: complementary points of view

A more nuanced approach has arisen from the plethora of corpora that has been collected and analyzed from an expanding pool of interactive situations, and the social context is of particular interest in the sociolinguistic analysis of intonation variation (see Yaeger-Dror *et al.* 2010:138).

One of the most important difficulties in the sociolinguistic interactional approach to intonation is the need for a large quantity of spontaneous speech data (see Martín-Butragueño 2011), and furthermore the trouble of achieving an exhaustive map of intonation form-function relations that varies across different variables (social variables such as gender, age, education, social class, occupation, ethnic group…, and linguistic variables such as speaking style, speech rate, etc.).

Due to the difficulties than can result from the use of a solely sociolinguistic approach, mainly the need to take into account the influence of the variables in the analysis of speech production, perhaps it would be a better choice to start with a more controlled methodology: a sociophonetic one. It not only permits the control of these variables, but also allows us to observe how the variants behave in a gradient manner (see Foulkes 2012; for intonation see Lopez-Bobo and Cuevas-Alonso 2014). In this way, Thomas (2011: 184 and ff.) indicates some prosodic aspects that can be analyzed using a sociophonetic/sociolinguistic methodology: pauses, speech rate (sometimes related to age, dialectal variables), and intonation. The latter presents some important difficulties in Thomas' opinion: a) the transcription method, b) the relationships of form and function, and their transcription, and c) the amount of work needed to transcript a large amount of natural data. It is also evident that in all cases the fidelity to discourse is incomplete when we transcribe the data and when we do not account for other facets which are not strictly linguistic, such as gestures, movements, etc. They are very important because they could transmit beliefs or attitudes, etc. that may have, in some way, an influence on the planning and production of intonation. In addition, as researchers, we must be very careful in our intervention before or during the analysis of the data (see Silverman 1993: 208).

We must be very attentive when we select the methodology, because the result of diverse linguistic productions presents differences and "some of these dissimilarities are purely linguistic [...] while others appear to be culturally variable and may be dependent on societal norms of power and solidarity" (Yaeger-Dror et al. 2010: 134).We will be forced to take into account not only the former, but also the latter, in order to establish a coherent form-function map. Although the results

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must be confirmed by naturalistic approaches[6], based on spontaneous speech, laboratory and elicitation, sociophonetic approaches to Spanish and other Romance languages, for example, have obtained a very clear, but not exhaustive, map of these form-function couples (see, for example, Sosa 1999, Prieto and Roseano 2010; Hualde and Prieto forthcoming for Romance languages). This is a very important way to drive future interactional and sociolinguistic research about everyday speech. Various academics have also explained very interesting phenomena related to language contact changes, dialectal accommodation, etc. and to some sociolinguistic aspects (see Simonet 2008, Cuevas Alonso and López Bobo 2011, Colantoni and Gurlekian 2004, Prieto and Roseano 2010, Martín-Butragueño 2006 and 2011).

That being said, a sociophonetic approach is useful, not just for our theoretical research, but also for a more complete understanding of intonation because it allows the interaction between controlled empirical data analysis and sociolinguistic approaches. This interaction facilitates the comparison of two kinds of data and means that we do not have to sacrifice the advantages of natural speech in favor of reading studies, which ensured the collection of sufficient data.

3. AMPER AND *THE INTERACTIVE ATLAS OF SPANISH INTONATION*

In order to address the research question properly, we must, first of all, clarify how the notion of prosody was treated in Spanish linguistics. For these reasons, before we describe our methodology, we will briefly outline some methodological aspects. We shall namely focus on the research that has emerged from or is incorporated into the AMPER[7] and *The Interactive Atlas of Spanish Intonation*[8].

In doing so we will enter the field of descriptive intonation (AMPER), but also the field of metrical phonology, which is *The Interactive Atlas of Spanish Intonation's* basis for the systematic description of the intonational patterns encountered. The atlases in question, deal, on the one hand, with the analysis of intonational acoustic forms (fundamental frequency (F0) and duration parameters) for non-biased declaratives and information seeking *yes-no* questions –AMPER– (see Fernández Planas 2005). On the other hand, *The Interactive Atlas of Spanish Intonation* (see Prieto and Roseano 2009–2013) focuses on the relationship of intonation with semantic and pragmatic meaning, from different perspectives, dealing with prominence relations, and taking into account the syllables, prosodic words, intonation phrases and utterances.

[6] The difficulties arose with the use of the term "natural" applied to language facts, especially when the speaker knows their speech is being recorded.

[7] http://stel.ub.edu/labfon/amper/cast/amperinternacional_metodologia.html

[8] http://prosodia.upf.edu/atlasentonacion/

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By making a detailed description through these methodologies, we aim to illustrate a part of the procedure, as well as the techniques, and to highlight the kinds of interactional prosody evidence, if there is any, on which they relyupon.

A characteristic of these atlases is that they display a three-part structure corpus. Firstly, they are mostly concerned with utterances, which originate from sentences usually read aloud by the subjects (AMPER), or by a situation survey(an inductive method by which the interviewer presents the speaker with asituation and the participant has to act accordingly *The Interactive Atlas of Spanish Intonation*).

In the latter, the language used in the survey is semi-spontaneously produced by the speaker. It is the description of the action and the pictures which accomplishes the main function.

In the case of AMPER, the participants are instructed to read each sentence silently first and then to pronounce it as naturally as possible. If according to the researcher's judgment the subjects mispronounce a sentence, they have to read it again. As for *The Interactive Atlas of Spanish Intonation's* first procedure, the questionnaire, which is inserted in different context-settings, is presented to the subjects context by context, and the participants have to act accordingly to each of them.

On the other hand, there is a *Map Task* dialogue (*The Interactive Atlas of Spanish Intonation* and AMPER), in which two participants cooperate to reproduce the same route on the maps they have been given, performing a cooperative task through a dialogue. If the two maps differ, one participant has to ask the other if they have followed the correct route. In this way, they respond to each other spontaneously, and they have to create a context in which they may speak freely. This technique encourages the opposite of the previously mentioned closed procedure (reading different sentencesaloud since there is any delivery of a preferred answer). The first participant launches a question. If the other speaker responds in a minimal fashion, his answer requires further elaboration, and the other has to formulate a more specific question. In light of these features, we consider this task as comparable with a natural talk-in-interaction.

Concentrating on the other materials of the atlases' corpora, the third and final task is, on the one hand, an inductive technique in which the speakers that participate follow instructions in a context creation task (they have to answer how they will greet an old woman, for instance) (AMPER). Thereafter, the interaction develops in response to the interviewer's comment. In the *Interactive Atlas of Spanish Intonation*, there is also a videotaped conversation.

An important difference between them is necessary in order to account for their main goal. The informants in AMPER are sociolinguistically divided by age, gender and level of education. Otherwise, in the *Interactive Atlas*, the speakers are always women; the situation survey and the map task are carried out by a young woman with a high level of education, while the videotaped conversation is realized by an old woman with only primary education. As in other experimental programs, the scope of the research defines the origin of the data: AMPER has a

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dialectal goal (with a secondary one focused on sociolinguistic variation); on the other hand, the *Interactive Atlas's* claim is to offer an exhaustive intonation form-function map paying attention to semantic-pragmatic variability.

These types of methodology in various utterances of spoken Spanish clearly make one point with respect to intonation approach: the methodologies in question need some refinement, if not correction. It would seem quite feasible to propose that the utterances of these two atlases display a whole range of intonation patterns; yet never has methodology been detailed enough to tease out all the utterances possible.

On both counts, the management of the *Map Task* activity is worthy of research attention since most studies of prosody have relied upon artificial manipulations of reading sentences; they did not take into account that reading prosody is significantly different from speaking it. One characteristic of the *Map Task* activity, is that it employs speech in an attempt to cover some of the interactional prosody associated with different conversational turns, although Selting (2010) stresses in her 'state of the art' that,

> [w]ork with controlled, semi-natural data like those from, for instance, map-task dialogues […]ha[ve] bridged the gap between the approaches to a certain extent, but not really closed it. Here experimental subjects engage in semi-natural tasks with set-up problems in which they respond rather spontaneously to each other. Nevertheless, the situations are too restricted to be comparable to natural talk-in-interaction. (Selting 2010: 13)

There are at least three reasons to look at the design of the atlases' corpora. Firstly, in the case at hand, the interplay of interactional techniques (like phone conversations and radio interviews, etc., from a sociolinguistic perspective) is very difficult to apply, especially if we want to see whether there are sex differences or variation concerning the participants' education, etc., in a studied speech community. The situation survey does not necessarily conflict with the methodology of the interaction as a whole.

Secondly, at some points Prieto's methodology requires an appeal to the interactional prosody (see the *videotaped conversations* technique). The scholar includes in her atlas an interactional technique based on video recordings that implies analyzing the relation between intonation and nonverbal signals. One key point to retain from this consideration is that, in this context, prosody is integrated in the sequential and multimodal analysis of interaction.

Last but not least, in addition to the technique mentioned above, this atlas developed some tools for the transcription of the corpus and the analysis: ToBI[9] (*Tones and Break Indices*).This approach is very important because it could be

[9] In general there are some shortcomings of ToBI; this system has received criticism from a number of angles because of: a) the lack of phonetic specification (see Ladd 1996), b) the interpretation of semantic interpretation (see Fox 2000). See also Kabatek 2007.

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applied to typologically different languages as Jun (2007: 1) remarks; see also Prieto and Roseano 2010 and Frota and Prieto forthcoming).

The materials examined here give a clear picture of what is happening with current research on Spanish studies. In the first instance, they offer the clear demonstration that we can gain immensely by taking into account some of the previous methods for a sociolinguistic approach to an interactional prosody and that is making much greater use of them. Prieto's methodology is the principal platform in which Spanish intonational and interactional competences are shaped.

However, with regards to a sociolinguistic perspective of an interactional study on intonation, there is still much that remains to be looked at in detail, and in many ways the picture painted here is a disappointing one. Now, this begs the question *how is this possible*? Hopefully, the methodology described in the following sections will indicate how a corpus can be built and gainfully exploited as a resource for a sociolinguistic approach, focusing on intonation variation in this new light. It is important to emphasize that the results obtained are very dependent on the data collection measures and collecting techniques. In addition, a deep reflection is necessary to best decide what the most appropriate methodology would be to address our scientific object and the goals of our research.

4. METHODOLOGICAL PROPOSAL. A CASE OF STUDY

From these studies we could infer several points of view, both methodological and theoretical, concerning for instance, Reber's ideas. This author suggests that prosody should not be seen as a part of grammar; it can be assumed, for example, that it represents a contextualization cue approach, "a linguistic resource which provides a frame of reference for the interpretation of activities and other units of actions" (Reber 2010: 42). As we have seen, Escandell Vidal (2011) puts forward a similar point view. The prosodic cues provide a valuable insight for our understanding of prosody as they display different functions and meanings, which noticeably deviate in function of context.

Not only is there a gap as far as the sociolinguistic perspective is concerned on intonation study, but also a theoretical and methodological one in the understanding of prosody methodology. We will use a combination of data approaches that, in our opinion, will shed light on various aspects of intonation analysis. Due to its complex nature, as previously mentioned, intonation can and must be investigated from different angles if we are to arrive at a thorough understanding of its intricacies.

Our proposal explores the sociolinguistic analysis of intonation in terms of using a range of techniques that will hopefully enable us to balance our sample in order to contain equal samples of controlled, semi-spontaneous and "naturally" occurring speech from 90 speakers of Pola de Siero. We will take into account the

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three 'basic' social variables: age, gender, and educational background. We will also consider each speaker's mother tongue, occupation, social class, and direct ties with the Asturian language and the consequences each may bring, among others.

We apply both quantitative and qualitative insights on language to explore the issue of prosody. The primary goal of methodological design is to contribute to a more nuanced understanding of intonation, but it also aims to look at the usefulness of elicitation and to highlight the usefulness of sociolinguistic interview. The study of prosody must be situated in the context of unfolding interaction and interpersonal relationships among its participants. Nevertheless, although elicitations are very useful to obtain quasi-spontaneous speech, they need to be complemented with speech produced in natural everyday situations (see Armstrong and Ferguson 2010: 215 and ff.). In addition, the elicitation techniques convey the problem of replication and data reporting; these must be designed carefully to permit the analysis to be tested (see Hendrik 1990 and vander Veer et al. 1994) in spite of the unfeasibility of the perfect replicability.

One of the most important problems that non-sociolinguistic studies omit is the importance of social variables in how people speak. Differences involving these variables, could in some cases make it impossible to replicate the study. Additionally, intonation variation linked to pragmatic uses is another aspect to contemplated in order to make it a controlled variable. In this respect, we cannot ignore the importance of the sociophonetic approach in order to explore, at first, how the intonation system is fundamentally organized[10].

The corpus of our study, which uses a broad range of techniques, offers valuable insights into how intonation is deployed. Traditional methods are not sufficient to determine intonational patterns, but additional methods, such as one of prosody-in-interaction could be relevant to manage the study of intonation.

4.1. Gathering data

Since the choice of methods may have drastic implications, we designed materials with the highest possible number of techniques in order to ensure confidence in results. Laboratory experiments can be less reliable due to artificial conditions (see our comments about Xu 2010 in 2.1.). One way of dealing with cases like this is to include other procedures, or apply other types of tasks that

[10] Benet et al. (2011: 98) affirm: "Studies on intonational phrasing of Catalan are based on read data […]) or on semi-spontaneous speech […].The use of the controlled data, as read speech, was a necessary first step in research on intonation, in order to isolate the crucial topics and specific phenomena. It is certainly not possible to describe the intonation and phrasing patterns of a language directly and exclusively from spontaneous speech, since too many factors depending on the context or on the speaker are at play in this speech style and may create confounding arte facts in the data. However, it is also true that both kinds of speech are substantially different and thus the description of read speech, which can function as a basis of research, may lie too far away from what real language is".

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might be more reliable in particular instances. This allows us to compare the data obtained in order to elaborate a coherent explanation of the intonation phenomena. However, the drawback is that the researcher must deal with a huge amount of data, especially if they intend to carry out a naturalistic interactional study.

In order to investigate prosody, we shall use a variety of techniques: questionnaires with personal information about the participants[11] and ethnographic observations, the place and context of interviews[12], sociolinguistic interviews[13], and a situation survey[14]. Their high degree of contextual control is still indispensable for initial approaches to our prosodic phenomenon, laying the foundations for sustainable insights into the prosodic patterning of the dialectal area to be analyzed. The data is also recorded on video.

Therefore, as the data must reflect the reality of interactions as emergent, we will base our sample on conversational contexts shared by speakers from the same cultural, ethnic and sociolinguistic background as opposed to those traditional studies that involve the observer's paradox. The type of speech obtained in these tasks will vary considerably as far as spontaneity is concerned, depending, first of all, on how comfortable the speakers feel in performing the task.

The data consists of conversational interviews, which are specially designed to simulate a natural conversational style as closely as possible, with 90 speakers who grew up in Pola de Siero. The speakers form a balanced sample, and are equally represented in terms of gender, age and socioeconomic status, and also preferably born to parents from the same linguistic area. The individuals are selected for this study from lower, middle or upper classes on the basis of their educational background, and from across the age spectrum.

The speakers will be grouped into three generations as shown in Table I[15] and we have taken five speakers for each set of social constraints, an adequate number by most standards (see, for example, Hoffman 2014).

[11] Respondents might find these questionnaires as intrusive to their private lives. Because of this, it is very important to inform them that they will be treated with complete confidentiality.

[12] Even though we have a preliminary planning for our interview, sometimes we have to adapt to our subject because we cannot anticipate every situation that we will encounter whilst interviewing. This way we will provide a complete account of the observations of the interviews using field notes about the physical setting of events, the people who take part in these events, etc.

[13] The topics focus on the local traditions of the community, childhood, personal experiences during holidays and Christmas, the well-known "danger of death" question, etc. Other questions are even more specific to the community under study: for example, we included a question on parking problems, since this region has had parking difficulties; the questionnaire is purposefully designed to steer attention away from language itself. To see more about the interview questions that we use, see Bleorțu 2014.

[14] See, for instance, the survey of situations of Oviedo, Gijón, Vigo, Santander, Cabezón de la Sal: http://prosodia.upf.edu/atlasentonacion/equips/equips-english.html. These surveys are crafted to provide information on the particular prosodic features of these areas.

[15] We use M for "man" and W for "woman".

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Table I: Speakers grouping

Level of education	Teenagers 18–37		Middle-aged 38–57		Adults 58–77	
From 1 to 4 years of education	5 M	5 W	5 M	5 W	5 M	5 W
From 4 to10 years of education	5 M	5 W	5 M	5 W	5 M	5 W
more than 13 years of education	5 M	5 W	5 M	5 W	5 M	5 W

Age[16], as a characteristic, may have different effects on intonational variation because of the differences in the Asturian language's use. Some differences may result from changes in educational policies like the shift from the total exclusion of Asturian language in schools to its reinstallation in schools' curriculum. These changes may have varied across time to such an extent that it has affected the kind of linguistic variation that we see in Pola de Siero today. The choice of 1996 and 1938 as the year-of-birth boundaries between generations is based on Spain's history. Those born before 1975 studied under Franco's rule. Generation 2 speakers, born between 1976 and 1957, grew up surrounded by the influences of Franco's rule, while Generation 3, born between 1977 and 1996, was free of this influence. These groups correspond precisely to three stages in Spain's history that offered distinct experiences, particularly with respect to education (change sapparent across time).

The variation is expected to be higher between Generation 1 and Generation 3, since a narrower gap is anticipated between second and the third. Moreover, the majority of Generation 2's parents grew up during Franco'sera, and consequently can provide amixed linguistic input.

A very important aspect, is that all participants have to be oblivious to the purposes of our study.

The sociolinguistic interviews last between 40 and 60 minutes, and are usually conducted at the interviewer or speaker's residence, according to the participant's schedule[17]. They are recorded at a sampling rate of 44,100 Hertz (Hz) and at a resolution of 16 bits, using a *wav* file audio, using *Audacity* and a microphone. Before the interview we seek the speaker's informed consent for their "representation," and they also give their written approval that the data can be used for research purposes.

[16] It can also play a crucial role because the F0 of female decreases until about the age of 50 and it remains stable after 50.

[17] There is a third person who participates, and is preoccupied with writing down information about the social context under which the data is produced: who is speaking to whom, the setting of the interview, the relationship between the interlocutors, and other aspects of the occurrence that could be relevant to the analysis. Triangulation is another very useful method and it is provided by these ethnographic notes while recording and the discussion with other researchers.

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We have taken into account that participants might feel more comfortable with an interviewer from the same community[18]. As such, we have selected an interviewer from Pola de Siero. Both interviewer and interviewees must collaborate in an unproblematic way since they must perceive each other as partners in order to co-form a true interaction (see Holstein and Gubrium 1995).To achieve our goals, the interviewer must know the necessary information to develop a good understanding of the social, political, and cultural backgrounds of the speakers. He is involved in the Siero community and can be considered as an insider, with the knowledge and connections that come from normal community interaction. The more similar two speakers are, the more likely is that they will produce spontaneous speech.

The height of the interviewer also plays a very important role. Labov (1972) gives examples when participants' behavior changes a lot when the interviewer is at the same height as the subjects. Consequently, in interviewing, he can assume the speaker's identity (for example, if the speaker uses Asturian, the interviewer can too). This connection is very important for a natural conversation[19]. Thus, we do not have to spend a significant amount of time integrating ourselves into the community that we want to study before we begin data collection.

In order to capture what is systematic about Pola de Siero's spoken language, it is necessary to gain access to our community via the interviewer. We also use a judgement sampling that employs the "friend of a friend" or snowball technique to recruit people who are amenable to participating in our research; this method entails a greater degree of trust.

As regard the unfolding context, our research also includes video recordings of users, a method of multimodal analysis, which examines the relation between participants' facial expressions and posture, and the content of the interviews. With this aspect in mind, one issue requires special consideration; to ensure visual clarity in the video recordings, the camera must be placed to capture a full view of their movements.

In addition to understanding how people use intonation, we want to understand what people think about the language they use (Asturian, Spanish, *amestao*[20]). To achieve this, we use a questionnaire at the end of the spontaneous interview. As such, the participants might not be aware that they are participating in a study. However, we also have a perception test which consists in presenting

[18] We prefer to use the traditional *speech community* instead of *social network* or *practice community*.

[19] We also have to take into account the *dialect accommodation effects* as in Pola de Siero are two languages: Asturian and Spanish. The subjects usually accommodate their speech to that of the interviewer if this appears in a positive light.

[20] *Amestao* is a mixture of Spanish and Asturian.

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different interrogatives (*stimuli*) to five participants for each variable to see whether they found anything unusual or difficult about the experiment. The tokens are presented in a different order for every participant using *Open Sesame* or *Psyscope* software. This study utilizes discrimination tasks to examine the perception of interrogatives produced by speakers who maintain a distinction. The listeners indicate whether two interrogatives sound the same or different. For this experiment, we will use paper response sheets and all participants will listen to the experiment through headphones.

4.2. Corpus analysis

As soon as we have gathered the research data, we shall conduct the analysis of the material. It is worth mentioning that the choice of the quantitative and the qualitative methodology is not a simple matter; the quantitative approach is primarily concerned with the linguistic change in progress, while the qualitative takes into consideration the participant's position and asks whether he is aware of it or not. Consequently, we can study not only how intonation is constrained by the linguistic system and social context, but also how speakers create new intonation contours given a language's natural propensity to vary. This implies a casual relationship between the two dimensions of the methodology.

4.2.1. *Data preparation*

The first stage of the data analysis is to transcribe the recordings, saving the files as text-only documents because most corpus tools work best with this type of file. These files are cut into chunks of speech using the program PRAAT (Boersma and Weenink, 2014); the utterances will be segmented manually using this software at the points where pauses occur. The data will be transcribed with the phonemic transcript.

Our next step we will be to use ELAN, a tool which aligns *.txt* and sound files (*wav* files), and generates a phonetic / phonological output file with the help of PRAAT (2014). This tool is very important because it covers a wide range of phenomena (non-verbal behavior, pauses, noises) that may have a relevant impact on the research of prosody, as previously mentioned.

A further level of annotation could be used to indicate the visual information from our video-recorded material. Saferste in (2004: 3) states that "the reflexivity of gesture, movement and setting is difficult to express in a transcript". However, we will also use ELAN, to align the transcription with the audio and video recordings in order to synchronize the display of different representations. This tool is available for download athttps://tla.mpi.nl/tools/tla-tools/elan/download/

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4.2.2. *Analysis*

The next stage of corpus analysis is to examine our data with regard to the linguistic (stress[21], word category[22]), (para)linguistic (focus, phase type) and non-linguistic (sex, age, educational background, emotions, etc.) functions of intonation.

To identify the central tendency in our data set, we have to determine what type of inferential statistical methods to utilize. We use tests of significance to extrapolate our corpus to the entirety of Pola de Siero's spoken language. The first parameter to consider is the base frequency for each of the 90 participants, calculating linear as well as logistic regressions.

For the linguistic variables, different types of analyses will be performed. Firstly, as far as stress is concerned, we will use ANOVAs on the number of stressed syllables and ANOVAs on the position of the first stressed syllable. In order to analyze the word class, we pay attention to the lexical syllables.

We must also observe the variation of intonation (specially the nuclear configuration) depending on different pragmatic meanings. Our most important decision is to choose the most appropriate pragmatic approach tocarry out the analysis. Martín Butragueño (2014), in his sociolinguistic study of Mexican intonation, based his pragmatic division of utterances on the postulates of speech acts theory. Nevertheless, in our opinion, the use of this methodology is insufficient in spite of the fact that it uses a huge amount of data obtained from an interactional methodology. We will use a more open theory that permits the elaboration of new categories, and the inclusion of contextual aspects in our analysis: the Relevance Theory (with a double approach, from theory to data and vice-versa).

As we are using focus as a variable, ANOVAs will be performed taking into consideration four situations: *nofocus*, *pre-focus, focus, post-focus.* Furthermore, phrase type can be tested according to Gilles (2005) classification – *continuation, potential continuation, termination*, and *potential termination*. In terms of the distribution of emotions, we will label our utterances as *neutral*, *bored / tired, happy*, and others (fear, anger, etc.).

During the analysis of non-linguistic variables – sex, age, and educational background, we will test whether there are differences between males and females, those from different educational background and the three age groups.

As regards multimodal analysis, we consider intonation interpretation to be a matter of inferential reasoning. It concerns participants involved in each interview, their functional and social embedding in the interview's context (the casual circumstances), the spatial information and participants' reactions and gestures, and attention to their voice (to whom speaks, for what purposes), etc. Intonation

[21] Leeman (2012) considers stress as very relevant as it shows an increase of F0.
[22] For more information, see Leeman (2012).

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meaning always has to be analyzed in context with information added to the interview that may change initial interpretations.

For our perceptual experiment, we use an analysis of variance to determine whether the responses of our groups of listeners differ from each other, to see whether the results show that the groups respond to the stimuli in the same manner. Finally, a short analysis of the visual data is given.

Based on the analyses of the intonation detailed above, we shall see the most important features of Pola de Siero's intonation.

5. CONCLUSIONS

After the evaluation of the strengths and weaknesses of some intonation approaches, our main focus was to see how this range of methods and perspectives could be applied to the sociolinguistic study of intonation. The article has addressed various types of studies that have attempted to examine intonation.

Previous to this study, no systematic, large-scaled account of sociolinguistic Spanish prosody methodology existed. In the framework of a research project at the Hispanic Linguistics Department of the University of Oviedo and the University of Vigo (2014–2018) based on spontaneous speech data, as "opposed" to laboratory speech, we have attempted to show how intonation's use in these contexts is crucial to understand intonational variation. Our methodology could indeed shed light on the development of intonation because we aim to offer a coherent view of intonation behavior, taking into account an ensemble of variables of diverse nature: (sociolinguistic variables, such as age, gender and level of education, and pragmatic and interactional variables).

Meaning in intonation arises also out of the multiple interaction of various modalities such as gestures, noises, pauses, and participants' reactions, an approach which systematically defines and describes how non-verbal language is combined with speech. We consider our interviews as discourses where the combination of resources produces meaningful sequences that we have to analyze. Intonation is thus a phenomenon in which non-verbal and verbal resources interact and operate in order to create the overall meaning.

We have shown the need to deal with intonation systems from a multidimensional perspective that allows us to offer a coherent explanation of these complex prosodic phenomena. In this sense, we have exposed a methodology that integrates different data gathering techniques, in order to determine the importance of each one in the elaboration of a holistic explanation of intonation.

We have tried to address some of the issues that crop up when sociolinguistic research on intonation is undertaken. Firstly, we presented what type of data to gather. Then, how to transcribe, segment and annotate it with variables of interest,

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and finally how to explore the corpus, analyzing each of its linguistic, (para)linguistic and non-linguistic variables.

It could be argued that we have been highly speculative throughhout this article. However, the sociolinguistics of intonation may be much more gradient and intriguing than it has been previously perceived. Further studies are needed to substantiate our methodology. An ambitious future investigation would be to develop an Atlas of discursive intonation of Romance languages based on "natural" data.

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