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METHODOLOGICAL AND PRACTICAL ISSUES IN STUDYING INTONATION

THE CASE OF REQUESTS IN ITALIAN
AND SPANISH TASK-ORIENTED DIALOGUES

Iolanda Alfano

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IOLANDA ALFANO

Milano 2019

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Preface

This book is about the way in which intonation conveys the communicative function of *requesting* in two Romance languages, Italian and Spanish, by analysing semi-spontaneous speech dialogues. It aims at providing a phonetic description of the choices of speakers that make up the intonation systems of requests.

In the varied range of methodological paradigms available for intonation description and modelling, this research follows a phonetic approach and confronts methodological issues and concrete problems when conducting research on intonation by adopting a phonetic perspective.

The analysis focuses on the speech act of request in the Neapolitan variety of Italian and in the Spanish spoken in Barcelona, taking into account the specific characteristics of the two linguistic situations.

The units of analysis correspond to conversational moves that express four kinds of requests, which play specific roles in conversation, have different textual functions and assume different pragmatic values. Therefore, the framework of a functional system of requests is the starting point of this study.

The main research question that we want to answer aims to assess if and how phonetic parameters contribute to the distinctions between the different kinds of requests.

In order to achieve this goal, we examine requests through a phonetic description of f_0 contours. We investigate and analyse two parameters: global profile, that is to say the overall trend of the curve, and terminal contour, seen as the direction of the pitch starting from the last stressed syllable of the tonal unit. Additionally, we consider each kind of request in a specific way, depending on some controversial points arising from the literature review. In certain cases, we focus on some portions of the signal (for example, on *wh*-elements, which are supposed to be “prominent”) and we consider the overall pitch range excursion of the curve (which, in certain conditions, is supposed to distinguish information-seeking requests from confirmation-seeking requests).

We examine and define intonation contours using a descriptive framework in which we develop a method to study the relation between the forms and functions of intonation, remaining faithful to phonetic details and successfully analysing linguistic regularities.

This book provides an empirical understanding of methodological issues related to a phonetic approach towards analysing intonation, as well as provides a contribution by describing the intonation of requests in Italian and Spanish. In both languages, each request shows a specific intonational realization, but some kinds of

requests present a more stable realization than others, independently of dialogue, speakers, semantic or syntactic factors.

The first chapter of the work is dedicated to setting the goals of the research and presenting a literature review on intonational studies dealing with information- and confirmation-seeking requests in Italian and Spanish. Special attention is given to methodological issues related to the different approaches towards the study of intonation, from data collection to data analysis. In the second chapter, the speech style considered in the analysis is presented. The criteria and procedures employed to collect the data for this study are also explained. Chapter 3 illustrates the theoretical background and methodological choices in analysing intonation: an overview is given of the processes of stylization and annotation of f_0 contours. Some critical issues are discussed, alongside examples of the kind of analysis and interpretation performed to arrive at “abstract” intonation patterns, conceived to describe and represent intonation contours, after extracting shared features of concrete phonetic forms.

In the fourth chapter, the results of the analysis of speech material are presented. Finally, in the last chapter, the results are discussed in order to find out if and how intonation, as examined through phonetic parameters, conveys distinctions in the functional system of requests.

CHAPTER 1

The intonation of requests

In this chapter, we will present the pragmatic categorization and the aims of this work in Section 1.1 and the theoretical background to the intonation of requests in Section 1.2. We will divide this second part (§ 1.2) into two subsections dealing with the traditional bipartition between two kinds of requests: information- vs. confirmation- seeking requests. These subsections, in turn, will be concerned with the two languages of interest to this study, Italian and Spanish. Regarding the varieties under consideration, we will focus our attention mainly on Neapolitan Italian and the variety of Spanish spoken in Barcelona, since these are relevant to our corpus of semi-spontaneous speech dialogues (§ 2.3); but we will also consider studies on other varieties, if they are usually considered a point of reference.

As we will see in the next section, even if there exists a certain degree of correspondence with the morphosyntactic level, our units of analysis are functional and not morphosyntactic categories. On the contrary, in most cases, studies on intonation do not analyse prosodic characteristics starting from pragmatic or discursive functions, but from a formal categorization enabling us to consider some functional aspects in a further step. Therefore, for both languages, we will consider a sort of correspondence with our categories. In addition, it should be noted that the works we will examine belong to different theoretical frameworks, analyse the different speech styles and adopt different methodologies. For these reasons, their results are not always easily comparable.

1.1 *Requesting: pragmatic framework and research questions*

This work focuses on the intonation of the speech act of request in two Romance languages, Italian (Neapolitan variety) and Spanish (Barcelona variety). We will consider speech acts identifying them as *conversational moves* (Carletta, Isard, Isard, Kowtko, Doherty-Sneddon & Anderson, 1996) of a functional system of requests.

By adopting a system perspective on the communicative function of *requesting*, we mean a paradigmatic set of options of which each alternative can be chosen in function of the specific role played in conversation: different kinds of initiation are possible to get information and a different kind of informative contribution can be requested.

As we will see in the next section (§ 1.1.1), the requests we analyse in this work were classified according to their specific purposes in the conversation, taking into account both the kind of initiation and the kind of requested contribution.

1.1.1 Identifying units of analysis: the pragmatic tag-set

Requests were coded using the scheme for pragmatic annotation known as Pr.A.T.I.D (Pragmatic Annotation Tool for Italian Dialogues; Savy, 2010, see § 2.4.2).

We focused on four types of requests identified within the coding scheme according to the following tags: *info_request*, *query_w*, *query_y* and *check*. Independently of the kind of classification, it can be assumed that the primary function of a request is to manage a *discourse topic*¹. Requests are identified in Pr.A.T.I.D, depending on the way they succeed in doing this.

In a task-oriented dialogue, conversation is focused on accomplishing a concrete task. In such a conversation, there is a recurrent structure: speakers introduce a topic and talk about it until they think that they have nothing more to say about it. They may reach some sort of agreement on it or they can leave it because they consider that it is not possible to come to a pact with the interlocutor. Once this topic is exhausted, one of the speakers proposes another topic candidate or lets the interlocutor do it. Therefore, in a conversation, there will be a number of *transactions* made up of several *conversational games* (Anderson, Bader, Bard, Boyle, Doherty, Garrod, Isard, Kowtko, Mcallister, Miller, Sotillo, Thompson & Weinert, 1991; Carletta *et al.*, 1996) about different discourse topics. In our case, the various elements of the drawings (see § 2.1) are all candidate referents to become discourse topics and the task assumes the function of a conversational context determining the structure of dialogue.

As stated by Savy, Alfano (2016), we may assume that other kinds of conversations can be considered, in some sense, task-oriented interactions: meeting up with a friend, giving directions, booking a hotel or buying something can perfectly be the aims of a spontaneous conversation.

Let us consider the example proposed by the authors (Savy, Alfano, 2016: 211), in which “A” and “B” represent the two speakers, in order to briefly explain the four kinds of requests considered in our classification:

(1)

A: Stasera? E un film?

B: Perché no, ottima idea! Quale vuoi vedere? Al cinema vicino casa mia stanno dando Avatar. Ti piace il genere fantascientifico?

A: Sì, sì, e poi sono curioso, ne ho tanto sentito parlare...

B: Allora, dove ci vediamo? passo a prenderti io?

A: Quindi andiamo in macchina? e dove parcheggiamo?

¹ Discourse Topics globally organize the information of a passage as a whole, in terms of macrostructures, whereas *sentence topics* are parts of utterances and organize the information in terms of microstructures. The notion of topic, and above all of discourse topic, is not uniquely identified and takes with it a complex set of problems in which syntactic, semantic and pragmatic properties of language are intertwined. In this context, we use this notion as in the *map task dialogue system* (Anderson *et al.*, 1991; Carletta *et al.*, 1996; De Leo, 2008), in which a new *transaction* introduces a new topic. (For a more general overview, see Van Dijk, 1977; Brown, Yule, 1983; Gundel, 1988; Lambrecht, 1994; Van Kuppevelt, 1995; Büring, 1997; Gundel, Hedberg & Zacharski, 1993; Lambrecht, Michaelis, 1998; Beyssade, Marandin, 2002; Asher, 2004).

The first kind of request, *info_request*, can play two different roles: it can elicit the introduction of a new discourse topic, requesting the interlocutor to do it (“Stasera?”, “Tonight?”²) or it can introduce it *ex abrupto* (“E un film?”, “And a movie?”) by requesting a generic contribution.

The second kind of request, *query_w*, performs the function of requesting an informative contribution about a previously introduced discourse topic (“Quale vuoi vedere?”, “What do you want to see?”) or about a new discourse topic (“Dove ci vediamo?”, “Where can we meet?”).

The third kind, *query_y*, requests a specific contribution about a new or given discourse topic (“Passo a prenderti io?”, “Should I pick you up?”) or about its characteristics (“Ti piace il genere fantascientifico?”, “Do you like science fiction?”).

The fourth kind, *check*, functions to ask for a confirmation about a given (rarely new) discourse topic or about its characteristics (“Quindi andiamo in macchina?”, “So we’ll go by car”).

Therefore, the distinctive factor between these subcategories of requests deals with the textual function of the discourse topic³.

In this regard, it should be noted that conversational moves corresponding to our requests are identified on a pragmatic-functional basis. Therefore, a one-to-one correspondence with formal (morphosyntactic) characteristics does not exist. To give an example, a noun phrase can realize both an *info_request* and a *query_y*, depending on its specific communicative function.

Let us consider the following examples (2 and 3), in which “A” and “B” represent the two interlocutors, involved in a task-oriented dialogue. Each speaker has a drawing and they are asked to find differences between the two drawings, relying only on verbal interaction.

(2)

A: Cosa vedi nel tuo disegno?

B: Vedo un signore che sta seduto su una panchina leggendo un giornale

A: eh, pure io

B: c’è un albero, una casa, una specie di statua...

A: Un cane?

B: sì, sì, accovacciato, che sembra stia dormendo

² We consider that a move like “Stasera?” does not necessarily introduce a new discourse topic (even if it could do it), because it can play the function of stimulating the interlocutor to do it.

³ Even if these moves are functional units, they show some formal characteristics. As shown by the examples mentioned above, *info_request* moves are generally realized through noun, prepositional or adverbial phrases. *Query_w* moves are introduced by an interrogative pronoun, adverb or adjective and can present several different syntactic structures. *Query_y* and *check* moves correspond to polar questions and present a great variability in their syntactic structures (from complex structures to simple phrases). Finally, *check* moves may be also characterized by an affirmative part, followed by an interrogative/confirmatory tag (e.g., “andiamo in macchina, vero?”). A further element of variability is the result of different constituent orders, correlated with different organizations of information. For instance, the *query_y* move in the previous example, “Ti piace il genere fantascientifico?” can become “Il genere fantascientifico ti piace?”.

(3)

A: Com'è difficile trovare 'ste differenze...

B: il signore, la statua, la casa, la panchina

A: infatti, tutto uguale

B: Aspetta un attimo <ehm> Il cane?

A: <uh> è vero, allora il cane a me sta sulla destra del disegno ed è accovacciato a terra, con la coda bassa

The noun phrase “un cane”, “a dog” in (2) would receive the *query_y* tag, because its functional value is to request a specific contribution about the presence of the topic “il cane” (meaning “is there a dog in your drawing?”). Now, in a different discourse context, the same noun phrase “un cane” might be tagged as a *check* move too. The difference between a *query_y* and a *check* move is not always easily recognizable. Moreover, the task-oriented dialogues that we consider are a check task. Therefore, each move might be understood as a confirmation request in a broad sense, but in our categorization we identify *check* moves only in the case of a clear confirmation request, identified considering textual, inferential and situational cues that indicate a clear presupposition on the part of the speaker.

Turning to the example in (3), the noun phrase “il cane”, “the dog”, would be coded as an *info_request* move, since it requests a generic contribution about the topic “il cane” (meaning “what about the dog in your drawing?”).

This pragmatic categorization of requesting is the starting point of this study.

1.1.2 Research aims

The main research question that we want to answer aims at assessing if and how these functional categories build a system as far as their intonation is concerned, and how phonetic parameters contribute to their distinctions.

In order to achieve this goal, we will examine requests through a phonetic description of f_0 contours by performing an intralinguistic analysis of both languages and a comparison between them.

We will examine and define intonation contours using a descriptive framework in which we develop a method to study the relation between forms and functions of intonation, remaining faithful to phonetic details. In this sense, the present study is faced with methodological issues and concrete problems when conducting research on intonation by adopting a phonetic perspective. Without basing our work on a predetermined set of phonological categories, linguistic events are rigorously identified in terms of a phonetic analysis of the pitch curves, which implies several problems in analysing linguistic regularities.

Additionally, we will consider each kind of request in a specific way, depending, as we will see in the next section, on some controversial points arising from the literature review. In certain cases, we will focus on some portions of the signal that are supposed to be “prominent” and, in other cases, we will consider the overall pitch range excursion of the curve that is supposed to distinguish, in certain conditions, information-seeking requests from confirmation-seeking requests.

1.2 Literature review

In this section, we outline the state of the art with regard to our research theme, dividing our review, for ease of exposition, on the function of the traditional dichotomy between information- and confirmation-seeking requests. As it is well known, all speech acts perform several functions simultaneously and this is obviously true for requests. Along with conveying to a hearer (requestee) that he/she wants the requestee to perform an act which benefits the speaker (Trosborg, 1995), requests can also express degrees of certainty and counterexpectational meanings, among other aspects.

Escandell (1996) takes into account the degrees of knowledge of speaker and hearer and differentiates questions concerning the function of the speaker's knowledge about the content of the question and the hypothesis that the speaker formulates about the knowledge possessed by the hearer. In her proposal, information-seeking requests imply minimal knowledge on the part of the speaker and, at the same time, a maximal presumption of the knowledge possessed by the hearer. Consequently, confirmation-seeking requests are characterized by a partial knowledge on the part of the speaker. Different types of confirmatory questions, where the speaker's ignorance is not total and he/she seeks different levels of confirmation of his/her hypothesis are located at intermediate points of the continuum. Therefore, confirmatory questions convey a degree of presupposition on the part of the speaker, who expects a clear confirmation on the part of the hearer. Defining the degree of certainty and therefore the distinction between these categories is not always easy and requires a careful analysis of cotext and context. As far as our categories are concerned, we do not consider different degrees of certainty, but only the recognizability of a presupposition on the part of the speaker. The tags of *info_request*, *query_w* and *query_y* correspond to information-seeking requests, while *check* moves are confirmation-seeking requests (see § 2.4.2).

1.2.1 Information-seeking requests

Our functional categories, *info_request*, *query_w* and *query_y*, are variable, but do present some specific characteristics and are generally realized by interrogative sentences.

As we have seen, *info_requests* are generic requests and are realized by several kinds of phrases (noun, adverbial or prepositional phrases, for example, "the shoes?", "then?", "in the first one?") or by disjunctive structures (for example, "red or black?"). Therefore, we will take into account for the review on *info_request* category the studies on disjunctives and on requests generally referred to as "elliptic questions".

Query_w requests are expressed by information-seeking wh-questions (introduced by an interrogative pronoun, adverb or adjective). Finally, *query_y* requests are conveyed by information-seeking yes-no questions⁴. Therefore, we will exam-

⁴ Both categories can present several different syntactic structures and different characteristics. For example, in *query_w requests* the wh-word can occupy different positions (the initial position, "How are the paws drawn?" or not the initial position, "And the paws, how are they drawn?").

ine in our review the literature on information-seeking wh-questions and on information-seeking yes-no questions, with special attention to Neapolitan Italian and Barcelona Spanish.

In attempt to outline the key elements of the previous works on these categories, we will follow this order in our review: *info_request*, *query_w* and *query_y*.

1.2.1.1 Italian

Info_requests have not yet been given the attention they deserve in the literature on Italian intonation. As far as we know, we can find descriptions of utterances corresponding to this category only in Gili Fivela (2008), in Alfano, Savy (2010) and in Gili Fivela *et al.* (2015).

Such as in the case of yes-no questions (for example, in “Oggi fa freddo”, “It is cold” as a statement vs. “Oggi fa freddo?”, “Is it cold?”, as a question), this category lacks any morphosyntactic means for marking questions, so that intonation by itself can convey the function of distinguishing modality and, from a functional point of view, of expressing the request. In spite of that, data about this kind of requests are still scarce.

As far as the morphosyntactic type realized by disjunctive structures is concerned, Gili Fivela (2008) indicates the presence of an [L+]H* pitch accent⁵ on the first member of the alternative, while, for the second member of the alternative, the author employs an H+L* notation “with a high leading tone that appears to be masked by the previous high peak” (Gili Fivela, 2008: 145). A low edge tone is then the most common in her corpus⁶, even if some examples with a final high pitch are also found; therefore, the most common coding follows with a low phrase accent (L-) and a low boundary tone (L%).

According to Gili Fivela *et al.* (2015: 181), disjunctive questions

show a quite regular pattern through varieties of Italian. They are usually realized thanks to an L+H* pitch accent (eventually followed by H or L edge tones) and a H+L* final pitch accent followed by L% or H% edge tones (although in some varieties the final edge tones are LH% [...] and L*+H is also found on the last item [...]).

It may be worth noting that an analogous pattern characterizes disjunctive sentences in other languages; for English, see Bartels (1999) and Pruitt, Roelofsen (2013).

The same author considers a category comparable to our *info_request* to be an elliptic wh- question, when underlying a question, such as “How about X?”, proposing the same nuclear pitch accent [L+]H* to indicate a rise from a low target to a

⁵ Transcribing conventions used in this work, and in many others studies that we will consider in our review, follow the ToBI intonation transcription system (Beckman, Hirschberg & Shattuck-Hufnagel, 2005), developed within the Autosegmental Metrical Theory of intonation (Pierrehumbert, 1980; Pierrehumbert, Beckman, 1988; Ladd, 2008).

⁶ The author analyses, for Pisa Italian, two speech styles: read and semi-spontaneous speech. The first was elicited by asking speakers to read aloud some sentences, giving them indications about the context. The semi-spontaneous speech was recorded with the map task method (see § 2.1).

high target, which is usually reached in the final part of the nuclear vowel, followed by a high phrase accent (H-) and a high boundary tone (H%)⁷.

For *info_requests* realized by noun phrases in Neapolitan Italian, Alfano, Savy (2010), in considering semi-spontaneous speech, find in a pilot corpus a rising tune and a rising terminal contour, indicated by the INTSINT coding [B - S - H - T]⁸.

In the case of *query_w*, realized by wh-questions, more references are available, even if, as we will see, they are difficult to compare and raise several issues.

Works on intonation from the 1960s to the 1990s indicate that this category presents a peak in the initial part of the utterance, corresponding to the interrogative element, followed by a globally falling pattern, a characteristic that has led to comparisons being made to declarative sentences (Chapallaz, 1964; Lepschy, 1978; Benincà, Salvi & Frison, 1988; Simone, 1991; Bertinetto, Magno Caldognetto, 1993). Other authors indicate the possibility of a final rising (Magno Caldognetto, Ferrero, Lavagnoli & Vagges, 1978; Canepari, 1985), a characteristic that would associate wh-questions to yes-no questions, which were traditionally described with a final rising intonation. However, if one compares the two kinds of questions, various studies suggest that the value of the final rise in yes-no questions is generally higher than for wh-questions.

Moving onto subsequent studies, Endo, Bertinetto (1997) analyse several kinds of sentences in different varieties of Italian, including yes-no questions and wh-questions. They examine two wh-questions, “Cosa hai fatto stamattina?” “What did you do in the morning?” and “Dove l’hai perso?”, “Where did you lose it?”, elicited through a reading task as parts of a short text.

Esse presentano un picco iniziale molto accentuato [...] Tale picco si trova spesso sulla prima o sulla seconda sillaba della frase, nonostante il fatto che in entrambi gli esempi da noi considerati, l’accento si collocasse invariabilmente sulla prima sillaba. Nella porzione che segue il picco iniziale, l’intonazione delle interrogative parziali mostra spesso una brusca discesa. (Endo, Bertinetto, 1997: 44)

One can deduce from the text that these observations are general and deal with all the examined varieties of Italian. Indeed, the authors comment that this is the most common pattern found in their corpus and classify it as “falling” (*discendente*). However, other patterns characterized by further f_0 movement in the final part of the utterance can also be found, showing a great amount of variability (not only diatopic, between the different varieties, but also interlinguistic).

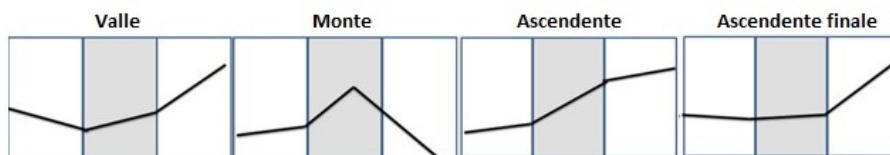
The authors recognize four final movements, which, for reasons of clarity, we exemplify in Figure I-1 (based on their examples, we have sketched the described movements, highlighting the position of the stressed final vowel):

⁷ The author interprets two possible different phonetic realizations for this phonological pattern: a globally rising pattern (a gradual rise) or a rising pattern followed by a high but flat part (final plateau).

⁸ For transcribing conventions of this coding system, see Hirst, Di Cristo, 1998; Campione, Hirst & Véronis, 2000; Hirst, Di Cristo & Essesper, 2000; § 3.1.

1. *valle*, if the final movement is rising after a sharp fall⁹;
2. *monte*, if the final movement presents a peak in the last stressed vowel, followed by a sharp fall;
3. *ascendente* (rising), if there is a final rising that starts in the last stressed vowel;
4. *ascendente finale* (final rising), if there is a final rising only in the last unstressed syllable.

Figure I-1 - A schematic representation of f_0 final movements in *wh*-questions identified by Endo, Bertinetto (1997)



As far as Neapolitan Italian is concerned, the authors consider 12 occurrences but do not present details about the f_0 peak on the interrogative element. Among the possible realizations, there was no pattern that was the most common: in five cases, they found the falling pattern, without movements in the final part of the utterance and, in four cases, they identified the *valle* pattern. Moreover, two occurrences of the rising pattern and one of the *monte* pattern were also found. Only the final rising movement was not present in the corpus.

Along the same lines, Caputo (1997) found, for the Italian spoken in Naples, a falling pattern with a high nuclear pitch accent coded by the ToBI system as H^*+H L-L%.

In Soriano (2006) and in Gili Fivela *et al.* (2015), we encounter a review on the most relevant studies on several varieties of Italian. According to Soriano (2006), they all show a globally falling pattern, L-L%, except for the varieties spoken in Milan and Rome, which present a globally rising pattern. As far as the nuclear pitch accent is concerned, we find several diatopic differences: $!H+L^*$ or H^* for Milan Italian, H^* or $H+L^*$ for Florence (Avesani, 1995), H^* for Siena (Marotta, Soriano, 1999), L^* or $(LH)^*$ for Lucca (Marotta, 2001), $H+L^*$ for Pisa (Gili Fivela, 2002), L^* or $L+H^*$ for Rome (Sardelli, 2006), $L+H^*$ for Cosenza (Soriano, 2001) y $H+L^*$ for Catanzaro (Sardelli, 2006).

With reference to the prominence of the interrogative element, described as an f_0 peak, differently from the other studies we have mentioned, Soriano indicates that the interrogative element is not necessarily prominent. According to the author, its realization would vary in the function of two factors: the length of the utterance and the type of *wh*-element. The prominent realization would correlate with short utterances, in which the *wh*-element attracts the intonative prominence and results in prosodic strength. The non-prominent realization, on the contrary, is

⁹ The authors claim that the final rising may start in the last vowel or later. From this point of view, the representation in Figure I-1 does not correctly illustrate this element of variability.

also possible in long utterances, in which there may be more than one pitch accent, one of which is normally located in the last word of the utterance. Therefore, in not very short utterances, the interrogative element can be prominent or non-prominent depending on the type of element¹⁰. Some elements would tend to be realized as non-prominent (“chi”, “who”, “che”, “what”, “dove”, “where”, “come”, “how”), while others are generally stronger and often associated with a prominence, such as “perché”, “why”, which is syntactically different too, since it is the only interrogative element that allows the subject to appear before the verb (see also Marotta, 2001). Along the same lines, more recently, according to Bocci (2013), the *wh*-elements not requiring adjacency with the verb show specific prosodic properties, such as “perché”, and are associated with a prominence, while the other class of *wh*-elements (not requiring adjacency with the verb), such as “dove”, are prosodically weak¹¹. In recent studies on other Italian varieties, such as Este (North of Italy), there is evidence of *wh*-questions introduced by a *wh*-element not requiring adjacency with the verb (“dove”), where the main prominence tends to be associated to the predicate and not to the *wh*-element (Crocco, Badan, 2016).

Sorianello (2006) considers the category of *wh*-questions as a syntactically marked utterance, in which the illocutionary force is evident from the morphosyntactic form of the question. Both the interrogative mark and the syntactic restrictions of word order identify and specify the modal category, making intonation a subordinate dimension, if one compares it with other kinds of questions.

The coding H+L* L-L% is proposed by Gili Fivela (2008) for Pisa Italian, both for read and semi-spontaneous speech. Regarding the realization of the *wh*-element, according to her analysis, no pitch accent is usually associated with the *wh*-word. However, if it is present, it is a H* pitch accent¹².

Examining spontaneous conversations in other varieties, Bologna, Forlì and Rimini, Rossano (2010) indicates an intonative peak on the question word and describes a main pattern with a falling termination in two thirds of the cases and a rising termination in the remaining third of occurrences. According to the author, the results suggest the need for a more fine-grained analysis to clarify the conditions in which *wh*-questions show a final rise in addition to a pitch rise on the question word.

¹⁰ Sorianello (2006: 124) gives the following two examples of different realizations:

“Perché l’hai comprato?”

H* L+H* L-L%

“Quando l’hai comprato questo vestito?”

L+H* L+H* L-L%

¹¹ In the “cartographic” framework, Rizzi (2001) identifies two different classes of *wh*-elements with specific syntactic properties, determining a class of ordinary *wh*-requiring adjacency with the verb and a class of not requiring adjacency with the verb, such as “perché” and the synonym “come mai”.

¹² In her cases, the H* pitch accent is associated with the *wh*-word “dove” (in the utterance “E dove devo andare?”, “And where do I have to go?”; Gili Fivela, 2008: 113), even if it is considered a weak interrogative element.

In Alfano, Savy (2010), we find an analysis of a particular type of wh-question, different from the cases of the other studies we have considered until now. In the previous cases, we found examples of wh-questions with the wh-word placed in first position (such as “Cosa hai fatto stamattina?”, “What did you do in the morning?” or “Dove l’hai perso?”, “Where did you lose it?”). In these cases, the informative organization of the utterance corresponds to a comment structure (see § 2.4.4), while Alfano, Savy (2010) consider topic-comment structures, such as in the case of “La casa nel tuo disegno dov’è?”, “The house in your drawing, where is it?”, with a focalization on the head of the noun phrase that performs the function of subject, “la casa”. In addition, all the previous cases analyse utterances ending in a paroxitone word rather than oxitone ones. This can make all the difference if we consider that there is no segmental material in the terminal contour after the stressed syllable¹³. This particular syntactic and informative type shows a globally rising-falling pattern and a low termination. The wh-element is not at all prominent, since the topicalized element (syntactically the subject) is the strong element of the utterance and attracts the f_0 peak. At least in this structure, the falling part starts after the focused element and proceeds along the length of the utterance, determining what, in the ToBI system, would be a low boundary tone L%.

More recently, Gili Fivela *et al.* (2015) offer an overview of the patterns used across several Italian varieties in information-seeking wh-questions and indicate the nuclear pitch accent found in Neapolitan Italian is H+L*, followed by a low boundary tone L%¹⁴.

Given all the differences about speech style, syntactic, informative and segmental features, as well as the methodological choices, among the works mentioned, it is difficult to compare these results.

All things considered, we can state that, for all varieties, and even more for the Neapolitan variety, conclusions reached by the various authors are not unanimous in all aspects. Independently of the variety considered, they all agree on a falling body of the utterance, but the realization of the wh-element (prosodically strong or weak and the factors affecting it), together with the realization of the final movement (falling, low or possible final rise), still remains an open issue.

As far as *query_y* moves are concerned, they are realized by means of polar or yes-no questions, even if not all polar questions correspond to the *query_y* moves

¹³ This characteristic may vary the intonative realization, if we consider Ladd’s (1996) division between “truncation” and “compression” as strategies employed in the literature on intonational phonology in order to adapt intonational contours to short utterances. If an intonational contour consists of two or more pitch accents and if the utterance is a monosyllabic word, languages can either associate all of the pitch accents with this syllable (compression) or delete one of them (truncation). Ladd mentions English as an example of a compression language and Hungarian as an example of a truncation language. Southern varieties of Naples, Bari and Palermo are considered truncation languages (D’Imperio, 2002b; Grice, D’Imperio, Savino & Avesani, 2005).

¹⁴ As far as the comparison with other Italian varieties is concerned, the authors claim that “[...] in many varieties the nuclear pitch accent is H+L* and the phonological differentiation from the nuclear pattern of statements is only due to edge tone choices” (Gili Fivela *et al.*, 2015: 178).

of our coding scheme (see § 1.1.1). This is due to the fact that yes-no questions may perform different functions. A first macroscopic difference deals with genuine information-seeking requests, in opposition to confirmation-seeking requests, which demand information that the speaker has some reason to believe, even if he/she is not completely sure. We will see an example of the latter in § 1.2.2; meanwhile, in this section, we consider the real requests for information realized by means of yes-no questions.

Probably given the distinctive role of intonation in Italian, many authors have investigated this kind of request. The aforementioned work by Endo, Bertinetto (1997), on read speech, describe, for Neapolitan Italian, a pattern that presents a peak in the first part of the utterance, generally in correspondence with the first or second stressed syllable, and then a falling body prior to the stressed vowel, where it occurs as a rapid rise and fall. They analyse 18 cases and, concerning the final movement, they identify 11 cases of *monte*, five cases of *valle*¹⁵ and two others that cannot be specified. The prevalence of what they call the *monte* pattern corroborates, in some way, a previous study, probably the first on the Neapolitan variety, by Maturi (1988), on the difference between declarative and interrogative sentences. This work suggested that a peak in correspondence of the last stressed vowel of the utterance seemed to be peculiar of yes-no questions, while the global pattern and the final (post-tonic) movement was not crucial for the distinction. However, as far as the final movement is concerned, subsequent studies do not indicate a rising terminal contour. Only Caputo (1994, 1997) and Savino (2012) find some occurrences of the final rising in this category. Caputo interprets this as an alloform of a phonological pattern characterized by a low edge tone. Savino (2012) indicates a rising movement after the fall in small percentages of queries (in about 10% in Neapolitan Italian¹⁶).

Examining spontaneous speech, Caputo indicates a rise-fall prosodic pattern and proposes the following ToBI coding: L+H* L-L% o H-L%. She analyses this category of requests by identifying a rising movement, which is considered as a bi-tonal pitch accent with a starred H, a phrase accent HL- and a low boundary tone, L%.

Looking at more recent studies on the same framework of Autosegmental phonology, we find descriptions of yes-no questions in Neapolitan Italian, but also in other Southern varieties, in opposition to Central and Northern varieties. Most non-Southern varieties show the typical rising pattern traditionally associated with interrogativity: descriptions indicate a low nuclear pitch accent, followed by a high boundary tone (to give some examples from Milan and Rome varieties, see Sardelli, 2006). On the contrary, Southern varieties present a rising nuclear pitch accent, L+H, and a low termination, indicated by a low edge tone L%. Then, a different synchronization of the two tones with stressed syllables would characterize each

¹⁵ See Figure I-1 for an exemplification of these patterns.

¹⁶ Moreover, the author discusses this occasional extra final rise, hypothesizing that its realization is favoured in reading tasks.

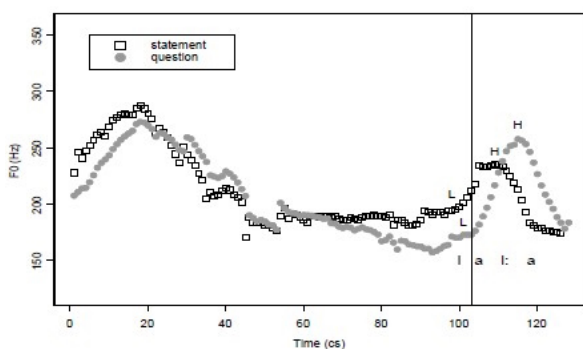
variety. Pisa Italian seems to be a peculiar case: Gili Fivela (2008) claims that, for yes-no questions, asking for new information from speakers exploits a falling nuclear accent followed by a sequence of high-low edge tones. The intonation pattern is accounted for by a nuclear H+L* and by H-L% edge tones (differences with wh-questions result from a post-nuclear rise-fall pitch movement).

In Neapolitan Italian, the movement is analysed as L*+H and the fall as phrase accent HL-, followed by an L% boundary tone (D’Imperio, 1997, 2000, 2001; Grice *et al.*, 2005; Crocco, 2006a, 2006b). Moreover, the actual shape of this pattern is affected by the position and the scope of the focus. In particular, in cases of narrow focus on a long constituent, “the rise and fall appear to separate, with the rise staying anchored to the focal initial stressed syllable, while the fall is realized later, reaching the target in the vicinity of the constituent right boundary” (D’Imperio, 2001: 342).

However, the shape of this L*+H accent is quite similar to that of the narrow focus statements. A rise-fall pattern, with an important peak, characterizes the part of the curve from the stressed syllable up to the end, as Figure I-2, extracted from D’Imperio (2002b: 40), shows. The figure illustrates traces for a statement (open squares) and a question (grey circles) “Mamma andava a ballare da Lalla”, “Mom used to go dancing at Lalla’s” (both with narrow focus on “Lalla”). The vertical bar marks the onset of the stressed vowel.

Both nuclear accents have been analysed as LH rises, but the temporal alignment of the L and H targets is considered to be different and perceptually relevant to the purpose of signalling modality. Specifically, the entire rise-fall appears to be timed later (relative to the stressed vowel) in questions than in statements (see also D’Imperio and House, 1997; D’Imperio, 2002a).

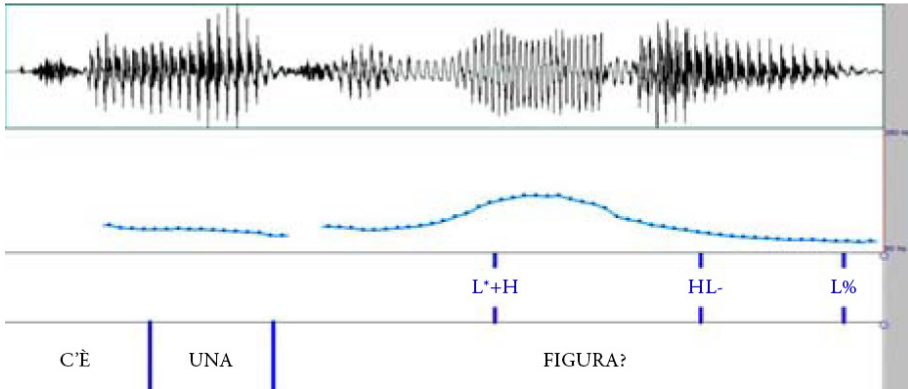
Figure I-2 - *Traces for a statement (open squares) and a question (grey circles) in Neapolitan Italian (extracted from D’Imperio, 2002b: 40)*



Crocco (2006a, 2006b) analyses semi-spontaneous speech recorded using the map task method and reaches the same conclusions as previous works on read speech: “questions have a global fall-rise shape, composed of two phases, currently analysed

as L^*+H and $HL-$. The nuclear accent L^*+H is anchored to the first stressed syllable of the focus constituent, and the $HL-$ fall to the last” (Crocco, 2006b: 810). Figure I-3 shows an example of a pattern identified by Crocco (2006b: 810), which she considers to be a question about new information (analogous to our *query_y*).

Figure I-3 - *An example of a yes-no question about new information in Neapolitan Italian (“C’è una figura?”, “Is there a picture?” extracted from Crocco, 2006b: 810)*



Alfano, Savy (2010), by adopting a phonetic approach, describe an analogous rising-falling pattern, characterized by a low termination of the curve.

To conclude, Petrone, D’Imperio (2011) give attention to define the contribution of the f_0 prenuclear region to tune meaning. Even assuming that the alignment of the nuclear accent is a robust perceptual cue for intonation modality (by a contrast between nuclear accent types L^*+H vs. $L+H^*$), the authors want to test if Neapolitans are able to differentiate questions and statements before the nuclear accent is perceived. Their results from identification and semantic differential tasks (in which the nuclear accent information was omitted) indicate that differences in accentual phrase target scaling in the prenuclear region significantly affect listeners’ judgments, indicating that the prenuclear contour carries enough information in order to distinguish questions from statements.

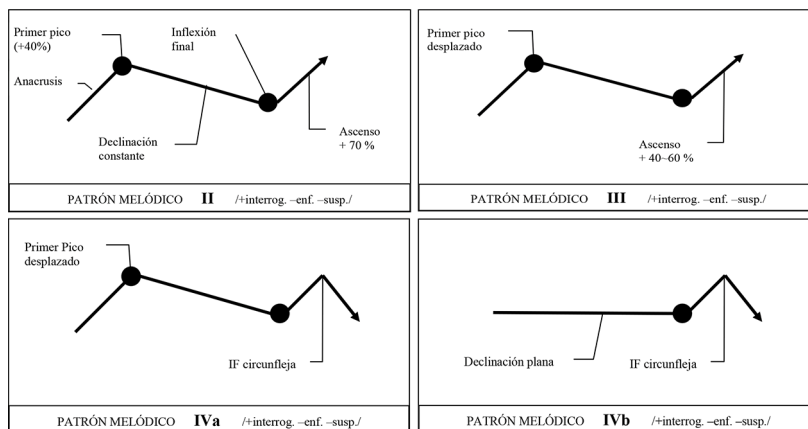
As far as the comparison with other Italian varieties, one can note that only Neapolitan Italian and Turin Italian show a rising-falling pattern, even if with a strong phonetic difference in the realization of the L^*+H accent in these two varieties (Gili Fivela *et al.*, 2015: 172): in Neapolitan Italian, the the nuclear syllable shows a rising movement.

1.2.1.2 Spanish

As we have done in the case of Italian, we will try to summarize the most notable results from previous studies on the closest types of utterances to our categories, following the order of *info_request*, *query_w* and *query_y* requests.

We will start by reviewing some findings related to interrogative patterns, within the framework of the melodic analysis of speech (MAS)¹⁷. The authors of the model consider three binary phonological features “/± interrogative/ /± emphatic/ /± suspended/”. Interrogative patterns are characterized as /+interrogative -emphatic -suspended/ and are realized, according to Cantero, Font (2007), by four interrogative patterns: two with a rising final inflection (Patterns II¹⁸ and III) and two others with a circumflex rising-falling final inflection (Patterns IVa and IVb). Figure I-4, adapted from Cantero, Font (2007: 74-76) illustrates the four patterns.

Figure I-4 - Interrogative patterns in MSA (Cantero, Font, 2007: 74)



Given the theoretical framework, it is quite difficult to establish a correspondence between these findings and the intonation of our functional categories, because we

¹⁷ This is an acoustic-perceptive analysis method elaborated from Cantero's proposal (2002). The model is based on the concept of phonic hierarchy, according to which speech is made up of linked phonic units in a hierarchical structure: the syllable, the rhythmic group (or phonic word) and the phonic group. The last is considered as the intonation analysis unit. The rhythmic group is the rhythm analysis unit (whose melody is also relevant within the contour), while the melody analysis unit is the tonal segment (that is, the relative tonal value of the syllabic core: the vowel). Each vowel constitutes a tonal segment, except for the tonic vowels, which can constitute a tonal inflection of two (or more) tonal segments, as occurs with the sentence accent (or syntagmatic accent), which is the core of the phonic group and therefore the core of the melody, i.e., the final inflection (FI) of the contour. The contour melody is not studied in terms of the succession of frequency values in hertz or semitones, but in terms of their relationship by calculating the percentage of the variation in each absolute value with regard to the previous value. Therefore, a rise will correspond to a positive percentage and a fall to a negative percentage. Finally, the percentages obtained are converted using an arbitrary initial value (see Font, 2007b; Font, Cantero, 2009).

¹⁸ Comparing Spanish with Catalan, Cantero, Font (2010) indicate that the two languages share this pattern, characterized by a first peak and an important final inflection. “En español y en catalán la entonación interrogativa se manifiesta mediante diversas melodías, en las que se combinan primeros picos desplazados con declinaciones planas e inflexiones finales circunflejas. Únicamente comparten el patrón melódico básico, caracterizado por el fuerte ascenso final” (Cantero, Font, 2010: 36).

do not know if there are any relations between these four patterns and formal or functional factors.

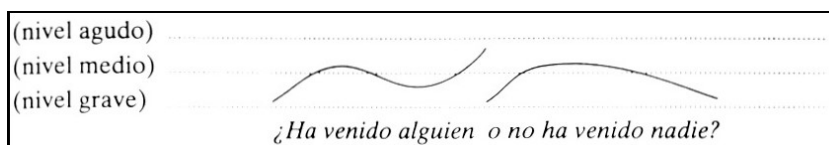
Another great problem in their interpretation deals with diatopic variation, since these findings are based on a corpus collected between 1996 and 2000 from TV programmes, in which we suppose that there are different varieties.

For these reasons, even if our *info_requests* usually correspond to interrogative utterances, for our purposes, we do not have enough elements to consider these studies as a reference.

As far as we know, like in Italian, this category has not yet been explored, neither in the Spanish spoken in Barcelona, nor for other Peninsular varieties. The only kind of *info_request* on which we find some other studies is the one realized by disjunctive structures.

The intonation pattern indicated by Alarcos (1994) is illustrated in Figure I-5. We can observe a first member characterized by a final rise, while a second member showing a rising falling melody, with a low termination.

Figure I-5 - *Intonation pattern of a disjunctive question according to Alarcos (1994: 55)*



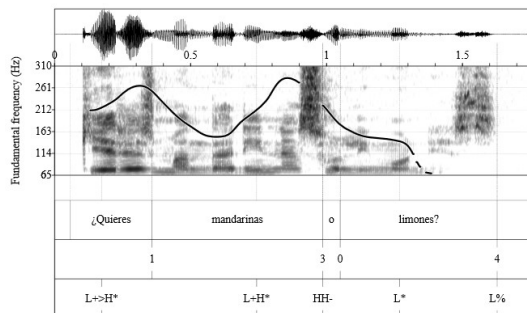
For Madrid Spanish, Estebas, Prieto (2010) consider different kinds of utterances, part of the Interactive Atlas of Spanish Intonation (Prieto, Roseano, 2009-2013), in the framework of the *Interactive Atlas of Romance Intonation* (IARI, Prieto, Borràs & Roseano, 2010-2014)¹⁹.

Figure I-6 shows the intonative realization of the utterance “¿Quieres mandarinas o limones?”, “Do you want mandarins or lemons?”, extracted from Estebas, Prieto (2010: 31).

¹⁹ The atlas contains audio and video materials for the study of intonation in different Romance languages. They are utterances of different sentence types, as well as conversations and interviews. The data of the intonational survey were collected by means of a questionnaire based on an inductive method in which the researcher presented the subject with a series of situations and then asked him/her to respond accordingly. For more information, see <http://prosodia.upf.edu/iari/>.

The results of prosodic analysis of intonation patterns across varieties are collected in Frota, Prieto (2015), Prieto, Roseano (2010, 2018).

Figure I-6 - Waveform, spectrogram and f_0 trace of a disjunctive question in the Madrid Spanish coded by Estebas, Prieto (2010: 31)



The authors indicate a pre-nuclear $L+>H^*$ accent in which the diacritical sign indicates that the peak of the rise occurs in the post-tonic position (and not in the tonic syllable, such as in the $L+H^*$ pitch accent). The nuclear accent shows an analogous low-high configuration, coded by the $L+H^*$ pitch accent²⁰, followed by a high boundary tone (HH-), which delimits the first prosodic unit. The second unit, which corresponds to the second member of the alternative (“o limones”), shows a falling configuration coded by an L^* pitch accent and an $L\%$ boundary tone²¹.

Regarding *query_w* requests, several works analyse their intonation. Different from the other information-seeking requests studied in our work (*info_{request}* and *query_y*), this category presents an element, the *wh*-word, which seeks to convey the communicative function of the request. Navarro Tomás (1974) and Quilis (1993) describe a falling contour as an unmarked configuration, which would not be different from a declarative sentence with the highest part of the curve corresponding to the interrogative element, followed by a falling part and a low termination. In turn, both authors distinguish other configurations: Navarro Tomás indicates a polite contour characterized by a final rise and a circumflex contour characterized by a final rise-fall, which is used to express amazement or surprise, whereas Quilis recognizes a marked configuration characterized by a final rise. However, while the unmarked configuration discussed by Navarro presents a final fall, Quilis describes a gradual and global falling throughout the utterance. According to Quilis, the analogy found with declarative sentences is due to a principle of economy. An intona-

²⁰ Referring to the $L+>H^*$ pitch accent, they claim: “This accent is phonetically realized as a rising pitch movement on the accented syllable with the F_0 peak aligned with the postaccentual syllable. It is attested in the pre-nuclear position of broad focus statements.” Referring to the $L+H^*$ pitch accent, the authors state: “This accent is phonetically realized as a rising pitch movement during the accented syllable with the F_0 peak located at the end of this syllable. It is commonly found in the nuclear position of narrow focus statements, counterexpectational yes-no and *wh*-questions, statements of the obvious, commands and vocatives, among other sentence types” (Estebas, Prieto, 2010: 19).

²¹ As far as Catalan disjunctive questions are concerned, Salcioli (1988: 62) describes a configuration characterized by a falling-rising movement in the first member and a falling movement with a final low termination in the second one. As far as we know, there are no other recent works on Catalan that deal with our category of *info_{request}*.

tive specification would be unnecessary when another grammatical mark is present: “Como la economía de la lengua tiende a evitar redundancias, basta un solo signo para indicar la pregunta” (Quilis, 1993: 431).

Sosa (1999) finds the patterns described by Navarro Tomás and Quilis in all varieties of Spanish that he analyses (several American and Peninsular varieties). He finds the falling contour in a Mexican variety, the rising contour in the Spanish spoken in Barcelona and the circumflex contour in Madrid Spanish (Sosa, 1999: 218-219). He claims that there exists a great diatopic variability in the use of the different patterns; the final rise configuration, for instance, is more frequent in some varieties such as Colombian, Mexican and Peruvian Spanish, independently of polite implications.

In accordance with the previous studies on intonation in Peninsular Spanish from Navarro Tomás and Quilis, Sosa notices that sentence initial f_0 peaks of interrogatives are significantly higher than those presented in declarative sentences (this also depends on the cases, but he generally codes H^*+H as the tonal pitch accent of pronominal questions, in opposition to the L^*+H or H^* identified in declarative utterances).

As far as Barcelona Spanish is concerned, the description from Sosa of a “pregunta suave, de indagación” fits with the general picture sketched until now for the polite nuance. The intonation of the pronominal question analysed by Sosa presents, according to the author, the typical contour of interrogatives, with a wide final termination that does not contain the f_0 maximum of the utterance. The example represents the curve of the question, “¿Dónde estás?”, “Where are you?” coded as $H^*+H L^* H\%$ (see Figure I-7, extracted from Sosa, 1999: 218).

Figure I-7 - Pronominal question, “¿Dónde estás?”, in the Spanish spoken in Barcelona according to Sosa (1999: 218)

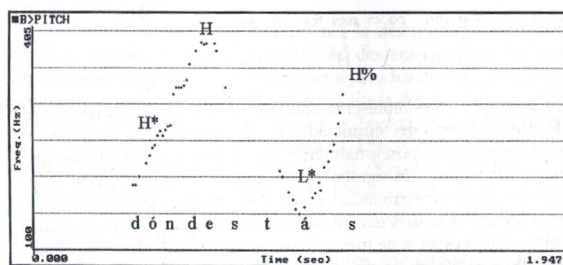


FIGURA 3-30. ¿Dón de es tás?

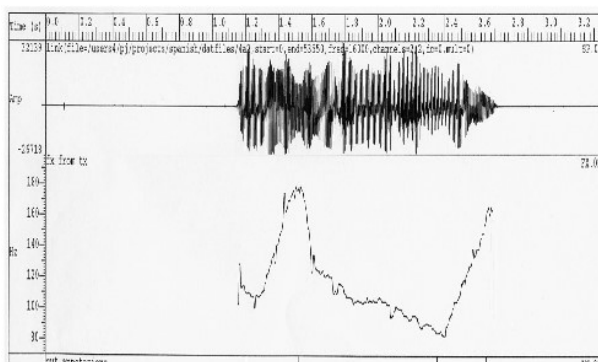
H^*+H $L^* H\%$

Moreover, Sosa clearly indicates a correspondence between a peak and the interrogative element, even if it may be associated with the stressed syllable, but also with the post-tonic syllables²².

²² “Como la intención interrogativa se concentra sobre la primera palabra acentuada, el pico más alto tiende a coincidir con esa palabra (pronombre o adverbio interrogativo), aunque no necesariamente en su sílaba acentuada” (Sosa, 1999: 216).

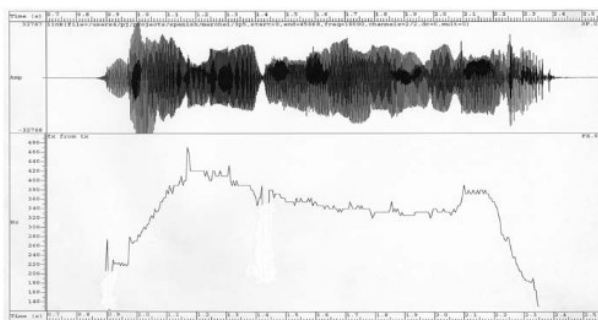
Considering the effect of sentence type on the scaling of sentence-initial peaks on five different sentence types (statements, yes-no questions, wh-questions, commands, exclamative sentences), Prieto (2004) finds, for wh-questions, that the most frequent pattern contains a final rise, similar in configuration to the final rising or 'polite' pattern mentioned by Navarro Tomás and Quilis²³. Figure I-8, extracted from Prieto (2004: 38), shows this pattern.

Figure I-8 - *Pronominal question with a final rise. "¿Dónde mira la nómada el número de lámina?" in Peninsular Spanish analysed by Prieto (2004: 38)*



Together with this pattern, she indicates another occasional configuration, characterized by an initial rise followed by a plateau that extends over the utterance until the final stressed syllable, where an f_0 fall occurs. Figure I-9, extracted from Prieto (2004: 38), shows this pattern.

Figure I-9 - *Pronominal question with a final fall. "¿Dónde mira la nómada el número de lámina?" in Peninsular Spanish analysed by Prieto (2004: 38)*



We can conclude that Prieto's findings do not confirm earlier results, since her most frequent pattern does not coincide with the unmarked pattern described in the pre-

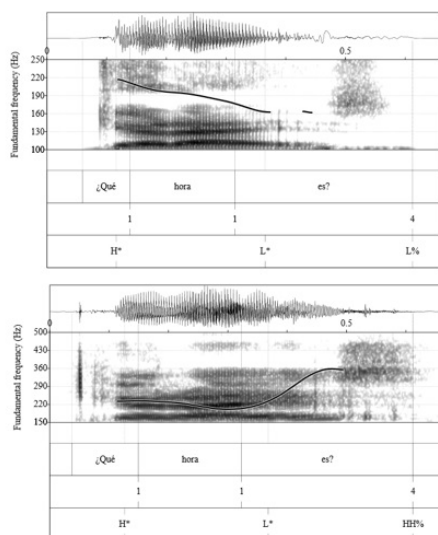
²³ She considers read speech of two speakers of Peninsular Spanish who come from Lleida and Huesca (North-east Spain).

vious literature. On the contrary, her findings on the first H peak in the utterance confirm the earlier description of a higher f_0 found in questions compared to statements. Moreover, as far as the last example in Figure I-9 is concerned, she indicates a prominent rising accent, placed on the wh-particle²⁴ (Prieto, 2004: 39).

A pattern similar to the one identified by traditional work on Spanish intonation is found by Hualde (2005), which indicates a configuration similar to a statement, with the highest part of the curve corresponding to the interrogative element, followed by a falling part and a low termination. Like Quilis, Hualde (2005: 267) underlines the occurrence of the interrogative element as the necessary cue for communicating a wh-question in Spanish.

Figure I-10, extracted from Estebas, Prieto (2010: 36), illustrates the two patterns identified by the authors in the case of Madrid Spanish. They indicate a falling pattern (L*L%) and a pattern showing a rising inflection (L*HH%), once again related to pragmatic nuances, which, this time, is of interest due to a greater speaker involvement in the speech act.

Figure I-10 - *Patterns identified by Estebas, Prieto (2010: 36) for wh-questions in Madrid Spanish exemplified by the utterance, “¿Qué hora es?” “What time is it?”*



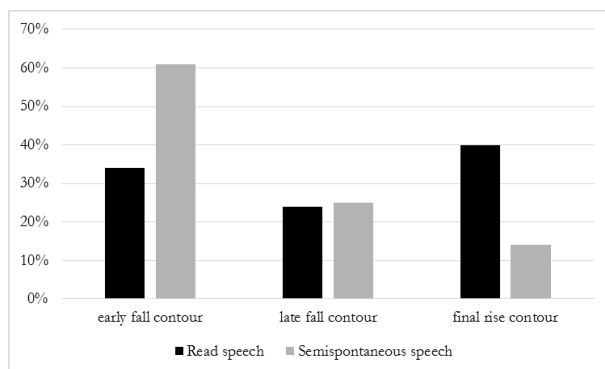
Moreover, they notice that both productions present a H* pitch accent in the pre-nuclear position (in both cases of approximately 220 Hz), confirming high pitch levels in questions stated in the previous literature.

Henriksen (2009) indicates four possible patterns for another variety of Spanish (spoken in the city of León) by considering read speech and task-oriented dialogues: i) a *final rise contour*, ii) a *nuclear circumflex (i.e., rising-falling) contour*, iii) a *global*

²⁴ Given the aims of her work, she does not focus on the realization of the interrogative element, nor it is possible to make a general deduction about this aspect.

falling contour, iv) *a nuclear falling contour*. It seems that the first two may resemble the patterns described until now. They are the most frequent since they apply to 90% of the cases. In another work, the same author identifies, for Manchego Spanish, three patterns: *early fall*, *late fall* and *final rise* (Henriksen, 2010: 57). The most interesting aspects deal with the variation in the distribution of these contours in the function of the speech style. We illustrate the difference in Figure I-11, in which the graphic shows the distribution of the three patterns in read speech in black and in semi-spontaneous speech in grey.

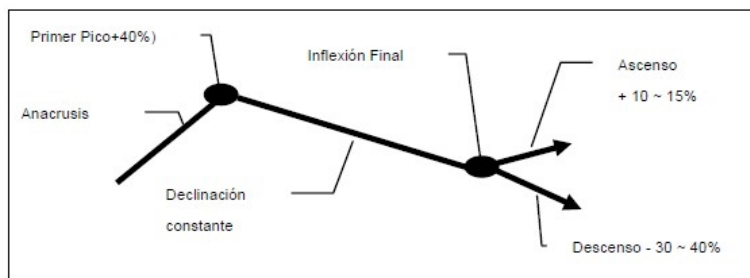
Figure I-11 - *Distribution of three patterns identified by Henriksen (2010: 57) for Manchego wh-questions in read speech (black) and semi-spontaneous speech (grey)*



The *late fall contour* is equally possible in both speech styles, whereas the *final rise contour* is more common in read speech and the *early fall contour* is more frequent in semi-spontaneous speech. Moreover, the author signals an amount of inter-speaker variability. We find some differences in the function of speech styles in Sosa (2003) too, which compares read speech with speech collected in in a semi-structured interview setting.

A great variability is attested for other Peninsular and American varieties (see Hualde, Prieto, 2015). For example, de la Mota, Martín Butragueño & Prieto (2010), for Mexican Spanish, indicate that the most common f_0 contour in wh-questions is produced with a circumflex configuration (coded as L+H* HL%), but they attest other possible contours, not only rising-falling patterns, but also rising and falling contours.

Cantero, Font (2010) characterize the pattern of “neutral” intonation, used for unmarked wh-questions, as shown in Figure 12, extracted from Cantero, Font (2010: 35).

Figure I-12 - *Melodic pattern for “neutral” intonation according to Cantero, Font (2010: 35)*

They indicate an optional first peak, a generally falling body and a relatively variable final termination. According to the authors, Spanish and Catalan share this pattern²⁵.

Finally, Hualde, Prieto (2015), also basing on previous studies, indicate four kinds of patterns for this category in Peninsular Spanish: falling: $L^* L\%$ (classified as unmarked interrogative), rising-falling: $L+;H^* L\%$, rising: $H^* H\%$, and claim that wh-questions in Peninsular Spanish may also be produced with the $L^*H\%$ contour of yes/no questions.

For the last kinds of information-seeking request that we analyse in this work²⁶, i.e., the ones realized by means of yes-no questions, both Navarro Tomás (1974: 101) and Quilis (1993: 429) indicate a falling contour followed by a final rise, which starts in the last stressed syllable, near to the baseline and lower than the mean f_0 value of the utterance. Quilis makes a difference in the function of the stress pattern of the last word of the utterance, claiming that, if the final word is an oxytone, the final rise can start in the last or in the penultimate syllable; if it is a paroxytone or proparoxytone word, it generally occurs in the stressed syllable. This implies that, independently of the stress pattern of the last word, the final inflection always involves the last stressed syllable. While Navarro signals that the final inflection does not reach the f_0 maximum, Quilis' examples show a final inflection clearly overcoming the highest f_0 value of the utterance.

²⁵ As far as Catalan wh-questions are concerned, the literature agrees on a main pattern, similar to the one described for Spanish as the unmarked contour, characterized by a globally falling melody (or by a rising part on the interrogative element and a falling body). A final rising would be used, once again, to express a special interest or amazement (Bonet, 1984), a rhetorical question or a repetition (Salcioli, 1988) or speaker involvement in the speech act (Prieto, 2002). Other possible contours, with a final rising or with a circumflex termination, would be used to show politeness or a special interest in the answer, but 90% of the cases present a falling melody and a low termination (Font, 2009).

²⁶ Due to an influence of Catalan, Spanish speakers residing in Catalonia can realize polar questions using the conjunction “que” (“that”) in the sentence-initial position. The presence of this particle affects the intonation in Catalan, which is studied in the function of this factor (among others, see Pradilla, Prieto, 2002). We will not consider the intonation of the interrogatives with “que” (see Romera, Salcioli, Fernández Planas, Carrera, & Román, 2007, Romera, Salcioli, Fernández Planas, Carrera, & Román, 2008) because they do not appear in our corpus.

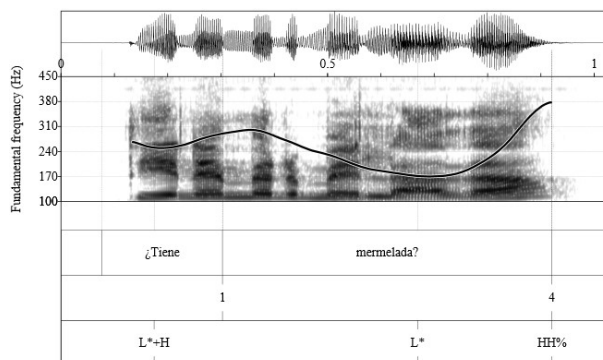
Sosa (1999: 198) indicates that, in this category of questions, we can find the clearest differences among the different varieties of American and Peninsular Spanish. In terms of Peninsular varieties examined by the author, the ones spoken in Madrid, Barcelona, Pamplona and Seville, they all share a typical rising end²⁷.

For Madrid Spanish, Escandell (1998, 1999) describes three main configurations with specific pragmatic interpretations:

1. a falling-rising contour (with a fall up to the stressed syllable of the word with the nuclear stressed, followed by a rise up to the end of the utterance), which she considers the neutral pattern;
2. a circumflex contour (with a rise on the stressed syllable of the word with nuclear stress followed by a fall), which the speakers use when they want to attribute the proposition to someone else;
3. a rising contour, with a rise from the beginning of the sentence, which speakers use when not asking genuine questions because they know the answer and they are ready to provide it.

For the same Peninsular variety, Sosa (1999) claims: “El pretonema se inicia con el acento tonal no marcado L^*+H , si bien no hay otro pico pretonemático, sino solamente un descenso en la sílaba acentuada [...], que tiene un acento tonal simple L^* . El tonema es el mismo ascendente $L^*H\%$ ” (Sosa, 1999: 210). Martínez Celdrán, Fernández Planas (2003), Face (2004), and Ramírez Verdugo (2005) describe a similar configuration²⁸. Estebas, Prieto (2010) indicate that information-seeking yes-no questions typically end in a rise. Figure I-13, extracted from Estebas, Prieto (2010: 30) illustrates the pattern described by these authors for pragmatically unmarked polar questions.

Figure I-13 - *Intonation pattern for information-seeking yes-no questions in Madrid Spanish, exemplified by the utterance “¿Tiene mermelada?” “Have you got any jam?”, reported by Estebas, Prieto (2010: 30)*



²⁷ Even when the coding of the Pamplona variety is $L^*+H H\%$, in contrast to the other $L^* H\%$ cases.

²⁸ This is true even if Sosa considers, as a general characteristic, that interrogatives show a major height when compared with declarative sentences, in the sense that they are realized in a higher tonal space and start with a higher f_0 . Indeed, he expresses this feature using the initial $H\%$ boundary tone (Sosa, 1999: 215). On the contrary, Martínez Celdrán, Fernández Planas (2003), Ramírez Verdugo (2005) and Romera *et al.* (2007, 2008) find that interrogative sentences present a similar and, in some cases inferior, height in comparison with statements.

More recently, Hualde, Prieto (2015) present a summary of the results of prior research using the *Discourse Completion Task* (in the framework of the already mentioned *Interactive Atlas of Romance Intonation*), across several varieties of Spanish in Spain and Latin America, confirming a rising nuclear pattern in Peninsular Spanish²⁹.

As far as the Barcelona variety is concerned, Figure I-14, extracted from Sosa (1999: 210), illustrates the sentence analysed by the author.

Figure I-14 - *Intonation pattern for information-seeking yes-no questions in Barcelona Spanish, exemplified by the utterance “¿Le dieron el número de vuelo?”, “Did they give him the flight number?”; reported by Sosa (1999: 210)*

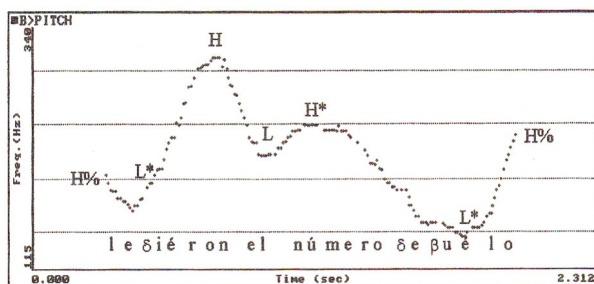


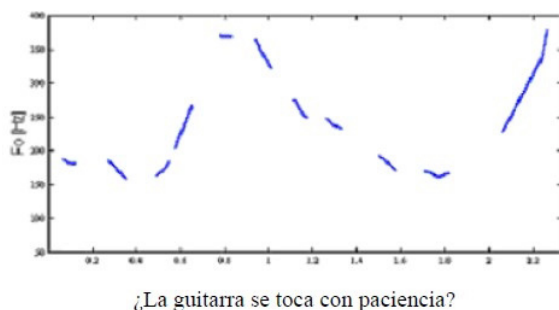
FIGURA 3-22. ¿Le **die** ron el **nú** me ro de **vue** lo ?
H% L*+H L+H* L* H%

The first H% boundary tone indicates the initial height of the interrogative. Then, starting from the first stressed syllable, the utterance presents two rises in the pre-tonematic part (L*+H) and, as for other varieties, a final rise (L*H%). The maximum f_0 value corresponds to the first peak; considering the intonation unit, the final rise indeed reaches an intermediate f_0 level.

In contrast with Sosa, Romera *et al.* (2007, 2008) find a very high final rise (of about 400 Hz), as shown in Figure I-15 (extracted from Romera *et al.*, 2007: 154), which illustrates the f_0 contour of an absolute interrogative obtained with the mean values of three repetitions of the same sentence. Even if the final inflection reaches the maximum f_0 value, it seems to be as high as the other peak of the sentence.

²⁹ Hualde, Prieto (2015: 372) consider that their findings coincide with Estebas, Prieto (2010: 30), even if they transcribe L*H% as the characteristic nuclear pattern (and not L*HH%). A discussion of this choice about the phonetic/phonological status of the transcriptions may be found in Hualde, Prieto (2015) on page 362.

Figure I-15 - *Intonation pattern for information-seeking yes-no questions in Barcelona Spanish, exemplified by the utterance “¿La guitarra se toca con paciencia?”; “Do you play the guitar with patience?”; reported by Romera et al. (2007: 154)*



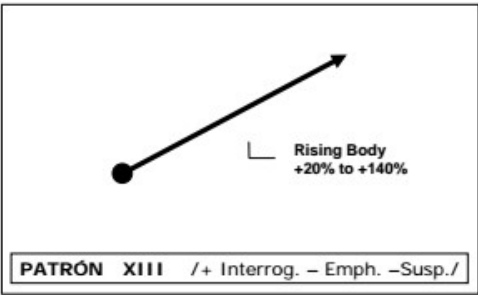
If one compares the data on the Madrid and Barcelona varieties, both configurations show a final inflection, even if it is possible to observe a difference between the two final tonemes: Madrid Spanish presents an L* HH%, whereas Barcelona Spanish an L*H%³⁰, according to Sosa (1999).

Considering these data, one could deduce that the diatopic variation between the two Peninsular varieties would lie in the width of the final inflection, compared to the baseline and topline of the curve. In the Central variety, the final rise leads to the f_0 maximum value (see Figure I-13), while it does not occur in Barcelona Spanish (see Figures I-14 and I-15). However, it is not possible to exclude the fact that the width of the final rise could depend on other factors, for example, the speech style and the register, but also specific pragmatic intentions and idiosyncratic differences.

We suppose that our *query_y* should correspond, in the framework of MAS (see Footnote 17), to /+ interrogative -emphatic -suspended/ and could be realized by means of one of the patterns identified by Cantero, Font (2007) and illustrated in Figure I-4. Moreover, in a more recent work, Font, Mateo (2011) define a new melodic pattern used to produce absolute interrogatives, characterized by a globally rising melody (see Figure I-16, extracted from Font, Mateo, 2011: 1120).

³⁰ We are not very sure that this kind of comparison is correct, since the rising boundary tone HH% in Estebas, Prieto (2010), as well as in the rest of the collective volume coordinated by Prieto, Roseano (2010), has been changed to H% in Prieto, Hualde (2015). As far as the difference between them, HH% was used to indicate a “subida de f_0 desde un acento bajo (o alto) anterior que se caracteriza por un ascenso significativamente mayor al del tono H%” (Estebas, Prieto, 2008: 276).

Figure I-16 - *Intonation pattern for yes-no questions identified by Font, Mateo (2011: 1120)*



As far as the slope of the rise of the utterance is concerned, the authors claim:

What has been established is that the higher the rise the larger the level of identification of a /+interrogative/ meaning. However, we believe that the speaker tends not to completely make the effort that a very marked tonal rise requires, both in this and in other interrogative patterns with rising inflection but endeavours it to be sufficient for the utterance to be understood as an interrogative within the context Font, Mateo (2011: 1120).

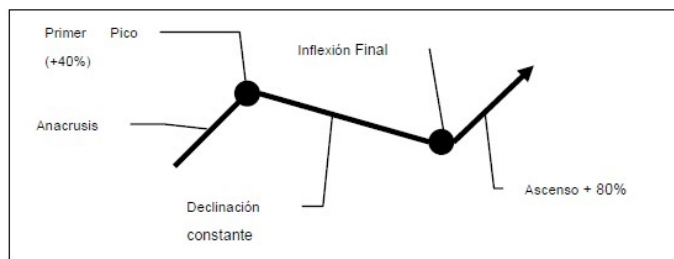
Garrido (2012) examines intonation patterns of Peninsular Spanish, without specifying the variety, of professional speakers. He takes into account the unit of the “stress group” (“grupo acentual”) composed of a stressed syllable and all the following unstressed syllables until the following stressed syllable or until the end of the intonation group that contains the stress group. Analysing a large sample of speech carried out with an automatic tool of stylization, annotation and modelling of pitch contours, he defines the most frequent patterns, dividing the sentence-final and non-final stress group categories. In sentence-final stress groups of yes-no interrogative sentences, once again, rising patterns prevail, independently of the number of syllables in the stress group. As for the final rise, this occurs in correspondence with the stressed syllable, but only if the word is an oxytone. In the case of paroxytone and proparoxytone words, it occurs on the post-tonic syllables, as shown by Figure I-17, adapted from Garrido (2012: 122).

Figure I-17 - *Final rise in the function of the stress pattern in sentence-final stress groups of rising interrogative sentences (adapted from Garrido, 2012: 122)*

Ascendente	1_1 (una sílaba tónica)	Interrogativa	VI0_PM0_P+FO	
	2_1 (dos sílabas, acento en la primera)		VI1_PFI	
	3_1 (tres sílabas, acento en la primera)		VM1_PM2	

Finally, comparing Spanish and Catalan yes-no questions, Cantero, Font (2010) indicate a shared pattern, characterized by a sharp final rise, illustrated in Figure I-18 (extracted from Cantero, Font, 2010: 36)³¹.

Figure I-18 - “Basic melodic pattern” of interrogative intonation shared by Spanish and Catalan (extracted from Cantero, Font, 2010: 36)



1.2.2 Confirmation-seeking requests

Languages can use different means to signal the meaning of confirmation-seeking request, speech act characterized by a certain degree of presupposition about the answer on the part of the speaker.

A check move requests the partner to confirm information that the checker has some reason to believe, but is not entirely sure about. Typically the information to be confirmed is something which the partner has tried to convey explicitly or something which the checker believes was meant to be inferred from what the partner has said. Check moves could cover past events (e.g. “I told you about the land mine, didn’t I?”) or any other information that the partner is in a position to confirm. However, check moves are almost always about some information which the checker has been told. (Carletta *et al.*, 1996: 5)

Check label indicates this type of utterance in our categorization (see § 1.1.1). An example of *check* request in English may be “There is a man. Isn’t there?”. Using

³¹ The literature review on Catalan yes-no questions indicates the coexistence of two melodic patterns. The first one, a “falling” pattern, starts in a high f_0 level and is constant until the last stressed syllable, where it sharply descends. The second one, a “rising” pattern, presents a medium f_0 start, a rising in the first post-tonic syllable, a gradual falling until the final stressed syllable, followed by a final rise on the stressed syllable in oxytone words and on the post-tonic syllable in the other stress patterns. The preference for one of the two patterns has been related to syntactic differences and pragmatic nuances. Speakers tend to use the falling pattern when interrogatives present the initial particle “que” and when they want to sound polite (see, for read speech, Bonet, 1986; Prieto, 1998; Pradilla, Prieto, 2002; Payrató, 2002; Fernández Planas, Martínez Celdrán, Carrera, van Oosterzee, Salcioli, Castells & Szmidt, 2004; Martínez Celdrán, Fernández Planas, Salcioli, Carrera & Espuny, 2005; Martínez Celdrán, 2007; Astruc, 2008; Carrera, Fernández Planas & Martínez Celdrán, 2010). Analysing spontaneous speech, Font (2007a, 2008) indicates several possible patterns and a preference for a final rising inflection. Along the same lines, we find Prieto, Cabré & Vanrell (2010), indicating an L* HH% nuclear configuration.

such an utterance, the speaker thinks to know that there is a man and he/she only looks for a confirmation. Among the various means, English conveys the difference between information-seeking and confirmation-seeking requests using morphosyntactic markers too (such as in the above mentioned example by means of a tag question), but not all languages do that. In order to establish how languages convey this meaning of confirmatory question, several studies focus on the role played by intonation, in combination with lexical, morphosyntactic and gestural features, analysing the production and the perception of epistemicity. Even if both illocution and modality express an attitude of the speaker and the two notions are expressed in many languages by the same forms,

Illocution and modality should be conceived as two distinct categories. In fact, while modality can be defined as the expression of a speaker's attitude *towards what he says*, illocution [...] is the way a proposition is used, for example, in asking, answering, informing, reassuring, warning, etc. Each of these uses is directed *towards the addressee*. Thus [...] illocution characterizes an act communicatively, [...] while modality expresses a speaker's attitude towards the propositional content of his utterance, illocution expresses a speaker's attitude toward the addressee (Pietrandrea, 2005: 21).

Languages rely on many verbal and nonverbal sources and hearers use these markers to detect degrees of (un)certainty. For American English, Gravano, Benus, Hirschberg, Sneed & Ward (2008) suggest that lexical markers indicate the epistemic modality in cooperation with intonation. For Catalan, Borràs, Roseano, Vanrell, Chen, & Prieto (2011) conduct two perception experiments containing a set of audiovisual materials in which lexical, prosodic and facial gestural cues present congruent and incongruent combinations for the expression of (un)certainty. The authors claim that even though lexical choice is important for conveying pragmatic meanings like (un)certainty, it can be easily overridden by prosodic and gestural patterns. Moreover, when gesture and prosody are in conflict, gesture is a more salient and powerful cue.

For Italian varieties, analysing prominence placement and syntactic structure, Crocco (2013) compares yes-no questions and statements containing a clitic right dislocation (CLRD) and points out that CLRDs are a grammatical resource to express a confirmation request.

In languages such as Italian and Spanish, speakers have at their disposal a variety of means to convey epistemicity, from lexical or morphosyntactic markers (negative forms, for instance) to specific intonational patterns. That is why the role of the various grammatical cues, prosody among them, has been investigated.

Considering several studies on different languages, Savino (2014) indicates a general trend of a rising or high pitch associated with the expression of uncertainty, whereas a low or falling pitch would be related to degrees of certainty. This fits with the concept of "intonation universals" in accordance with which there are cross-culturally similar uses in frequency expressing basic attitudinal meanings³².

³² Bolinger (1964, 1978) already signalled the link between openness, deference, submission and lack of confidence with rising or high pitch and the connection between assertiveness, authority, aggression

In several languages, as well in some varieties of Italian, there is evidence that prosodic means express the speaker's (un)certainly and polarity of the answer. Vanrell, Mascaró Prieto & Torres (2010) and Vanrell, Mascaró, Torres & Prieto (2012) state, for Catalan, that the distinction between information- and confirmation-seeking requests (yes-no questions) is intonationally marked, not by a different f_0 movement, but by a different scaling of the leading H tone in the H+L* pitch accent. Armstrong (2010) claims, for Puerto Rican Spanish, that speakers choose different nuclear pitch accents in the function of their belief about the propositional content of the question (H+L*, if the speaker produces a confirmatory question about something he/she believes to be true and ¡H* if the speaker has no specific belief about the propositional content). Let us consider the situation of Italian in the next section.

1.2.2.1 Italian

A variety of studies has considered the relation between the various functions of interrogative utterances, analysed considering *query*, *check*, *align* and *object* map task conversational moves (Anderson *et al.*, 1991), and prosodic patterns in semi-spontaneous speech (for Bari Italian, see Grice, Benzmueller, Savino & Andreeva, 1995; Grice, Savino, 1995a, 1995b, 1997, 2003a, 2003b, 2004; Savino, Grice, 2007, 2011; Savino, 2012, 2014; for Pisa Italian, see Gili Fivela, 2008; for Neapolitan Italian, see Crocco, 2006a, 2006b, 2013)³³.




In Bari Italian, Grice, Savino (1997) formulate the hypothesis according to which the information status of the answer may be related to the accent pattern of the question. So, a sentence such as “Vado a destra” can be a statement (“I go to the right”), an information-seeking request (“Do I go to the right?”) or a confirmation-seeking request (“So, I go to the right?”) (Grice, Savino, 1997: 29). According to the authors, such a distinction is intonationally signalled by the use of different pitch accents types: a rising L+H* for information-seeking requests, as opposed to either the rising L+H* or the falling H*+L or H+L* pitch accents for confirmation-seeking requests.

and confidence with low or falling pitch. Ohala (1994) traces back the use of a sound symbolism and of a “frequency code” to that of other living species, based on the metaphor of high pitch for smallness and submissiveness and low pitch for bigness and dominance. More recently, Gussenhoven (2002b, 2004) claims that biological codes (“frequency code”, which relates to power relations, “effort code”, which associates wider excursion with greater effort, and “production phase code”, which associates high pitch with the beginning of utterances and low pitch with the end) give an explanation of what is universal about the interpretation of pitch variation. However, the explanation of a cross-linguistic and universal systematic correlation between f_0 and meaning/function is obviously problematic and hard to argue rigorously, for a good number of reasons. Indeed, we can claim that the universalist approach towards intonation has been losing some ground. For a general discussion on intonational universals, see Ladd (2001), while, for a recent work on a universalist view of intonation, see Bazarbayeva, Zhalalova & Ormakhanova (2015).

³³ Savino, Grice (2007) do not focus on intonation patterns, but on pitch range variation in the identification of two different pragmatic meanings (*query* vs. *object*). However, given the purpose of this review, we will consider only the studies about the realization of confirmation-seeking yes-no questions, that is to say, *check* moves.

The use of any of the three pitch accents in confirmation-seeking questions depends on the degree of speaker confidence in terms of the correctness of the inferred material asked in the question (Grice, Savino, 1997, 2003a, 2003b, 2004). In the function of these factors, they classify three types of *check* moves: “1) *Tentative Check*, intonationally marked by a rising L+H* nuclear pitch accent, i.e., confirmation-seeking yes-no questions when speaker confidence as to the correctness of inferred material is very low [...] 2) *Confident Check*, intonationally marked by a high-falling H*+L nuclear pitch accent, when speakers are confident that information is mutually given or accessible (Chafe 1974) [...] 3) *Very Confident Check*, intonationally marked by a low-falling H+L* pitch accent, when the degree of speaker confidence as to givenness of information is very high, i.e., higher than in Confident Checks. Note that when context is not provided, Very Confident Checks are indistinguishable from declarative utterances” (Savino, 2014: 56). Figure I-19, adapted from Savino (2014: 58), exemplifies the relationship between the pragmatic function and prosodic coding.

Figure I-19 - *Prosodic coding in different confirmation-seeking requests in Bari Italian, according to different degrees of speaker confidence that information is being shared (adapted from Savino, 2014: 58)*

Pragmatic function	Intonational marking
QUERY Tentative CHECK (Unconfident)	 L+H* L-L%
Confident CHECK	 H*+L L-L%
Very confident CHECK	 H+L* L-L%

The confirmation-seeking request, when speaker confidence about the correctness of inferred material is very low (“tentative check”), shares the intonative pattern of an information-seeking request: L+H* L-L%. At the opposite end, when the degree of speaker confidence about the givenness of information is very high (“very confident check”), this is similar to declarative utterances: H+L* L-L%.

Savino (2014) provides perceptual evidence supporting this interpretation, initially derived from production studies, and confirming the role of intonation as an epistemic marker of (un)certainty.

As far as Pisa Italian is concerned, Gili Fivela (2008) finds, in her corpus, that speakers, both in read and semi-spontaneous speech, can use the same pattern observed for yes-no questions when asking for new information (H+L* H-L%). Moreover, she signals that the pitch accent usually expressing a contrastive interpretation, [L+]H*+L, may be produced by speakers to ask for confirmation. Interestingly, this pitch accent was found with different edge tone combinations depending on the speaker role in Map Task dialogues and on the related presupposition of knowledge: instruction followers use L% (owning the lowest level of information in Map Task), while givers use LH% (see also Gili Fivela *et al.*, 2015: 177).

Even if the functional distinction between information- and confirmation-seeking requests does not seem to be clearly intonationally marked, the author highlights some features of checks that she interprets as phonetic specificities. Some checks, especially in semi-spontaneous speech, do not present a clear pre-nuclear high pitch syllable. Additionally, she proposes that a greater pitch span in pitch accent could be related to speaker attitude variation. Therefore, differences in range would correspond to degrees of self-confidence and (un)certainty.

However, it is worth noting that the author considers this to be an outstanding question:

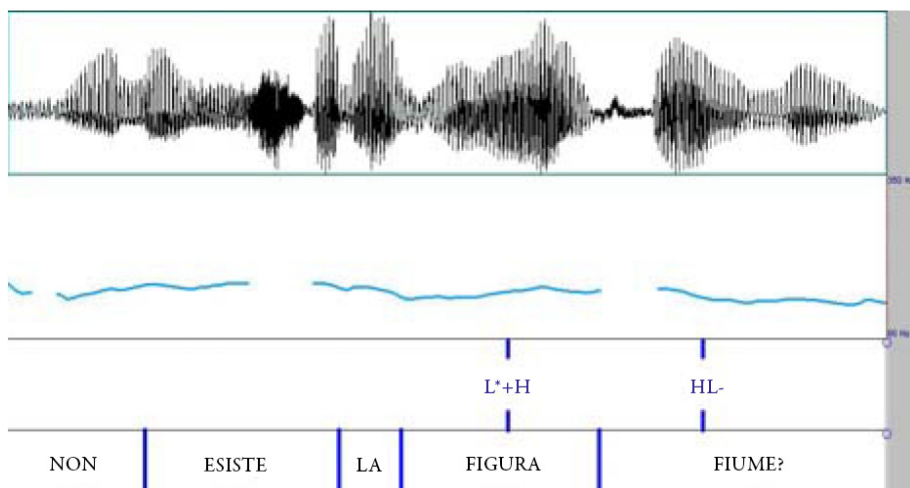
Further analysis may show that what appears to be a phonetic difference at the present stage of investigation actually distinguishes queries and checks. For instance, the height of the leading tone target (but also the height of the following high phrase accent) could participate in making the pitch variation prominent and could, therefore, represent a way to express illocutionary force in questions – i.e., differentiating questions with no presupposition of knowledge from checks, as well as less confident from more confident checks. (Gili Fivela, 2008: 124)

Apart from yes-no questions, which can ask for information or confirmation, she analyses another type of confirmation-seeking request, i.e., a tag question, which is frequently used to check information. It corresponds to a *check* move in our classification and can present different types of confirmatory tags (see § 2.4.2).

For the first part of the check, the affirmative part, she indicates a nuclear (H+) L* pitch accent, as for previous checks, even if the high leading tone is taken to be not realized and is indicated in brackets. For the second part, i.e., for the confirmatory tag, she indicates the coding H- (L%), interpreting the phenomenon as tonal truncation. The final part may not be realized when the pattern is associated with final stress words. Therefore, it is possible to observe different phonetic implementations of contours because both the nuclear pitch accent and the edge tone are associated with the same syllable. This tendency, which the author observes in her corpus in a number of examples involving final stress words in the final position within the utterance, is particularly evident in tag questions with “no?” as the confirmatory tag, where the usual rise-fall pattern appears to be partially truncated. On the contrary, when the confirmatory tag is not a final stress word, such as the case of “vero?”, the rise-fall pattern (H-L%) is realized on the unstressed syllable “ro”.

Turning to the variety spoken in Naples, Crocco (2006b) considers four groups of different yes-no questions by classifying them into a function of two factors: 1) information- vs. confirmation-seeking requests and 2) the kind of information being asked, according to the activation status of the referents (thereby dividing questions on given, new or accessible information). The pattern described in Section 1.2.1.1 and exemplified in Figure I-3 is found in each of these pragmatically different groups of questions. Both information- and confirmation-seeking requests show a global rise-fall shape, coded as L*+H and HL-. The nuclear accent L*+H is anchored to the first stressed syllable of the focus constituent and the HL- fall to the last. Figure I-20, extracted from Crocco (2006b: 810), shows an example of a yes-no question used as a confirmation-seeking request about given information.

Figure I-20 - *An example of a yes-no question about given information in Neapolitan Italian*
 (“Non esiste la figura fiume?”, “The picture river doesn’t exist?”) (Crocco, 2006b: 810)



Even if information and confirmation-seeking requests share the general rising-falling pattern, regardless of the function performed by the question in the context and the type of information, the author comments on some interesting phonetic particularities in yes-no questions concerning given information (corresponding to *checks* in the coding scheme adopted in this work).

First, in short confirmation-seeking questions, the author finds that the tonal targets show a different alignment from the one found in most of the corpus utterances. Specifically, in an alignment move, the L target of the rise is located on the syllable preceding the nucleus, while the HL fall takes place on the stressed vowel. The resulting configuration is near to the one described above for Bari Italian.

Second, if compared with yes-no questions about new information, the pitch range appears to be reduced in several *checks* on given information, as stated by Alfano, Savy (2010) for the same variety of Italian, even if the author suggests the necessity to corroborate this characteristic with a larger corpus.

Crocco (2006b: 811) concludes her work as follows:

The functional distinctions in the class of the [yes-no questions] do not correspond to a univocal linguistic coding. A variety of grammatical means (negative form, focus scope variation, etc.) can be exploited by the speaker to express his beliefs and attitudes toward the question. However, the lack of a univocal linguistic coding for distinguishing different types of questions, suggests that a crucial role in the correct interpretation of the utterance is played by the context.

Finally, Gili Fivela *et al.* (2015: 177) make remarks on some varieties about a different realization between information-seeking and confirmation-seeking yes-no questions, but not on Neapolitan Italian. Therefore, we can deduce that, for this variety, the patterns reported for information-seeking yes-no questions may be used for confirmation-seeking yes-no questions too.

In conclusion, we can say that there exists a diatopic variation: while, in Bari Italian, the distinction between information- and confirmation-seeking requests appears to be clear-cut, in the Italian spoken in Pisa and Naples, the picture is more complex. However, even if these studies on Neapolitan and Pisa Italian do not find a systematic difference between the prosody of information- and confirmation-seeking requests, they do not consider their conclusions to be satisfactory, suggesting that there could still be no recognizable difference.

As in the case of Bari Italian, some works on Spanish clearly indicate that prosodic differences distinguish questions in which the speaker expresses some kind of presupposition or knowledge about the answer. We will summarize the findings of these studies in the next section.

1.2.2.2 Spanish

Discussing some cross-dialectally intonational contours in Spanish, Prieto, Roseano (2010, 2018) indicate that systematic prosodic differences, usually located in boundary tones, are among the means used in Spanish to distinguish between information- and confirmation-seeking yes-no questions³⁴.

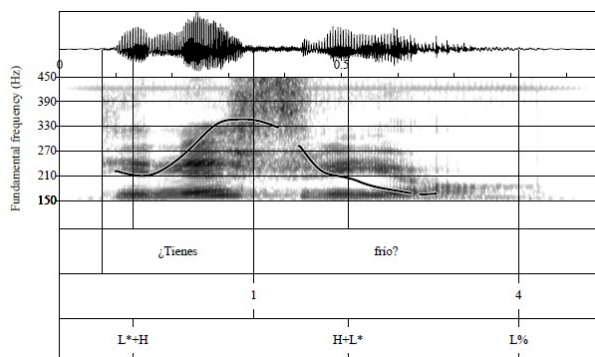
For Madrid Spanish, we find some analyses of this aspect within the tenets of the Sp_ToBI framework. As mentioned above (see § 1.2.1.2), Estebas, Prieto (2010), for information-seeking yes-no questions, signal an L*+H pre-nuclear accent and a nuclear accent showing an f_0 dip, which is interpreted as an L* pitch accent. The final rising movement is described as HH%, given the sharp final inflection (see Figure I-13). For confirmation-seeking questions, they find the same pre-nuclear

³⁴ “With respect to the potential intonational contrast between confirmation questions and other types of yes-no questions, it must be noted that this contrast is realized by a variety of means in all dialects. This is to say, there is no nuclear configuration that is cross-dialectally common for this utterance type. This notwithstanding, there seems to be a common pattern, which consists in using a final boundary tone that is radically different from that used in information-seeking yes-no questions. In dialects where the latter utterance type shows a rising final boundary tone, confirmation questions have a falling or low boundary tone, and in dialects where information-seeking yes-no questions exhibit a falling or low boundary tone, the boundary tone for confirmation questions rises” (Prieto, Roseano, 2010: 11).

accent and a final fall, which involves a H+L* nuclear accent followed by an L% boundary tone. Figure I-21, extracted from Estebas, Prieto (2010: 34), illustrates an example of this realization.

Therefore, comparing information- and confirmation-seeking yes-no questions in this work, we can notice a different boundary tone (HH% in information-seeking vs. L% in confirmation-seeking interrogatives) and a different nuclear accent (L* in information-seeking vs. H+L* in confirmation-seeking questions).

Figure I-21 - *Confirmation-seeking yes-no questions for Madrid Spanish* (“¿Tienes frío?” “Are you cold?”) extracted from Estebas, Prieto (2010: 34)

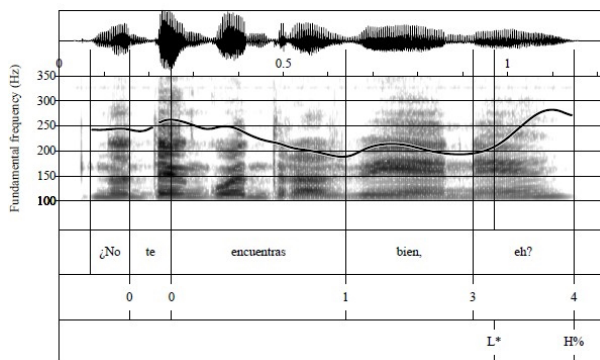


For the example shown in Figure I-21, the authors add to their description: “it is pronounced with a nuance of surprise and disbelief” (Estebas, Prieto, 2010: 29). This observation leads us to think that this utterance would not be tagged in our coding scheme as a *check* move (see § 2.4.2), since, by definition, being a move coming from a strong presupposition, a *check* cannot express surprise or disbelief. In this sense, we do not know if this example is comparable to our category of confirmation-seeking requests³⁵.

Moreover, the authors find, in their corpus, another pattern for confirmation-seeking questions, through the use of a rising contour, L* H%. Figure I-22 shows this configuration, illustrating the tag question, “¿No te encuentras bien, eh?, “You aren’t feeling well, are you?”.

³⁵ The communicative situation designed to evoke the confirmatory question is the following: “Sabes que afuera hace mucho frío. Entra alguien bien abrigado y le preguntas si tiene frío. (*Carácter hipotético, margen para responder sí o no*) ¿Tienes frío?” (extracted from the Intonation Survey, Utterance no. 33, of “Central Peninsular Spanish”, <http://prosodia.upf.edu/atlasentonacion/metodologia/index.html>). Since the speaker knows it to be very cold, he/she would only ask for confirmation from his/her interlocutor and thus not show surprise or disbelief.

Figure I-22 - *Confirmation-seeking yes-no questions for Madrid Spanish* (“No te encuentras bien, ¿eh?”; “You aren’t feeling well, are you?”) extracted from Estebas, Prieto (2010: 34)



They add that the final inflection of these confirmatory questions is typically lower than for the final rise of the information-seeking questions. Comparing two contours of the same speaker, they indicate that the utterance-final value for the final rise in Figure I-22, i.e., a confirmation-seeking request, is 287 Hz, whereas this value for the information-seeking question is 380 Hz (see Figure I-13). Based on this difference, they introduce a phonological contrast between these two types of rising contours, an L* HH% for information-seeking questions and an L* H% for confirmation-seeking questions³⁶.

Considering semi-spontaneous speech elicited using map task dialogues, Pérez, Estebas, Vanrell & Prieto (2011) investigate the same Central variety, reaching the same conclusion about a clear prosodic difference between the two categories. Furthermore, they establish a hierarchy of patterns according to the degree of (un)certainty: different prosodic patterns express different degrees of presupposition about the answer on the part of the speaker.

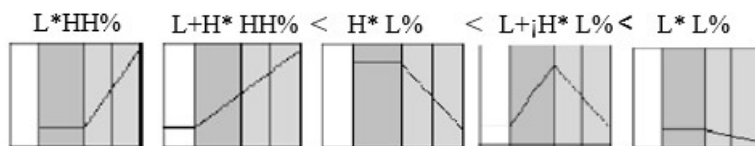
According to the authors, genuine information-seeking requests and confirmatory questions with a high degree of confidence about the answer are the extreme poles of a prosodic continuum, indicating by their coding in this way:

L* HH%, L+H* HH% < H* L% < L+;H* L% < L* L% (Pérez *et al.*, 2011: 53)

Figure I-23, adapted from Pérez *et al.* (2011: 47), shows the inventory of pitch accents proposed by the authors for the prosodic continuum of yes-no questions in the function of the degree of (un)certainty.

³⁶ As we have mentioned above, for confirmatory tags of confirmatory questions, Gili Fivela for Pisa Italian considers the coding H- (L%), thus indicating two different phonetic implementations of contours: a rising and a falling one. The usual rise-fall pattern may be partially truncated when both the nuclear pitch accent and the edge tone are associated with the same syllable (such as in the case of “eh”; see § 1.2.2.1). We do not know what occurs in Madrid Spanish if the confirmatory tag is not a mono-syllabic word (such as in the case of “verdad”), since the authors do not provide examples of this kind. However, we do not fully understand the comparison between the two yes-no questions (“¿Tiene mermelada?”, an information-seeking question, and “¿No te encuentras bien, eh?”, a confirmation-seeking question), given the presence of a confirmatory tag in the second utterance.

Figure I-23 - *Prosodic continuum of yes-no questions in the function of the degree of (un) certainty, according to Pérez et al. (2011: 47): information-seeking questions on the left and confirmation-seeking requests on the right*



It is possible to notice that the extreme pole of the continuum representing the question with the highest degree of certainty about the answer shows the typical pattern of declarative sentences, characterized by a low nuclear pitch accent and a low boundary tone.

Finally, Hualde, Prieto (2015: 389) report a number of possible intonational patterns for different utterance types of “Bebe la limonada”, “(S)he is drinking the lemonade” for Peninsular Spanish and indicate for confirmation questions a circumflex contour, using the following notation $L+<H^*$ (*Bebe*) $L+H^*$ HL% (*la limonada*).

Therefore, if we compare the findings of Estebas, Prieto (2010) and of Hualde, Prieto (2015) for the same Spanish variety, we can observe different prenuclear pitch accents (L^*+H vs. $L+<H^*$), different nuclear pitch accents ($H+L^*$ vs. $L+H^*$) and different boundary tones ($L\%$ vs. $HL\%$).

As far as we know, the Spanish spoken in Barcelona has not yet been investigated in order to find out if and to what extent intonation functions as an epistemic mark³⁷.

1.2.3 In summary

Trying to summarize the findings of the previous studies on information- and confirmation-seeking requests, the first thing to consider is the heterogeneity of methods and materials used by the various authors. To reach some satisfying conclusions, it is necessary to analyse comparable categories belonging to the same speech corpus and to adopt a unique method of analysis. We will do that by carefully taking all the previous research conducted on both Italian and Spanish into account.

Despite the differences in the approaches, we can highlight some essential points arising out of literature review and above all some controversial points that need to be explored in a deeper way.

³⁷ On the contrary, for Catalan, Prieto *et al.* (2010), Vanrell *et al.* (2010) and Vanrell *et al.* (2012) reach similar conclusions to those obtained for Madrid Spanish: phonological contrasts in intonation (together with other linguistic strategies) can signal the speakers’ beliefs about the certainty of the proposition expressed. Generally, a high tone (in a pitch accent or in a boundary tone) is associated with a low degree of certainty, whereas low tones correlate with high degrees of certainty. However, they find different strategies depending on the variety: Central, Majorcan and Menorcan Catalan speakers use a different type of nuclear pitch accent to mark the distinction between confirmation- and information-seeking yes-no questions, while Ibiza/Formenteran Catalan speakers use boundary tones.

Before summarizing these points, we should recall the types of requests identified according to the *info_request*, *query_w*, *query_y* and *check* tags (cf. § 1.1.1).

The *info_request* move can elicit the introduction of a new discourse topic, requesting the interlocutor to do it (“Stasera?”, “Tonight?”) or it can introduce it *ex abrupto* (“E un film?”, “And a movie?”) by requesting a generic contribution. It corresponds, in our analysis, to disjunctives (for example, “È bianco o nero?”, “Is it white or black?”) or to different kinds of phrases (for example, “Il cappello?”, “The hat?”).

The *query_w* request performs the function of requesting an informative contribution about a discourse topic (“Dove ci vediamo?”, “Where can we meet?”). It is characterized by the presence of a wh-element (an interrogative pronoun, adverb or adjective), which can appear in different positions.

The third kind, *query_y*, requests a specific contribution about a discourse topic or about its characteristics (“Passo a prenderti io?”, “Should I pick you up?”, “Ti piace il genere fantascientifico?”, “Do you like science fiction?”). It is conveyed by yes-no questions, which can present several different syntactic structures.

The fourth kind, *check*, functions to ask for a confirmation about a discourse topic or about its characteristics (“Quindi andiamo in macchina?”, “So we’ll go by car”). It shares the same variability of *query_y* moves in their syntactic structures, plus the possibility of presenting an affirmative part, followed by a confirmatory tag (for example, “È nuovo, vero?”, “It is new, isn’t it?”).

For both Italian and Spanish, the category of *info_request* realized by noun, adverbial or prepositional phrases needs to be further investigated. In Pisa Italian, we find a globally rising pattern or a rising pattern followed by a high but flat part (final plateau), while there are no works on the Spanish spoken in Barcelona or on other Peninsular varieties. The only kind of *info_request* on which we find some other works is the one realized by disjunctive structures. In this case, we can compare the two languages (even if they are Pisa Italian and Madrid Spanish) within the tenets of the ToBI transcription system of the Autosegmental Metrical Theory. We can observe a different prosodic phrasing. In Spanish, we find an intonational phrase delimited by a low edge tone (L%) and an intermediate phrase, delimited by a high boundary tone (HH-), which corresponds to the first member of the alternative. In Italian, we do not find this correspondence between the intermediate phrase and the first member of the alternative. Moreover, even if different pitch accents are associated with the tune [L+]H* H+L* (or L*) L-L% in Italian³⁸ and L+>H* L+H* HH- L* L% in Spanish, we can notice an analogous phonetic realization. A rise that culminates in the first member of the alternative, which reaches (as in the examples) the maximum f_0 value, and a following fall, which reaches a low termination and the minimum f_0 value, characterizes the melodic curve of this category.

As far as information-seeking wh-requests, we can observe a complex picture. In traditional grammatical descriptions of both Italian and Spanish intonation, it was often simplistically claimed that the melodic pattern of wh-questions is quite similar

³⁸ With some differences among varieties, both in pitch accents and in edge tones (Gili Fivela *et al.*, 2015: 181).

to that of declarative sentences (even if various authors agree on the fact that initial f_0 peaks of interrogatives are significantly higher than those that present declarative sentences). In both languages, we find a description of a falling contour as the unmarked configuration, which would not be different from a declarative sentence with the highest part of the curve corresponding to the interrogative element, followed by a falling part and a low termination. However, if we compare all the previous studies on this subject, we easily realize that they are anything but conclusive.

First, we have to consider not only diatopic differences but also a diaphasic variation, since speech style obtained using various elicitation techniques results in another variable to be taken under control. Secondly, various patterns are associated with this category and different configurations may occur at the end of the utterance (at least rising, falling and rising-falling), which, in some cases, are interpreted to express pragmatic purposes (in particular, to sound politer).

Thirdly, research on Italian and Spanish generally suggests that the unmarked wh-question configuration contains an f_0 rise on the interrogative element³⁹, even if not all authors agree on this point. Other authors suggest that its realization may vary in the function of the length of the utterance (prominent in short utterances) and the type of wh-element. However, the strong or weak realization of the question word remains an open issue.

A generally clearer picture represents the situation of *query_y* requests. For Neapolitan Italian, the literature review indicates that yes-no questions show a global rising-falling configuration, composed of two parts, which are mostly analysed as L^*+H and $HL-$. Moreover, the nuclear L^*+H pitch accent is anchored to the first stressed syllable of the focus constituent and the $HL-$ fall to the last. For Spanish, unmarked polar questions show a falling contour (in some cases, falling after a first f_0 peak, usually collocated in the first post-tonic syllables), followed by a final rise. The final inflection characterizes all the varieties mentioned in our review, but Madrid Spanish would present an $L^* HH\%$, whereas Barcelona Spanish would present an $L^*H\%$. However, not all authors agree on the width of the final inflection, compared to the baseline and topline of the curve. Finally, the point at which the final ending starts would depend on the stress pattern of the last word of the utterance. Unless it is an oxytone word, it would not start in the stressed syllable, but in the post-tonic syllables.

Comparing the three categories of information-seeking requests in Italian and Spanish, we can summarize as follows:

1. a general great amount of diatopic and diaphasic variability has to be considered;
2. very little is known about our category of *info_request* moves, both in Italian and in Spanish;

³⁹ Ladd (1996: 170) notices that, in languages that present wh-movement, the question word would not bear the prominent accent, suggesting that the interrogative element is not the focus of the utterance. On the contrary, languages that do not exhibit wh-movement would mark the pronominal word with an f_0 rise. According to these cross-linguistic trends, both Spanish and Italian should not present an f_0 rise on the question word.

3. the main open issues concern the realization of the interrogative element and the termination of *query_w* moves in both languages;
4. yes-no information-seeking requests show a very different intonation pattern in the two languages (as well as, clear differences among the different varieties).

Finally, considering *check* moves, corresponding to confirmation-seeking requests, the main question that researchers have tried to answer concerns if and how the functional distinction between information- and confirmation-seeking requests is intonationally marked. For Italian, studies on Bari, Pisa and Neapolitan Italian lead to different conclusions. In Bari Italian, speakers rely on intonation to convey the epistemic disposition of (un)certainity towards a proposition. They use different pitch accents types: a rising L+H* for information-seeking requests, as opposed to either the rising L+H* or the falling H*+L or H+L* pitch accents for confirmatory requests. The use of any of the three pitch accents in confirmation-seeking questions depends on the degree of speaker confidence about the correctness of the inferred material asked in the question. On the contrary, in Neapolitan and Pisa Italian, the difference between the prosody of information- and confirmation-seeking requests does not seem to be systematic, even if, compared to genuine polar questions, confirmatory questions present some different phonetic features concerning a different alignment of tonal targets and a narrower overall pitch range excursion. For Spanish, the Barcelona variety has not been investigated, whereas the findings about the Madrid variety indicate a clear prosodic difference between the two categories. Furthermore, such as in the case of Bari Italian, a hierarchy of patterns according to the degree of (un)certainity is established. Therefore, we can conclude in this respect that the realization of polar questions with different degrees of certainty about the answer in Neapolitan Italian and in Barcelona Spanish needs to be examined further.

CHAPTER 2

Data collection

In this chapter, we will describe the criteria and procedures that we employed to collect the data for this study. First, in Section 2.1 we will illustrate the elicitation technique. Next, in Sections 2.2 and 2.3, we will describe what kinds of speakers we targeted for inclusion in the corpus and how we recorded speech material. Then, in Section 2.4, we will provide a brief description of the preprocessing of the data, consisting of the orthographic transcription of the dialogues, pragmatic annotations and conventions used to extract the units of analysis, as well as informative and morphosyntactic classifications of the items. Finally, in Section 2.5, we will illustrate the speech corpus by considering each kind of request in Italian and in Spanish.

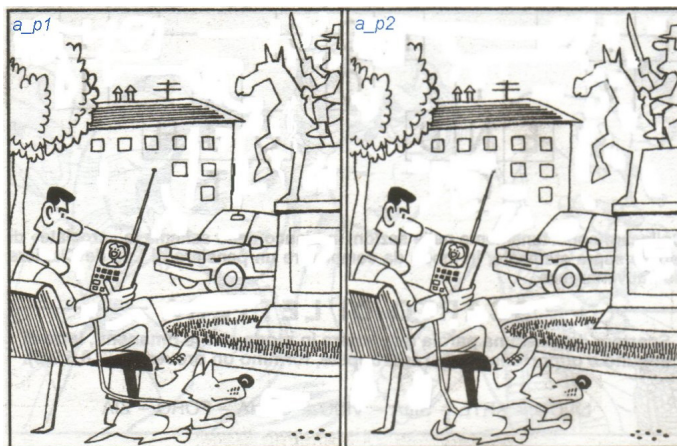
2.1 *Dialogues' elicitation technique*

Linguistic data can be gathered using a varied range of techniques. Since salient differences are observed across different types of elicited speech material, data acquisition has a crucial importance. It is increasingly recognized and documented that there are no ideal methods and materials that perform best in all respects: each choice implies advantages and disadvantages that may vary according to research aims and objectives. Niebuhr, Michaud (2015) rate different types of elicited speech material along various dimensions, among which they discuss five: (i) degree of control over experimental variables; (ii) event density: the number of analysable tokens per time unit; (iii) expressiveness; (iv) communicative intention: the speaker's concern to actually convey a message; and (v) homogeneity of behaviour. We recollected our corpus using the "spot the difference" technique (Péan, Williams & Eskenazy, 1993), which allowed us to have good speech material along these dimensions and to minimize the observer's paradox, without renouncing high-quality sound recordings.

The task requires participants to find seven differences between two drawings, relying only on verbal interaction (Cerrato, 2007; Cutugno, 2007). Figure II-1 shows the drawing we used, belonging to the CLIPS project (*Corpora e lessici dell'italiano parlato e scritto*¹). As can be seen, finding differences is not an easy activity and requires a good cooperation between the speakers and their full attention.

¹ See Savy, Cutugno (2009) and the following website: www.clips.unina.it/it.

Figure II-1 - *The drawing used to elicit our “spot the difference” dialogues (Cutugno, 2007)*



If we compare this kind of speech with spontaneous conversations, pragmatic, syntactic and lexical variety is somewhat reduced but, even if this elicitation technique does not allow a good degree of control over all experimental variables, it guarantees good speech material from a phonetic and prosodic point of view. As far as the other dimensions are concerned (event density, expressiveness, communicative intention, homogeneity of behaviour), it has to be considered that, in order to find the differences that each participant describes in his/her drawing, he/she will ask about all the details that he/she thinks could differ from his/her interlocutor's drawing. In this way, he/she asks about shape, colour, orientation, the dimension of elements and so on, performing many types of requests (e.g., “L'albero com'è disegnato?”, “The tree, how is it drawn?”, “A te c'è un'aiuola?”, “In your drawing, is there a flowerbed?”, “¿El señor tiene una nariz muy grande?”, “Has the man got a big nose?”, “¿Cuántas patas le ves?”, “How many paws do you see?”). In this type of dialogic text, therefore, requests play a central role, since they allow for solving the task.

As to the observer's paradox, speakers alternate with each other in turn, talking quite freely and spontaneously, since the goal of the game successfully distracts them and permits them to stop thinking about the recording or, at least, makes them refrain from doing so all the time.

These task-oriented dialogues are generally defined as “semi-spontaneous”: on the one hand, lexical, syntactic and pragmatic choices are constrained by the task design; on the other, speech is unplanned and does not present limitations on turn-taking².

² Among the other elicitation techniques of this kind, i.e., a cooperative task involving two participants, one of the most used is the map task approach (Anderson *et al.*, 1991), in which speakers must collaborate verbally to reproduce on one of the participant's map (instruction follower) a route printed on the other's (instruction giver). We did not use this elicitation technique because conversational structure is generally less balanced and leads a speaker to participate more than the other one (even if they exchange roles).

2.2 Procedure

Participants sat three or four metres apart, without facing each other, with their drawing placed on a desk. Pairs of subjects were not randomly associated: we selected classmates, so that their relationship could support spontaneous behaviour.

After giving them all the instructions, they were asked to speak only to each other, without directing themselves at the researcher, and to communicate only in the indicated language (it was necessary to say to the Italian subjects that they had to avoid dialect and, above all, Spanish speakers needed to know that they had to speak Spanish and not Catalan³). They knew nothing about the research aims, but they were informed that it was not an intelligence test or a language proficiency test.

Italian dialogues were recorded at the University “Federico II” of Naples, while Spanish dialogues were recorded at the “Universitat Autònoma de Barcelona” following the indications described by Cutugno (2007) and Cerrato (2007).

In both cases, materials were recorded on a Digital M-Audio Microtrack 24/96, using a Shure WH20QTR close-talking microphone and one channel per speaker (we chose the WAV format, with a sampling frequency of 44,000 Hz and 16-bit resolution).

Subjects adapted quite easily to the task and experimental setting, producing relatively fluent and spontaneous speech⁴.

2.3 Speakers

It has been clearly shown that there are many sources of cross-speaker variation: from physiological and anatomical differences to gender variances, and from a combination of cognitive and social factors to an individual's experience of different languages, dialects and sociolects, mentioning only the main sources of variation in linguistic habits, without taking into account individual strategies in speech production and perception. In addition, it has been considered that prosody is especially susceptible to the effects of these factors. Therefore, in order to select speakers following a coherent and rigorous set of criteria in both languages, we tried to perform a sensitive inquiry into the speakers' language experience. Inevitably, our choices had to acknowledge linguistic peculiarities of Naples and Campania and of Barcelona and Catalonia, resulting in two different questionnaires, which were developed by considering analogous sociolinguistic variables. To do that, we used previously validated questionnaires, which had been designed in order to control

³ Even if Italian speakers did not use Neapolitan dialect and even if Catalan speakers were bilinguals with a preference for Spanish (see § 2.3), it was necessary to avoid cases of code-mixing and code-switching.

⁴ Only in one case was the elicitation technique unsuccessful: speakers did not understand each other, probably because one of the participants did not wear her glasses and, after two or three minutes, they did not know how to move on, thinking wrongly to have found all the differences. Actually, nobody succeeded in finding all the differences in ten minutes, which is the duration indicated by Cutugno (2007). That is why we gave five more minutes, when it was necessary.

the main sociolinguistic variables in selecting bilingual speakers (Viladot, 1981; Alonso, 2008).

Therefore, the two selected groups of speakers were homogeneous with respect to the following variables:

- age (between 19 and 34 years old),
- gender (female),
- birthplace and years of residence in that place (Naples and Barcelona or Sabadell),
- parents' birthplace and years of residence in that place (Naples and Catalonia or other communities, all their life),
- previous places of residence and years of residence (none, where possible),
- profession and education level (university students),
- first language (the language spoken at home: Italian and Spanish),
- the language directed at parents, brothers and sisters, friends and partner and at the public: shops, bars, public services (mostly Italian and Spanish),
- the language used to think, to count, to read, to take notes and to watch TV and movies (mostly Italian and Spanish),
- the language preferred for oral expression (mainly Italian and Spanish),
- linguistic self-evaluation (all considered themselves to be native speakers of Italian and of Spanish),
- proficiency in other foreign languages (low or mid level in other languages).

In addition, we considered the differences between the two linguistic situations with regard to Neapolitan dialect in Naples and Catalan in Barcelona, which we briefly summarize below.

The regional variety of Italian and Neapolitan dialect generally make up the linguistic repertoire of Neapolitans. Berruto (2001) proposes the term of “*dilalia*” to define a linguistic situation of this kind, where, even if Italian tends to be used in more formal contexts and Neapolitan dialect in more informal ones, both codes are used in everyday conversation and overlap in several domains⁵. Dialect is socially stratified and there exists a continuum of subvarieties between the high and the low varieties. On the one hand, in Naples and in other main cities, there exists a strong diastratic variation: people belonging to high social classes tend to almost exclusively use Italian, both in formal and in informal contexts, while, in lower social classes, dialect is more used than Italian and is, without doubt, the language used in private and informal situations. On the other hand, if we consider small villages, dialect is the primary spoken idiom, whatever their culture, religion or social class. For most of these Italians, their first contact with the standard language, excluding mass media influence, comes in primary school. We only mention some basic aspects of the repertoire to explain our choices and problems in selecting speakers, but we do not focus on the complex linguistic situation of Campania here (for more details, see De Blasi, 2006). Therefore, we chose eight Neapolitan speakers, born in Naples to

⁵ Italian is normally used in informal and private situations too. As a counterpart, it has to be noted that Neapolitan dialect may also be promoted to the high variety, for example, in its literary uses.

Neapolitan parents, and considered as a requisite that Italian was their first language and that the use of dialect was null or very marginal⁶.

As we decided not to investigate the variable related to gender, we only selected female speakers, since they were more numerous in the faculties in which we realized the inquiry. We recorded four speakers, while the other four were recorded via the CLIPS project (Savy, Cutugno, 2009). The speakers selected in the CLIPS project presented the same characteristics with regard to the sociolinguistic variables we considered (as illustrated by Sobrero, Tempesta, 2007). Therefore, all the speakers selected to record the Italian dialogues were native speakers of Italian under 34 years of age, who were born in Naples and had lived there all their life. They were also all university students with Neapolitan parents and preferred Italian to express themselves, rather than in dialect. Finally, as far as other languages were concerned, the speakers declared that they knew English, French and Spanish in one case, but none of the speakers had a high or even good level in any of these languages.

As far as the linguistic repertoire of Catalonia is concerned, there are three languages with official status: Spanish, which is official throughout Spain, along with Catalan and Aranese. The linguistic situations in Catalonia have been conflictive and dynamic; moreover, because of recent immigration from all over the world, several other languages are spoken in Catalonia. However, the autonomous community of Catalonia is considered to be a bilingual region. In theory, it is possible to observe a balanced bilingualism, in the case of those who have two mother tongues and normally speak both at home; but, in practice, this is not that likely. Even if people in Catalonia can take Catalan, Spanish or both languages as mother tongues, people usually have more command over one language. At school, they learn both Spanish and Catalan from the time they are children (besides English, of course). In public life, despite the fact that Catalan is the main language in education (the Catalan Government favours the use of Catalan), most of the linguistic input outside the academic context is in Spanish (cinema, TV, magazines, most newspapers and press in general, music). Therefore, there are no monolingual Catalans and speakers can use and prefer Catalan or Castilian depending on their linguistic habits and communicative situations. Geographic differences do exist: Castilian is more commonly used in urban areas. In particular, the capital of Catalonia, Barcelona, is a very central area affected by immigration and foreigners who mainly rely on Castilian more than Catalan (Institut d'Estadística de Catalunya, 2009). Despite the institutional power and prestige of Castilian in Spain, Catalan is not a low-prestige language in people's eyes. Today, the residents of Catalonia, both those with Catalan roots and those with parents from other regions of Spain, generally consider themselves Catalan when asked. Moreover, an increasing number of people has written abilities in and overall knowledge of the Catalan language. Considering the linguistic situation, we designed our questionnaire in order to reject people with Catalan as

⁶ As a matter of fact, each of the speakers had started to acquire dialect only at primary or secondary school. This does not mean that they never used dialect, but it was relegated to very informal and private situations.

their first language and those who preferred to use Catalan in several communicative situations. This implied the selection of speakers with one or two parents born in other communities of Spain; only in these cases speakers had learned Castilian at home and had had their first contact with Catalan in the late childhood.

As previously done for Italian, we recorded eight female speakers who all considered themselves to be native speakers of Castilian. They all were university students, who were aged between 19 and 22 years old, were born in Barcelona (or Sabadell) and had lived in Catalonia all their life. They all preferred to express themselves in Castilian more than in Catalan and believed to be at a higher level in Castilian than in Catalan. Analogously, we selected speakers who used Castilian in private and familiar situations and who declared using Castilian more than Catalan to read, count, think, write, take notes and watch movies and TV. Finally, as far as other languages were concerned, speakers declared knowing English, French and, in some cases, Italian, German, Japanese and Galician, but none of the speakers had a high or good level in any of these languages.

As can be easily appreciated, we selected the two groups of speakers based on the same criteria and by considering the same sociolinguistic variables that could affect our results.

2.4 Preprocessing of the data

After recording the corpus, we performed the following steps in order to determine our units of analysis:

1. orthographic transcription of the dialogues,
2. pragmatic annotation,
3. extraction of requests moves,
4. informative categorization,
5. morphosyntactic classification.

We briefly outline them below.

2.4.1 Orthographic transcription

In the case of spoken corpora, any linguistic analysis needs an orthographic transcription, which corresponds to a representation of the speakers' utterances using the standard spelling of a given language (i.e., a transliteration). We performed a manual transcription following the conventions of the CLIPS project (Savy, 2006). These guidelines are based on criteria discussed by Edwards (1993) and follow the general recommendations for the orthographic transcription of EAGLES (1996). The output is a transcript in ASCII (.txt file extension), in which the following basic elements are represented:

1. the arrangement of turns,
2. overlaps,
3. pauses,
4. lexical elements,

5. vocalized but non-lexical or semi-lexical phenomena,
6. non-linguistic phenomena occurring during the course of speech,
7. possible comments of the transcriber.

2.4.2 Coding scheme

The coding scheme for pragmatic annotation used in this work, Pr.A.T.I.D (Pragmatic Annotation Tool for Italian Dialogues; Savy, 2010), was specifically conceived for the pragmatic analysis and annotation of task-oriented dialogues elicited following the “spot the difference” method (see § 2.1).

It is a monodimensional scheme, which allowed us to identify the primary pragmatic function assumed by each dialogue act⁷.

As in the Map-task Dialogue System (Anderson *et al.*, 1991; Carletta *et al.*, 1996), Pr.A.T.I.D considers the *Transactions/Games/Moves* articulation of the dialogue, but in a hierarchical multi-level structure in which each level encodes a different status of the dialogue act. An exhaustive description of the scheme is not presented here, since it goes beyond the aims of this study. For details on the annotation scheme, see Savy (2010), while, for copious examples of annotation, see De Leo, Savy (2007).

We have seen that the tags *info_request*, *query_w*, *query_y* and *check* indicate four types of requests in Pr.A.T.I.D, depending on the way they introduce or manage a discourse topic (see § 1.1.1).

After annotating the entire dialogues, with special attention to the contextual and contextual aspects, we extracted the request moves corresponding to *info_request*, *query_w*, *query_y* and *check* tags.

2.4.3 Extraction of requests

We categorized each audio file using the conventions shown in Table II-1. The name of each file identifies, in a progressive order, the kind of request, the speaker that produced it, the number of turns in the orthographic transcription and the dialogue to which they belong, as identified by adopting the same conventions used for the CLIPS project (see Savy, 2006). Finally, an underscore (“_”) divides the kind of request from the indication of the turn and another underscore appears between the turn and the dialogue. Therefore, “i_p1#35_A04ES” would indicate that the *info_request* produced by the speaker “p1” corresponds to turn number 35 in the Spanish dialogue “A04”, while “qy_p2#128_A05N” stands for the *query_y* uttered by the speaker “p2” corresponds to turn number 128 in the Italian dialogue “A05”.

⁷ Utterances in dialogue are often multifunctional, i.e., they have more than one communicative function. Dialogue analysis and annotation frameworks are therefore often multidimensional in the sense of allowing the assignment of multiple tags to a functional unit. A multidimensional annotation scheme presents the advantage to be widely and generally applicable, but it suffers from a high heaviness and an extreme sparseness of the tag-set. In order to avoid the exponential combination of tags and functions, we preferred a monodimensional scheme.

Table II-1 - *Conventions used to classify items*

Request	Speaker	Turn	Dialogue
<i>info_request</i> = i	p1	# number of turn	dialogue
<i>query_w</i> = qw	p2		
<i>query_y</i> = qy			
<i>check</i> = c			

After extracting and naming all the items, we performed an informative and morphosyntactic analysis, which we will briefly describe in the next section.

2.4.4 Informative and morphosyntactic classifications

Informative and morphosyntactic aspects obey different communicative needs and strategies that we do not examine here: for a detailed description of these levels and a comparison between Italian and Spanish dialogues, see Alfano (2017). Even if we consider these levels in this work only in terms of their influence at the intonational level, we consider it necessary to summarize the main aspects of classification criteria that we adopted, because information structural facts have been studied from several perspectives and by using unequal terminologies.

We considered the dichotomy between the informative units of *topic* and *comment*, following Gundel's definition:

An entity, E, is the topic of a sentence, S, iff, in using S, the speaker intends to increase the addressee's knowledge about, request information about, or otherwise get the addressee to act with respect to E". A predication, P, is the comment of a sentence S, iff, in using S the speaker intends P to be assessed relative to the topic of S. (Gundel, 1988: 210).

The two informative units do not have a specific correspondence with the syntactic level. Moreover, the topic is not always present and, if it is, it does not necessarily occupy the first position in the utterance (Gundel *et al.*, 1993).

Therefore, an utterance such as "Dove parcheggiamo?", "Where do we park?" would correspond in our informative classification to a comment (C), "Tuo fratello (T) dove ha parcheggiato? (C)", "Your brother, where did he park?", would be tagged as a topic/comment (T/C), and "Dove ha parcheggiato (C) tuo fratello? (T)", "Where did he park, your brother?" could be classified as comment/topic (C/T)⁸.

⁸ Initially, besides these two main units, we considered other units, corresponding to appendix, parenthetical or other dislocated elements. As far as the appendix is concerned, we conceived it as an informative unit, which plays a role in integrating some additional information related to the topic or comment. According to Cresti (2000, 2005), while the comment expresses the illocution, the topic and appendix perform different functions: the topic expresses the scope to which the illocutionary force applies, while the appendix is a textual integration of the comment or topic. Unlike the "Teoria della Lingua in Atto", we did not want the position of the unit to be a decisive factor in identifying informative units. We wanted to consider the appendix as an element conveying information that is integrative or additional with respect to the preceding linguistic material, independently of its position. After establishing some explicit criteria for identification and, each time, carefully considering

All the requests were classified according to their informative structure. After performing this analysis, we examined the informative types at the morphosyntactic level. We performed both an informative and a morphosyntactic analysis in order to observe their relation with intonation.

2.5 *Speech corpus*

Table II-2 presents the corpus used in this study. In both languages, the number of occurrences of the items is expressed in relation to the informative types mentioned above⁹. A total of 332 utterances constitutes our corpus: 132 items appear in Italian dialogues and 200 occur in Spanish dialogues.

The total number of requests was greater than this one but, considering the effective realizations, we had to remove some occurrences. In some cases, while speakers produced requests with a suspensive intonation, this did not prevent us from assigning a pragmatic tag, since it was possible to do so thanks to the context and to the co-text; however, this did prevent us from considering them to be comparable to the other realizations. In addition, we had to discard all the cases overlapping with vocalized non-lexical phenomena, such as coughing or laughing, which did not allow for the study of f_0 traces.

Table II-2 - *Speech corpus*

Italian	Informative structure	Total
<i>info_request</i>	C: 23	24
	T/C: 1	
<i>query_w</i>	C: 8	16
	T/C: 8	
<i>query_y</i>	C: 25	62
	T/C: 34	
	C/T: 3	
<i>check</i>	C: 22	30
	T/C: 8	
		132

the real context of occurrence, we found the difference between a postposed topic and an appendix to be potentially ambiguous. In our corpus, they were marginal cases, given that 99% of the utterances presented the first two informative types (C, T/C). On the controversial unit of the appendix and its relations with the illocution and the semantic function, see Lombardi Vallauri (2009).

⁹ The relations with the morphosyntactic level will be discussed directly when presenting the results (§ Chapter 4). Meanwhile, Table II-2 aims to present the number of occurrences in a usable and brief manner; moreover, syntactic aspects will be treated only in the cases in which they affect intonational realizations.

Spanish	Informative structure	Total
<i>info_request</i>	C: 10	14
	T/C: 4	
<i>query_w</i>	C: 35	39
	T/C: 4	
<i>query_y</i>	C: 54	100
	T/C: 39	
	C/T: 7	
<i>check</i>	C: 36	47
	T/C: 11	
		200

CHAPTER 3

Methodology

In this chapter, we will describe all the aspects related to the methodology adopted in this study. First, in Section 3.1, we will explain the kind of approach we use to analyse intonation and the theoretical framework of this research. Next, in Section 3.2, we will provide a detailed description of the process of stylization for f_0 contours and then, in Section 3.3, of the annotation system. Finally, in 3.3.1 and 3.3.2, we will illustrate how we performed the analysis, present some of the problems we encountered and discuss some critical issues, giving examples of the kind of analysis and interpretation we performed to arrive at “abstract” intonation patterns.

3.1 *A phonetic approach to intonation modelling*

Whenever someone starts to study prosody, in any language, he/she seems to be faced with the dilemma of what kind of theoretical framework to employ and, consequently, what annotation system to choose. As is well known, a varied range of methodological paradigms is available for intonation description and modelling. We present here the model used in this work, after having briefly introduced the main issues related to our choice.

We can identify several differences among the various theoretical schools, which are essentially attributable to the following aspects:

- the way they conceive intonational phenomena,
- the unit they consider pertinent,
- specific research interests,
- as a consequence of these, important differences in analysis and annotation processes.

A first macroscopic difference lies in what can be identified as a dichotomy between phonetic vs. phonological approaches. The first ones analyse intonation by looking for the physical correlates of prosodic realizations that allow for establishing invariants in the acoustic and perceptual properties of speech signals. The Dutch school (‘t Hart, Collier & Cohen, 1990) may be an example of this kind of approach.

The second ones examine intonation starting from an inventory of abstract categories that are identified by finding out those patterns conveying prosodic distinctions: by the formulation of rules, they transpose the phonological description of intonation contours into its phonetic form, with a progression from an abstract representation to a concrete form. An example of a phonological approach is the Autosegmental Metrical (AM) model, first presented in Pierrehumbert’s (1980) thesis and consolidated as a general theory of tone and intonation by Pierrehumbert, Beckman (1988); not by chance is it also referred to as Intonational Phonology.

Indeed, Gussenhoven (2002a) describes the principled separation of phonological representations and phonetic implementation as the most innovative aspect of Pierrehumbert's account (together with the concept of a phonetic *target* as distinct from a phonological tone).

Therefore, the two traditions (phonetic vs. phonological) differ with regard to the degree of abstractness assumed in the prosodic representation and, consequently, with regard to the adopted method. Opting for a phonetic approach, in which phonetic details are considered, may imply the risk of overlooking communicatively relevant features. At the same time, choosing a phonological approach potentially implies the risk of overlooking phonetically important features¹. Depending on this choice, different kinds of problems arise in the analysis and interpretation of f_0 contours.

In order to obtain a symbolic representation of melodic curves, Estruch, Garrido, Llisterri & Riera (2007) identify three steps in the study of prosody:

1. f_0 detection,
2. a possible production of the corresponding stylized curve²,
3. prosodic coding.

A phonetic study of intonation begins with measurement of the course of f_0 traces in the greatest possible amount of speech data. In spite of the many difficulties in interpreting speech recordings, the researcher tries to find regularities that permit him/her to outline intonational patterns in the function of linguistic properties. In this kind of approach, there generally exists a more or less formalized intermediate step, which consists of deleting irrelevant or "microprosodic" pitch movements. These types of variations do not add any relevant information to the message but are related to physiological characteristics or segmental features³.

A phonological study of intonation, by definition, separates the phonological representation from its phonetic implementation, thus taking into account the possible prosodic structure as distinct from the phonetic form of intonation contours.

Therefore, the two kinds of approaches share the ambitious ultimate goal of reaching a symbolic representation of melodic curves, which allow for the effective and efficient analysis and systematization of linguistic data, but the way they do that is very different and proceeds from a clearly dissimilar theoretical notion of intonation.

¹ Anyway, it seems reasonable to us to say that in a phonological approach, discrete tonal events are identified with some specific *targets* in f_0 trace considering their phonetic realization too, but assuming that there exist different phonetic instantiations, which superficially look different, of the same melody.

² F_0 detection algorithms extract melodic curves that contain micromelodic variations, such as interruptions due to unvoiced sounds; see Buenafuentes, Madrigal & Garrido (2000). Therefore, in order to study melodic curves in a functional way, a stylization process can be performed. The Dutch school ('t Hart *et al.*, 1990) is based on the principle of f_0 stylization, which permits the curve to be reduced to a discrete series of points (perceptually equivalent to the original curve), which, united by lines, offers a representation of the more relevant movements of the curve.

³ An example would be the individual f_0 variations related to age, gender or the length of the utterance in relation with the declination slope.

Apart from a dissimilarity in the kind of approach, another macroscopic difference among the various traditions lies in *which element* or unit has been considered pertinent to the analysis of intonation, since f_0 changes are not discrete and easily identifiable. A theory of intonation should be able to identify the connection between intonation and meaning, that is to say, should be able to make generalizations and predictions. Although this can be considered a shared goal, researchers have treated f_0 contours in a very different way, as holistic pitch movements or as composed of primitives of some sort.

The British school of intonation considers *configurations* and treats intonation in terms of dynamic pitch contours, in which the nucleus (last pitch accented syllable within the tone group) represents the only obligatory part of a 'tone group'⁴. American schools of prosody are often described as relying on a *levels* approach to intonation: these authors do not consider intonation contours as constituted by different structural parts, but through a series of levels (an idea subsequently shared by the AM model⁵). The Dutch school conceives the study of intonation from a perceptive point of view and shares some aspects of both British and American tradition. It describes contours relevant to the "close-copy stylizations" in terms of three declination lines (high, middle and low), where pitch accents are realized by rising and falling between these declination lines⁶.

These contributions have focused on different aspects, from the interface with semantic and pragmatic levels for didactical purposes to tonal events and phenomena of an accentual prominence. In different ways, they all have contributed to developing the field of prosodic studies.

Another contribution, crucial in this work, comes from the University of Aix-en-Provence (France) in the late 1990s by Daniel Hirst and his colleagues (Hirst, Di Cristo, 1998; Hirst *et al.*, 2000), with the aim of comparing prosody in different languages.

The Aix-en-Provence model of intonation provides for four different levels:

1. the physical level, which corresponds to the level of acoustic data,
2. the phonetic level, consisting of quantitative values derived from the acoustic signal, which is taken as the interface between abstract cognitive representations and their physical manifestations,
3. the surface phonological level, which codes the prosodic form as a sequence of discrete symbols,

⁴ There are differences between the various contributions that go by the name of British school; but, besides the nucleus, they generally consider a "pre-head" (unaccented syllable before the first pitch accent), a 'head' (reaching from the first pitch accented syllable to, but not including, the nuclear syllable) and a 'tail' (unaccented post-nuclear syllable). For a general overview on this tradition, see García Lecumberri (2003).

⁵ As in the case of British school, there are several differences found among the various authors, but they often assume that there are four basic pitch levels. For a general overview of the American tradition, see Martínez Celdrán (2003). For a description of the AM model, see Hualde (2003).

⁶ For an overview of the approach proposed by the IPO for Dutch, see Garrido (2003).

4. and, finally, the underlying phonological level, which is conceived as the interface between the representation of the phonological form and syntactic/semantic interpretation.

As can be seen, each level of representation has to be interpretable in terms of adjacent levels.

The Aix-en-Provence model considers f_0 curves as the combination of a macroprosodic component reflecting the speaker's choice of intonation pattern and a microprosodic component, which is entirely dependent on the segmental characteristics of the utterance. It seeks to obtain an automatic extraction of the relevant macroprosodic information from the speech signal and does so in two stages:

1. a stylization, i.e., the replacement of the f_0 curve by a simpler numerical function, which is assumed to be perceptually identical to the original;
2. a symbolic coding, i.e., the representation by means of an alphabet of symbols, reducing the stylized curve to a sequence of discrete categories⁷.

The method of MOMEL (*MODélisation de MELodie*) stylization uses a quadratic spline function (sequence of parabolic segments) resulting in a continuously smooth curve in which unvoiced segments are interpolated. The quadratic spline functions used for synthesis can be defined by a sequence of target points corresponding to the significant changes in the f_0 curve.

The symbolic coding system, INTSINT (*International Transcription System for INTonation*), aims to provide a purely formal encoding of the macroprosodic curve. Each target point of the stylized curve is coded by a symbol, either as an absolute tone, defined globally with respect to the speakers pitch range⁸, or as a relative tone, defined locally with respect to the immediately neighbouring target points. Relative tones can be further subdivided into iterative and non-iterative categories, where it is assumed that iterative tones can be followed by the same tone, whereas non-iterative tones cannot. Therefore, in contrast with other transcription systems in which pitch movements are taken to be the primitive elements, it is assumed in INTSINT that the phonetic representation of an utterance is most adequately defined as a sequence of points, whose symbols are represented in Figure III-1 (adapted from Campione *et al.*, 2000: 189).

Figure III-1 - Symbols for the INTSINT coding system

		<i>Positive</i>	<i>Neutral</i>	<i>Negative</i>
<i>ABSOLUTE</i>		T [↑]	M [⇒]	B [↓]
<i>RELATIVE</i>	<i>Non-iterative</i>	H [↑]	S [→]	L [↓]
	<i>Iterative</i>	U [<]		D [>]

⁷ In principle, the discrete categories of the second stage could be used to regenerate a curve, which would be considered by listeners as linguistically equivalent. As it is easy to imagine, automatic and reversible coding using INTSINT poses many problems and is far from obvious.

⁸ From Hirst *et al.* (2000) forward, pitch range is considered in relation to intonation units.

In the first case, as an absolute tone, the target point may take the value Top (T) or Bottom (B). In the second case, as a relative iterative tone, pitch points are defined as relatively higher than (H), lower than (L) or the same (S) as the immediately preceding pitch point. Two further symbols (relative non-iterative symbols) make it possible to represent a slight lowering (Downstepping, D) or raising (Upstepping, U) of the pitch relative to the preceding pitch point. In most cases, H and L correspond to peaks and valleys, respectively, whereas D and U correspond to a levelling-off in a falling or rising stretch of pitch. The possibility is also left open to make a quantitative distinction, in that D and U are assumed to imply a smaller pitch change than that transcribed as L or H⁹. Finally, square brackets ([]) are used to mark the boundaries of intonation units¹⁰.

Therefore, this system adopts a phonetic approach and can be seen as a first degree of abstraction, which can be used for a first semi-automatic extraction from spoken corpora, followed by a linguistic analysis and interpretation. The prosodic coding through the INTSINT system is based on a perceptive and auditory analysis too and does not require the annotator to have previous knowledge of the language for examination purposes. Even if the last aim of any prosodic analysis consists of finding out systemic or, in other words, phonological, differences, a linguistic interpretation within this theoretical framework may follow the annotation process. From this point of view, if we compare the INTSINT coding system with phonologically oriented systems, we can underline a certain neutrality of this method, in which the annotation results are descriptive and not interpretative. This aspect makes it very attractive for interlinguistic comparison, since the coding is language-independent.

Therefore, in the first step of the analysis and annotation, we aim to depict pitch contours *per se*, not producing phonological representations, which should capture what is contrastive in the intonational system under analysis.

Our approach relies on the idea that intonation can be studied adopting a phonetic perspective and that it is possible to make generalizations taking under control sources of phonetic variation. Our hypothesis is that intonation contributes to the expression of pragmatic functions and that a phonetic description of f_0 curve can provide information about the relation between shape and function, even if it is far

⁹ The authors created six progressively more complex versions of an automatic (or semi-automatic) transcription system based on the INTSINT model, as described in Campione *et al.* (2000). The six implementations (*HL*, *Config*, *Mixed*, *Ampli2*, *Ampli3*, *Levels*) share the two absolute symbols T and B and the symbol S, but differ in the use of the other symbols (see § 3.3).

¹⁰ All models employ the concept of an intonation unit, variously called, for example, a tone group, a tone unit, a breath group or an intonation phrase; it is considered as the domain within which intonational features occur. However, the identification of an intonation unit through phonetic criteria is not problem-free, but all authors agree that the phonetic parameter of the pause is not a sufficient indicator and has to be considered together with others cues. Beyond a potential pause, Cruttenden (1997) indicates the following criteria: final syllable lengthening, anacrusis, changes in pitch level and f_0 resetting. In our analysis, we took into account all these parameters and found, in many cases, a one-to-one correspondence between the functional unit of the move (see § 1.1.1) and the intonation unit.

from being a one-to-one correspondence. At the same time, we do not exclude that certain aspects of contours can be more important than other ones. That is why we observe in a particular way some portions of configurations (§ 3.3.1). Consequently, even if our theoretical framework can be inserted in configurational models, – which consider f_0 curves as holistic pitch movements that convey a uniform meaning, and not as discrete sequences of H and L level tones –, we try to consider some ideas belonging to other theoretical frameworks.

Finally, the Aix-en-Provence model and its INTSINT coding system may potentially be applied to every type of speech style, without conditioning research results¹¹.

Thus, it is possible to summarize the reasons why we chose this system for our analysis as follows:

1. we were attracted by its supposed theoretical neutrality;
2. we thought it could offer an automatic prosodic coding, which is very useful when analysing a great amount of data;
3. we reflected on its annotator independence;
4. we considered the stylization process to be very useful because, on the one hand, it allows for the removal of irrelevant variations and, on the other hand, has a perceptive base;
5. we fully appreciated the idea of coding that reflects the phonetic variation in the melodic curve, with a supposed one-to-one correspondence between target points and symbols;
6. we found it appropriate for interlinguistic analysis, this it met our purposes;
7. we could apply it to every speech style;
8. we saw it employed in many languages¹².

Different versions of the MOMEL and INTSINT algorithms have been developed, although we did not use the former algorithm. In our analysis, we used the *Prosomarker* program, as described in Origlia, Alfano (2012), which contains a stylization algorithm, known as OpS (*Optimal pitch Stylization*) (see Origlia, Abete, Cutugno, Alfano, Savy & Ludusan, 2011) and an annotation module based on the INTSINT system. We dedicate the next two sections to explaining how we conducted these phases, illustrating the stylization algorithm in § 3.2 and the annotation process in § 3.3.

¹¹ Even though any model stems from specific hypotheses on what is relevant and what it is not relevant, and this affects the coding system as well.

¹² See, among others, Hirst, Ide & Véronis (1994), Llisterri (ed.) (1996), Hirst, Di Cristo (1998), Estruch (2000), Auran (2004), Bouzon (2004), Hirst (2007); for Italian, see Rossi (1998), Giordano, Savy (2003), Crocco (2004), Giordano (2004, 2005, 2006); for Spanish, see Mora (1996) and Alcoba, Murillo (1998).

3.2 Stylization of f_0 contours

A stylized version of a pitch curve “should eventually be auditorily indistinguishable from the resynthesized original and [...] it must contain the smallest possible number of straight-line segments with which the desired perceptual equality can be achieved” (t Hart *et al.*, 1990: 42). This means that the stylized curve should be as informative as the original one, in the sense that it should maintain relevant pitch movements and be compact, in the sense that it should not contain variations due to segmental characteristics.

The MOMEL algorithm takes the same perspective as the IPO model, but introduces quadratic interpolation. More recently, different approaches have been presented. Mertens (2004) extracts syllables from a time-aligned phonetic annotation and uses them to predict the way in which pitch variations could be perceived depending on the position of the syllable boundaries. Wypych (2006) employs an orthographic transcription to detect syllable boundaries and place stylization segments during the bottom-up step of the algorithm. Ravuri, Ellis (2008) use syllables to define the length of the stylization segments, while relying on an automatic Gaussian mixture model-based syllabification algorithm.

Our approach exploits the occurrence of prominent syllables to reduce the complexity of stylization in perceptually less relevant areas of the pitch curve. Pitch stylization is seen as an optimization problem, such that, when looking for the best balance between curve quality and cost, it is measured as the smallest number of control points rather than the smallest number of segments.

The OpS algorithm (Origlia *et al.*, 2011) is based on the *divide et impera* method in which the original problem is iteratively split into two subproblems of approximately equal size until a subproblem with a trivial optimal solution is found. By backtracking and combining the solutions of each couple of subproblems, an optimal solution for the original problem can be found. OpS employs syllable-level segmentation and prominent syllable annotation to obtain less expensive curves by using fewer points in pitch curve sections that fall inside non-prominent syllables. Like MOMEL, in order to produce the stylized curve, OpS considers the f_0 curve as a sequence of target points corresponding to the significant changes in the melodic curve. Unlike MOMEL, it works with a linear interpolation.

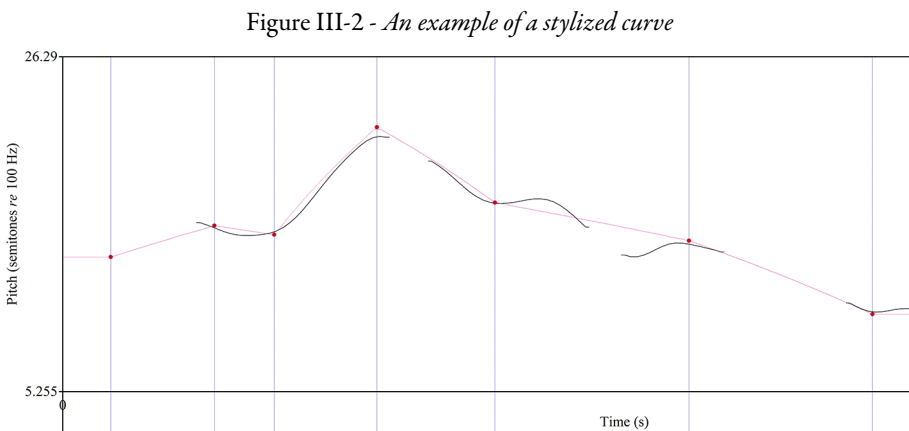
In addition, in order to consider perceptual significance, the OpS algorithm was evaluated using both objective measures and a subjective listening test. The results indicate that, if compared with MOMEL, OpS performs a perceptive equivalent stylization using significantly fewer points¹³, in other words, it produces a better stylization in terms of balance between curve quality and cost.

Another point in favour of OpS consists of producing a semi-automatic stylization; in this way, a manual correction allows us to remove possible errors. It is possible to move, add or remove a point, as appropriate. In most cases of manual correction, there are points with a high value of f_0 , typically in the form of final rises

¹³ For details, see Origlia *et al.* (2011).

that the algorithm did not succeed in detecting. In the problematic cases, we performed a perceptive and acoustic analysis by comparing the original melodic curve with its stylized curve, using perceptive equivalence between the two curves as the decisive criterion.

Figure III-2 shows an example of the stylization process. It corresponds to a request in Italian, qy_p2#84_A03N, “Il cavallo ce l’ha la bocca?”, “The horse, has he got the mouth?”. The original curve is represented in black, while the stylized one is shown in red; target points are also represented in red.



The OpS algorithm is implemented in PRAAT (Boersma, Weenink, 2019) since it presents many advantages. It is probably the most complete program available and highly flexible. It contains a large set of primitives to perform phonetic analysis; it is designed to handle multilayer annotations for automatic generation due to the scripting language, in terms of visualization. This because of the built-in editors and drawing capabilities. Concerning compatibility with external software, as the format of the annotated file, the *TextGrid* format is widely supported. In addition, it is distributed for free and there are versions for most of the common operating systems.

3.3 Annotation system

After performing the stylization process, the *Prosomarker* program will produce an automatic or semi-automatic annotation. It provides different versions of the INTSINT coding scheme (HL, Config, Mixed, Ampli2, Ampli3, and Levels; see Campione *et al.*, 2000), each one on a different tier. During this step, each point can receive a tag in accordance with the chosen implementation. As in the case of the stylization process, the annotation was performed in semi-automatic mode, not in order to correct possible errors, but to carefully observe each case.

The INTSINT coding scheme produces the intonational representation starting from the speech signal, using algorithms based on the signal processing, but

incorporating a perceptive component. Therefore, the INTSINT prosodic transcriptions are an abstract representation in which an alphabetic sequence represents the f_0 curve. Apart from the absolute tones, there are several differences between the six implementations of the INTSINT coding.

In *Ampli3* (and *Ampli2*), relative non-iterative H and L are classified as H1, H2 and H3 (only H1 and H2 in *Ampli2*) and L1, L2 and L3 (only L1 and L2 in *Ampli2*), depending on the amplitude of f_0 variation. On the contrary, in the *Levels* implementation, the region between two thresholds is divided into three bands: grave, medium and acute, each corresponding to one third of the target points when assuming a normal distribution. Therefore, the coding of the target points takes into account both the direction with respect to the preceding target point and the band in which the targets are situated. The HL implementation only takes into account two symbols, H and L (in addition to T, B and S, which, as mentioned above in § 3.1, are common to all implementations).

In the *Config* version, target points are coded as H, L, U or D, according to configuration: H and L indicate peaks and valley, respectively, while U and D designate a raised plateau and a lowered plateau, respectively. Finally, in the *Mixed* version, the distinction between iterative and non-iterative target points is based both on configuration and size. Thus, peaks will be coded either H or U and valleys will be coded either L or D, depending on the size of the pitch interval with respect to the preceding target point.

Therefore, the two pairs of symbols (H-L and U-D) can indicate peaks, valleys and plateaus in rising or falling sequences, but H and L indicate intervals with a greater frequency difference. In this case, it is necessary to establish the threshold (“interval greater than a threshold α above the previous target point”; “interval less than a threshold α below the previous target point”; Campione *et al.*, 2000: 193).

The different versions were tested on a corpus of read speech in French and the best two versions resulted in *Ampli3* and *Levels*. The precision of the coding generally increased with the number of symbols used, but it must be recognized that the greater the tag-set, the less representative and abstract the results. This can explain why the *Ampli3* and *Levels* implementations have not been used as much as the *Config* and *Mixed* versions.

In addition, different versions provide a better fit for different aspects, for example, in the case of relative pitch intervals or for absolute target values. *Ampli3* provides a better fit for relative pitch intervals, whereas *Levels* provides a better fit for absolute target values.

For this work, we chose between the *Config* and *Mixed* implementations, since they were the most used and employ a relatively reduced tag-set, discarding, a priori, the others. The difference between these two versions lies in the different uses of the symbols H, L, U and D. Comparing them, we decided to use the *Mixed* version, so that the annotation could express not only the type of configuration, but also information on the amplitude of rises and falls, even if in an abstract way. Moreover, in the *Mixed* version, it is possible to deduce if a point U indicates a target point in

a raised plateau or a peak, considering the following target point: if U indicates a peak, it can be followed only by tags that indicate an f_0 fall. Similarly, the symbol D indicates a target point in a lowered plateau or a valley. If it designates a valley, only tags that indicate a rise will follow it. In this sense, we found that the *Mixed* implementation was more complete than the *Config* version. Thus, we used the following tag-set:

- T (*Top*), the point corresponding to the highest value of f_0 ;
- M (*Mid*), the initial point in the intonation unit¹⁴;
- B (*Bottom*), the point corresponding to the lowest value of f_0 ;
- U (*Up*), the point in a rising sequence or peak;
- D (*Down*), the point in a falling sequence or valley;
- H (*Higher*), peak;
- L (*Lower*), valley;
- S (*Same*), the point with the same value as the preceding target point.

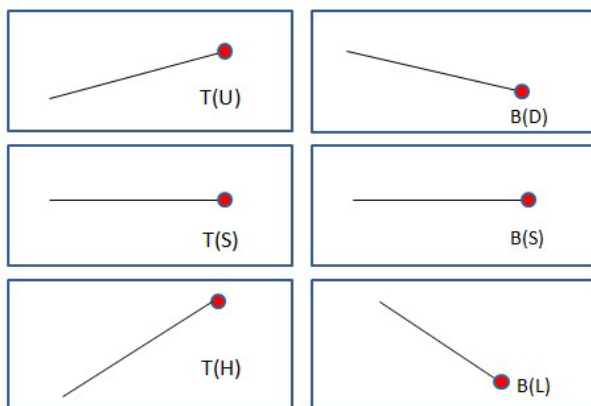
As far as the threshold to determine the tags of relative tones is concerned, the *Prosomarker* algorithm works as follows. It assigns the tag:

- S, if the difference between the target point indicated by the tag and the previous target point is lower than 1.5 semitones¹⁵;
- D or U, if the difference between the target point indicated by the tag and the previous target point is higher than 1.5 semitones, but lower than three semitones;
- L or H, if the difference between the target point indicated by the tag and the previous target point is higher than three semitones;
- D, if the value of the target point indicated by the tag is lower than the value of the previous target point, but higher than the value of the following target point;
- U, if the value of the target point indicated by the tag is higher than the value of the previous target point, but lower than the value of the following target point.

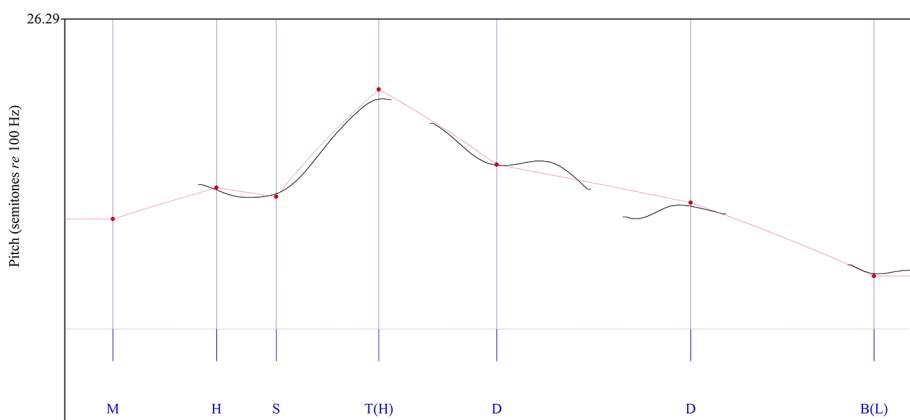
Finally, we introduce a new element in the annotation by treating the absolute points T and B as relative points too, which indicates that the relative tone between parentheses corresponds to the absolute tone. Indeed, a rise that culminates in the maximum peak of the intonation unit may be more or less steep and, as such, this difference is expressed by the tag used in the annotation corresponding to T(H) or T(U), respectively. Figure III-3 presents some examples of our adaptation.

¹⁴ We use the symbol M, which should represent a point corresponding to a medium pitch value, to indicate the first point of the intonation unit, unless it corresponds to a B or T point. In these cases, the algorithm employs the annotation B(M) or T(M), respectively (see below for the indication of tones between parentheses).

¹⁵ The choice is due to the *just noticeable difference* (JND) ('t Hart *et al.*, 1990: 29).

Figure III-3 - Representation of absolute tones (*T* and *B*), also considered as relative tones

Prosomarker can create a *Praat* annotation file or a *TextGrid*, which represents the annotation at the time and can be opened in the future by selecting it together with the sound file and editing them in *Praat*. Moreover, it is possible to save the result of the annotation (i.e., the alphabetic sequence) in a separate file (in *.txt* or *.csv* format). Interestingly, it is always possible to add other tiers to the *TextGrid*, which is an option that allows us to consider other linguistic levels of analysis and label them in the same file. Figure III-4 shows the same example as in Figure III-2 (§ 3.2) in which it is possible to observe not only the stylized curve, but also the annotated curve, with the output produced by *Prosomarker*.

Figure III-4 - An output example from *Prosomarker*, with the stylized curve and the intonative transcription

3.3.1 Data analysis: problems and solutions

In this section, we set out the analysis we performed. The INTSINT intonative transcription of requests was our starting point, but we considered some ideas from other theoretical frameworks. Specifically, we not only considered requests as a whole, but we also analysed different parts of intonation units, depending on the kind of request (§ 1.1.1).

Even if (as we tried to point out in § 3.1) different theoretical traditions disagree on what elements should be considered pertinent to intonative analysis, they do agree on paying special attention to an element, which is the most prominent of the intonative unit, corresponding to the last stressed syllable of the unit.

In the British tradition, this syllable corresponds to the *nucleus*, which constitutes the most important element of the configuration. Sosa (1999: 56) makes explicit that the British notion of *nucleus* (see § 3.1) is close to the Spanish notion of *tonema* (Navarro Tomás, 1974), to the French notion of *intonème* (Rossi, 1999) and to the American *terminal contour* (see § 3.1). It designates the syllable that takes the main stress (*accent*) of the intonation unit and constitutes an axis of the melody of an intonation pattern. In the AM model (see § 3.1), this element is conceived as the nuclear pitch accent, which, together with boundary tones, establishes the phonological inventory of a language. On this basis, in the analysis, we considered a terminal contour (TC), a term by which we mean the direction of the pitch, starting from the last stressed syllable of the utterance, that is to say, the intonation of the last accented syllable in the sequence together with that of any following syllables.

Even if we followed the same steps for all the requests, the analysis varies in function of the bibliographical review of each kind of request: *info_request*, *query_w*, *query_y*, *check* (§ 1.2)¹⁶.

For all kinds of requests, we performed an analysis for each of them individually by examining the sequence of tags described in the previous section (§ 3.3), according to:

- its informative organization (§ 2.4.4),
- its morphosyntactic structure (§ 2.4.4).

We analysed the three informative types, comment (C), topic/comment (T/C) and comment/topic (C/T), by comparing the part of utterance corresponding to the comment. For example, for the three following requests, we compared the realization of the underlined parts:

(1) “¿Tiene collar?”

(2) “¿Tu perro tiene collar?”

(3) “¿Tiene collar tu perro?”¹⁷

¹⁶ Apart from paying considerable attention to some portions of the curve, in some cases, we will consider the overall pitch range excursion of the curve.

¹⁷ As far as the informative classification is concerned, the example in (1) is C, the example in (2) is T/C and the example in (3) is C/T.

In *query_w*, *query_y* and *check* requests, we further divided the part corresponding to the comment (C) into two parts:

- *profile* (P), by which we mean the overall trend of the curve from the beginning of the comment until before the last stressed syllable in the intonation unit,
- *terminal contour* (TC), by which we refer to the direction of the pitch, starting from the last stressed syllable of the intonation unit.

Therefore, in a request such as “Dove arriva questo filo?”, we considered “Dove arriva questo” (P) and “filo” (TC).

In the case of *info_requests*, we conducted a different analysis depending on the morphosyntactic type. For disjunctive constructions, we followed the traditional distinction between the two members of the alternative, indicated by P1 and P2. Thus, in a request such as “¿Tu casa tiene siete u ocho ventanas?”, we examined separately “tiene siete” (P1) and “u ocho ventanas” (P2). For *info_requests* realized by phrases, we considered the realization of the whole utterance, since, in most of the cases, the request was too short to divide it into P and TC (in a request such as “Il cane?”, for instance”). Following this criterion, we did not divide the comment for other kinds of requests in similar cases. Indeed, in the case of a *query_w* request such as “Come?”, P and TC are identical.

For *query_w* requests, beyond P and TC, we explored the realization of the interrogative element (wh-element)¹⁸, since we found dissenting opinions on the supposed rhythmic and melodic prominence of the so-called wh-word (see § 1.2.1). This does not mean that we excluded the wh-element from the comment, but that we observed it separately as well.

Finally, for *checks*, we separately analysed the possible confirmatory tags. For example, in a request such as “La figura è simile, no?”, we separately observed the realization of the confirmatory tag “no”¹⁹.

Therefore, in a request such as “Tu casa tiene ocho ventanas, ¿verdad?”, we considered the following parts:

- “tu casa” (topic),
- “tiene ocho ven” (comment),
- “tanás” (terminal contour),
- “¿verdad?” (confirmatory tag).

This means that we examined portions of signal corresponding to notions identified from different perspectives: the topic/comment structure, which refers to the informative organization of the utterance (§ 2.4.4), the profile/terminal contour division, which is rooted in phonological considerations and the presence of specific morphosyntactic marks, such as a confirmatory tag. In this sense, we can say that we performed a hybrid analysis.

To illustrate the intonative transcriptions of the four requests, we present below some examples of the output from *Prosomarker* in *Praat* (see § 3.3), i.e., a *TextGrid*

¹⁸ We use the term wh-elements to refer to interrogative pronouns, adverbs or adjectives.

¹⁹ *Checks* with a confirmatory tag and *info_requests* realized by disjunctive constructions are the cases in which requests generally correspond to more than one intonation unit.

object, which can present different layers depending on how many levels are considered in the analysis.

Praat can create two kinds of tiers: an interval tier (i.e., a connected sequence of labelled intervals, with boundaries in-between) and a point tier (i.e., a sequence of labelled points). We used both kinds of tiers in our analysis and a variable number of layers, according to the different requests and the different cases as explained above.

The first layer that follows the orthographic transcription in all the cases is a point tier, indicating the intonative transcription (see, for instance, Figure III-5). The other layers are interval tiers, which we used to mark some parts of the utterance. We used the second layer to indicate informative types, with the intervals corresponding to topics (*t*) and comments (*c*)²⁰.

We employed the following layer to separate the two parts that form the comment, profile (*p*) and terminal contour (*tc*)²¹; see Figure III-7 for an example. In the case of *info_requests* as realized by disjunctive constructions, we used this layer to divide the two members of the alternative (*p1* and *p2*); see Figure III-6 for an example.

Finally, the last layer indicates the interrogative element in *query_w* requests (see Figure III-8) and the confirmatory tag in some *check* requests (see Figure III-9).

We show some examples of *TextGrid* objects below.

Figure III-5 shows the Italian *info_request* i_p2#80_A03N “Al cavallo o lui?,” “To the horse or him?”

Figure III-5 - Example of the annotation of an *info_request* (“Al cavallo o lui?”; informative type: C)

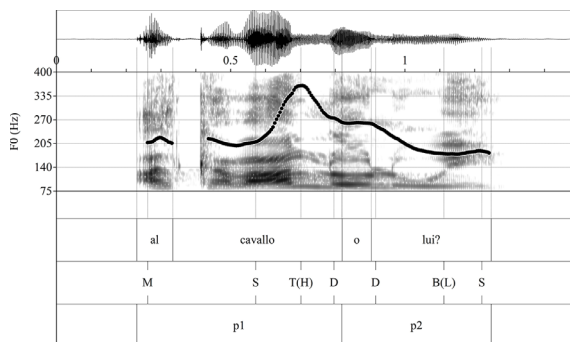
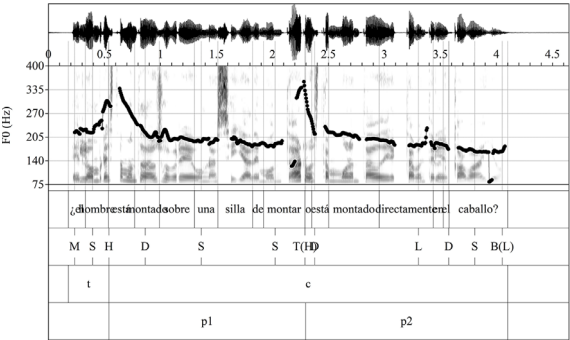


Figure III-6 illustrates the Spanish *info_request* i_p1#137_A05ES “¿El hombre está montado sobre una silla de montar o está montado directamente en el caballo?,” “Is the man riding on a saddle or is he riding the horse without it?”

²⁰ In some cases, because of the many layers involved, we did not indicate this layer for the type C (comment), while the presence of a topic is always indicated (see Figures III-5 and III-6).

²¹ When it was senseless to divide them, because they were very short, we indicated it in the same layer using “p=tc”. For example, in a request such as c_p2#72_A04ES, “Y el tronco es finito, ¿verdad?,” the profile would have corresponded to “es fi” and the terminal contour to “nito” (see Figure III-9).

Figure III-6 - Example of the annotation of an *info_request* (“¿El hombre está montado sobre una silla de montar o está montado directamente en el caballo?”; informative type: T/C)



In Figure III-7, we show the annotation of the *query_y* request *qy_p1#105_A05N*, “Hai qualche disegno?”, “Have you got any drawing?”.

Figure III-7 - Example of the annotation of a *query_y* (“Hai qualche disegno?”; informative type: C)

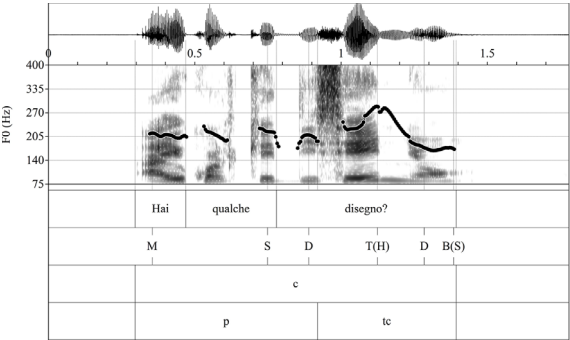
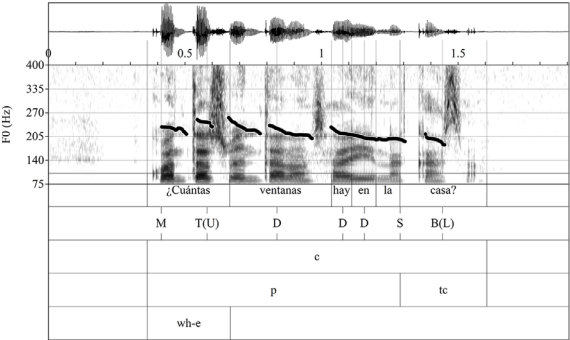


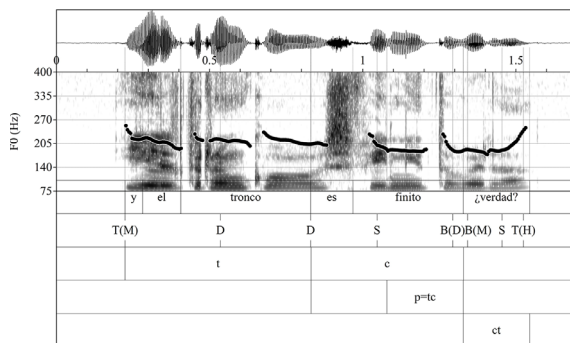
Figure III-8 shows the annotation of the *query_w* *qw_p2#58_A03ES*, “¿Cuántas ventanas hay en la casa?”, “How many windows there are in the house?”.

Figure III-8 - Example of the annotation of a *query_w* (“¿Cuántas ventanas hay en la casa?”; informative type: C)



In Figure III-9, we present the annotation of the *check* request c_p2#72_A04ES, “Y el tronco es finito, ¿verdad?”, “And the trunk is thin, isn’t it?”.

Figure III-9 - Example of the annotation of a check (“Y el tronco es finito, ¿verdad?”; informative type: T/C)



Therefore, for each kind of request, we divided the two informative parts of the topic and the comment, comparing their intonative transcriptions and creating a sort of table with all the realizations of the topic and the comment of *info_request*, *query_w*, *query_y* and *check* moves.

We saw that the stylization process erases micromelodic variations and interruptions due to unvoiced sounds (see § 3.2), but this does not mean that it takes into account all the factors related to the segmental characteristics of an utterance. Consequently, the sequence of tags that expresses the intonative realization inevitably depends on them, but does not contemplate all the variations related to each concrete realization.

This should have been an expected result, if we consider that the annotation sought to establish a theory-independent encoding, which presents a good level of abstraction that is capable of leading to a description, even starting from a phonetic description.

However, comparing intonative curves and their respective transcriptions makes clear that an analysis and interpretation of the results requires a previous step, in which it is necessary to cancel other sources of variation due to the segmental characteristics of the utterance. If we were to exclusively analyse intonative transcriptions without considering all the contingent factors, we would only see that each utterance has its own intonative transcription.

The phonetic modelling and the symbolic coding of the intonation curves is, in our work, an auxiliary stage to define the characteristics of intonation patterns. Given the type of corpus we used to obtain semi-spontaneous speech, i.e., totally unplanned and quite close to spontaneous speech for our purposes (see § 2.1), there were several sources of variation that we inevitably did not take into account. We are referring here to the factors that may vary the intonative realization (and therefore the INTSINT intonative transcription), but have no linguistic value and function. Among the main sources of variation, we can include:

- rhythm variations due to speaking rate, pauses and all the typical phenomena of the unplanned styles of speech (such as restarts or hesitations),
- the structure of constituents (their composition, length and stress pattern),
- the length of the utterance.

In order to find invariant linguistic elements, we tried to isolate all these contingent variables and to adapt the resulting intonative transcription through a comparative process (i.e., contrasting all the analogous informative and morphosyntactic types of moves), always carefully considering the specific and particular case. In this respect, the analysis we performed was anything but automatic, since it implied a qualitative analysis post-annotation.

The idea of considering two levels of prosodic representation is not new. Within the project AVIP-API (*Archivio di Varietà di Italiano Parlato*, Spoken Italian Varieties Archive, Albano Leoni, 2003, Crocco, Savy & Cutugno, 2003), two different approaches for prosodic labelling have been discussed and followed: a more phonetically-acoustically oriented one, inspired to the Aix-en-Provence model and using an INTSINT-like transcription system, and a more phonologically oriented one, using a ToBI-like transcription system (Savino, Gili Fivela & Bertinetto, 2003). This strategy consisted in adopting an “iterative process of labelling” (Savino, Refice & Daleno, 2002: 308), such that the final description could be achieved by successive refinement stages without losing intermediate stages information, in order to verify phonological hypothesis and to reliably determine the phonetic realizations of tonal categories²².

Choosing this methodological solution, we hoped to be able to perform an analysis that adopted a phonetic approach, but allowed us to produce what we refer to as “abstract” intonation patterns, conceived as ideal patterns that present all the common characteristics of certain kinds of utterances.

These patterns are not meant to be abstract phonological categories, which would allow for identifying underlying prosodic distinctions, but are conceived to describe and represent intonation contours, extracting shared features of concrete phonetic forms.

Then, we performed our intonative analysis following these three main steps:

- stylization (see § 3.2),
- annotation (see § 3.3),
- extraction of “abstract” intonation patterns, through a careful analysis and comparison of the same kinds of moves.

The next section addresses the third step.

²² Within the AM framework, a phonetic tier label with temporary annotations is mentioned as a guideline for deciding tonal distinctive categories (Beckman *et al.*, 2005; Jun, Fletcher, 2014). Along the same lines, Hualde, Prieto (2016) argue for including both levels of representation: a broad phonetic and a phonological level of transcription, through the IPrA (*International Prosodic Alphabet*) set. According to the authors, having access to a level of broad phonetic representation of tones can facilitate intra and interlinguistic analysis, making labels easier to compare and facilitating comparative work. On the contrary, Arvaniti (2016: 26) argues that “[...] a systematic, broad phonetic representation of intonation, can only amount to an arbitrary collection of allotones without capturing the full gamut of variation”.

As the figure shows, the second member of the alternative (“o<oo> c’ha la bocca all’ingiù”) is encoded by the sequence D S D B(L). However, by considering the vocal lengthening of the conjunction “o” as a contingent factor, we can reduce the transcription to the sequence D D B(L).

These kinds of factors, which are very common and completely unpredictable in unplanned speech, may vary in terms of intonative realization and have a direct effect on an automatic transcription that needs to be neutralized.

Let us consider another case, in which we can appreciate the effect of the length of the utterance.

Figure III-11 shows the Spanish *query_w* *qw_p2#14_A05ES*, “¿Cuántos ves?”, “How many do you see?” expressed by the transcription M T(S) D B(D).

Figure III-11 - *qw_p2#14_A05ES*, “¿Cuántos ves?”

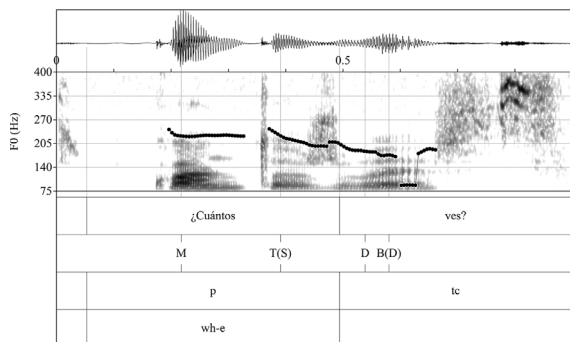
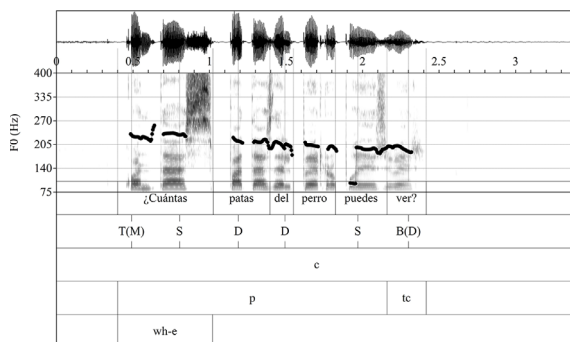


Figure III-12 illustrates another *query_w* request, *qw_p1#77_A05ES*, “¿Cuántas patas del perro puedes ver?”, “How many dog’s paws can you see?”, realized as T(M) S D D S B(D).

Figure III-12 - *qw_p1#77_A05ES*, “¿Cuántas patas del perro puedes ver?”



Both requests are used to ask the interlocutor about how many of something (paws, in the second case) she has in her drawing. In this sense, we can imagine that we could use these two requests in an analogous context.

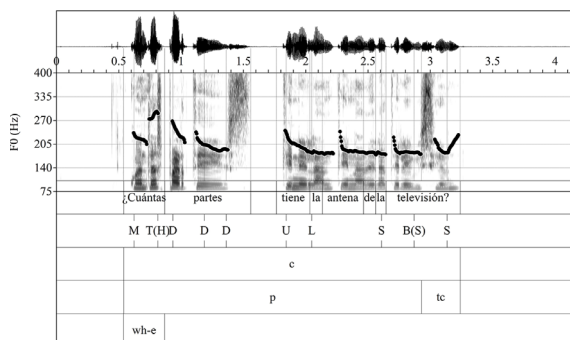
The two requests have a different length and present a different intonative realization, indicated by two different transcriptions: M T(S) D B(D) vs. T(M) S D D S B(D).

Nonetheless, if we compare the two utterances, the position of absolute tones clearly indicates that both requests present a globally falling configuration and relative tones between the parentheses, indicating that they are not important peaks or valleys. These observations are independent of the different length of the two utterances. Comparing the two curves, the coding T(M) S D B(D) can be seen as an abstract pattern, which suits both configurations, even if does not correspond to either the first or the second.

As in the previous case, this kind of factor also has a crucial relevance in our case, considering the type of speech in our corpus. If we had had the possibility to take factors such as the length of utterances, the length of words and their stress pattern under control, we would not have needed to perform a sort of “normalization” process.

Similarly, let us consider another case, which takes into account the effect of a silent pause, shown in Figure III-13. It deals with a Spanish *query_w*, qw_p2#150_A04ES, “¿Cuántas partes tiene la antenna de la televisión?”, “How many parts has the television antenna got?”, transcribed by the sequence M T(H) D D D U L S B(S) S. The coding does not express the presence of a pause, but it is possible to observe it in the spectrogram in Figure III-13: the speaker makes a pause after “Cuántas partes”, which, from an intonative point of view, implies a slight f_0 reset. Considering the resultant INTSINT transcription, M T(H) D D D U L S B(S) S, the target point U corresponds to this reset. Therefore, given that the point U is due to the pause and that the point L is due to the point U, we can explain the sequence U L in function of the pause, which can be considered a contingent factor. In this sense, the coding M T(H) D D D S B(S) S better expresses the intonation of the utterance, with a peak in correspondence of the wh-element and a globally slightly falling curve.

Figure III-13 - qw_p2#150_A04ES, “¿Cuántas partes tiene la antenna de la televisión?”



Finally, let us reflect on another case, which clearly shows the influence of the structure of constituents.

Figures III-14, III-15 and III-16 show three examples of topic portions in Italian corresponding to noun phrases with a different composition.

Figure III-14 illustrates a simple noun phrase composed by determiner + noun: “il cavallo” (coming from the *query_y* qy_p1#37_A05N, “E il cavallo<oo> ha qualche segno di occhio?”, “And has the horse got any sign of eyes?”).

Figure III-15 shows a slightly more complex noun phrase composed of determiner + noun + prepositional phrase: “la gamba del cavallo” (coming from the *query_y* qy_p1#35_A05N, “E la gamba del cavallo è alzata?”, “And is the horse’s leg raised?”).

Figures III-14, III-15 - *qy_p1#37_A05N*, “E il cavallo”; *qy_p1#35_A05N*, “E la gamba del cavallo”

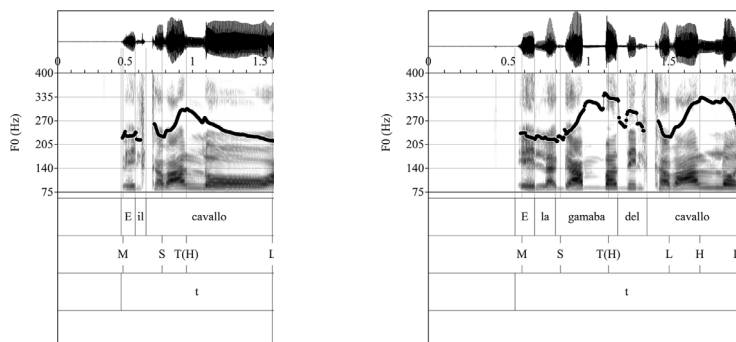
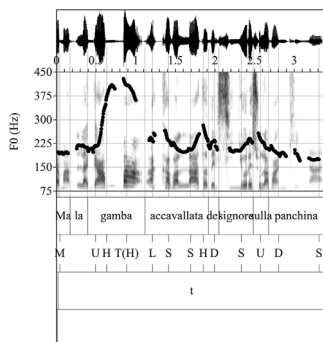


Figure III-16 presents a more complex noun phrase made by determiner + noun + three modifiers, one adjective and two prepositional phrases (coming from the *query_y* qy_p1#119_A05N, “Ma la gamba accavallata del signore sulla panchina è <eeh> la destra?”, “But is the man’s crossed leg on the bench the right one?”).

Figure III-16 - *qy_p1#119_A05N*, “Ma la gamba accavallata del signore sulla panchina”



In these three cases, the noun phrases present a very different composition, going from a simple to a complex phrase, even if they all function as the subject of the sentences.

The intonative coding of these topics is as follows:

- qy_p1#37_A05N: M S T(H) L (see Figure III-14);
- qy_p1#35_A05N: M S T(H) L H D (see Figure III-15);
- qy_p1#119_A05N: M U H T(H) L S S H D S U D S U S D (see Figure III-16).

Despite what appears to be a totally different realization, due to the different composition and length of the constituent, the comparison reveals an f_0 rise (see the point T), whose important size is indicated by the relative tone between parentheses (H), determining a rising-falling configuration, where the rise affects the noun head or both the noun head and the modifiers.

If we disregard the specificities of each case, it is possible to find an abstract pattern for the portion of the topic, coded as M U T(H) L or as M S T(H) L.

We have presented these examples in order to explain how we extracted intonation patterns for both the topic and the comment²³ by considering the influence of these segmental aspects, which we could not control in the corpus design. Moreover, we distinguished the possible differences in intonative realizations of the same informative portion, given that these segmental factors in the variations seemed to be inexplicable.

In the first case, i.e., if the possible differences were due to a contingent factor, we did not consider them in the extraction of the prototypical pattern of a request²⁴. In the second case, i.e., if the differences were not due to a contingent factor, we considered them in terms of the function of their frequency of occurrence in the following way. If a feature occurred in less than 10% of the cases, we considered it marginal and discussed it in our results without including it in the extraction of the abstract pattern. If a feature occurred in no more than 25% of the cases, we treated it as a minority and included it in the abstract pattern by designating it in the resultant coding in a different way. Finally, if a feature occurred in a percentage of the cases between 25% and 50%, we preserved it by considering more than one possible abstract pattern.

²³ Corresponding to the sum of the P and the TC or to the sum of the two members of the alternative in the case of the disjunctive structures of *info_requests*.

²⁴ If it had been possible to identify a unique pattern. As we will see, this was not always the case.

CHAPTER 4

Results

In this chapter, we will illustrate the results of this investigation. After preprocessing the data as detailed in Section 2.4, we analysed conversational moves corresponding to requests in the Pr.A.T.I.D coding scheme (see § 2.4.2) by performing a stylization process (see § 3.2) and producing a representation of intonation based on the INTSINT coding scheme (see § 3.3).

Therefore, following the criteria presented in Section 3.3, we defined the “abstract” intonation patterns of our information- and confirmation-seeking requests by considering their informative and morphosyntactic realization (§ 2.4.4). We will set out, in Section 4.1.1, the intonation patterns of information-seeking requests, dividing the results into two subsections concerned with the two languages subjects being studied, Italian (§ 4.1.1.1) and Spanish (§ 4.1.1.2). Finally, we will illustrate the intonation patterns of confirmation-seeking requests (*check* moves) in Section 4.1.2 within separate subsections for Italian (§ 4.1.2.1) and Spanish (§ 4.1.2.2).

4.1 *Intonation patterns*

Before unveiling our results, it is necessary to clarify some crucial points of the analysis related to the frequency of occurrence concerning the different kinds of requests. Given the elicitation technique used to collect the data (§ 2.1), it was impossible to take the number of occurrences in the function of each variable considered in the analysis under control. We decided to sacrifice the possibility to have a balanced number of types in order to dispose of a semi-spontaneous corpus, which was closer to everyday conversation, at least from a phonetic-prosodic point of view, than a pre-planned speech corpus. This meant that we obtained a different number for the types of requests. *Query_y* moves, for instance, are more numerous than other requests, both in Italian and in Spanish. This inevitably implies a different degree of reliability in our considerations. Moreover, as we will see from the data, we cannot always analyse all the informative and morphosyntactic structures for each type of request, meaning that we cannot always make an interlinguistic comparison, since we have to limit our consideration to the effective occurrences of the speech corpus (§ 2.5).

4.1.1 Information-seeking requests

In the next sections, we will discuss the intonative transcriptions corresponding to the different types of information-seeking requests, following the order of *info_re-*

quest, *query_w* and *query_y* moves. For each type of request, we will illustrate a table comprising the following columns (going from the left to the right¹):

1. the item identification (§ 2.4.3),
2. the informative structure (“Inf.” § 2.4.4),
3. the morphosyntactic structure (“Ms.”)²,
4. the intonative transcription of the topic (if present),
5. the intonative transcription of the comment, by generally considering the profile (P) and the terminal contour (TC), but differently dividing them in terms of the function of the type of request (§ 3.3.1).

Finally, following the same order of exposure, we show each item with its orthographic transcription in the Appendix B.

4.1.1.1 Italian

Table IV-1 illustrates the results concerning *info_request* moves in Italian. As far as their information structure is concerned, only in one case did we find a topic/comment (T/C) structure, whereas 96% of the occurrences present a comment structure (23 out of 24 cases). As shown in the table, we can consider two major morphosyntactic forms, with the first composed of disjunctive structures (DISJs) and the second composed of various types of phrases, most of them noun phrases (NPs).

Table IV-1 - *Intonative transcriptions of Italian info_request moves*

<i>Info_request</i>	Inf.	Ms.	T	C
i_p2#17_A02N	C	DISJ		M, U, H, T(S), D, D, B(L)
i_p2#47_A02N	C	DISJ		M, U, T(H), D, D, B(L)
i_p2#34_A03N	C	DISJ		B(M), U, U, T(S), D, S, L, S
i_p2#56_A03N	T/C	DISJ	M, H, L, S	S, U, T(S), D, S, B(L)
i_p2#19_A02N	C	DISJ		M, U, T(H), D, D, B(L)
i_p2#80_A03N	C	DISJ		M, S, T(H), D, D, B(L), S
i_p2#2_A03N	C	PP		B(M), H, S, L, U, T(H)
i_p2#95_A02N	C	ADVP		B (M), U, S, T(S)
i_p2#101_A02N	C	ADVP		B(M), U, T(H)
i_p2#181_a_A02N	C	ADVP		B(M), T
i_p2#110_A03N	C	ADVP		B(M), U, T(H), S
i_p2#162_A03N	C	ADVP		B(M), U, T(H)
i_p2#159_A02N	C	NP		B(M), U, S, T(S)
i_p2#181_b_A02N	C	NP		B(M), U, T(H)
i_p2#203_A02N	C	NP		B(M), U, T(H), S

¹ Considering that speech is unplanned (§ 2.1), the segmental characteristics of utterances, such as the number of syllables or the stress patterns, were not taken into account.

² For the abbreviations used in the tables, see the list of abbreviations in the Appendix A.

<i>Info_request</i>	Inf.	Ms.	T	C
i_p2#58_A03N	C	NP		B(M), U, T(H), S
i_p2#74_A03N	C	NP		B(M), S, T(H), S
i_p2#142_A03N	C	NP		B(M), U, T(H), S
i_p2#146_A03N	C	NP		B(M), U, T(H), S
i_p2#256_A03N	C	NP		B(M), U, T(H), S
i_p2#62_A06N	C	NP		B(M), S, U, T(U), S
i_p2#66_A06N	C	NP		M, B(S), T(H), S
i_p2#88_A06N	C	NP		M, S, T(H), B(L), U, S
i_p2#92_A06N	C	NP		B(M), S, U, T(S)

For the first morphosyntactic type, corresponding to the first six rows, the comment is divided into P1 and P2, which represent the two members of the alternative proposed in the request (§ 3.3.1). Table IV-2 illustrates intonative transcriptions considering the two members of the alternative.

Table IV-2 - *Intonative transcriptions of Italian info_request moves considering the two members of the alternative in disjunctive structures*

<i>Info_request</i>	Inf.	Ms.	P1	P2
i_p2#17_A02N	C	DISJ	M, U, H, T(S), D	D, D, B(L)
i_p2#47_A02N	C	DISJ	M, U, T(H), D	D, D, B(L)
i_p2#34_A03N	C	DISJ	B(M), U, U, T(S), D	D, S, L, S
i_p2#56_A03N	T/C	DISJ	S, U, T(S), D,	D, S, B(L)
i_p2#19_A02N	C	DISJ	M, U, T(H), D	D, D, B(L)
i_p2#80_A03N	C	DISJ	M, S, T(H), D,	D, D, B(L), S

As clearly indicated by the transcriptions, a rising-falling configuration characterizes the comment of these utterances. When looking at the two parts of the comment in more detail, we can observe that the first one, P1, presents a rising-falling configuration (always ending in a D point), while the second member shows a falling tune, ending with a low termination.

As far as the position of the T (top) point, we can observe a rising pitch movement during the last accented syllable of P1, with the f_0 peak almost always located at the end of this syllable, independently of the type of disjunctive structure (nominal or verbal clauses).

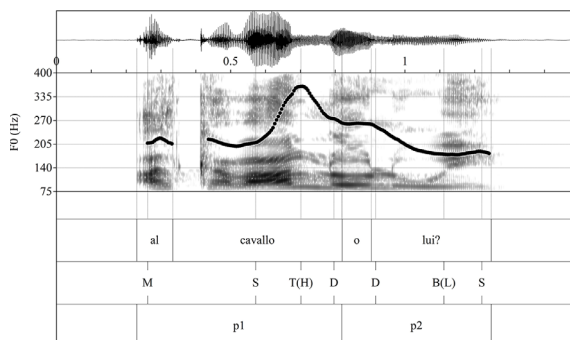
The realizations show some constants, which we can reconstruct as follows:

- initial point: M,
- upstep: U T(H),
- downstep: T(H) D D,
- final point: B(L).

Observing the constants in the transcriptions, we can reconstruct an abstract pattern for this morphosyntactic type, expressed by the sequence **M U T(H) D D B(L)**.

Figure IV-1 shows an example of this melodic pattern (i_p2#80_A03N, “Al cavallo o lui?”, “To the horse or him?”)³.

Figure IV-1 - *An example of an Italian info_request (“Al cavallo o lui?”; morphosyntactic type: disjunctive)*



In the single occurrence of a T/C structure, we can only signal that the topic presents a rising-falling configuration (M H L S).

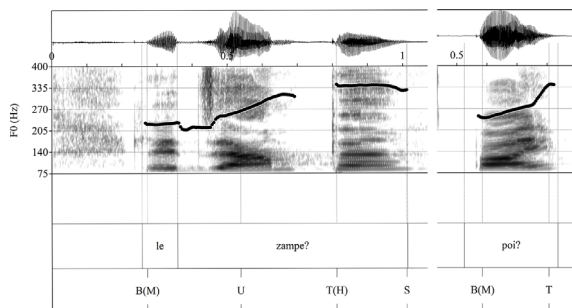
As for the second morphosyntactic type, it presents different types of phrases (prepositional, adverbial and noun). Most of them are simple phrases, which only present a head with a determiner (for example, i_p2#142_A03, “Le scarpe?”, “The shoes?”). The two occurrences i_p2#88_A06, “Le orecchie del cavallo?”, “The ears of the horse?”, and i_p2#2_A03, “Dentro al televisore?”, “Inside the television?”) present a modifier (the prepositional phrases “del cavallo” and “al televisore”).

All the simple phrases show a clearly rising configuration, whereas the only two complex phrases present a different intonative transcription: i_p2#88_A06: M S T(H) B(L) U S and i_p2#2_A03: B(M) H S L U T(H). The rising configuration, which, in simple phrases involves all the utterances, characterizes both the head and the modifier in complex phrases. Since we are dealing with only two occurrences, we cannot reach any conclusion in this respect, but we can only hypothesize that these requests are characterized by a rise in the stressed syllable, as indicated in most of the cases by the sequence U T(H).

When considering simple phrases, this morphosyntactic type can present a rising configuration, followed by a high and flat part, or an entirely rising configuration. In Figure IV-2 we show an example of each of them (i_p2#256_A03N: “Le zampe?”, “The paws?”, on the left; i_p2#181_a_A02N: “Poi?”, “Then?”, on the right).

³ As can be observed in the figure, even if we analysed the utterances by considering the stylized curve (see § 3.2), we can still show the examples of the original curves in PRAAT, edited with its *TextGrid*, because the visualization is clearer than the output of *Prosomarker*. Additionally, it provides the waveform and the spectrogram of the melodic curve.

Figure IV-2 - Two examples of Italian info_request moves (“Le zampe?”, “Poi?”; morphosyntactic type: phrases)



The intonative constants found in the whole of the utterances led us to establish the following features:

- initial point: B(M),
- upstep: U T(H),
- final point, followed by a flat part: T(H) S.

Therefore, the abstract pattern corresponding to this request can be described by the sequence **B(M) U T(H) S**.

When trying to compare our results with previous studies on the same category (even if they investigate other Italian varieties), we can claim, for disjunctives, the presence of the same configuration. However, in our case, the first member of the alternative is realized through a rising-falling configuration, indicated by the notation M U T(H) D, and not through a rising one, as described by other authors (Gili Fivela, 2008; cf. § 1.2.1.1). As for the second morphosyntactic type analysed, represented by the sequence B(M) U T(H) S, our findings are consistent with only a few other previous works (cf. § 1.2.1.1).

Table IV-3 shows the results regarding *query_w* moves in Italian, formally characterized by the presence of a *wh*-element. We considered the comment dividing it into a profile (P), by which we mean the overall trend of the curve from the beginning of the comment until before the last stressed syllable in the intonation unit, and a terminal contour (TC), by which we refer to the direction of the pitch, starting from the last stressed syllable of the intonation unit (§ 3.3.1). Moreover, we observed the intonative realization of the *wh*-element, which is indicated in the last column in Table IV-3 as “whE”.

Regarding their information structure, they correspond to the comment type (C) in 50% of the cases (8 out of 16 occurrences); in the remaining 50%, they present a topic sentence and therefore a T/C structure⁴. We analyse the two types by comparing the parts that correspond to the comment portion.

⁴ Looking at the table IV-3 and the Appendix B, one can notice that topics play different syntactic functions and present different segmental characteristics. Moreover, some topics are realized by one constituent (such as “a te”, “to you”, meaning “in your drawing”), while others by two constituents (such as “ma la macchina tu”, “but the car you”). Even if we consider them as they were single topics

As far as their morphosyntactic structure is concerned, we will only consider the position of the *wh*-element, since intonative realizations do not seem to be strictly dependent on other syntactic features. More specifically, we do not dispose of a sufficient number of occurrences for each syntactic type, for example, to allow us to systematically consider this variable⁵. However, in all C types, the *wh*-element occupies the initial position in the utterance, whereas, in all T/C types, the interrogative element is not in the initial position, since it follows the topicalized element.

Table IV-3 - *Intonative transcriptions of Italian query_w moves*

<i>Query_w</i>	Inf.	Ms.	T	P	CT	whE
qw_p1#184_A02N	C	whE		M, T(H), S, B(L), S	S, H, S	M, T(H)
qw_p1#9_A06N	C	whE-OBJ		M, T(U), D	D, S, B(L)	M, T(U)
qw_p2#97_A02N	C	whE-VP		T(M), S	S, B(L), S	T(M), S
qw_p1#230_A02N	C	whE-VP		M, T(H), D, D, L	L, B(S)	M, T(H)
qw_p1#133_A05N	C	whE-VP		M, U, D, B(L)	B(L), T(H)	M, U, D
qw_p1#222_A02N	C	whE-VP- SUB(SC)		T(M), S, D, S, S	S, B(S)	T(M), S
qw_p1#234_A02N	C	whE-VP- SUB(SC)		M, T(S), L, S	S, B(L), S	M, T(S)
qw_p1#185_A05N	C	whE-VP- SUB		M, T(H), L, S	S, S, B(L)	M, T(H)
qw_p2#76_A03N	T/C	CE-whE- VP	B(M), U, T(S)	T(S), S	S, S	T(S), S

made by more than one constituent, they could actually be considered two topics. In any case, as we will see, we will basically limit our analysis to single topics.

⁵ As already stated for *info_requests*, the choice of an unplanned speech styles implied that we could not consider all syntactic variables. For instance, the morphosyntactic type “whE-VP-SUB” contains different kinds of subjects: a noun phrase in qw_p1#185_A05N (“questo filo”, “this cable”) and a relative clause that modifies a noun phrase in qw_p1_222_A02N and in qw_p1_234_A02N (“la ruota che si vede”, “the wheel that you can see”). It is generally agreed that syntactic complexity and weight can affect intonative realization. Therefore, comparing these utterances considering them the same syntactic type does takes into account a relevant feature. Our choice strictly depends on the type of corpus we decided to examine, but it is in part justified by the type of relative clause. In fact, if we focus on the length of the utterance and on its number of syllables, we can see that an utterance such as “Qual è la ruota che si vede?”, “Which one is the wheel that you can see?”, has the same number of syllables of an utterance such as “Qual è la ruota più vicina?”, “Which one is the nearest wheel?”. However, a rigorous approach would require to examine a corpus in which syntactic type should be considered in function of syntactic weight, complexity, number of syllable and type of syllables too, but this is only possible considering an ad hoc corpus.

<i>Query_w</i>	Inf.	Ms.	T	P	CT	whE
qw_p1#187_A05N	T/C	CE-whE-VP	M, H, L, U, T(H), L	L, U, D	D, B(L), S	L, U
qw_p2#187_A02N	T/C	OBJ-SUB-whE-VP	M, U, T(U), D, L, U	U, D, D	D, B(L), S	U, D
qw_p2#56_A06N	T/C	SUB-whE-OBJ-VP	M, T(H), S, L	L, U, S	S, B(L)	L, U, S
qw_p1#47_A03N	T/C	SUB-whE-VP	M, B(S), T(H), D, L	L, U	S, U	L, U
qw_p2#52_A06N	T/C	SUB-whE-VP	B(M), U, T(H), D, L, U, D	D, U, D	U, D, S	D, U
qw_p2#72_A06N	T/C	SUB-CE-whE-VP	M, H, D, T(U), D	D, S	S, B(S), S	D, S
qw_p2#96_A06N	T/C	SUB-whE-VP	M, U, T(S), D	D, S, S, B(D)	B(D), H	D, S

First, looking at the intonative realizations of *query_w* moves, one can notice a significant amount of variability⁶. By observing, in Table IV-3, the parts corresponding to the profile (P), the terminal contour (TC) and the interrogative element (whE), we can state that this variability involves all the parts considered in the analysis. Naturally, the realization of the wh-element does affect the realization of the P too by establishing a difficulty in extracting a pattern for this request. Therefore, we will start by considering the intonation of the interrogative element.

On analysing the wh-element, the coding does not show constants: in some cases, it indicates an f_0 variation; meanwhile, in other cases, it expresses no relevant f_0 movement.

It is far being obvious or unambiguous what prominent means, but previous studies choose to associate an f_0 peak with the wh-word or at least seem to assume that the wh-word would be made prominent by an f_0 peak (Marotta, Sorianoello, 1999; Sorianoello, 2006; Rossano, 2010; cf. § 1.2.1.1)⁷. Therefore, we conceived a

⁶ One can argue that this amount of variability can directly depend on differences in morphosyntactic structures. As already discussed, each morphosyntactic type can contain heterogeneous items, as far as their segmental characteristics are concerned. However, wherever possible, we tried to take into account these differences analysing and interpreting data. Considering that it was not possible to take into account a priori all these factors in our corpus, we tried to examine them a posteriori and we are reasonably led to believe that this variability does not only or directly depends on the differences that we have excluded in the morphosyntactic categorization.

⁷ For instance, Marotta, Sorianoello (1999: 1162) claim that “Ladd [...] has already noticed that in languages like English and Italian, the wh-word is not always the most prominent word of an interrogative utterance, although it might display the highest pitch. According to the data, the interrogative morpheme generally shows a certain degree of prosodic prominence. Nevertheless, a second PA may be found at the end of the question, especially in long utterances. This final PA has lower F0 value

prominence in this way and divided prominent from weak or non-prominent realizations in function of f_0 movements: if there are no relevant f_0 movements, we consider it a weak realization.

In a strong or prominent realizations, we can appreciate different f_0 movements:

- in most cases, it is a rising movement⁸,
- in only one case, it is rising-falling movement⁹.

As already stated, if there is no movement in correspondence with the interrogative element, we consider it a weak realization¹⁰. This is the case for the following tag sequences: T(M) S, T S, M T(S), T(S) S, D S.

However, in all the occurrences that we classify as non-prominent realizations, even if there are no f_0 variations, the wh-element is associated with the f_0 maximum value of the unit (provided there is no sentence topic accent, as we will see). Once we clarify what we mean by prominent, if we separate strong or prominent wh-elements from weak or non-prominent elements, 50% of the cases are prominent (8 out of 16 cases) and generally show a rising movement.

We are reminded that the previous literature is not unanimous in this respect. Some authors suggest that the realization of the wh-word depends on the length of the utterance (in combination with the type of interrogative element, Marotta, Soriano, 1999; Soriano, 2006; Marotta, 2002) and on the type of interrogative element (Bocci, 2013). In short utterances, the wh-element should attract an intonative prominence and generally result in being prominent. In long utterances, the interrogative element could be differently realized in the function of the type of element. “Chi”, “who”, “che”, “what”, “dove”, “where” and “come”, “how”, would tend to be realized as non-prominent, whereas others would be generally stronger and often associated with a prominence, such as “perché”, “why” (cf. § 1.2.1.1). In view of these considerations, we examined our data to evaluate whether these factors affect the intonation of these requests and account for the apparent variability.

In order to establish if an utterance has to be considered long or short, we calculated the average of syllables per utterance in *query_w* requests. Since the average value is less than eight syllables, we considered a short utterance to have a maximum of seven syllables and a long utterance to have eight or more syllables. Figure IV-3 shows prominent and non-prominent realizations in the function of the length of the utterance in our corpus of Italian dialogues. It is clear that the prominence of the interrogative element is not associated with the length of the utterance in our corpus.

than the pitch occurring on the wh-word, but perceptually it is more salient than the former. The reason is probably that in Italian duration plays a primary role in the assignment of prominence”.

⁸ It is indicated by the following tags: M T(H), M T(U), D U, L U, L U S.

⁹ The corresponding coding is M U D.

¹⁰ Except for one case, qw_p2#187_A02N, “Ma la macchina tu dove la vedi?”, “But the car, where do you see it?”, where the coding indicates a falling movement: U D. But we consider this to be a weak realization, since it occurs within a falling comment.

Figure IV-3 - *The prominent vs. non-prominent realization of the wh-element in Italian in the function of the length of the utterance*

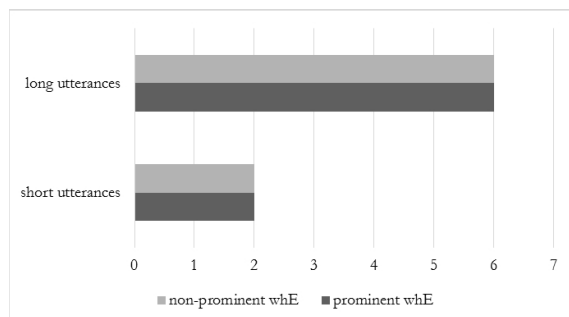
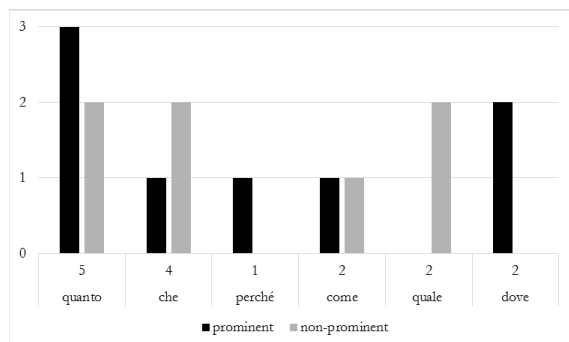


Figure IV-4 illustrates the prominent and non-prominent realizations in the function of the type of interrogative element. The “perché” and “dove” result is prominent, whereas “quale” is always weakly realized. Moreover, “quanto”, “che” and “come” result both prominent and non-prominent.

Figure IV-4 - *The prominent vs. non-prominent realization of the wh-element in Italian in the function of the type of wh-element*



Comparing these findings with the previous studies that considered two classes of wh-elements (Marotta, Sorianello, 1999; Marotta, 2002; Bocci, 2013), requiring and not requiring adjacency with the verb, described as prosodically prominent and weak respectively, we can see that the occurrences of “perché” and “quale” confirm our expectations. On the contrary, we find that the element “dove” is prominent and it was supposed to be weak; moreover, “quanto” and “che” can be realized in both ways.

Our data confirm the expectation that the type of interrogative element may affect its intonative realization, though this might not be the only factor. However, the small number of occurrences (indicated in Figure IV-4 for each element) and the different number of each wh-element prevent us from coming to a conclusion.

Turning to the realization of the comment, we will firstly consider the profile (P) and secondly examine the terminal contour (TC).

Apart from the realization of the wh-element, the P is represented by different series of tags, but they all are falling sequences.

The TC presents a falling configuration too in most cases (12 out of 16 occurrences) and contains the minimum f_0 value (B point in the coding). In the remaining 25% of cases, we find a rising TC, which does not correlate with the strong or weak realization of the interrogative element (cf., for example, qw_p1#184_A02N with a prominent wh-element and qw_p2#96_A06N with a non-prominent wh-element).

Our data indicate that intonative realizations of the comment show some constants in the P but do present a variable wh-element (prominent in 50% of the cases) and a falling TC in most cases.

We can observe the following shared characteristics:

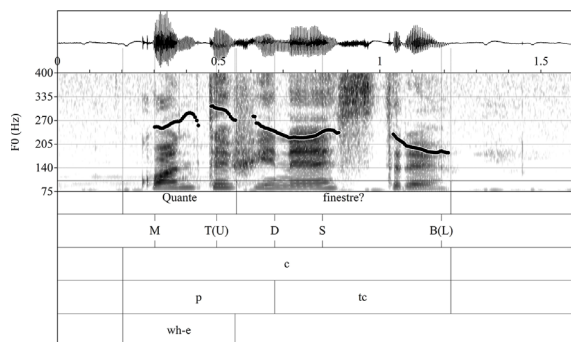
- initial point: M,
- possible f_0 rise associated with the wh-element: M H,
- downstep: D D,
- minimum f_0 value: B,
- low and flat part: S
- possible, but infrequent final rise: H.

Therefore, we identify two variants of abstract intonation patterns for this request, depending on the realization of the wh-element: if it is prominent, we propose the coding **M H D D B S H**¹¹; in the case of a weak realization of the wh-element, we propose the sequence **M S D B S H**.

Figure IV-5 shows an example of *query_w* with a prominent realization of the interrogative element (qw_p1#9_A06N, “quante finestre?”, “How many windows?”). Figure IV-6 illustrates an example of *query_w* with a weak realization of the interrogative element (qw_p2#76_A06N: “A te com’è?”, “In your drawing, how is it?”).

Finally, in Figure IV-7, we show an example of a rising TC (qw_p1#133_A05N: “Quanti ne sono?”, “How many are they?”). It is not possible, at least if we analyse the data at our disposal, to link this minority rising realization with other variables examined in the corpus.

Figure IV-5 - An example of an Italian *query_w* with a prominent wh-element (“Quante finestre?”)



¹¹ As in all the other cases, bold type indicates the sequence of the abstract pattern. As shown in the example, regular type in the sequence indicates a possible but infrequent element, such as the final rise in a *query_w* request.

Figure IV-6 - An example of an Italian query_w with a non-prominent wh-element (“A te com’è?”)

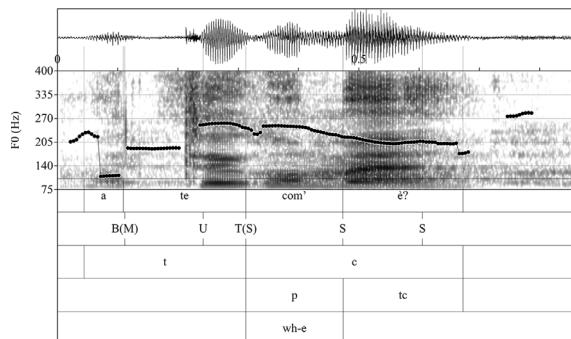
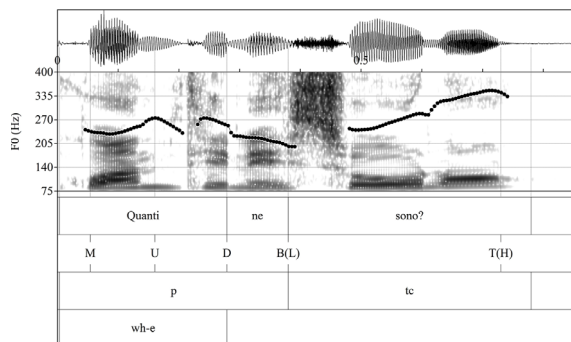


Figure IV-7 - An example of an Italian query_w with a rising TC (“Quanti ne sono?”)



As for the realization of the topic (informative type T/C, indicated in Table IV-3 in the last eight rows), we can only offer a few introductory remarks.

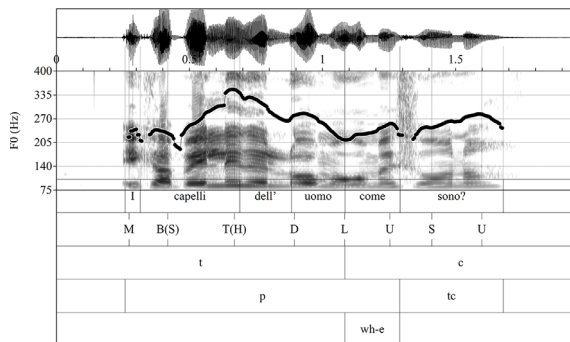
The topic generally presents a rising-falling configuration, except in two cases: qw_p2#76_A03N, “A te com’è?”, “In your drawing, how is it?”, and qw_p2#187_A02N, “Ma la macchina tu dove la vedi?”, “But the car, where do you see it?”. In these utterances, the topic presents a rising configuration. Even if we have, at our disposal, too few occurrences to extract some conclusions, the different realization of “te” and “tu” makes us suppose that the intonative realization depends on the segmental composition of the topic too. Therefore, we do not consider these variants in the extraction of the abstract pattern. Moreover, it seems to us that, if there are two topics, the same configuration can appear for each one, as is the case with adverbial phrase and prepositional phrase in qw_p1#187_A05N, “E poi a terra dove finisce?”, “And then on the ground where does it ends?”.

We can summarize the constants in the realization of the topic in the following way:

- initial point: M,
- upstep that leads to the maximum f_0 value: U T(H),
- downstep: T(H) L.

Therefore, the sequence **M U T(H) L** can constitute the abstract pattern for the topic in *query_w* requests. Figure IV-8 shows an example belonging to *qw_p1#47_A03N* “I capelli dell’uomo come sono?”, “The man’s hair, how is it?”.

Figure IV-8 - *An example of a topic in an Italian query_w (“I capelli dell’uomo come sono?”)*



Previous studies on the intonation of these requests in Italian generally indicate a falling body in the utterance, while leaving unresolved some issues concerning the prominence of the interrogative element and the termination of the utterance (cf. § 1.2.1.1).

Our findings indicate, first, that informative organization does affect the intonative realization of the request, since it is possible to identify abstract patterns corresponding to the topic (**M U T(H) L**)¹² and to the comment (**M H D D B(L) S H**; **M S D B(D) S H**).

Secondly, the *wh*-element can be prominent or otherwise, indicating that the contribution of this element to convey the meaning of the request is not necessary. Its prominence can depend on the type of *wh*-element; however, even based on our occurrences, we cannot reach any conclusion, but it does not seem to depend on the length of the utterance.

Finally, regarding the TC, our result indicates that there is a majority low-falling termination. It is possible, but unlikely, that there is a rising termination, without clear results directly related to other factors, such as the informative organization (it occurs both in C structures and in T/C structures) or the segmental characteristics of the utterances (it occurs, for instance, both for oxytone and for paroxytone words).

As the last kind of information-seeking request considered in this work, Table IV-4 illustrates the intonative transcriptions of Italian *query_y* moves. These present a comment structure (C) in 40% of the cases (25 out of 62 occurrences), while they present a topic sentence (or two topics) in the remaining 60% (T/C structure in 34

¹² For a discussion and a comparison with prior studies on the intonation of the topic, see below, after the exposure of the results on *query_y* moves.

occurrences and C/T in only three cases¹³). We analyse the three informative types by comparing the parts corresponding to the comment portion.

As shown in Table IV-4, we considered the intonation of the comment (C) by dividing it into a profile (P) and a terminal contour (TC)¹⁴, preceded by the intonative transcription of the topic (T). Moreover, Table IV-4 shows each *query_y* move with its informative and morphosyntactic realization¹⁵. In the cases of a very short utterance (for example, in qy_p1#183_A03N, “Nero?”, “Black?”), we indicate “P=TC” in the table, since the division between a P and a TC was senseless. Finally, following the same order of exposure, we show each item with its orthographic transcription in the Appendix B.

In order to control the influence of syntactic structure on the intonation of the requests, we divided the items in the function of this variable. Comparing all the

¹³ In approximately 18% of cases, *query_y* moves contained a clitic right dislocation, in which a noun phrase that occurs in a post-verbal position is resumed by a coreferent clitic pronoun, as, for instance in “La vedi la seconda scarpa?” “Do you see it, the second shoe?”, where “la seconda scarpa” is not an afterthought used as a repair strategy to solve a possible ambiguity. As far as the information structure is concerned, while in declarative sentences, the post-verbal noun phrase is usually considered as a topic (or “antitopic”, Lambrecht, 2001), in our requests the referent corresponding to the noun phrase is discourse-new and it might be considered as part of the comment too (even if, in the specific communicative situation in which speakers share the drawing, it is usually active or at least accessible). However, according to Crocco (2013) a clitic right dislocation in a yes-no question can be considered a means of expressing a non-confident confirmation request. Therefore, we discarded *query_y* moves containing a clitic right dislocation (for their intonation, see Crocco, 2013), but we did not decide to include them in *check* moves, since in our annotation scheme, *check* moves are characterized by a clear and recognizable presupposition on the part of the speaker (cf. § 1.1.1).

The following example shows the context in which occurs the utterance “La vedi la seconda scarpa?” “Do you see it, the second shoe?”.

p2#38: la coda a me èalzata

p1#39: no, a me non èalzata

p2#40: ah ok e le zampe sono abbassate

p1#41: sì <ehm> la vedi la seconda scarpa?

p2#42: <ehm> no, solo la <aa> il tallone insomma

Analysing the context, the speaker does not know if the interlocutor sees or does not see the second shoe and has not got contextual elements to deduce it, since they had not previously talked about it. Therefore, we consider that the speaker asks for an information and not for a confirmation. The discourse status of the referent can help to clarify the interpretation of the request: if it is given (or accessible, active or semiactive, Chafe, 1987), it can be the object of a confirmation request, but this is not a general reliable criterion. One can ask for an information about a discourse-given referent or can ask for a confirmation on a discourse-new referent.

¹⁴ We are reminded that, by “profile” (P), we mean the overall trend of the curve from the beginning of the comment to before the last stressed syllable in the intonation unit and that, by “terminal contour” (TC), we refer to the direction of the pitch, starting from the last stressed syllable of the intonation unit (§ 3.3.1).

¹⁵ For the abbreviations used in the tables, see the list of abbreviations in the Appendix A; moreover, the diacritic symbol “*” used in Table IV-4 indicates existential-presentative sentences (qy_p2#228_A03N, “e c’è anche il paraurti?”, “and is there a bumper too?” VP-SUB*, for instance).

INTSINT tag sequences, we cannot appreciate differences that are directly attributable to morphosyntactic differences in the P or in the TC. The same P or TC is not associated with a specific morphosyntactic type, while, at the same time, the same morphosyntactic type shows a different intonative realization of the P and of the TC¹⁶. Therefore, we examined this request independently of the morphosyntactic structure, analysing the INTSINT tag sequences of the parts corresponding to the comment and the topic of the request.

As for the other requests, we start with the comment by discussing the P and then the TC. As for the P, we identified the following five cases:

1. rising,
2. flat-falling,
3. rising-falling,
4. falling-rising,
5. P=TC¹⁷.

¹⁶ If, for instance, we observe the realization of the VP-OBJ type (as in “vedi pure la punta?”, “do you see the tip too?”), we can easily notice that the P and the TC do not present evident regularities in their coding. It is also true that in this type, and in all the other cases, there are different VPs and different OBJs. For instance, as far as the OBJ is concerned, “il bordo spiovente”, “the sloping edge”, “qualche disegno”, “some drawings”, “entrambi gli specchietti”, “both mirrors”, “pure la punta”, “the tip too”. Similarly, we can find different OBJs in the type SUB-VP-OBJ, including a disjunctive structure in qy_p2#32_A06N “qualche occhio o qualcosa”, “any eye or anything”, that we do not consider separately because there is only one occurrence.

The found variability might also be linked to these differences, but the only way to have perfectly comparable items would require a preplanning of speech production.

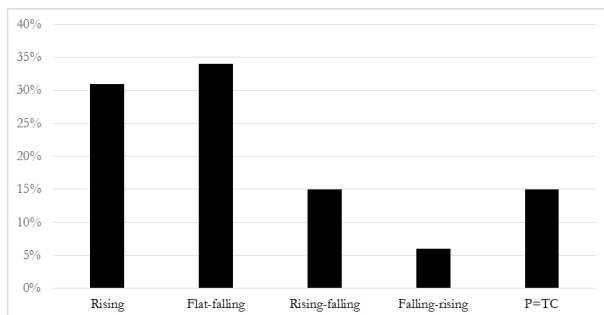
¹⁷ We classified our profiles in the following way. The “rising” profile corresponds to a sequence of INTSINT tags indicating a rise, for example, M S S H S; M T(U) S; M U T(H); M S T(U); M, U; M, B(S), U, T(H). The “flat-falling” profile matches a sequence of INTSINT tags, thus designating a flat or falling configuration, for example, M L S L; M, S, D, S; M S; M S D; T(U) D D; D D B(S). With a “rising-falling” profile, we identified all the sequences of INTSINT tags that presenta rising part followed by a falling part, for example, M S T(H) D; M S T(H) L; M S T(H) D S. By a “falling-rising” profile, as in the previous case, we mean all sequences of INTSINT tags that present a falling part followed by a rising part, for example, D L U S and D L H S. Finally, we decided to separate the case of an utterance with a very short profile (indicated by P=TC).

Table IV-4 - *Intonative transcriptions of Italian query_y moves*

C					
<i>Query_y</i>	Inf.	Ms.	T	P	CT
qy_p2#120_A03N	C	OBJ-VP		M, L, S, L	L, T(H), B(L), S
qy_p2#141_A02N	C	Ph		M, S, S, H, S	T(U), D, B(S)
qy_p2#153_A02N	C	Ph		M, T(U), S	S, B(L), S
qy_p1#69_A03N	C	Ph		M, U, T(H)	T(H), D, B
qy_p1#89_A03N	C	Ph		M, S, T(U)	T(U), B(L), S
qy_p1#91_A03N	C	Ph		M, U	T(S), B(L), S
qy_p1#97_A03N	C	Ph		M, B(S), U, T(H)	T(H), D, U
qy_p1#183_A03N	C	Ph		P=TC	M(B), T(U), D(S)
qy_p2#128_A05N	C	Ph		M, S,	S, T(H), D(B), S
qy_p2#74_A06N	C	Ph		P=TC	M, T(U), B(L)
qy_p1#131_A06N	C	Ph		M, T(H)	S, B(L), S
qy_p2#69_A02N	C	VP-CE		M, T(H)	S, D, B(S)
qy_p2#155_A02N	C	VP		P=TC	M, T(U), D, B(L), S
qy_p2#12_A03N	C	VP-IO		M, S, T(H), S, S	S, B(D)
qy_p1#133_A06N	C	VP-CE*		M, S, H, S, S, T(H)	T(H), B(L), S
qy_p2#107_A02N	C	VP-OBJ		M, S, T(H), S	S, D, B(S)
qy_p1#105_A05N	C	VP-OBJ		M, S, D	D, T(H), D, B(S)
qy_p1#17_A06N	C	VP-OBJ		M, S, T(H)	S, D, B(D)
qy_p2#44_A06N	C	VP-OBJ		M, S	S, T(U), D, B(D)
qy_p2#228_A03N	C	VP-SUB*		M, U, T(H), S	S, D, B(D)
qy_p1#19_A05N	C	VP-SUB*		M, S, H, S, B(L), U, U	U, T(H), D, D, S
qy_p1#29_A05N	C	VP-SUB*		M, T(S), L, S, D, S	S, U, D, B(D)
qy_p1#181_A05N	C	VP-SUB*		M, U, T(H)	T(H), D, S, B(L)
qy_p2#240_A03N	C	VP-SUB-OBJ		M, T(H), D, D, S	S, U, D, B(L)
qy_p1#22_A02N	C	VP-SC		M, U, S, T(H), D, S	S, B(L)
qy_p1#27_A06N	C/T	VP-OBJ-SUB		M, S, T(H), S, L	U, B(L)
qy_p1#29_A06N	C/T	VP-OBJ-SUB		M, S, T(H), L, S	S, B(D), H
qy_p2#144_A06N	C/T	VP-OBJ-SUB		T(M), D, S, D, S	S, B(D)
qy_p2#159_A02N	T/C	CE-VP	M, U	T(U), D, D	D, U, D, B(S)
qy_p2#214_A03N	T/C	CE-VP-OBJ	M, T(U), D	D, D, S	S, H, B(L)
qy_p1#165_A03N	T/C	CE-VP-SUB- CE*	M, T(H)	T(H), D, S, S, D, S, S, S	S, B(L)
qy_p1#85_A06N	T/C	CE-VP-SUB*	M, S, T(H), S, L, U, L	L, H, L, H, D	D, B(L)
qy_p1#163_A06N	T/C	CE-VP-SUB*	M, T(H), D, B(L), S, H, D	D, S, H	H, D, S, H
qy_p1#21_A03N	T/C	OBJ-VP	M, S, U, T(H), D	P=TC	B(L), H, D
qy_p1#31_A03N	T/C	OBJ-VP	M, S, H, B(L)	P=TC	U, T(H), L
qy_p2#124_A03N	T/C	OBJ-VP	M, S, U, T(S), D	P=TC	D, B(L), H

C					
<i>Query_y</i>	Inf.	Ms.	T	P	CT
qy_p1#177_A03N	T/C	OBJ-VP	M, S, T(H), L, S	P=TC	B(L), H, D
qy_p1#159_A06N	T/C	OBJ-VP	M, T(S), L	L, U	U, B(L), U
qy_p2#264_A03N	T/C	OBJ-SUB-VP	M, U, T(H), L, U, D	D, U	U, B(L), S
qy_p1#7_A05N	T/C	CE-Ph	B(M), U, H, L	P=TC	L, H, L, T(H)
qy_p2#47_A02N	T/C	SUB-OBJ-VP	M, U	U, D	D, T(H), D, B(S)
qy_p1#112_A02N	T/C	SUB-VP	M, U, T(S), D	L, S	S, U, B(L), S
qy_p2#165_A02N	T/C	SUB-VP	M, T(H), D	D, L	L, H, B(L), S
qy_p1#13_A03N	T/C	SUB-CE-VP	M, U, D, S, U, L	L	L, S, T(H), D, B(S)
qy_p1#27_A03N	T/C	SUB-VP	M, S, T(H), D	D, L	L, S, H, D, B(S)
qy_p1#63_A03N	T/C	CE-SUB-VP	M, T(H), S, L, U, D, S, U, L	L, H	H, B(L), S
qy_p2#96_a_A03N	T/C	SUB-VP-IO	M, S, T(H)	T(H), D, D, H, S	S, B(L), S
qy_p1#185_A03N	T/C	SUB-VP	M, T(H), S, D	D, L, U, S	S, D, B(S)
qy_p1#17_A05N	T/C	SUB-VP	M, S, T(H), D	D, D, B(S)	B(S), U, H, L, S
qy_p1#33_A05N	T/C	SUB-VP-IO	B(M), U, U, H, D	D, L, S, S	S, U, L, T(H)
qy_p1#35_A05N	T/C	SUB-VP	M, S, T(H), L, H, D	D, B(D)	B(D), H, L, U
qy_p1#119_A05N	T/C	SUB-VP	M, U, H, T(H), L, S, S, H, D, S, U, D, S, U, S, D	U, S, D	D, U, H, B(L)
qy_p1#47_A06N	T/C	SUB-VP*	M, S, T(H), S, L, H, B(L)	P=TC	B(L), H, D
qy_p2#276_A03N	T/C	SUB-CE-VP- OBJ	T(M), S, L, S, H, B(L), U	U, H, L, S	S, D
qy_p2#196_A03N	T/C	SUB-VP-OBJ	M, U, T(H), D	D, L, H, S	S, D, B(L), S
qy_p1#15_A05N	T/C	SUB-VP-OBJ	M, H	H, D, L, S, H, S	U, T(H), D, B(D)
qy_p1#37_A05N	T/C	SUB-VP-OBJ	M, S, T(H), L	L, S, U, D, S	S, U, B(L), H
qy_p2#138_A05N	T/C	SUB-VP-OBJ	B(M), S, U, T(H), D	D, D, H, S	S, D, B(D)
qy_p2#32_A06N	T/C	SUB-VP-OBJ	M, T(U), L	L, S, D, D	D, B(D), S
qy_p2#36_A06N	T/C	SUB-VP-OBJ	M, T(H), L	[L, U, D] S, H, S	S, B(L)
qy_p2#114_A06N	T/C	SUB-VP-OBJ	M, S, T(H), L, U, D	S, D, S, H, L, S	U, D, B(S)
qy_p1#161_A06N	T/C	SUB-VP-OBJ-CE	M, S, U, T(S), L	L, H, L, S	S, B(S)

In Figure IV-9, we can see the frequency of occurrence for the five Ps recognized for Italian *query_y* moves, as well as easily appreciate that there is no unique prototypical P: the flat-falling P is the most common (34%), immediately followed by the rising P (31%) and the rising-falling P (15%).

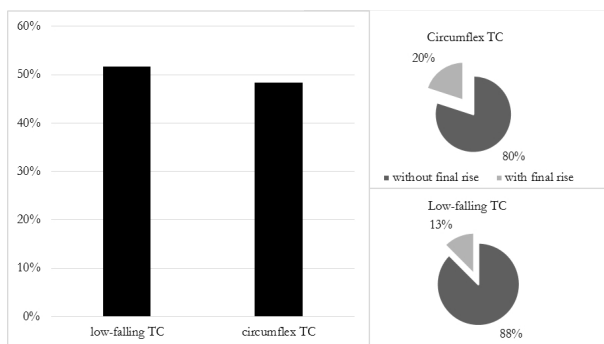
Figure IV-9 - *Frequency of occurrence (%) of the Ps identified in Italian query_y moves*

Following the same procedure for TC, we recognized two types:

1. low-falling,
2. circumflex¹⁸.

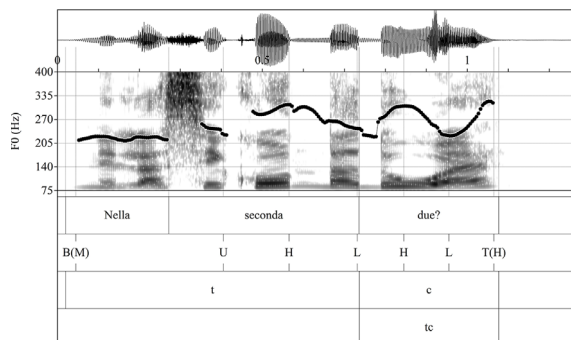
Moreover, both TCs can present a final rise, globally occurring in 16% of cases (10 occurrences).

Figure IV-10 shows the frequency of occurrence for the two TCs, both of which illustrate the frequency of their final rises.

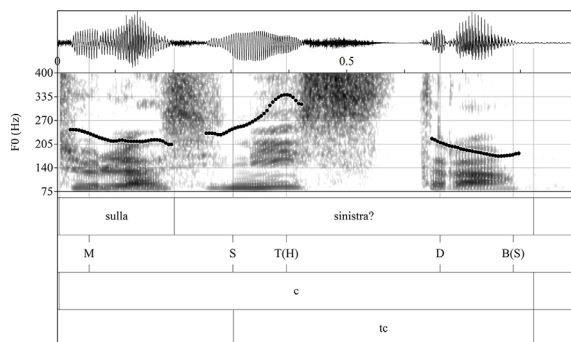
Figure IV-10 - *Frequency of occurrence (%) of the TCs identified in Italian query_y moves*

While low-falling and circumflex occur in a similar percentage of the cases (52% and 48%, respectively), the final rise is clearly infrequent in both types of TC. However, Figure IV-11 shows an example of a circumflex TC with an “extra-final” rise, *qy_p1#7_A05N*, “Nella seconda due?”, “In the second one, two?”.

¹⁸ We considered a “low-falling” TC to occur when the INTSINT tag sequence indicates a fall or a low termination, for example, D B(L); T(U) D B(S); S B(L) S; T(H) D B; T(U) B(L) S; T(S); B(L), S; S B(S). We considered a “circumflex” TC to occur when the INTSINT tag sequence corresponds to a rising-falling configuration, for example, L T(H) B(L) S; S T(H) B(L); S H B(L).

Figure IV-11 - *An example of a TC with a final rise (“Nella seconda due?”)*

These first considerations of P and TC in *query_y* moves reveal a great amount of variability, independently of the differences in morphosyntactic structures; however, when analysing the relationship between the different Ps and TCs, we observed a correspondence between them. The circumflex TC only occurs with a flat-falling P, whereas the low-falling TC can appear with the rising-falling, rising and falling-rising P. This implies that, despite the different intonative realizations, all *query_y* moves share a characteristic: they present a rising-falling movement in a variable position in the utterance. Indeed, the cases of P=TC (that is, the case of utterances with a P, which are so short that they almost correspond to a TC) show a rising-falling configuration. This is the case with the example shown in Figure IV-12, qy_p2#128_A05N, “Sulla sinistra?”, “On the left?”.

Figure IV-12 - *An example of an Italian query_y move of P=TC (“Sulla sinistra?”)*

In the following figures (IV-13, IV-14, IV-15, IV-16), we give an example for each possible combination between the types of TC and P.

Figure IV-13 shows an example of circumflex TC and flat-falling P (qy_p2#120_A03N, “Ce l’ha disegnata tutta?”, “Has it been drawn it all?”).

Figure IV-13 - *An example of an Italian query_y move with circumflex TC and flat-falling P* (“Ce l’ha disegnata tutta?”)

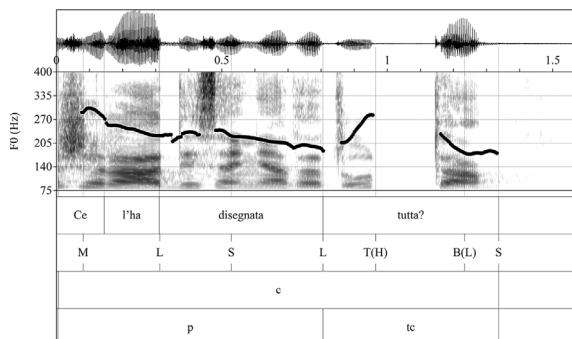


Figure IV-14 illustrates an example of a low-falling TC and a rising-falling P (qy_p1#22_A02N, “Ma si vede chiaramente che è una donna?”, “Can you see clearly that she’s a woman?”).

Figure IV-14 - *An example of an Italian query_y move with low-falling TC and rising-falling P* (“Ma si vede chiaramente che è una donna?”)

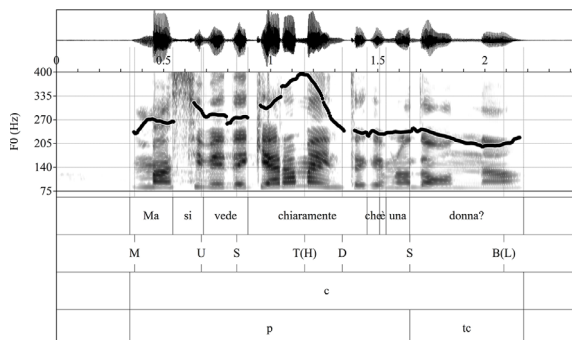


Figure IV-15 shows an example of a low-falling TC and a rising P¹⁹ (qy_p2#141_A02N, “Ma d+ <eeh> t+ da tutt’è due i lati?”, “But on both sides?”).

¹⁹ We classified it a rising P, because the initial flat part corresponds to a voiced hesitation.

Figure IV-15 - *An example of an Italian query_y move with low-falling TC and rising P*
 (“Ma d+ <ceh> t+ da tutt’e due i lati?”)

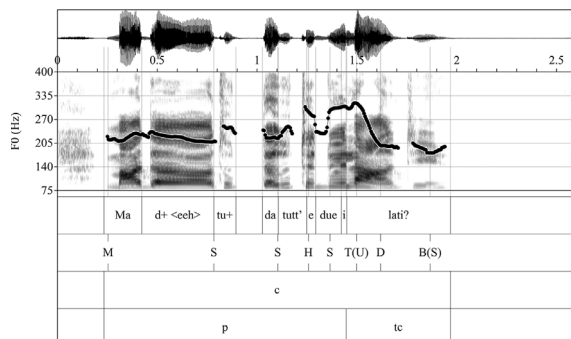
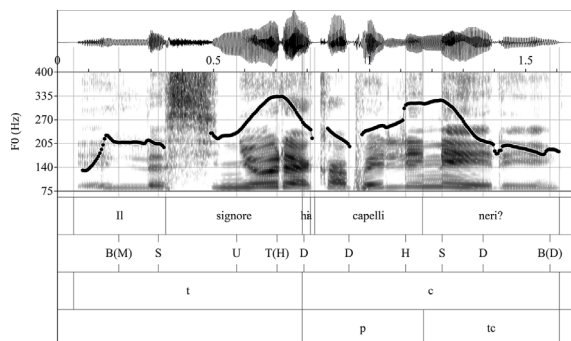


Figure IV-16 shows an example of a low-falling TC and a falling-rising P (qy_p2#138_A05N, “Il signore ha i capelli neri?”, “Has the man got black hair?”).

Figure IV-16 - *An example of an Italian query_y move with a low-falling TC and a falling-rising P*
 (“Il signore ha i capelli neri?”)



Therefore, comparing all the cases we have described, we find a constant in all the intonative realizations, that is to say, a rising-falling movement, which can occur in a different part of the utterance, both in the P or in the TC, and present a different width. This can either involve only a part of the utterance, which is the case with qy_p2#120_A03N (Figure IV-13), or implicate the entire utterance, as occurs for qy_p2#141_A02N (Figure IV-15).

These findings are in line with previous studies on the intonation of these requests (D’Imperio, 1997, 2000, 2001; Grice *et al.*, 2005; Crocco, 2006a, 2006b; Gili Fivela *et al.*, 2015; cf. § 1.2.1.1). They indicate a rise-fall pattern, a low termination and variations in the function of the position and the size of the focus²⁰ (more specifically, the nuclear accent L*+H is anchored to the first stressed syllable of the focus constituent, while the HL- fall is anchored to the last). Moreover, the same

²⁰ The term “size” of the focus is also referred to as the “scope” or “domain” of the focus. Following Büring (2012), we prefer the term “size”.

rising-falling movement should occur both in utterances with a narrow focus on a long constituent and in utterances with a broad focus or a whole sentence focus²¹. The rising-falling sequence should therefore involve the variable corresponding to the *requested* object. Indeed, if in a declarative sentence, the focus corresponds to the information that the speaker wants to highlight, it seems reasonable that, in a request, it will tend to coincide with the requested element.

In our examples, the entire comment of the utterance is the requested element, which can be considered in a broad focus in *qy_p1#7_A05N* “Due?”, “Two?” (Figure IV-11), in *qy_p2#128_A05N* (Figure IV-12) “Sulla sinistra?”, “On the left?” and *qy_p2#141_A02N*, “Ma d+ <eeh> t+ da tutt’e due i lati?”, “But on both sides?” (Figure IV-15), for instance.

As for the TCs found in our corpus, we classified 48% of them as circumflex TC (see Figure IV-10). This implies that, in 48% of cases, the TC coincides with a short utterance in a broad focus or with an utterance with a narrow focus on the element corresponding to the TC. In the remaining 52%, that is to say, the cases of a low-falling TC, the rising part occurs in the P, which is why it cannot be a flat-falling P, while the TC occurs in the falling phase.

In a low percentage of the cases, that is, about 8% (five occurrences), this correspondence between TC and P (a circumflex TC combined with a flat-falling P, a low-falling TC associated with a rising-falling, rising, and falling-rising P) seems to be contradicted. If the rise, supposedly associated with the element in focus, starts in the portion of the P, it ends before or in correspondence with the TC, implying a flat, low or a falling TC, respectively.

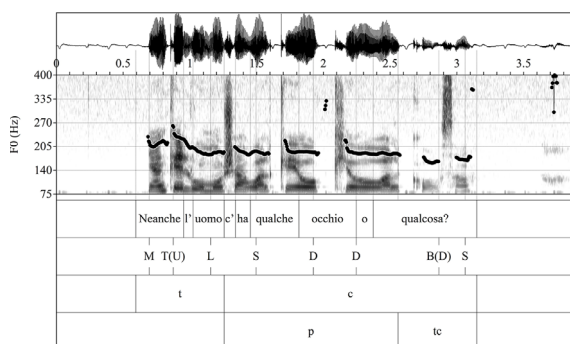
Notwithstanding, in two cases, requests show a circumflex TC and a rising-falling P. Now, applying the same method of analysis that we have followed in the other cases, we have to delete all the contingent factors that determine variations in the pitch curve (§ 3.3.1). We provide an example of such cases, in which we show how the apparent contradiction in the relationship between P and TC disappears when reconsidering the INTSINT coding and constructing the abstract intonation pattern of the requests without, for example, hesitations and filled or silent pauses. Figure IV-17 illustrates the utterance “C’ha pure lui la nuca<aa> appuntita?”, “Has he got the pointed nape too?” (*qy_p2#240_A03N*), where a different realization is due to a different informative structure.

While the other cases are neutral requests with a broad-focus intonation, this case seems to be a narrow-focus pattern, which presents the main perceptual prominence on “pure lui”, “also he”, that is to say, somewhere other than on the rightmost lexical stress.

²¹ We use here the term “broad focus” to indicate a focus larger than a single word or phrase in order to distinguish it from a focus on the entire utterance, i.e., a whole sentence focus.

ence of negation marks, such as “mica”, “non è che” or “neanche”. It is true that, in their context, these requests introduce new topics, but negation marks should probably be considered as a clear cue of a certain degree of presupposition on the part of the speaker. Let us consider the example, qy_p2#144_A06N, “Non è che ha magari una staffa la sella del cavallo?”, “It’s not like the saddle horse has a bracket?”. The two speakers had not previously talked about a saddle bracket as a topic, but “non è che magari” clearly indicates that the speaker has a strong presupposition based on the fact that her interlocutor has no saddle brackets and only asks for confirmation. In order to solve the task, she tries anything, but she seems quite sure that even her interlocutor cannot see saddle brackets in her drawing. Similarly, let us consider the example qy_p2#32_A06N, “Neanche l’uomo c’ha qualche occhio o qualcosa?”, “Not even the man has got an eye or anything else?”, as illustrated in Figure IV-18, where the presence of “neanche” might be considered a cue indicating a confirmation request, even there is no other linguistic or extralinguistic feature that signals a speaker’s presupposition about the answer.

Figure IV-18 - *An example of an Italian query_y move with a low-falling TC and a flat-falling P (“Neanche l’uomo c’ha qualche occhio o qualcosa?”)*



We can say that cases like these are difficult to classify. Furthermore, after the first three or four minutes of conversation, and even more if the speakers do not find the expected differences, they can construct a wide set of presuppositions. How to correctly identify a speaker’s orientation and attitude about the answer is problematic, and it is difficult to establish general reliable criteria. The discourse status of the referent can help to identify the type of request in the sense that if it is given or at least accessible, it can help to recognize a confirmation request, but it is not a rule.

However, we consider that it cannot be the case that only in these situations can we observe a correspondence between a low-falling TC and a flat-falling P. All things considered, this leads us to think again about the pragmatic classification, rather than talk of another intonation pattern.

Therefore, we can summarize, in the following way, the results concerning the realization of the comment in these Italian requests.

Our findings show that the realization of the TC and the realization of the P do not allow us to find invariants in the intonative realization, at least using our method of analysis. On the contrary, we can observe a correspondence between the various Ps and TCs identified through the INTSINT coding. Even if in different theoretical frameworks, we can still say that our results are consistent with previous studies. Furthermore, in our corpus of Italian dialogues, we find a rising-falling configuration, while the variations that we find do not seem to be a direct consequence of syntactic structures. They seem to depend on the size of the focus, which is a variable that we do not study in this work; but, comparing our findings with previous studies (§ 1.2.1.1), it seems quite reasonable to assume that the rising-falling sequence involves the variable corresponding with the requested element of the utterance.

Therefore, extracting the abstract intonation patterns for this request by considering, as usual, all the constants in the realizations, we can identify the following patterns:

- **M T(H) D B(S)**,
- **M S D S T(H) B(L) S H**,
- **M U T(H) S D D S B(L) S H**.

The first one describes the abstract pattern for short utterances, in which we did not separate the TC from the P. The second one represents the case of a flat-falling P and a circumflex TC, whereas the third one corresponds to a rising or a rising-falling P followed by a low-falling TC. The final non-bold type “H” in the second and third pattern indicates that the extra final rise is possible, but infrequent²².

As done for the other information-seeking requests, after extracting the abstract intonation pattern for the informative part of the comment, we illustrate the same results as far as the topic is concerned. Given the heterogeneity of the occurrences, we observed the main variables that are supposedly linked to the intonation of the topic, namely, its syntactic function and the type of phrase realizing the topic in the function of its “weight” and composition and the type of topic according to its discourse role.

First of all, we analyse the intonation of the topics realized by one constituent, discarding the occurrences of more than one constituent – which actually are multiple topics – because it was impossible to control their variability in the function of the factors linked to their intonation (for example, we excluded cases such as “la spada alla base”, “the sword to the base”, or “la criniera il cavallo”, “the mane of the horse”). Secondly, we took under control the syntactic weight of the constituent and its function. As far as the weight is concerned, we divided the occurrences into only two types: light and heavy, based our decision about the presence of a modifier,

²² It varies from 12% in a low-falling TC to 21% in a circumflex TC (cf. Figure IV-10). On the contrary, we do not consider the falling-rising profile in the extraction of the abstract intonation pattern because of its low frequency of occurrence at 5% (for the criteria adopted in this respect, see § 3.3.2).

inspired by Voghera, Turco (2008)²³. Therefore, we classified the structures composed of only the nucleus (with or without a determiner) as “light” topics and the structures made by the nucleus plus one or more than one modifier as “heavy” topics. We consider light topics to be, for example “La freccia”, “The arrow”, or “porte”, “door”, whereas “il guinzaglio del cane”, “the dog’s leash”, is classified as a heavy topic. Moreover, our analysis focuses on topics that are located in the left periphery of the utterance²⁴.

Finally, as far as the discourse role is concerned, Frascarelli, Hinterhölzl (2007: 88) identify three different topics: 1) *aboutness topic*, a newly introduced, changed or returned to element, which is proposed as a matter of interest, 2) *contrastive topic*, an element that induces alternatives which have no impact on the focus value and creates oppositional pairs with respect to other topics, 3) *familiar topic*, a given element, which is typically destressed, realized in pronominal form and generally used for topic continuity. They provide evidence that these topics show different intonational properties. In particular, they identify three tonal events associated with topic expressions, namely L*+H for (shifting) *aboutness topics*, H* for *contrastive topics* and L* for *familiar topics* and conclude that the prosodic realization depends on its discourse role, while does not seem to depend on other factors (such as the position within the sentence or segmental characteristics). Additionally, the authors consider shifting topics as new aboutness topics while continuing topics as non-new aboutness topics and indicate that continuing topics are realized as familiar topics²⁵. As for their analysis in terms of activation states, the authors indicate that shifting topics can be newly introduced or semi-active constituents. Contrastive topics are generally active (or semi-active) elements, while only familiar topics are always connected with active referents.

Therefore, we classified topics according to their discourse role, following Frascarelli, Hinterhölzl (2007: 88)²⁶.

²³ Voghera, Turco (2008) use a much more complex measure of syntactic weight. They take into account both the structure and the length of constituents, considering not only the presence of modifiers, but also the following features: \pm presence of determiners, \pm presence of pronouns. Considering our occurrences, we did not consider different degrees of complexity.

²⁴ We do not present any results on post-verbal topics, which are located in the right of the utterance (for example, “Ha qualche occhio il cavallo?”, “Has it any eyes, the horse?”) because of the low frequency of occurrence in our corpus. However, observing them would suggest a completely different realization. While the left topic appears intonatively marked, the right topic does not seem to be prominent at all (in line, as we will see, with previous studies, even if we have to consider that the literature has focused mainly on topics in declarative and not interrogative sentences).

²⁵ Moreover, in the case of multiple realization, the authors claim that the three topics types are located in a specific order, according to a topic hierarchy: 1) shifting, 2) contrastive and 3) familiar topics.

²⁶ Brunetti, D’Imperio & Cangemi (2010) focus on *partial* topics in Neapolitan Italian, showing that the topic expression in a partial answer is prosodically different from the one in an exhaustive answer (such as in “Milena lo vuole amaro”, “Milena wants it sugarless” as an answer to “How do your friends drink coffee?” and “How does Milena drink coffee?”, respectively). On partial and contrastive topics, see also D’Imperio, Cangemi (2011).

Table IV-5 shows the intonative transcriptions of the one-constituent topics appearing in the *query_y* moves of our Italian corpus, whereas Figure IV-19 illustrates their distribution in terms of syntactic function, weight and discourse role.

Figure IV-19 - *Syntactic function, syntactic weight and discourse role of Italian topics in query_y moves*

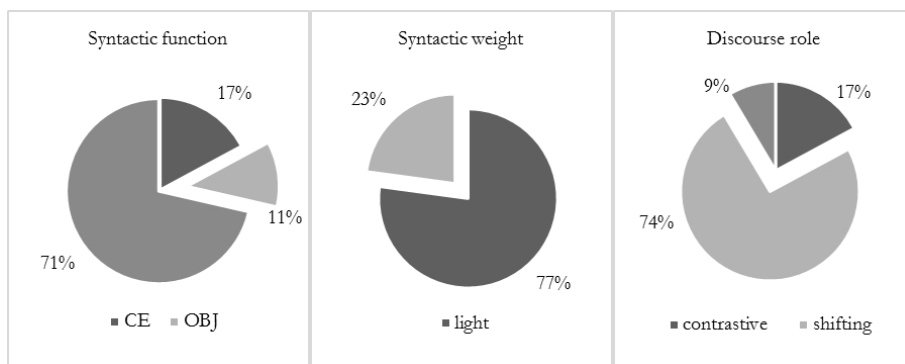


Table IV-5 - *Intonative transcriptions of Italian topics in query_y moves*

	Topic	Syntactic function	Syntactic weight	Discourse role	Intonative transcription
qy_p2#159_A02N	a te	CE	light	contrastive	M, U
qy_p2#214_A03N	sopra	CE	light	shifting	M, T(U), D
qy_p1#165_A03N	a te	CE	light	contrastive	M, T(H)
qy_p1#7_A05N	nella seconda	CE	light	contrastive	B(M), U, H, L
qy_p1#21_A03N	il guinzaglio	OBJ	light	shifting	M, S, U, T(H), D
qy_p1#31_A03N	la coda	OBJ	light	shifting	M, S, H, B(L)
qy_p2#124_A03N	la freccia	OBJ	light	shifting	M, S, U, T(S), D
qy_p1#159_A06N	porte	OBJ	light	shifting	M, T(S), L
qy_p2#47_A02N	tu	SUB	light	contrastive	M, U
qy_p2#165_A02N	il tronco	SUB	light	continuing	M, T(H), D
qy_p1#27_A03N	il naso	SUB	light	shifting	M, S, T(H), D
qy_p2#96_a_A03N	il fantino	SUB	light	shifting	M, S, T(H)
qy_p1#185_A03N	l'orecchio	SUB	light	shifting	M, T(H), S, D
qy_p1#17_A05N	l'antenna	SUB	light	shifting	M, S, T(H), D
qy_p1#33_A05N	la spada	SUB	light	shifting	B(M), U, U, H, D
qy_p1#77_A03N	l'omino	SUB	light	shifting	M, T(H)
qy_p2#84_A03N	il cavallo	SUB	light	shifting	M, H, S, T(H)
qy_p2#196_A03N	il cavallo	SUB	light	shifting	M, U, T(H), D
qy_p2#232_A03N	la ruota	SUB	light	shifting	M, S, T(H), D
qy_p2#266_A03N	il cavallo	SUB	light	continuing	M, S, T(H), D
qy_p1#15_A05N	tu	SUB	light	contrastive	M, H
qy_p1#37_A05N	il cavallo	SUB	light	shifting	M, S, T(H), L
qy_p2#138_A05N	il signore	SUB	light	shifting	B(M), S, U, T(H), D
qy_p2#36_A06N	il cane	SUB	light	shifting	M, T(H), L

	Topic	Syntactic function	Syntactic weight	Discourse role	Intonative transcription
qy_p1#77_A06N	la l'auto	SUB	light	shifting	M, S, T(H), L
qy_p1#161_A06N	la macchina	SUB	light	shifting	M, S, U, T(S), L
qy_p1#141_A06N	tu	SUB	light	contrastive	M, H
qy_p1#163_A06N	sopra la mar+ la il paraurti	CE	heavy	shifting	M, T(H), D, B(L), S, H, D
qy_p1#85_A06N	attorno a questa statua	CE	heavy	shifting	M, S, T(H), S, L, U, L
qy_p1#112_A02N	anche il tuo	SUB	heavy	continuing	M, U, T(S), D
qy_p1#35_A05N	la gamba del cavallo	SUB	heavy	shifting	M, S, T(H), L, H, D
qy_p1#119_A05N	la gamba accavallata del signore sulla panchina	SUB	heavy	shifting	M, U, H, T(H), L, S, S, H, D, S, U, D, S, U, S, D
qy_p1#47_A06N	il guinzaglio del cane	SUB	heavy	shifting	M, S, T(H), S, L, H, B(L)
qy_p2#32_A06N	neanche l'uomo	SUB	heavy	shifting	M, T(U), L
qy_p2#114_A06N	i comignoli della casa	SUB	heavy	shifting	M, S, T(H), L, U, D

In 71% of the cases, the topic is also the subject; in 17%, it performs the function of circumstantial elements; and, in the remaining 11%, it is the object. As far as the composition of the phrase is concerned, in 77%, we are dealing with light topics. Finally, as for the discourse role, in 83% of the cases the entity is an aboutness topic (shifting in 74% of the cases and continuing in 9%) and, in the remaining 17%, we classified it as a contrastive topic²⁷.

Therefore, we have to consider that our data are mainly concerned with topics that perform the function of the subject, are made up by one constituent, which is often a simple phrase, and play the discourse role of an aboutness topic.

We start by considering light topics (27 out of 35 occurrences). In 70% of the cases, a rising-falling configuration occurs, whereas the remaining 30% show a rising configuration. In five of the eight rising cases, the topic corresponds with “tu” or “a te” (“you” or “to you”), indicating that the intonative realization does indeed depend on the segmental characteristics, but we cannot systematically consider this variable.

As for the width of the rise, in the rising-falling configuration, the rise reaches the maximum f_0 value (T in the INTSINT coding) in 84% of the cases, whereas, in the rising configuration, it occurs in four of the eight cases. Without considering the cases

²⁷ In five of the six cases of contrastive topics, we find the topic as realized by “tu”, “a te”, meaning “in your drawing”, where the speaker makes a contrast with “in my drawing”. Moreover, we do not find familiar topics in our corpus of *query_y* requests.

of “tu” and “a te”, the topic would present a rising-falling configuration in more than 90% of the cases, while almost 90% of the cases would contain the maximum f_0 value.

Concerning the syntactic role played by the topic, when observing our occurrences, no direct correspondence is visible between the two levels. Figure IV-20 shows intonative realizations of topics performing different syntactic functions: from left to right, “l’antenna”, “the antenna” qy_p1#17_A05N (subject), “il guinzaglio”, “the leash”, qy_p1#21_A03N (object), and “nella seconda”, “in the second one”, qy_p1#7_A05N (circumstantial element).

Figure IV-20 - Three examples of Italian rising-falling topics in query_y moves (“E l’antenna”, “Il guinzaglio” and “Nella seconda”)

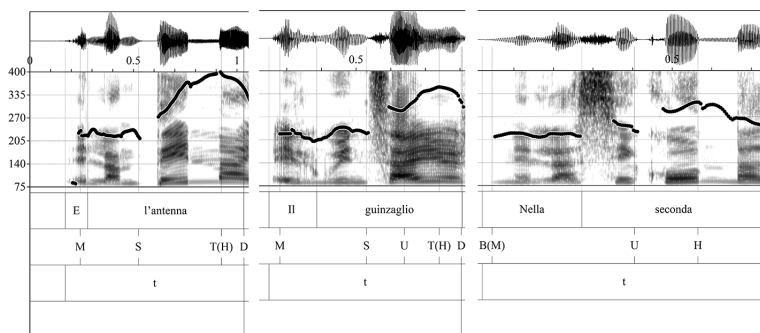
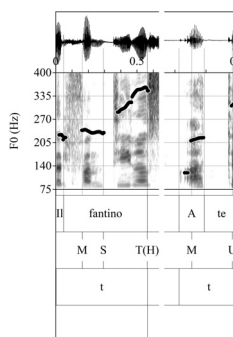


Figure IV-21 shows two examples of the less frequent abstract intonation pattern of the topic, the rising one. They are, from left to right, “il fantino”, “the jockey” (qy_p2#96_a_A03N), and “a te”, “to you” (qy_p2#159_A02N).

Figure IV-21 - Two examples of Italian rising topics in query_y moves (“Il fantino” and “A te”)



Finally, at least in all the cases of light topics, we can observe that both configurations (rising-falling and rising) share a common characteristic: an important rise in the stressed syllable of the head of a noun phrase (or the lexical element in the case of a prepositional phrase).

As far as the discourse role played by the topic, we can see that the type of configuration (rising-falling or rising) does not seem to depend on it, even if almost all

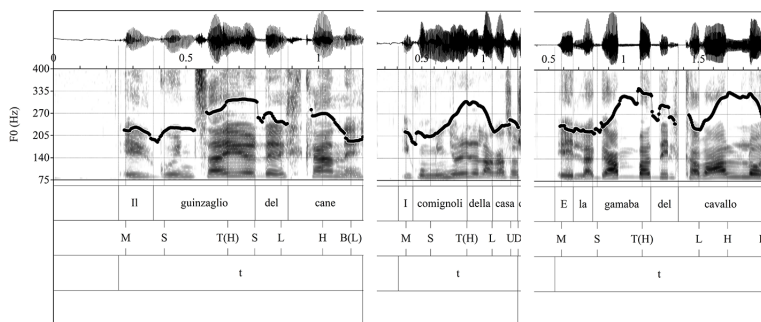
the rising realizations correspond to contrastive topics (realized as H*, according to Frascarelli, Hinterhölzl, 2007).

As far as heavy topics are concerned, that is to say, in complex phrases with some kinds of modifier, we can observe a very small number of the cases (only eight). Two of them, “Anche il tuo”, “Yours too” (qy_p1#112_A02N), and “Neanche l’uomo”, “Neither the man” (qy_p2#32_A06N), show the same rising-falling configuration, which we have already described as the most frequent pattern.

The remaining six cases of heavy topics present different structures. In three cases, they are noun phrases including a prepositional phrase as modifier: qy_p1#47_A06N, “Il guinzaglio del cane”, “The dog’s leash”, qy_p2#114_A06N “I comignoli della casa”, “The chimneys of the house”, qy_p1#35_A05N, “La gamba del cavallo”, “The horse’s leg”. These are shown in Figure IV-22, from left to right. The other cases correspond to different structures of prepositional phrases and to a noun phrase with three modifiers.

Observing Figure IV-22, we can once again see the rising-falling configuration, as described above; but, in the cases here, this configuration occurs in the nucleus of the phrase and in its modifier. Even if there is a different width, we can observe that the rise in the lexical elements occurs in each of these cases²⁸. Another aspect deals with the position of the f_0 maximum value (the point T in the coding): it occurs in correspondence with the nucleus of the phrase (“guinzaglio”, “comignoli”, “gamba”), not with the last element (“cane”, “casa” and “cavallo”). This is probably an unexpected situation in unmarked utterances, but we have, at our disposal, too small a number of occurrences to reach any satisfactory conclusion. We can only add that, in other requests with heavy topics of the same composition (made by noun phrases including a prepositional phrase as modifier), we find the same intonative realization, for example, in “I capelli dell’uomo” and “L’antenna della radiolina” (see Table IV-3 and Appendix B).

Figure IV-22 - Three examples of Italian heavy topics (noun phrases including a prepositional phrase as modifier) in query_y moves (“Il guinzaglio del cane”, “I comignoli della casa” and “E la gamba del cavallo”)

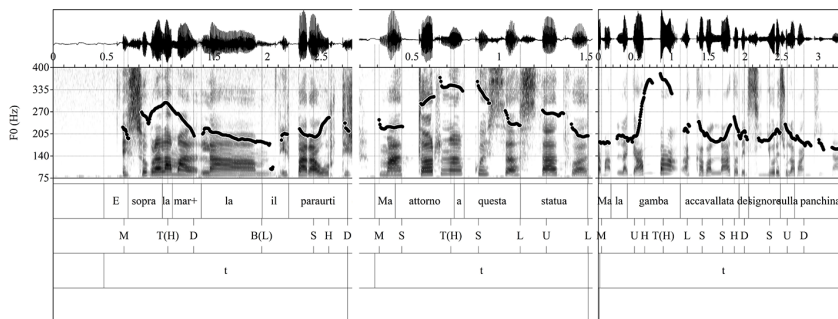


²⁸ Always from left to right, the INTSINT coding indicates “guinzaglio”: S T(H); “cane”: L H; “comignoli”: S T(H); “casa”: L U; “gamba”: S T(H); “cavallo”: L H (see Figure IV-22).

In Figure IV-23, we show the other three cases, *qy_p1#163_A06N*, “E sopra la mar+ la<aa> il paraurti”, “And on the bumper” *qy_p1#85_A06N* “Attorno a questa statua”, “Around this statue” *qy_p1#119_A05N*, “Ma la gamba accavallata del signore sulla panchina”, “But the man’s crossed leg on the bench” (from left to right).

Observing the first two cases, we can notice a rise in the prepositions (“sopra” and “attorno”) followed by a rise in the noun (“paraurti” and “statua”), where the T of the utterance corresponds, once again, to the element located on the left side. In the last case, *qy_p1#119_A05N*, “la gamba accavallata del signore sulla panchina” (to the right in Figure IV-23), an important rise in the nucleus of the phrase is coded by the sequence U H T(H), followed by another two rises, which reach lower peaks in “accavallata” and “signore”, whereas the last stressed syllable of the last modifier “sulla panchina” corresponds to an f_0 fall (D S in the coding).

Figure IV-23 - Three examples of Italian heavy topics (two prepositional phrases and one noun phrase with more than one modifier) in query_y moves (“E sopra la mar+ la<aa> il paraurti”, “Attorno a questa statua” and “Ma la gamba accavallata del signore sulla panchina”)



Summarizing all the considerations made for different kinds of topics, we can conclude that, regardless of its syntactic structure, composition and discourse role, the part corresponding to the topic of the utterance shows an important rise in the first stressed syllable of the phrase. In most cases, this rise reaches the f_0 maximum value (T) and is followed by a fall. Therefore, considering the constants in the realizations, we can indicate the sequence **M S T(H) D** to be the coding that represents the most frequent abstract intonation pattern of the topic (the rising-falling one), while the abstract sequence **M H** represents the less frequent abstract intonation pattern of the topic, the rising one²⁹.

As for the complexity of the constituent realizing the topic, we can limit our findings to some preliminary considerations, because we do not systematically examine all the variables affecting the intonative realizations. However, the few cases that we analyse do not confirm what has been indicated by previous studies, for example, by Frascarelli, Mereu (2006: 275), which claim that “il SN³⁰ topicalizzato è sempre marcato da una salita della f_0 sull’ultima tonica dell’intero costituente indipendente-

²⁹ We do not propose, in the rising configuration, a T(H) point for the rise because the peak reaches the f_0 maximum value in half of the cases.

³⁰ Where SN indicates the NP.

mente dalla struttura più o meno complessa del Topic o dalla sua funzione sintattica". The authors analyse some topics in declarative sentences, while we are considering interrogative modality. This can clearly be an important difference. We saw how, against expectations, the T of the unit and relative highest peak does not coincide with the last stressed syllable of the phrase but tends to correspond to the first one.

On the contrary, our data support the hypothesis that topics located in the left periphery are generally associated with a prominence.

Comparing our results with other analyses in the relevant literature, we find in our corpus two of the three possible realizations indicated by Firenzuoli, Signorini (2003), namely, the first two frequent types (the rising-falling type, with the rise aligned in the stressed syllable, and the rising one). On the contrary, we do not find the realization of the third type described by Firenzuoli, Signorini (2003), as to say a falling-rising configuration, with the fall aligned in the stressed syllable, defined by Cresti, Firenzuoli (2002) too. We do not know if these studies take into account the modality, but there is no reference about it. Analysing both declarative and interrogative sentences, Crocco, Savy (2007) indicate three main realizations for topics placed in the left periphery of the sentence: falling, high or rising tones. Falling tones prevail when topics correspond to a tonal unit; this is not true in our case. When analysing topics comparable to our items, they indicate a high or rising tone as the most frequent realization, finding that, in 86% of the cases, the f_0 maximum value is located in the topic, regardless of the actual linear position of the topic in the tonal unit.

As for phonological labelling, Frascarelli employs an L^*+H pitch accent, while Gili Fivela uses a H^* . Frascarelli (2007: 697) indicates that concerning "The Aboutness-shift Topic [...], intonationally, it is signalled by a rise in the F_0 contour that is aligned with the tonic vowel in its full extension" (L^*+H), whereas Gili Fivela (1999: 533) claims that "The topicalized constituent was consistently realized with a H^* pitch accent followed by a low target point which may be interpreted as a boundary tone of some kind" (H^*). We can deduce that Frascarelli finds that the f_0 peak is placed in the post-tonic syllable, while Gili Fivela finds that the f_0 peak occurs within the stressed syllable. However, they both suggest the presence of a rising tone and a stressed syllable in the rise. In our analysis, we do not consider differences in f_0 alignment. However, we can conclude that, in accordance with previous studies, our results suggest an important rise in the topicalized constituent, which affects the stressed syllable.

All these considerations concern topics that are placed in the left periphery, although we do not consider post-verbal topics located in the right periphery of the utterance. As shown in Table IV-4, we have at our disposal only three cases (for example, "il cavallo" in the utterance "Ha qualche occhio il cavallo?"). It is clear that we do not have a sufficient number of cases to reach any conclusion on this issue. However, we only want to notice that the position of the topic seems to be relevant in its intonative realization. Differently to the prominent topic located in the left periphery, these topics, which follow a comment and are located in the right periphery, clearly seem to be intonatively unmarked.

4.1.1.2 Spanish

Following the same order of exposure, we illustrate in this paragraph the intonation of information-seeking requests in Spanish.

In Table IV-6, we show the intonative transcriptions of *info_request* moves. 70% of these moves present a comment structure (10 out of 14 cases), whereas only four cases present a sentence topic (T/C structure). As usual, we will compare the parts corresponding to the comment. As far as their morphosyntactic structure is concerned, we consider two forms: the first one made up of disjunctive structures (DISJs) and the second one composed of various types of phrases, most of them prepositional phrases (PPs)³¹.

Table IV-6 - *Intonative transcriptions of Spanish info_request moves*

<i>Info_request</i>	Inf.	Ms.	T	C
i_p2#174_A05ES	C	DISJ		M, S, U, T(H), D, D, S, B(L)
i_p2#20_A05ES	T/C	DISJ	M, D, H, L, U	U, L, T(H), D, B(S), S
i_p1#137_A05ES	T/C	DISJ	M, S, H	H, D, S, S, T(H), D, L, D, S, B(L)
i_p1#183_A05ES	T/C	DISJ	M, S, H, L, U, H	H, D, S, T(H), D, D, B(D)
i_p2#190_A03ES	T/C	DISJ	M, S, H	H, L, T(H), D, B(S)
i_p2#204_A03ES	C	DISJ		M, S, T(H), L, D, B(L)
i_p1#11_A05ES	C	NP		M, B(D), U, T(H)
i_p1#47_A05ES	C	NP		M, B(S), U, T(H)
i_p2#12_A05ES	C	PP		B(M), S, U, T(H)
i_p1#13_A05ES	C	PP		M, B(D), U, T(H)
i_p1#15_A05ES	C	PP		M, B(L), U, T(H)
i_p1#39_A05ES	C	PP		B(M), S, U, T(H)
i_p2#36_A06ES	C	PP		B(M), S, H, L, U, T(H)
i_p2#272_A06ES	C	PP		M, B(D), S, T(H)

For the first morphosyntactic type, corresponding to the first six rows, the comment is divided into P1 and P2, which represent the two members of the alternative proposed in the request (§ 3.3.1). Table IV-7 illustrates intonative transcriptions considering the two members of the alternative.

Table IV-7 - *Intonative transcriptions of Spanish info_request moves considering the two members of the alternative in disjunctive structures*

<i>Info_request</i>	Inf.	Ms.	P1	P2
i_p2#174_A05ES	C	DISJ	M, S, U, T(H)	T(H), D, D, S, B(L)
i_p2#20_A05ES	T/C	DISJ	U, L, T(H)	T(H), D, B(S), S
i_p1#137_A05ES	T/C	DISJ	H, D, S, S, T(H)	T(H), D, L, D, S, B(L)
i_p1#183_A05ES	T/C	DISJ	U, H, D, S, T(H)	T(H), D, D, B(D)
i_p2#190_A03ES	T/C	DISJ	H, L, T(H)	T(H), D, B(S)
i_p2#204_A03ES	C	DISJ	M, S, T(H)	T(H), L, D, B(L)

³¹ Each move with its orthographic transcription is shown in the Appendix B.

For the first morphosyntactic type (DISJ), we can see that the comment presents a different intonative structure depending on the information structure: we can observe a rising-falling configuration if there is no sentence topic, while there is a falling-rising-falling configuration if there is a sentence topic (T/C in Table IV-6). Therefore, we can explain this difference, even if this can only be an observation, given the few cases we are dealing with, in the function of the intonative realization of the topic portion. The fall that the initial part of the comment presents (only in the case of the T/C structure) seems to be related to the need to turn to lower f_0 values following the rise used to mark the sentence topic.

The T/C structure in our corpus is not frequent in these requests. Therefore, there is only one possible interpretation, which should be tested on a greater number of the cases.

However, by not considering this difference, according to our interpretation, which is directly related to the presence of a sentence topic, the intonative realizations of the comment of this request realized by disjunctive structures present some constants, which we can extract as follows:

- initial point: M,
- upstep: S T(H),
- downstep: T(H) D D,
- final point: B(L).

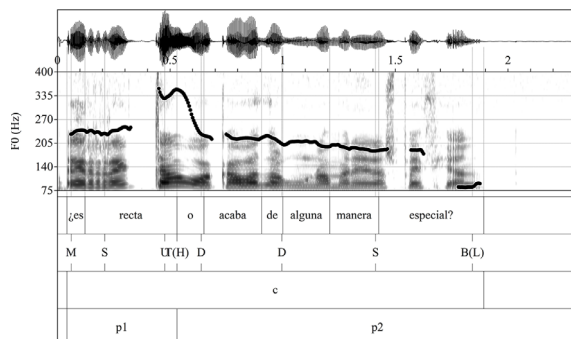
P1 and P2, which represent the two members of the alternative proposed in the request (§ 3.3.1), show a rising and a falling configuration, respectively. As for P1, it presents a rising configuration, always ending in a T(H) point in the coding (see Table IV-7). Regarding P2, it shows a falling configuration, which gets the lowest f_0 value of the utterance (B in the coding; see Table IV-7).

Observing the constants in the transcriptions, we reconstruct an abstract pattern for this morphosyntactic type as expressed by the sequence **M S T(H) D D B(L)**³².

Figure IV-24 shows an example of this pattern (it belongs to the request i_p2#174_A05ES: “¿Es recta o acaba de alguna manera especial?”, “Is it straight or does it end in a special way?”).

³² Where P1 is expressed by the coding M S T(H) and P2 by T(H) D D B(L).

Figure IV-24 - *An example of a Spanish info_request (“¿Es recta o acaba de alguna manera especial?”; morphosyntactic type: disjunctive)*



As far as the second morphosyntactic type is concerned, except for one case³³, it is composed of simple phrases. They all clearly show a rising intonation.

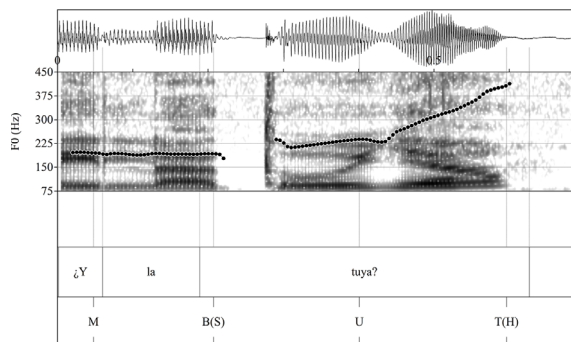
The intonative constants lead us to identify the following features:

- initial point: B(M),
- upstep: U T(H),
- final point: T(H).

Therefore, the abstract pattern corresponding to this request may be described by the sequence **B(M) U T(H)**.

Figure IV-25 shows an example of this pattern, corresponding to i_p1#47_A05ES: “¿Y la tuya?”, “And yours?”.

Figure IV-25 - *An example of a Spanish info_request (“¿Y la tuya?”; morphosyntactic type: phrase)*



Concerning the topic in this request (and in turn the T/C structure), if we do not take into account different realizations, due to other variables treated as contingent

³³ It is the request i_p2#36_A06ES, “¿y en el pedestal de la estatua?”, “and on the pedestal of the statue?”, which presents a prepositional phrase modifier. This is the only case that presents a different intonative realization: M(B) S H L U T(H). More specifically, it shows a rise in the lexical head of the phrase and a rise in the modifier of the phrase.

factors (such as the length and the structure of the constituents, § 3.3.2), it is possible to find the following constants:

- initial point: M,
- upstep: S H,
- final point: H.

Therefore, the description of the topic in these cases can correspond to the abstract pattern **M S H**, even if it can only be considered an observation based on four occurrences.

In the case of *info_request* moves in Spanish, there are a few works with which we can compare our findings (cf. § 1.2.1.2). For disjunctives in the Madrid variety, we found, in the course of the literature review, a description of an important rise in the first member of the alternative, ending in the f_0 maximum of the unit, and a fall that reaches the f_0 minimum of the unit. We can consider that our data on Barcelona Spanish, expressed by the abstract pattern **M S T(H) D D B(L)**, are in general accordance with this description.

As for the second morphosyntactic type analysed, represented by the pattern **B(M) S U T(H)**, we do not have other works at our disposal to evaluate whether our findings are consistent with previous descriptions.

Moving onto another kind of information-seeking request, we consider, in our investigation, *query_w* moves, which present an interrogative element or wh-element.

The position of this element is linked to their informative structure: if the wh-element occupies the initial position, we have a C structure, whereas, if it resides in non-initial position, this means that there is a topicalized element (or more topicalized elements) and therefore a T/C structure.

As for the morphosyntactic structure, we will only consider the position of the wh-element, since their intonation does not seem to be strictly dependent on other syntactic features (at least considering the occurrences at our disposal).

As for their information structure, *query_w* moves in Spanish rarely present a topicalization: they correspond to the comment type (C) in 90% of the cases (35 out of 39 occurrences); in the remaining 10% (four out of 39 cases), they present a topic sentence and therefore a T/C structure. As usual, we analyse the two types comparing the parts corresponding to the comment portion.

Table IV-8 illustrates the results regarding *query_w* moves in Spanish. Such as in the case of Italian, we analysed the comment dividing it into a profile (P), by which we mean the overall trend of the curve from the beginning of the comment to before the last stressed syllable in the intonation unit, and a terminal contour (TC), by which we refer to the direction of the pitch, starting from the last stressed syllable of the intonation unit (§ 3.3.1). Moreover, we observed the intonative realization of the wh-element.

The literature review on wh-questions in Spanish reveals that the wh-element has been traditionally associated with the most prominent element of the utterance (cf. § 1.2.1.2). On the basis of this observation, we will illustrate our findings starting from the intonative realization of the interrogative element.

Looking at the last column in Table IV-8 (“whE”), one can certainly appreciate that the INTSINT tag sequences do not seem to present easily identifiable regularities. As in the case of Italian (§ 4.1.1.1), we separated prominent or strong wh-elements from non-prominent or weak ones. The first realization consists of a rising configuration³⁴, whereas the weak realization does not present any f_0 peak³⁵.

Table IV-8 - *Intonative transcriptions of Spanish query_w moves*

<i>Query_w</i>	Inf.	Ms.	T	P	CT	whE
qw_p1#33_A05ES	C	whE		B(M), S	S, T(S)	B(M), S
qw_p1#69_A04ES	C	whE-OBJ		M, T(S)	D, B(S)	M, T(S)
qw_p2#30_A05ES	C	whE-OBJ		T(M), S, D	D, B(L), S	S, D
qw_p2#58_A03ES	C	whE-OBJ- VP		M, T(U), D, D, D, S	S, B(L)	M, T(U)
		whE-OBJ- VP		M, T(S), S, D, B(D)	B(D), S	M, T(S), S
qw_p1#23_A04ES	C	whE-OBJ- VP		M, U, D, D, B(L)	B(L), U, T(H)	M, U
		whE-OBJ- VP		M, U, D, D, B(D), S	S, U, T(H)	M, U
qw_p1#7_A05ES	C	whE-OBJ- VP		M, H, D, L, U, D, D, B(S)	B(S), U, T(H)	M, H
		whE-OBJ- VP		T(M), D, S, D, D	D, B(D)	T(M), D
qw_p2#8_A05ES	C	whE-OBJ- VP		T(M), S, D, D, S	S, B(D)	T(M), S
qw_p2#12_A05ES	C	whE-OBJ- VP		M, T(U), D, L	H, B(L)	M, T(U)
qw_p1#77_A05ES	C	whE-OBJ- VP		M, S, T(H), D, B(L)	B(L), U, H	S, T(H)
qw_p2#122_A05ES	C	whE-OBJ- VP		M, T(H), D, S, S, L, S, S, D, B(S)	B(S), S	M, T(H)
qw_p2#156_A05ES	C	whE-OBJ- VP		M, T(U), D, D, S, L, U	L, B(D)	M, T(U)
qw_p2#232_A03ES	C	whE-OBJ- VP-SUB		M, T(H), D, D, D, U, L, S, B(S)	B(S), S	M, T(H)
		whE-OBJ- VP-SUB		M, U, D, D, S, B(D)	B(D), S, U, T(H)	M, U
qw_p2#4_A04ES	C	whE-OBJ- VP-SUB		S, B(D)	T(H)	M, U
qw_p2#150_A04ES	C	whE-OBJ- VP-SUB		S, B(D)	T(H)	M, U
qw_p1#3_A05ES	C	whE-OBJ- VP-SUB		S, B(D)	T(H)	M, U

³⁴ This is indicated by the tag sequences M T(U), M U, M H, S T(H), M T(H), M S T(H), S H, T(M) U.

³⁵ We considered non-prominent wh-E cases corresponding to the following tag sequences: B(M) S, M T(S), M(T) S, T(M) D, T(M) S, M S, T D, M, T(H) D, H S. We have already clarified that, for the same analysis of Italian *query_w* requests, previous studies usually refer to an f_0 peak associated with the wh-word and tend to consider the prominence of the element in such a way. This is the reason why we separate strong from weak realizations using this criterion.

<i>Query_w</i>	Inf.	Ms.	T	P	CT	whE
qw_p2#6_A05ES	C	whE-OBJ- VP-SUB		M, U, S, L, S, D, D, B(D)	B(D), U, T(H)	M, U
qw_p2#10_A05ES	C	whE-OBJ- VP-SUB		M, T, D, D, D, S	S, B(D)	M, T
qw_p2#60_A05ES	C	whE-OBJ- VP-SUB		T(M), S, D, L, S, D	S, B(D)	T(M), S
qw_p1#127_A06ES	C	whE-OBJ- VP-SUB		M, S, T(H), S, D, S, S	B, S	M, S, T(H)
qw_p1#39_A04ES	C	whE-VP		T(M), S	S, B(S)	T(M), S
qw_p2#96_A04ES	C	whE-VP		T(M), S	S, B(S)	T(M), S
qw_p2#14_A05ES	C	whE-VP		M, T(S), D, B(D)	D, B(D)	M, T(S)
qw_p1#69_A05ES	C	whE-VP		M, S, T(S), D	D, D, B(S)	M, S
qw_p2#174_A05ES	C	whE-VP		T(M), D, D, B(S)	D, B	T, D
qw_p2#88_A05ES	C	whE-VP-OBJ		M, U, T(S), L	L, D, B(L)	M, U
qw_p1#9_A05ES	C	whE-VP- SUB		M, S, S, D, S, D, S, B(S), S	S, U, T(H)	M
qw_p1#35_A05ES	C	whE-VP- SUB		M, H, D, B(S)	B(S), U, T(H)	M
qw_p1#75_A05ES	C	whE-VP- SUB		M, T(U), D, S, S, S, S	S, D, B(D)	M
qw_p2#154_A05ES	C	whE-VP- SUB		M, S, H, D, B(S)	B(S), U, T(H)	S, H
qw_p2#168_A05ES	C	whE-VP- SUB		T, D, D, D	D, B(S)	T, D
qw_p2#180_A05ES	C	whE-VP- SUB		M, T(H), D, S, S	S, B(S)	M, T(H)
qw_p1#69_A06ES	C	whE-VP- SUB		T(M), S, S	S, B(D)	T(M), S
qw_p2#38_A05ES	C	whE-VP- SUB		T(M), U, D, D, S, D, D, D	S, B(S)	T(M), U
qw_p2#164_A05ES	C	whE-VP- SUB		T(M), S, D, D, B(L)	B(L), S	T(M), S
qw_p2#4_A05ES	T/C	SUB-whE- OBJ-VP	M, U, H	H, D, B(D)	B(D), U, T(H)	H, D
qw_p1#95_A05ES	T/C	SUB-whE- VP	M, S, T(H)	T(H), D, S	S, B(D)	T(H), D
qw_p1#129_A05ES	T/C	SUB-whE- VP	M, U, H, D, D, U, T(H)	H, S, D, D	S, B(D)	H, S
qw_p2#162_A05ES	T/C	SUB-whE- VP	M, S, U, T(H)	T(H), D, D	D, B(D)	T(H), D

Surprisingly, the wh-E is prominent (and therefore non-prominent) in 50% of the cases (18 out of 39 occurrences).

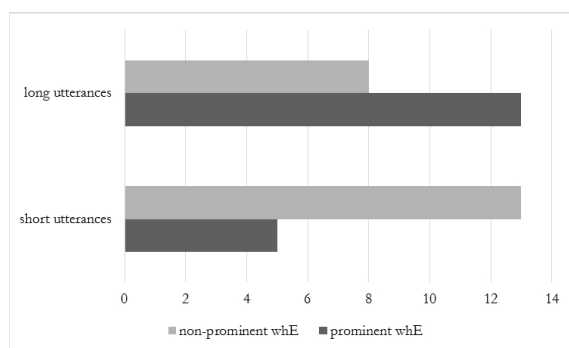
The variable realization of this element obviously affects the intonation of this request and implies a certain amount of variability with a consequent difficulty in

the extraction of its intonative pattern. As was the case for Italian, we can verify whether the different realization depends on the length of the utterance and the type of interrogative element.

As far as the length of the utterance is concerned, we are reminded that, according to some previous observations, the wh-E should be prominent in short utterances (where it would attract the intonative prominence), whereas it could be differently realized in long utterances depending on the type of element.

The average number of syllables per utterance in *query_w* requests in our corpus is higher than nine syllables, which is consistent with the value of 9.5 indicated by Quilis (1993: 419) in phonic groups. Based on this value, we considered a short utterance to have a maximum of nine syllables and a long one to have 10 or more syllables. Figure IV-26 illustrates prominent and non-prominent realizations in the function of the length of the utterance in our corpus of Spanish dialogues.

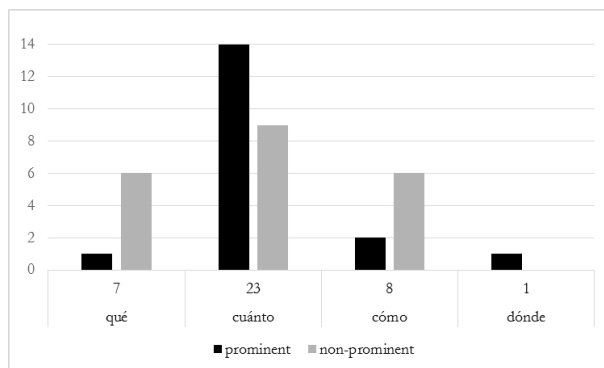
Figure IV-26 - *The prominent vs. non-prominent realization of the wh-element in Spanish in the function of the length of the utterance*



As is evident from Figure IV-26, our data do not confirm the hypothesis about an association between the prominence of the wh-element and the length of the utterance. According to the hypothesis, we should have prominent realizations in short utterances, whereas it appears that we can have both realizations, prominent and non-prominent, in long and short utterances (furthermore, we can see that, in short utterances, non-prominent realizations are more frequent than prominent ones; cf. Figure IV-26).

If we analyse the differences in the realization concerning the function of the type of wh-element, even if we do not have at our disposal an exhaustive set of occurrences of each type, we can easily appreciate that the same wh-element can appear realized as prominent and as non-prominent. Figure IV-27 shows the distribution in our corpus of Spanish dialogues with the number of occurrences for each element.

Figure IV-27 - *The prominent vs. non-prominent realization of the wh-element in Spanish in the function of the type of wh-element*



“Qué” and “cómo” tend to be realized in most cases as non-prominent; “dónde” appears only once (and is prominent), but, if we observe the behaviour of “cuánto”, which is also the most frequent wh-element (23 occurrences), we can only deduce that the intonative realization does not strictly depend on the type of element or, at least, that, even if the type of element affects it, its realization depends on other factors too.

Having revealed the “uncomfortable” situation of the wh-element, let us analyse the other parts of the comment and of the topic.

Regarding the comment, we will first consider the profile (P) and secondly the terminal contour (TC).

Apart from the prominent or non-prominent realization of the wh-element, the P is represented by different sequences of tags, most of them corresponding to falling sequences (34 out of 39 cases) and indicating a flat configuration in a small number of occurrences (five out of 39 cases).

Observing the cases of the flat configuration, we can observe a relation with the length of the utterance: we find this less frequent pattern in the cases of very short utterances. Our hypothesis is that, in the case of a very short utterance, one does not appreciate f_0 declination³⁶. The slightly falling configuration of all other utterances

³⁶ As is well known, the phenomenon of declination consists of a gradual f_0 decrease from the beginning to the end of an utterance (Cohen, Collier & 'T Hart, 1982; Ladd, 1984, 1996; 't Hart *et al.*, 1990). It has been claimed as a universal phenomenon by some authors (Ohala, 1978, for instance). However, it has been described for many different languages, among them Spanish and Italian (for Spanish, see Garrido, Llisterri, de la Mota & Ríos, 1995; Prieto, Shih & Nibert, 1996; for Italian, see Avesani, 1987, 1990; Vayra, 1991). It has been debated in the literature as to whether extent the declination is determined by respiratory factors. Fuchs, Petrone, Rochet-Capellan, Reichel & Koenig (2015) investigate the potential relationship between the respiratory system and f_0 declination by means of simultaneous respiratory and acoustic recordings. Their results indicate that f_0 declination should not be determined by respiratory factors, with the authors suggesting laryngeal control as an obvious alternative for future work to explore. Moreover, they interpret their findings by pointing to the possibility of a “look-ahead mechanisms” underlying the production of f_0 declination, which

of medium or long duration, as well as being caused by f_0 declination, could be less evident in the case of intonation units of a short duration³⁷.

Looking at the realization of the terminal contour (TC), we can see that it also presents a falling configuration in most cases (29 out of 39 occurrences) and contains the minimum f_0 value (B point in the coding). In the remaining 25% of the cases (10 out of 39 cases), we find a different configuration, a rising TC, which does not correlate with a strong or weak realization of the interrogative element and does not seem to depend on the information structure³⁸. As for the final rise, this always leads to the f_0 maximum value, coded as T(H). There is only one case that presents a final rise, but it does not correspond to the T point of the utterance. We do not consider it an exception because we think that a contingent factor, the presence of an unvoiced consonant, in fact explains the different coding, B(L), U, H (see Table IV-8). This is the case with qw_p2#156_A05ES, “¿Y cuántos ojos le ves?”, “And how many eyes do you see?”, ending in a voiceless alveolar fricative. We have seen that the stylization process erases interruptions due to unvoiced sounds (see § 3.2), but, at the beginning and at the end of the utterance, the stylized curve does not include a point corresponding to a voiceless sound. Comparing this case with all the other cases of final rises (of rising TCs), one can reasonably assume that, by varying the segmental material with a final voiced sound, the coding would be the same as in the other cases, that is, when ending with a T(H) point³⁹.

Our data indicate that intonative realizations of the comment show some constants in the P but do present a variable wh-element (prominent in 50% of the cases) and a low-falling TC in most cases (75% of the cases).

We can, therefore, derive the following shared characteristics:

- initial point: M,
- possible f_0 rise associated with the wh-element: M H,
- downstep: D D,
- minimum f_0 value: B,
- low and flat part: S,
- possible, but infrequent final rise: H.

would be modulated by the degree of planning, with the slope being steeper in read (therefore prepared) than in spontaneous (therefore not prepared) speech.

³⁷ As far as the relation between the length of an utterance and f_0 declination is concerned, the previous literature indicates that declination is less steep in longer utterances than in shorter ones (Ohala, 1978; Swerts, Strangert & Heldner, 1996, among others). Apparently, this could contradict our hypothesis, but we suppose that, even when comparing utterances in the function of their length, this reveals that declination is steeper in shorter utterances. In the case of very short utterances, this gradual f_0 decrease can be difficult to identify, due to a lack of segmental material. However, this is speculation and would need to be examined in a systematic way.

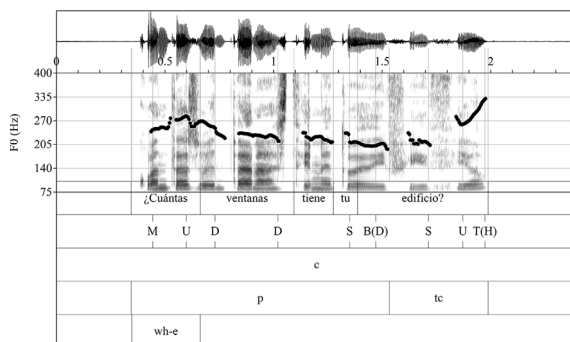
³⁸ Indeed, the rise may occur both in a request with a prominent wh-element (qw_p2#154_A05ES, for instance) and in a request with a non-prominent wh-element (for example, qw_p1#35_A05ES). Moreover, it occurs in both C and T/C types (with the same frequency of one in four cases).

³⁹ Further evidence of this is that, in all the other cases of a rising TC, the utterance ends in a voiced sound, for example, “caballo”, “árbol”, “edificio” and “hombre” (see Table IV-8 and Appendix B).

Therefore, we identify two variants of abstract intonation patterns for this request, depending on the realization of the *wh*-element: if it is prominent, we propose the coding **M H D D B S H**⁴⁰; in the case of a weak realization of the *wh*-element, we propose the sequence **M S D B S H**.

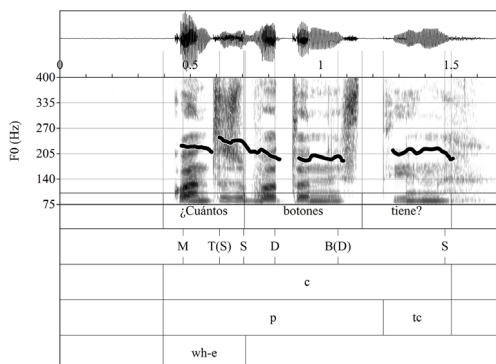
In Figure IV-28, we show an example of the pattern **M H D D B S H**, that is to say, a case of a strong *wh*-element and a case of a final rise in the TC. This corresponds to the request *qw_p1#3_A05ES*: “¿Cuántas ventanas tiene tu edificio?”, “How many windows has your building got?”.

Figure IV-28 - *An example of a Spanish query_w with a prominent wh-element and a rising TC (“¿Cuántas ventanas tiene tu edificio?”)*



In Figure IV-29, we illustrate an example of the pattern **M S D B S**, in other words, a case of a non-prominent *wh*-element. This illustrates the request *qw_p1#23_A04ES*, “¿Cuántos botones tiene?”, “How many buttons has it got?”.

Figure IV-29 - *An example of a Spanish query_w with a non-prominent wh-element and a flat-falling TC (“¿Cuántos botones tiene?”)*



⁴⁰ Bold type indicates the sequence of the abstract pattern and regular type indicates a possible but infrequent element in the sequence.

suggest that the contribution of its intonation is not crucial in conveying the meaning of the request (as, in fact, already proposed by some authors, such as Quilis, 1993, among others; cf. § 1.2.1.2).

As far as the termination of this request is concerned, a variation between a low-falling and a rising configuration is previously attested. Even if different interpretations have been proposed for the rising one, they all have the transmission of an added value in common, from a polite attitude to a special interest or a particular involvement in the speech act. In other words, all authors identify the low-falling TC as the unmarked termination.

While our data confirm that the low-falling TC is the most frequent termination, they do not easily allow for interpretations linked to the pragmatic nuances described in the literature. In our corpus, we find both possibilities without a clear dependence on these kinds of factors.

In conclusion, we identify an abstract pattern for the topic of the request *query_w* (**M U H**) and two variants for the comment (**M H D D B(L) S H**; **M S D B(D) S H**).

Moving onto *query_y* requests, Table IV-9 shows their realization in Spanish⁴³. We considered the intonation of the comment (C) dividing it into a profile (P) and a terminal contour (TC)⁴⁴, preceded by the intonative transcription of the topic (T). In Table IV-9, we show each *query_y* move with its informative and morphosyntactic realization⁴⁵. In the cases of a very short utterance (for example, in *qy_p2#78_A03ES*, “¿Y cejas?”, “And eyebrows?”, we indicate “P=TC” in the table, since the division between a P and a TC was senseless).

Considering that the total number of occurrences is 100, we will only indicate percentages, which are identical to the number of cases. *Query_y* moves in Spanish present a comment structure (C) in 54% of the cases, while they present a topic sentence in the remaining 46% (T/C structure in 39% and C/T in only 7%). We analyse the three informative types by comparing the parts corresponding to the comment portion; and, for the realization of the topic, we consider its position (left or right in the utterance).

In order to control the influence of syntactic structure on the intonation of the requests, we divided the items in the function of this variable. Comparing all the INTSINT tag sequences indicated in Table IV-9, we find no differences directly attributable to morphosyntactic differences in the P or in the TC. The same P or TC is not associated with a specific morphosyntactic type, while, at the same time, the same morphosyntactic type shows a different intonative realization of the P (where-

⁴³ Each *query_y* move with its orthographic transcription is shown in the Appendix B.

⁴⁴ By “profile” (P), we mean the overall trend of the curve from the beginning of the comment to before the last stressed syllable in the intonation unit and, by “terminal contour” (TC), we refer to the direction of the pitch, starting from the last stressed syllable of the intonation unit (§ 3.3.1).

⁴⁵ For the abbreviations used in the tables, see the list of abbreviations in the Appendix A; moreover, the diacritic symbol “*” used in Table IV-9 indicates existential-presentative sentences (*qy_p2#42_a_A04ES*, “¿Hay algo?”, “Is there anything?” VP-OBJ*, for instance).

as, as we will see, the TC presents a systematic realization, which does not seem to depend on other features, including morphosyntactic characteristics⁴⁶). Therefore, we examined this request independently of the morphosyntactic structure by analysing the INTSINT tag sequences of the parts corresponding to the comment and the topic of the request.

As for the other requests, we start with the comment by firstly discussing the intonation of the profile (P) and secondly the terminal contour (TC).

As far as the P is concerned, when analysing all the occurrences, we recognized the following configurations:

- flat-falling,
- rising-falling,
- P=TC,
- complex, that is, a P that cannot be included in the previous categories and presents a realization that is difficult to recognize⁴⁷.

Table IV-9 - *Intonative transcriptions of Spanish query_y moves*

C					
<i>Query_y</i>	Inf.	Ms.	T	P	CT
qy_p2#16_a_A03ES	C	Ph		P=TC	S, U, T(H)
qy_p2#40_A03ES	C	Ph		P=TC	S, T(H)
qy_p2#64_A03ES	C	Ph		P=TC	D, B(S), T(H)
qy_p2#78_A03ES	C	Ph		P=TC	B(D), T(H)
qy_p1#85_A03ES	C	Ph		M(B), S, H, D, S	S, U, T(H)
qy_p1#151_A03ES	C	Ph		P=TC	B(S), U, T(H)
qy_p1#255_A03ES	C	Ph		M, S, S, B(S), U, S, D	D, U, T(U)
qy_p1#85_A04ES	C	Ph		M, H, D, H, D, D, B(L)	B(L), U, T(H)
qy_p1#23_A05ES	C	Ph		P=TC	S, U, T(H)
qy_p2#100_A05ES	C	Ph		M, H, D, B(D), S, S	S, U, T(H)
qy_p2#118_A05ES	C	Ph		P=TC	B(M), U, T(H)
qy_p2#128_A05ES	C	Ph		M, S, U, B(L)	B(L), U, T(H)
qy_p2#142_A05ES	C	Ph		M, S, S, U, B(L)	B(L), U, T(H)
qy_p1#75_A06ES	C	Ph		B(M), U, S, D	D, S, T(H)
qy_p1#203_A03ES	C	VP		M, D, D, B(S), S, S	S, U, T(H)

⁴⁶ If, for instance, we observe the realization of the VP-OBJ type by comparing qy_p2#128_A04ES, “¿Tiene el pelo oscuro?”, “Has he got brown hair?” with qy_p2#170_A05ES, “¿Tiene calcetines?”, “Has he got socks?”, we can easily notice that the VP can present or otherwise an f_0 peak (U in the coding).

⁴⁷ We classified our profiles as follows. The “flat-falling” profile matches a sequence of INTSINT tags designating a flat or falling configuration, for example, M D D B(S) S S; M D D B(D). With the “rising-falling” profile, we identified all sequences of INTSINT tags presenting a rising part, followed by a falling part, for example, M(B) S H D S; M U B(L) S. “P=TC” indicates the case of an utterance with a very short profile. Finally, an example of a “complex” profile is the request qy_p2#56_A03ES, coded M D H D H L S H L H L B(S).

C					
<i>Query_y</i>	Inf.	Ms.	T	P	CT
qy_p1#13_A04ES	C	VP		M, S, B(L)	B(L), U, T(H)
qy_p1#19_A04ES	C	VP		P=TC	S, B(D), T(H)
qy_p2#88_A03ES	C	VP-OBJ		P=TC	B(D), U, T(H)
qy_p2#90_A03ES	C	VP-OBJ		M, D, D, B(D)	B(D), U, T(H)
qy_p2#8_A04ES	C	VP-OBJ		M, L, H, L, S, B(D)	B(D), U, T(H)
qy_p2#26_A04ES	C	VP-OBJ		M, B(D), H, D, U, D	D, T(H)
qy_p2#52_A04ES	C	VP-OBJ		M, D, D, B(D)	B(D), T(H)
qy_p2#128_A04ES	C	VP-OBJ		M, D, B(D)	B(D), U, T(H)
qy_p2#16_A05ES	C	VP-OBJ		P=TC	D, S, T(H)
qy_p2#66_A05ES	C	VP-OBJ		M, S, B(D)	B(D), U, T(H)
qy_p2#74_A05ES	C	VP-OBJ		M, B(L), S	S, U, T(H)
qy_p2#140_A05ES	C	VP-OBJ		P=TC	B(D), T(H)
qy_p2#144_A05ES	C	VP-OBJ-CE		M, U, D, H, L, S, B(D)	B(D), S, U, T(H)
qy_p2#146_A05ES	C	VP-OBJ-CE		M, U, D, H, L, B(S)	B(S), T(H)
qy_p2#160_A05ES	C	VP-OBJ		P=TC	B(D), U, T(H)
qy_p2#170_A05ES	C	VP-OBJ		M, U, D, B(D)	B(D), U, U, T(H)
qy_p2#178_A05ES	C	VP-OBJ		M, B(D), H, S, L	L, D, T(H)
qy_p2#42_A06ES	C	VP-OBJ		M, S, S, D, D, B(S)	B(S), U, T(H)
qy_p1#135_A03ES	C	VP-OBJ		M, U, D, B(D)	B(D), U, T(H)
qy_p1#37_A04ES	C	VP-OBJ		M, S, H, D, D	D, B(S), T(H)
qy_p1#57_A04ES	C	VP-OBJ		M, U, B(L), S	S, S, T(H)
qy_p1#139_A04ES	C	VP-OBJ		M, U, L, H, B(L)	B(L), U, T(H)
qy_p1#55_A05ES	C	VP-OBJ-CE		M, U, D, H, D, B(D)	B(D), U, T(H)
qy_p1#149_A05ES	C	VP-OBJ		P=TC	U, S, T(H)
qy_p2#30_A03ES	C	VP-OBJ-CE*		B(M), S, U, H, D, L, S	S, U, T(H)
qy_p2#56_A03ES	C	VP-OBJ-CE*		M, D, H, D, H, L, S, H, L, H, L, B(S)	B(S), T(H)
qy_p2#42_a_A04ES	C	VP-OBJ*		P=TC	B(L), S, T(H)
qy_p2#42_b_A04ES	C	VP-OBJ*		M, S, D, B(D)	B(D), S, T(H)
qy_p2#54_A05ES	C	VP-OBJ*		M, B(S), H, L	L, U, T(H)
qy_p2#188_A05ES	C	VP-OBJ-CE*		M, U, B(L)	B(L), U, U, T(U)
qy_p2#250_A03ES	C	VP-OBJ-SC		M, D, D, D, U, D, S, D, S, B(S), S	S, U, T(H)
qy_p2#42_A05ES	C	VP-OBJ-SC		M, S, H, L, S, H, D, B(L), U, H, D	D, U, T(H)
qy_p2#22_A04ES	C	VP-SUB		M, U, B(L)	B(L), D, T(H)
qy_p2#16_b_A03ES	C	VP-SUB		M, H, B(L)	B(L), U, T(H)
qy_p1#115_A04ES	C	VP-SUB		M, D, H, D, D, S, S, D, B(D)	B(D), U, T(H)
qy_p2#126_A04ES	C	VP-SUB		M, S, B(D), H, D	D, S, U, T(H)
qy_p2#156_A04ES	C	VP-SUB		M, S, B(L), H, D	D, U, T(H)
qy_p2#176_A04ES	C	VP-SUB		M, B(D), S, S	S, U, T(H)

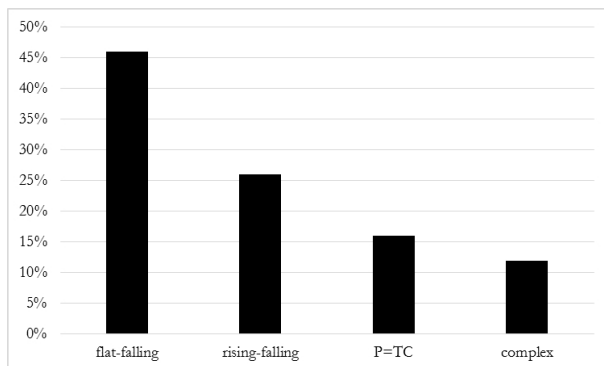
C					
<i>Query_y</i>	Inf.	Ms.	T	P	CT
qy_p1#123_A04ES	C	VP-SC		M, H, B(L), U, D, S	S, U, T(H)
qy_p1#17_A05ES	C/T	VP-OBJ-SUB(SC)	H, D, B(D), S, U, T(H)	M, U, L	L, U, H
qy_p2#46_A05ES	C/T	VP-OBJ-SUB	H, L, H, L, U, B(L), U, T(H)	M, S, H	L, H
qy_p1#49_A05ES	C/T	VP-OBJ-SUB	H, B(D), S, T(H)	M, U, L, S, S, D, D	D, H
qy_p1#51_A05ES	C/T	VP-OBJ-SUB	H, B(L), S, U, T(H)	M, U	D, U, H
qy_p1#63_A05ES	C/T	VP-OBJ-SUB	U, B, U, T(H)	M, U, D	D, U
qy_p1#103_A05ES	C/T	VP-OBJ-SUB	H, D, B(S), T(H)	M, U, L, H, D	D, H
qy_p1#125_A05ES	C/T	VP-OBJ-SUB	H, D, B(S), H, S, T(H)	M, U, L, H, D	D, L, H
qy_p2#192_A03ES	T/C	CE-VP-SC	M, H	T(U), D, S, S, D, D, S, D	B(D), U, H
qy_p2#208_A04ES	T/C	CE-VP-OBJ	M, L, H	D, S, B(D)	B(D), U, T(H)
qy_p2#190_A04ES	T/C	CE-VP-OBJ	M, D, S, H	H, L, H, D, S, B(D)	B(D), U, T(H)
qy_p1#57_A05ES	T/C	CE-VP-OBJ	M, S, U, D, S, H	H, D, D, S	S, B(D), T(H)
qy_p2#96_A06ES	T/C	CE-VP-OBJ	M, D, H	P=TC	B(D), T(H)
qy_p2#32_A03ES	T/C	CE-VP-OBJ*	M, D, S, U, L, H	H, D, B(D)	B(D), S, T(H)
qy_p1#113_A05ES	T/C	CE-VP-OBJ*	M, S, U, S, L, U, H	H, D, D, D, B(L)	B(L), S, T(H)
qy_p2#116_A05ES	T/C	CE-VP-OBJ*	M, S, H, L, H	H, D, B(D), S	S, U, T(H)
qy_p1#85_A05ES	T/C	CE-VP-CE-SUB	M, S, H	H, S, S, D, D, S, B(L)	B(L), U, T(H)
qy_p2#34_A04ES	T/C	CE-VP-SUB	M, D, H	H, D, B(D), H, D, S	S, S, T(H)
qy_p2#18_A04ES	T/C	CE-SUB-VP	M, D, D, H, L, H	H, B(L)	B(L), S, T(H)
qy_p1#43_A05ES	T/C	CE-SUB-VP-OBJ	M, S, H, D, D, B(L), H	H, S, D	S, U, T(H)
qy_p1#21_A05ES	T/C	OBJ-VP	M, B(S), H	P=TC	H, D, S, T(H)
qy_p2#28_A04ES	T/C	IO-VP-SUB	M, L, U	U, D, S, H, B(L)	B(L), S, T(H)
qy_p2#128_A03ES	T/C	SUB-VP	M, H	H, D, S, B(S)	B(S), T(H)
qy_p1#59_A04ES	T/C	SUB(SC)-VP	M, D, H, L, S, H	H, B(L)	B(L), U, T(H)
qy_p2#90_A05ES	T/C	SUB-VP	M, S, H, D, D, H	H, D, B(D)	B(D), U, T(H)
qy_p2#92_A05ES	T/C	SUB-VP	M, U, D, H	H, D, B(D)	B(D), U, T(H)

C					
<i>Query_y</i>	Inf.	Ms.	T	P	CT
qy_p2#136_A05ES	T/C	SUB-VP	M, S, S, H	D, L, S, H, D, B(S)	B(S), U, T(H)
qy_p1#27_A06ES	T/C	SUB-VP- CE	M, S, D, H	H, D, S, S, B(D)	B(D), S, T(H)
qy_p1#45_A03ES	T/C	SUB-VP- OBJ	M, S, H	H, D, D, B(L)	B(L), U, T(H)
qy_p2#52_A03ES	T/C	SUB-VP- OBJ-CE	M, S, H	H, D, B(D)	B(D), U, T(H)
qy_p2#54_A03ES	T/C	SUB-VP- OBJ-CE	M, U, H	H, D, L, U, D	D, B(L), T(H)
qy_p2#62_A03ES	T/C	SUB-VP- OBJ-CE	M, S, D, U, H, S, H	H, D, B(S)	B(S), U, T(H)
qy_p1#67_A03ES	T/C	SUB-VP- OBJ	M, B(S), U, S	U, L	L, S, T(H)
qy_p2#76_A03ES	T/C	SUB-VP- OBJ	M, S, U	U, S, D, B(D)	B(D), U, T(H)
qy_p2#98_A03ES	T/C	SUB-VP- OBJ	M, H	H, L, S, D, B(D)	B(D), T(H)
qy_p2#112_A03ES	T/C	SUB-VP- OBJ	M, S, H	H, B(L), U, S	S, T(H)
qy_p2#124_A03ES	T/C	SUB-VP- OBJ	M, U	H, D, B(D), U, S	S, S, T(H)
qy_p2#126_A03ES	T/C	SUB-VP- OBJ	M, S, H, L, U	H, B(L)	B(L), U, T(H)
qy_p2#138_A03ES	T/C	SUB-VP- OBJ	M, S, S, H, D, U	H, D, B(D), H, L, S	S, T(H)
qy_p1#165_A03ES	T/C	SUB-VP- OBJ	M, D, U	U, D, S, S, B(S)	B(S), S, T(H)
qy_p1#185_A03ES	T/C	SUB-VP- OBJ-CE	M, U, D, H	H, D, B(L), S, S, H, D, S	S, T(H)
qy_p1#253_A03ES	T/C	SUB-VP- OBJ-CE	M, D, U, L, U, H	H, D, B(D), H, D	S, U, T(H)
qy_p2#10_A04ES	T/C	SUB-VP- OBJ-CE	M, D, D, U	U, S, D, B(D)	B(D), S, T(H)
qy_p1#47_A04ES	T/C	SUB-VP- OBJ	M, S, U	U, D, D, S, D, B(D)	B(D), S, T(H)
qy_p2#94_A04ES	T/C	SUB-VP- OBJ-CE	M, L, S, H	H, L, S, B(D), H, D, S	S, U, T(H)
qy_p2#132_A06ES	T/C	SUB-VP- OBJ	M, H	H, D, D, B(L)	B(L), U, T(H)
qy_p2#248_A03ES	T/C	SUB-VP- OBJ-SC	M, U	U, L, S, D, D, B(S)	B(S), U, T(H)

In Figure IV-31, we can see the frequency of occurrence for the Ps identified for Spanish *query_y* moves and easily appreciate that there is no unique prototypical P: the flat-falling P is the most common one (46%), immediately followed by the

rising-falling P (26%). In 16% of the cases, the P is too short to separate it from the TC. Finally, 12% of the cases show a variable P, different from the others.

Figure IV-31 - *Frequency of occurrence (%) of the Ps identified in Spanish query_y moves*



Apparently, there was no systematic relation between the type of intonative P and the variables observed in this study. The only trends we can observe deal with the informative T/C type and the complex P.

As for the informative T/C type, the P tends to be realized through the flat-falling type. As we will see, both the topic and the TC present a rising configuration. Therefore, in the T/C type, we find an f_0 peak in the initial part of the utterance (and in turn the topic) and another f_0 peak in the final part of the utterance (in the TC). Since both the topic and the TC systematically show this kind of realization, we can interpret that their realization does not favour other f_0 peaks in the utterance, in other words, that they facilitate the realization of the flat-falling (and not rising-falling) P.

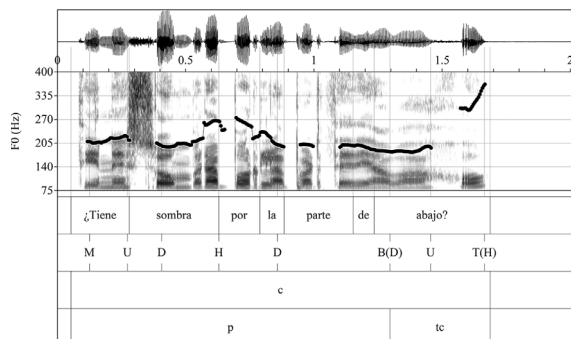
As for the complex P, which is the less frequently found in our corpus, we can recognize a common characteristic: all these requests present other elements in the final part of the comment, which are generally circumstantial elements.

Considering the realization of the utterance without circumstantial elements⁴⁸, we can include these “complex” Ps in the other two categories identified, that is to say, flat-falling or rising-falling Ps.

Figure IV-32 represents the realization of the request *qy_p1#55_A05ES*, “¿Tiene sombra por la parte de abajo?”, “Has it got a shadow at the bottom?”. This clearly shows that the part corresponding to the VP and the OBJ (“tiene sombra”) presents a rising-falling P, followed by a rising TC, whereas the circumstantial elements present a falling configuration up until the f_0 minimum of the utterance, B(D), followed by a final rise, U T(H).

⁴⁸ For example, considering “¿Tiene sombra por la parte de abajo?”, “Has it got a shadow at the bottom?” such as “¿Tiene sombra?”, “Has it got a shadow?”.

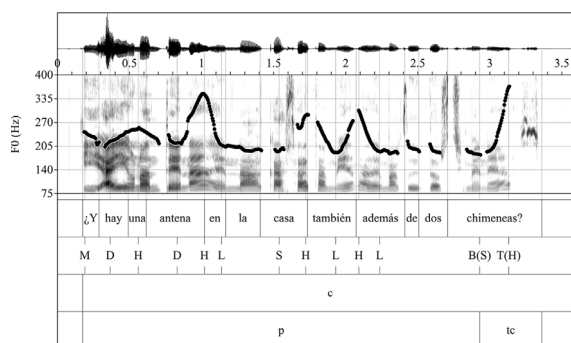
Figure IV-32 - *An example of a “complex” P in a Spanish query_y move with a circumstantial element (“¿Tiene sombra por la parte de abajo?”)*



In the case of the repetition of various elements, we can observe the same realization: the first part of the request is realized as if it were an independent utterance, showing the intonation described for the other Ps, while each of the circumstantial element shows a falling configuration, plus a final rise. The final rise that leads to the f_0 maximum of the utterance, T(H), occurs in the last element.

In Figure IV-33, we can observe an example of this phenomenon through the analysis of the request qy_p2#56_A03ES, “¿Y hay una antena en la casa también además de dos chimeneas?”. “Y hay una antena?” (“And is there an antenna?”) shows a rising-falling P, whereas the other elements, “en la casa” (“in the building”), “también” (“also”) and “además de dos chimeneas” (“apart from two chimneys”) present a falling part, plus a final rise.

Figure IV-33 - *An example of a “complex” P in a Spanish query_y move with more than one circumstantial element (“¿Y hay una antena en la casa también además de dos chimeneas?”)*



All our occurrences of complex Ps match this description, even if this kind of regularity should be analysed with a greater corpus. We cannot easily compare this intuition with previous studies, since, in our literature review, we did not find any systematic study of this aspect (cf. § 1.2.1.2).

Moving onto the other Ps that we have identified in our corpus of Spanish dialogues (the flat falling and the rising-falling), we can say that the difference between them lies in the presence of an f_0 peak, usually situated in the initial part of the utterance.

Figure IV-34 shows an example of the rising-falling P, which belong to the request qy_p1#115_A04ES, “¿Se le ven las dos rayas como las arrugas del pantalón?”, “Can you see the two lines like wrinkles of the trousers?”.

Figure IV-35 illustrates an example of flat-falling P, coming from the request qy_p1#203_A03ES, “¿Llegan hasta el extremo del papel?”, “Do they arrive at the end of the page?”.

Figure IV-34 - An example of a Spanish query_y move with a rising-falling P (“¿Se le ven las dos rayas como las arrugas del pantalón?”)

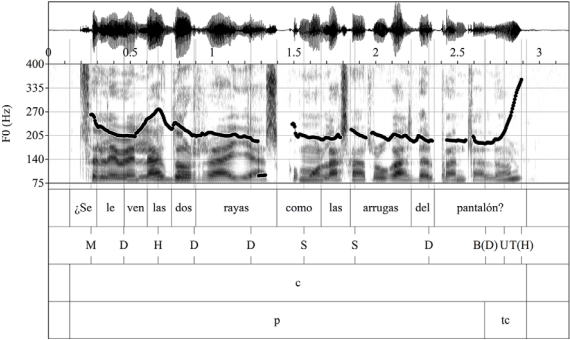
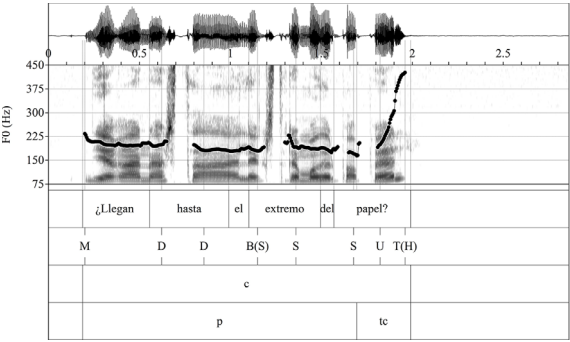


Figure IV-35 - An example of a Spanish query_y move with a flat-falling P (“¿Llegan hasta el extremo del papel?”)



The P that we have classified as a rising-falling P is in line with the literature (Sosa, 1999; Martínez Celdrán *et al.*, 2005; Romera *et al.*, 2007, 2008; cf. § 1.2.1.2): yes-no questions in the Spanish of Barcelona should present a first peak, generally located in the first post-tonic syllable, which should correspond to the maximum f_0 value of the utterance. We find it in only 26% of the cases, whereas, in most cases, *query_y* does not present this initial peak. Our interpretation of this discrepancy is related to the

speech style. Given that the studies that we have considered in our review primarily analyse read speech, we think that the possibility of a pre-planned and a relatively reduced speaking rate favours the presence of this initial peak, unlike semi-spontaneous or spontaneous speech, which, in any case, is not pre-planned and thus less accurate speech.

As for the TC of the comment, all the different INTSINT tag sequences are easily ascribable to a single realization: a rising type of TC (see Table IV-9). As far as the type of the rise is concerned, the position of the two absolute tones, T and B, indicating f_0 maximum and minimum in the utterance, helps to clarify some other aspects.

A very important detail comes from the position of the T point, which is situated in the TC in 92% of the cases. The remaining 8% belongs to the informative type C/T (except in one case). Therefore, we can say that the T point is located in the topic and not in the TC of the comment, albeit only when the topic follows the comment. Independently of the different informative and morphosyntactic types, all these requests present a final rise in the final part of the utterance, which leads to the f_0 maximum value. Moreover, it is a speed rise, which, in 90% of the cases, corresponds to the tag T(H); it only corresponds to T(U) in 2% of the cases.

Looking at the f_0 minimum value, coded by the tag B, it may be observed that, in most cases (64%), it appears in the TC. Considering that both maximum and minimum occur in the TC in a high percentage of the cases, we can say that the greater melodic variation and f_0 range excursion occur in this part of the utterance. Therefore, if we compare this with all the other elements analysed until now, both in Italian and in Spanish (where we have often observed a great amount of variability), we can state that the TC in Spanish *query_y* requests presents a clearly stable intonation.

Even if we do not consider f_0 alignment with the segmental string, we can make some observations in this respect in terms of the function of stress word patterns. It is worth noticing that the rise in the TC mainly involves the last syllable, be it stressed or unstressed.

In Table IV-10, we show the distribution of the three stress patterns occurring in TC. The paroxytone pattern is, by far, the most frequent⁴⁹, while, for oxytone, and above all for the proparoxytone pattern, we do not have at our disposal a great number of occurrences.

Table IV-10 - *Frequency of occurrence (%) in the TC of Spanish query_y requests*

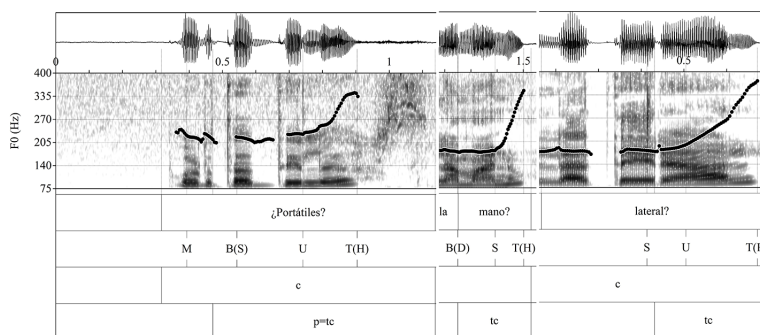
Frequency of occurrence (%) in TC	
Paroxytone	80%
Oxytone	18%
Proparoxytone	2%

⁴⁹ As is well known, the paroxytone pattern can be considered as the default pattern in Spanish lexicon. The distribution that we find in the TC in *query_y* requests is also consistent with the percentages indicated by Quilis (1993), i.e., proparoxytone: 79%, paroxytone: 18% and oxytone: 3%.

By relating the rise and the accentual pattern of the word that occurs in the TC, we can state that the rise only coincides with the stressed syllable for oxytone words, whereas, in the other patterns, it occurs in the post-tonic syllable(s).

Figure IV-36 shows the realization of the final rise in different accentual patterns, from left to right: proparoxytone (“portátiles”, “portable”, qy_p1#151_A03ES), paroxytone (“mano”, “hand” qy_p2#10_A04ES), oxytone (“lateral”, “lateral”, qy_p1#23_A05ES).

Figure IV-36 - Final rise in the TC in different accentual patterns of Spanish *query_y* requests (“portátiles”, “mano” and “lateral”)



Therefore, concerning the TC, we can state that our findings are consistent with previous studies on the same category (cf. § 1.2.1.2), both on f_0 configuration and on the relation between the rise and the stressed syllable⁵⁰. As far as the relative height of the final rise is concerned, we find different conclusions in the literature. In our corpus, the final rise systematically steps over the global height of the utterance. This means that the highest peak in the utterance always occurs in its final part, independently of all other factors.

In conclusion, we can state that, in the case of the realization of the comment in Spanish *query_y* requests, they present a flat-falling configuration or a rising pattern until the first peak, situated in the first post-tonic syllable, and a globally slight fall, which lasts approximately until the last stressed syllable⁵¹, followed by a steep rise in the final inflection, which systematically leads to the f_0 maximum value.

Observing all the invariants, we can extract the following abstract patterns:

- **M B(S) U T(H)** for short utterances (where we did not consider a division between the P and the TC);
- **M S U D D S B(D) U T(H)** for flat-falling or for rising-falling patterns, always ending in a rising TC.

To these abstract patterns, we have to add a variation in the function of the presence of circumstantial elements, which, if located at the end of the utterance, may vary

⁵⁰ To be more precise, our data are consistent with Garrido (2012), but not with Quilis (1993).

⁵¹ As we have seen, there exist variations depending on the accentual pattern. This description fits with oxytone words, while, for the other accentual patterns, the rise starts in the post-tonic syllables.

the way in which the global melody presents a pattern, which we can reconstruct through the sequence **H L S H**, that is, a falling-rising configuration. However, it is noteworthy that, despite morphosyntactic features, the highest peak and the greater f_0 range excursion occur in the final part of the utterance.

After analysing the comment, we present the results concerning the topic. As with Italian, we observed the main variables that were supposedly linked to the intonation of the topic, namely, its syntactic function and the type of phrase realizing the topic in the function of its “weight” and composition.

Considering the frequency of occurrence of topics in the function of these factors, we decided to discard multiple topics, such as “en tu dibujo el perro”, “in your drawing the dog”, or “el perro en la nariz”, “the dog in its snout”.

As far as the weight is concerned, we divided the occurrences into only two types: light and heavy, basing our decision on the presence of a modifier and simplifying the measure adopted by Voghera, Turco (2008) for Italian. As previously stated, by the term “light” topics, we refer to phrases composed of only the nucleus (with or without a determiner, for example, “debajo”, “below”, or “el coche”, “the car”) and, by the term “heavy” topics, we denote structures made by the nucleus plus one or more than one modifier (for example, “las ruedas del coche”, “the car wheels”).

As for the position of the topic, in 46 occurrences, we have 39 topics located in the left periphery and seven cases situated in the right periphery (that is, after the comment). We will start by considering topics located in the left part of the utterance.

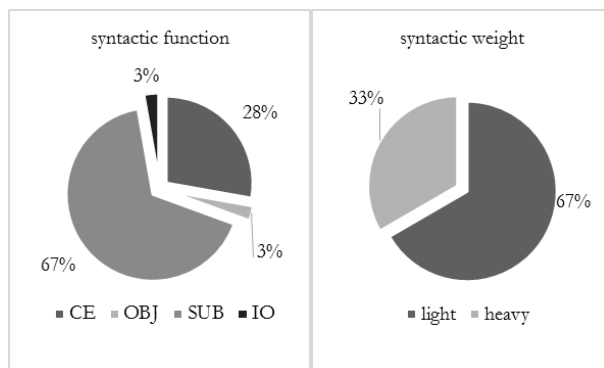
Table IV-11 shows the intonative transcriptions of topics (made by one constituent) appearing in *query_y* moves in our Spanish corpus, whereas Figure IV-37 illustrates their distribution in terms of syntactic function and weight.

Table IV-11 - *Intonative transcriptions of Spanish topics in query_y moves*

	Topic	Syntactic function	Syntactic weight	Intonative transcription
qy_p2#192_A03ES	pero en tu dibujo	CE	light	M, S, H
qy_p2#208_A04ES	y en el coche	CE	light	M, L, H
qy_p2#190_A04ES	en tu dibujo	CE	light	M, D, S, H
qy_p2#96_A06ES	y por el cielo	CE	light	M, D, H
qy_p1#85_A05ES	y debajo	CE	light	M, S, H
qy_p2#34_A04ES	en el banco	CE	light	M, D, H
qy_p1#21_A05ES	el de dentro	OBJ	light	M, B(S), H
qy_p2#28_A04ES	y al hombre	IO	light	M, L, U
qy_p2#128_A03ES	el hombre	SUB	light	M, H
qy_p2#136_A05ES	y las chimeneas	SUB	light	M, S, S, H
qy_p1#27_A06ES	luego la estatua	SUB	light	M, S, D, H
qy_p1#45_A03ES	el coche	SUB	light	M, S, H
qy_p2#52_A03ES	el hombre	SUB	light	M, S, H
qy_p2#54_A03ES	el perro	SUB	light	M, U, H
qy_p1#67_A03ES	el banco	SUB	light	M, B(S), U, S

	Topic	Syntactic function	Syntactic weight	Intonative transcription
qy_p2#76_A03ES	el hombre	SUB	light	M, S, U
qy_p2#98_A03ES	el banco	SUB	light	M, H
qy_p2#112_A03ES	y el árbol	SUB	light	M, S, H
qy_p2#124_A03ES	y el caballo	SUB	light	M, U
qy_p1#165_A03ES	y el hombre	SUB	light	M, D, U
qy_p2#10_A04ES	el hombre	SUB	light	M, D, D, U
qy_p1#47_A04ES	el caballo	SUB	light	M, S, U
qy_p2#94_A04ES	el perrito	SUB	light	M, L, S, H
qy_p2#248_A03ES	y el hombre	SUB	light	M, U
qy_p1#57_A05ES	en la parte trasera del banco	CE	heavy	M, S, U, D, S, H
qy_p2#32_A03ES	y a la derecha del perro	CE	heavy	M, D, S, U, L, H
qy_p1#113_A05ES	en el parachoques del coche	CE	heavy	M, S, U, S, L, U, H
qy_p2#116_A05ES	y en el lateral izquierdo del coche	CE	heavy	M, S, H, L, H
qy_p1#59_A04ES	y el brazo que tiene alzado	SUB	heavy	M, D, H, L, S, H
qy_p2#90_A05ES	y las teclas del televisor	SUB	heavy	M, S, H, D, D, H
qy_p2#92_A05ES	una de ellas	SUB	heavy	M, U, D, H
qy_p2#62_A03ES	*er el general de la estatua	SUB	heavy	M, S, D, U, H, S, H
qy_p2#138_A03ES	y el tejado de la casa	SUB	heavy	M, S, S, H, D, U
qy_p1#185_A03ES	las ruedas del coche	SUB	heavy	M, U, D, H
qy_p1#253_A03ES	la estatua de la rotonda	SUB	heavy	M, D, U, L, U, H
qy_p2#132_A06ES	el hombre ese	SUB	heavy	M, H

Figure IV-37 - *Syntactic function and weight of Spanish topics in query_y moves*



As we can see from Figure IV-37, in 67% of the cases, the topic is also the subject; in 28%, it performs the function of circumstantial elements; and, in the remaining 6% it is a direct (3%) or an indirect object (3%). As far as the composition of the phrase is concerned, in 67% of the cases, we are dealing with light topics. Therefore, we have to consider that our data are mainly concerned with topics that perform the function of the subject and are composed of one constituent, which is often a simple phrase.

We start with light topics (24 out of 36 occurrences), which, in 63% of the cases, present a rising configuration, whereas the remaining 38% show a falling-rising con-

figuration. This difference does not seem to be related with the accentual pattern. We can see from Table IV-11 that the nucleus of the phrase is a paroxytone word in 100% of the cases. As for the rise, it is coded as T(H) in most cases (67%), without being related to the (rising or falling-rising) configuration.

Therefore, we can formalize the intonative realization through the coding **M D S H**.

Figure IV-38 illustrates some examples of the pattern **M S H**, where the topics perform different syntactic functions. As we can see from the examples, at least in our corpus, the syntactic function does not seem to affect the intonative realization. From left to right, the figure shows a subject, a direct object and a circumstantial element (qy_p2#112_A03ES, “Y el árbol”, “And the tree”; qy_p1#21_A05ES, “El de dentro”, “The inside one”; qy_p2#192_A03ES, “Pero en tu dibujo”, “But in your drawing”).

Figure IV-38 - Three examples of Spanish rising topics in query_y moves (“Y el árbol”, “El de dentro” and “Pero en tu dibujo”)

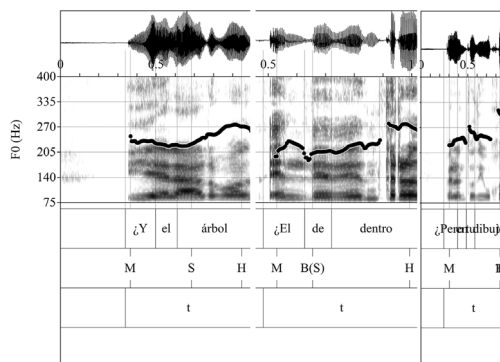
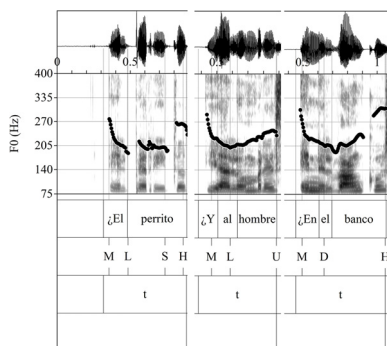


Figure IV-39 shows some examples of the pattern **M D S H**, where the topics perform different syntactic functions. From left to right, the figure shows a subject, an indirect object and a circumstantial element (qy_p2#94_A04ES, “El perrito”, “And the little dog”; qy_p2#28_A04ES, “Y al hombre”, “And to the man”; qy_p2#34_A04ES, “En el banco”, “In the bench”).

Figure IV-39 - Three examples of Spanish falling-rising topics in query_y moves (“El perrito”, “Y al hombre” and “En el banco”)



Analysing both realizations (rising and falling-rising), we can state that they share an important rise in the boundary of the topic.

As far as heavy topics are concerned, that is, in complex phrases with some kind of modifiers, we can observe a smaller number of cases (12). One of them, qy_p2#132_A06ES, “el hombre ese”, “this man”, shows the same rising configuration already described as the most frequent pattern.

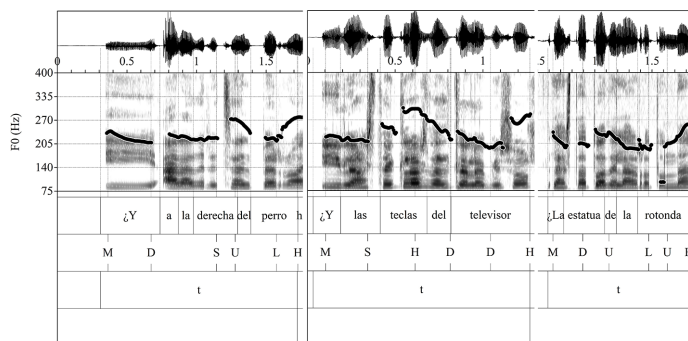
The remaining 11 cases of heavy topics present different structures, as shown in Table IV-12. Except for one case, they are all noun phrases with a prepositional phrase as modifier (“las ruedas del coche”, “car wheels”, for instance) or prepositional phrases including a prepositional phrase as modifier (“en el parachoques del coche”, “on the car bumper”); moreover, in two cases, they also present an adjective as modifier (“en la parte trasera del banco”, “at the rear of the bench”, and “y en el lateral izquierdo del coche”, “on the left side of the car”). Finally, we also have a case in which a sentence plays the role of a modifier (“y el brazo que tiene alzado”, “and his raised arm”).

Table IV-12 - *Intonative transcriptions of Spanish “heavy” topics in query_y moves*

	Orthographic transcription	Intonative transcription
qy_p1#57_A05ES	en la parte trasera del banco	M, S, U, D, S, H
qy_p2#32_A03ES	y a la derecha del perro	M, D, S, U, L, H
qy_p1#113_A05ES	en el parachoques del coche	M, S, U, S, L, U, H
qy_p2#116_A05ES	y en el lateral izquierdo del coche	M, S, H, L, H
qy_p2#90_A05ES	y las teclas del televisor	M, S, H, D, D, H
qy_p2#92_A05ES	una de ellas	M, U, D, H
qy_p2#62_A03ES	*er el general de la estatua	M, S, D, U, H, S, H
qy_p2#138_A03ES	y el tejado de la casa	M, S, S, H, D, U
qy_p1#185_A03ES	las ruedas del coche	M, U, D, H
qy_p1#253_A03ES	la estatua de la rotonda	M, D, U, L, U, H
qy_p1#59_A04ES	y el brazo que tiene alzado	M, D, H, L, S, H

When analysing heavy topics, we can also notice the same rising or falling-rising configuration described above. More specifically, we can see that a similar configuration takes place in the nucleus of the phrase and in its modifier. In Figure IV-40, we present some examples, proceeding from left to right: qy_p2#32_A03ES, “A la derecha del perro”, “On the right side of the dog”; qy_p2#90_A05ES, “Y las teclas del televisor”, “And the TV’s buttons”; y qy_p1#253_A03ES, “La estatua de la rotonda”, “The statue on the roundabout”.

Figure IV-40 - Three examples of Spanish heavy topics (noun and prepositional phrases including a prepositional phrase as modifier) in query_y moves (“A la derecha del perro”, “Y las teclas del televisor” and “La estatua de la rotonda”)



If we compare the two peaks, the one occurring in the nucleus (in qy_p2#90_A05ES, for instance, “las teclas”) and the one occurring in the modifier (“del televisor”, in the same example), we can appreciate that they reach a similar f_0 value or a slightly higher value in the modifier than in the nucleus. The only case of a modifier made by a sentence (qy_p1#59_A04ES, “y el brazo que tiene alzado”) presents a similar intonation: a rise in the boundary of the nucleus “el brazo”, coded as M D H, and a rise in its modifier “que tiene alzado”, corresponding to the coding H L S H.

Even if we had considered a reduced number of occurrences of heavy topics and not systematically examined the factors affecting its potential variation in intonation, when observing all the occurrences of topics in our corpus of Spanish dialogues, we can say that, independently of their syntactic function and their structure/weight, the left topics would have presented a configuration ending in a rise in their boundary with the comment.

As for post-verbal topics, located in the right periphery of the utterance, we can only make some observations for the seven cases in our corpus. Due to the small number of occurrences, we cannot consider the same variables that are taken into account for left topics⁵². However, concerning the syntactic function, they all perform the function of a subject and, as for their composition, they are both light and heavy topics, made by one constituent (see Table IV-13).

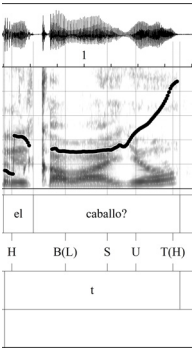
⁵² Previous contrastive studies between Spanish and Italian (Zamora, 2002; Francesconi, 2005) and between Spanish and Catalan (Planas, Villalba, 2013) clearly indicate a low frequency in the use of right dislocations in Spanish. Italian and Catalan interrogatives favour right dislocations, in sharp contrast with Spanish, which favours the in-situ realization of background material. According to these studies, Spanish interrogatives resort to subject-verb inversion or dropping of the subject, while Italian and Catalan tend to right-dislocate it. However, in our corpus, the strategy of the subject-verb inversion (corresponding to a post-verbal topic/subject, i.e., to our C/T structure) is clearly less frequent than the dropping of the subject (often corresponding to our informative type C).

Table IV-13 - *Intonative transcriptions of topics located in the right periphery in Spanish query_y moves*

	Orthographic transcription	Intonative transcription
qy_p1#17_A05ES	el coche que ves en la imagen	H, D, B(D), S, U, T(H)
qy_p2#46_A05ES	el el hombre de la estatua	H, L, H, L, U, B(L), U, T(H)
qy_p1#49_A05ES	la estatua	H, B(D), S, T(H)
qy_p1#51_A05ES	el caballo	H, B(L), S, U, T(H)
qy_p1#63_A05ES	tu coche	U, B, U, T(H)
qy_p1#103_A05ES	esta televisión	H, D, B(S), T(H)
qy_p1#125_A05ES	la la nariz del perro	H, D, B(S), H, S, T(H)

When observing light topics (“la estatua”, “the statue”, for instance), we can appreciate the same falling-rising configuration described for left topics, even if the fall is steeper, given that it is preceded by the rise in the TC of the comment. Figure IV-41 shows an example of light topic “el caballo”, belonging to qy_p1#51_A05ES, (“¿Tiene orejas el caballo?”, “Has he got ears, the horse?”).

Figure IV-41 - *An example of a topic located in the right periphery in Spanish query_y moves (“el caballo”)*



When looking at the three cases of heavy topics at our disposal, we acknowledge a configuration, which could possibly fit with a topic situated in the left of the utterance, except for a different pitch excursion⁵³. Taking into account what has been observed for topics situated in the right of the utterance realized by clitic right-dislocations, we would expect an unmarked intonative realization in this position, or at least a reduced pitch range⁵⁴, whereas our examples do not confirm this hypothesis.

⁵³ As previously indicated, in the case of a T/C structure, the f_0 maximum value of the utterance occurs in the TC of the comment and not in the topic. On the contrary, in the case of a C/T structure, the f_0 maximum value of the utterance occurs in the topic, at the end of the utterance, as one can see from table IV-9.

⁵⁴ As we will see when comparing our results with other analyses in the relevant literature, Feldhausen, Lausecker (2018) analyse clitic left- and clitic right-dislocations as expressions of topicalization. As far as clitic right-dislocations in Murcia Spanish, they indicate that they can be deaccented or accented

In conclusion, even if we cannot consider these observations as exhaustive conclusions, our data suggest that the position of the topic does not seem to be as relevant as one would have expected. Indeed, right topics also show a falling-rising or rising configuration. All that means is, regardless of their informative structure, all the *query_y* requests present a final rise, which systematically leads to the f_0 maximum value.

Comparing our findings with previous studies is not an easy task. First of all, we have to take into account differences depending on the modality of sentences. Le Gac (2014), for instance, indicates that, for Porteño Spanish, the topic tune in interrogative sentences is the opposite of that found in declaratives. Our *query_y* requests are all interrogative sentences; therefore, we cannot compare our data with results obtained by studying declaratives. Secondly, a great diatopic variation does exist. Feldhausen, Lausecker (2018), among others, analyse the prosody of clitic left- and clitic right-dislocations in Spanish from Spain (Murcia), Peru and Argentina and indicate a dialectal variation as a decisive factor in the prosody of dislocations.

As far as we know, left and right topics, as well as left- and right-dislocations, have been examined mainly from a syntactic and pragmatic-informative perspective, whereas only very few prosodic studies exist. Feldhausen (2016) examines three left constructions in both declarative and interrogative sentences, i.e., hanging topic left-dislocations, clitic left-dislocations and left-dislocations without a resumptive element⁵⁵, finding similar intonation patterns. He indicates that they are realized by a rising nuclear pitch accent and a high edge tone. Our findings, therefore, are consistent with his description. Moreover, the author states that these constructions may be followed by a pause or otherwise. It takes place more often in hanging topic left-dislocations and is obligatorily realized only in hanging topic left-dislocations in interrogative sentences. Different from our data, these constructions may also present a low edge tone in the variety of Spanish studied.

As for the topic located in the right periphery, this has been even less explored. Feldhausen, Lausecker (2018) provide some data on clitic right-dislocations in Murcia Spanish⁵⁶. They find differences in the function of the length of the dislocation: short clitic right-dislocations are deaccented, whereas long clitic right-dislocations⁵⁷ are, in most cases, accented and show a reduced pitch. If accented, the typical

(depending on the length of the dislocation), but that, in any case, show a reduced pitch range. More in general, previous studies on other languages, such as Catalan, indicate that right-dislocations have a very low pitch without any perceivable prominence; see Elordieta, Irurtzun (2012) for a review on several studies on this topic.

⁵⁵ There is no precise correspondence between our topic located in the left of the utterance and these categories. We cite here some examples made by the author; 'hanging topic left-dislocations': "María, hace tiempo que no veo a esa sinvergüenza"; 'clitic left-dislocations': "A María, hace tiempo que no la veo"; 'left-dislocations without a resumptive pronoun': "Dinero, me pregunto quién tiene" or "Dinero dicen que no tiene".

⁵⁶ In this case, our topics are also not clitic right-dislocations (completely absent from our corpus).

⁵⁷ They consider the following as a short clitic right-dislocation: "Se la comió Damasco, la pachamanca", "Damasco ate it, the Pachamanca". Meanwhile, "Lo vendió Rómulo, el armario de Lima", "Rómulo sold it, the wardrobe from Lima", is an example of a long short clitic right-dislocation (Feldhausen, Lausecker, 2018: 59).

configuration is $L+H^* L^* L\%$. Moreover, a low edge tone occurs between the main clause and the dislocated phrase, rarely marked by a pause.

Since the authors study declarative sentences, we cannot compare our empirical data with their findings, but we can suppose that the prosodic manifestation of the topics located in the left vs. right periphery would change in declaratives. The final rise we find in all the occurrences of our corpus could be related to modality and not directly connected with the realization of the topic. Further investigation is needed, taking into account i) sentence modality, ii) diatopic variation and iii) the structure of dislocated elements.

4.1.2 Confirmation-seeking requests

After having described the realization of information-seeking requests, we will present, in the next sections, the results obtained by analysing clarification-seeking requests, coded through the *check* tag. Different from information-seeking requests, *check* requests convey a degree of presupposition on the part of the speaker, who expects clear confirmation on the part of the hearer.

As we have seen when reviewing the literature (§ 1.2.2), in some languages, there is evidence to show that prosodic means to express the speaker's (un)certainly and polarity of the answer. Moreover, some authors identify a hierarchy of patterns according to the degree of (un)certainly. For this reason, we will also reveal the results concerning *check* requests by considering them in relation to the findings relative to *query_y* requests. Therefore, for both Italian and Spanish, we will present our data on the intonation of the comment (C), by dividing it into a profile (P) and a terminal contour (TC)⁵⁸, and the intonation of the topic (T). In addition, if there is a confirmatory tag in the request, we will consider it separately. After extracting the intonative pattern(s) for this request, we will examine the range of *check* requests, comparing it with that of *query_y* requests.

4.1.2.1 Italian

In Table IV-14, we show each *check* with its orthographic transcription, informative and morphosyntactic realization⁵⁹. In the cases of a very short utterance (for example, in c_p2#37_A02N, “è l'indice?”, “is it the forefinger?”), we indicate “P=TC” in the table, since the division between a P and a TC was senseless.

Most of these moves (73%) present a comment structure (22 out of 30 cases), whereas only eight cases present a sentence topic (T/C structure). As usual, we will compare, for both informative structures, the parts corresponding to the comment.

⁵⁸ By “profile” (P), we mean the overall trend of the curve from the beginning of the comment to before the last stressed syllable in the intonation unit and, by “terminal contour” (TC), we refer to the direction of the pitch, starting from the last stressed syllable of the intonation unit (§ 3.3.1).

⁵⁹ For the abbreviations used in the tables, see the list of abbreviations in the Appendix A. Moreover, the diacritic symbol “*” used in Table IV-12 indicates existential-presentative sentences (c_p1#159_A05N, “Non ci sono segni di s+ di sedili?”, “There aren't any signs of seats, are there?” VP-SUB*, for instance). The diacritic symbol “o”, placed beforehand, signals the presence of a confirmatory tag (for example, c_p2#235_A02N “E infatti non si vede la fine, no?”, “And he cannot see the end, can he?”, “VP-SUB).

Table IV-14 - *Intonative transcriptions of Italian check moves*

<i>Check</i>	<i>Inf.</i>	<i>Ms.</i>	<i>T</i>	<i>P</i>	<i>TC</i>	<i>Ctag</i>
c_p2#37_A02N	C	VP-SUB		P=CT	M, T(H), L, S, B(S)	
c_p2#235_A02N	C	°VP-SUB		M, T(H), D, D, D	D, B(S)	B(M), T(H)
c_p2#166_A03N	C	°VP-SC		M, U, S, T(H), L	L, B(L)	B(M), T(H)
c_p1#130_A02N	C	OBJ-VP		M, T(S), L, S	S, D, B(S)	
c_p2#43_A02N	C	Ph		M, T(U), D	D, B(D), S	
c_p2#59_A02N	C	Ph		P=CT	M, T(S), B(D), U	
c_p1#184_A02N	C	Ph		P=CT	T(M), L, B(D)	
c_p1#125_A03N	C	Ph		P=CT	M, T(H), B(L)	
c_p2#200_A03N	C	Ph		P=CT	M, T(U), D, B(S)	
c_p2#26_A05N	C	Ph		P=CT	U, T(H), L, H	
c_p2#32_A05N	C	Ph		P=CT	U, T(H)	
c_p1#39_A05N	C	Ph		P=CT	S, D, B(S)	
c_p2#132_A05N	C	Ph		P=CT	M, T(U), B(L)	
c_p2#90_A06N	C	Ph		P=CT	T(M), B(L), S	
c_p2#71_A02N	C	VP		P=CT	M, S, T(H), D, B(L)	
c_p2#145_A02N	C	VP		P=CT	T(M), D, U, B(L)	
c_p2#104_A05N	C	VP		B(M), S, U, S	S, T(H), S, L	
c_p1#69_A06N	C	VP*		P=CT	M, T(U), B(L), U	
c_p2#242_A03N	C	VP-OBJ		M, S, T(H), D, D, D	D, B(S)	
c_p2#146_A05N	C	VP-OBJ		M, S, T(H), D	D, D, S, B(D)	
c_p2#148_A05N	C	VP-OBJ		T(M), S	S, D, B(S)	
c_p1#159_A05N	C	VP-SUB*		M, T(U), D, S, U, D, B(S), U, S	S, S, S	
c_p2#3_A02N	T/C	°SUB(SC)- VP-SC	M, S, U, S, T(H), L	L, S, D	S, B(L), U	B(M), T(H)
c_p1#115_A05N	T/C	CE-VP-SUB	M, T(H)	T(H), D, S	S, D, B(L), S	
c_p2#46_A05N	T/C	CE-VP*	M, U, T(U), D	P=CT	U, B(L)	
c_p1#183_A05N	T/C	SUB-OBJ- VP	T(M)	T(M), L, S, H, D, S, D	D, B(L)	
c_p1#21_A05N	T/C	SUB-VP	M, S, H, L, U, T(H), D	D, D, H, D	S, B(D), S	
c_p1#157_A05N	T/C	SUB-VP	M, S, T(H), L, H, L, H, L	P=CT	L, U, D, B(S)	
c_p1#127_A05N	T/C	SUB-VP- OBJ	M, S, T(H), D, D, H, L	L, D, H, S	S, D, S, B(S)	
c_p2#148_A06N	T/C	SUB-VP-OBJ	T(M), S	S, S, D	D, B(D)	

As for morphosyntactic structures, when comparing all the INTSINT tag sequences, we cannot find differences that are directly attributable to morphosyntactic differences in the P or in the TC. The same P or TC is not associated with a specific morphosyntactic type, while the same morphosyntactic type shows a different intonative realization for the P and the TC.

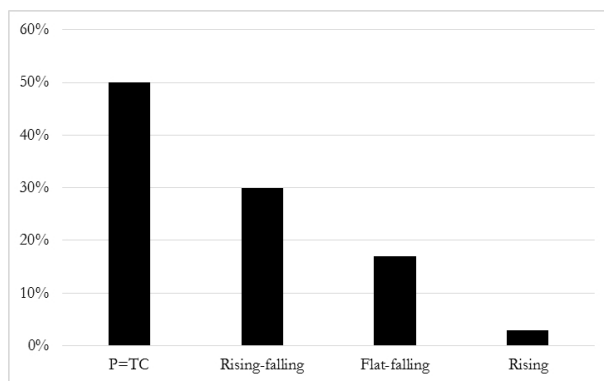
Therefore, without considering differences in morphosyntactic types, we will start with the comment by discussing the profile (P) and then the terminal contour (TC); finally, we will consider the confirmatory tag (Ctag).

As for the P, we recognized the following configuration (classified as exposed in § 4.1.1.1):

- rising,
- flat-falling,
- rising-falling,
- P=TC.

In Figure IV-42, we can see the frequency of occurrence of the Ps recognized for Italian *check* moves and easily appreciate that there is no unique prototypical P. In half of the cases, P=TC; the rising-falling P is the most common (30%), immediately followed by the flat-falling P (17%). We also find a case of a rising P (3%).

Figure IV-42 - *Frequency of occurrence (%) of the Ps identified in Italian check moves*



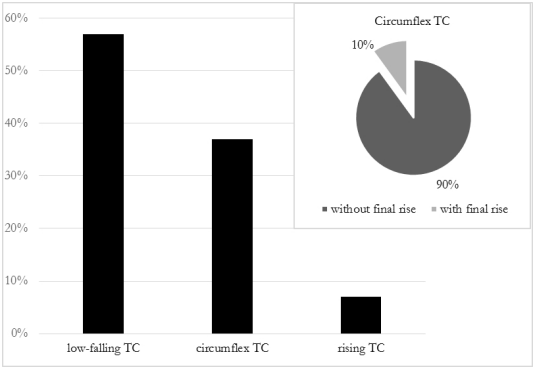
Following the same procedure for TC, we recognized three types:

1. low-falling,
2. rising,
3. circumflex⁶⁰.

Figure IV-43 shows the frequency of occurrence of the types of TC.

⁶⁰ For more details on the classification of the types, see § 4.1.1.1.

Figure IV-43 - Frequency of occurrence (%) of the TCs identified in Italian check moves



The most frequent TC is the low-falling type (57%), followed by the circumflex (37%); finally, there are also a few occurrences of a rising TC. Moreover, the circumflex TC can present a final rise (albeit in only 10% of the cases).

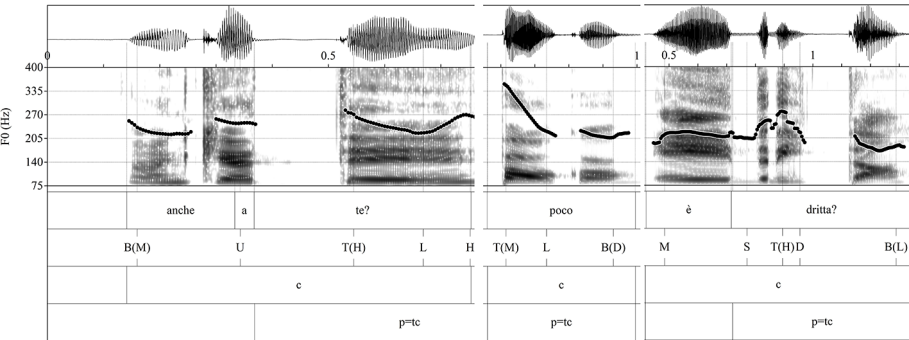
Observing the relation between the type of P and TC, we note that they can occur with several possible combinations, with no trend between the type of P and the type of TC.

We find all the circumflex TCs in the cases corresponding to short utterances (P=TC), but these occurrences can present different TCs. More precisely, we can observe the following distribution: a circumflex TC in 10 out of 15 cases, a low-falling TC in four out of 15 and one case of a rising TC.

Meanwhile, the cases of a low-falling TC can be associated with any P: flat falling, rising-falling or rising.

In Figure IV-44, we can compare different realizations of short utterances (P=TC). From left to right, we can see a circumflex TC plus a final rise (c_p2#26_A05N, “Anche a te?”, “To you too?”), a flat-falling TC (c_p1#184_A02N, “Poco?”, “Just a little?”) and a circumflex TC (c_p2#71_A02N, “È dritta?”, “Is it straight?”).

Figure IV-44 - Some examples of Italian check requests where P=TC (“Anche a te?”, “Poco?” and “È dritta?”)



In Figure IV-45, we can see an example of a rising-falling P and a low-falling TC (c_p2#146_A05N, “Non ha occhi”, “He has got no eyes”). In Figure IV-46, we show the realizations of a *check* request with a flat-falling P and a low-falling TC (c_p2#148_A05N, “Non ha bocca”, “He has got no mouth”).

Figure IV-45 - *An example of an Italian check with a rising-falling P and a low-falling TC (“Non ha occhi”)*

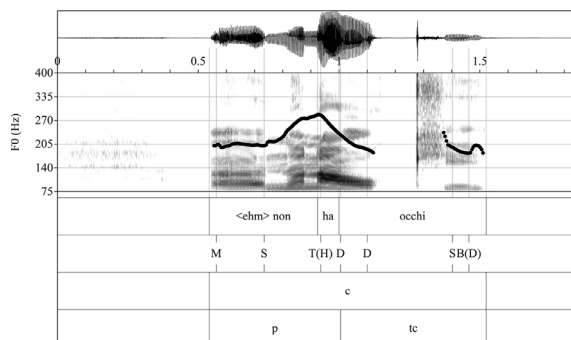
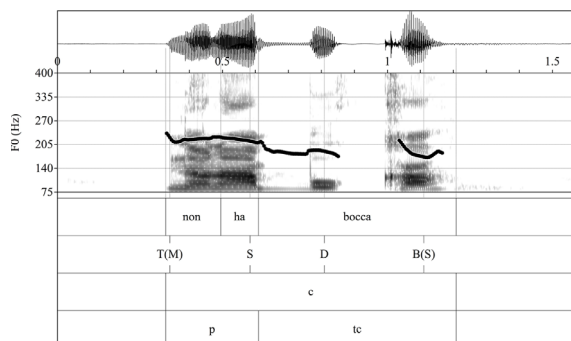


Figure IV-46 - *An example of an Italian check with a flat-falling P and a low-falling TC (“Non ha bocca”)*



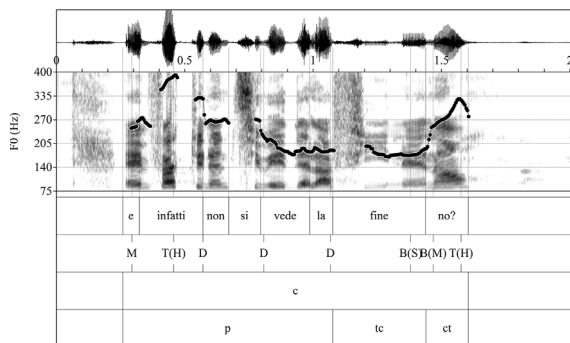
The same variability found in short utterance characterizes the other *check* requests, as shown by the examples in Figures IV-45 and IV-46 (which, along with everything else, share the morphosyntactic structure). Moreover, if we compare some of the realizations, we cannot fail to note that they show one of the patterns identified for *query_y* requests: rising-falling P or low-falling TC (see Figure IV-45). This is true in a not insignificant proportion: just over 50% (17 out of 30 cases).

The last element to consider is the confirmatory tag⁶¹, which is infrequent in Italian *check* requests. In the three occurrences in our corpus, it presents a rising configuration, coded as B(M) T(H).

⁶¹ This is realized in a separate intonation unit (see § 3.1).

Figure IV-47 shows an example of its realization (c_p2#235_A02N “E infatti non si vede la fine, no?”, “The end is not visible, is it?”).

Figure IV-47 - An example of an Italian check with a confirmatory tag (“E infatti non si vede la fine, no?”)



Due to the reduced number of occurrences, we cannot reach any conclusion about the realization of the confirmatory tag, even if, in similar cases, other authors describe an analogous realization. For example, Gili Fivela (2008) indicates, for Pisa Italian, a similar realization, but only in the case of a “no” as a confirmatory tag. For the tag, she indicates the coding H- (L%), which refers to different phonetic implementations of contours because, in a monosyllabic word, both the nuclear pitch accent and the edge tone are associated with the same syllable (cf. § 1.2.1.1). We do not have at our disposal different confirmatory tags for comparison purposes, for example, “vero” or “giusto”. In these cases, according to this hypothesis, the rise-fall pattern should be realized.

Therefore, our data about the comment of *check* requests do not allow us to find intonative constants, as we did for other types of requests. Observing the realization of both P and TC, we can only state that, together with other possible realizations, *check* requests can present a flat-falling P and a low-falling TC. That is to say, they can have an intonative pattern similar to that of declaratives. The coding of the abstract pattern representing it can be as follows: **T(M) S S D B(D)**.

As for the realization of the topic in *checks*, we have eight cases to consider (see table IV-14). Apart from one case⁶², the intonation fits with the description of topics in *query_y* requests (cf. § 4.1.1.1). Regardless of its syntactic structure and composition, it presents an important rise in the first stressed syllable of the phrase, which reaches the f_0 maximum value and is followed by a fall.

After analysing the intonation of the comment and the topic of the request, we focus on the overall pitch range excursion of the curve in the part corresponding to the comment by comparing the pitch range in *query_y* moves with that in *check*

⁶² We are talking about c_p2#148_A06N, “Il cane pure ha la bocca chiusa”, “The dog, he is keeping his mouth closed too”.

moves. Indeed, even if, in some cases, the two requests can present a similar intonation pattern, they could present differences in pitch range excursion.

For both categories, we calculated the range to be the difference between mean values of f_0 maximum and f_0 minimum (Hz), as illustrated in Table IV-15⁶³.

Table IV-15 - Mean values of f_0 maximum and f_0 minimum (Hz) in Italian check and query_y requests

	f_0 minimum	f_0 maximum	Range
<i>check</i>	169	294	125
σ	37,7	77,1	83,5
<i>query_y</i>	172	307	135
σ	28,5	47	53,5

As we can see, the range in *check* requests is slightly reduced compared to that for *query_y* requests. More specifically, *query_y* requests present an f_0 minimum almost equal to the one for *checks* (172 vs. 169 Hz) and an f_0 maximum that is slightly higher (307 vs. 294 Hz). This means that the difference in range between the two requests is 10 Hz (135 vs. 125 Hz).

If we consider not only the mean, but also the standard deviation (Table IV-15), we can see that, for both requests, the value is lower for the f_0 minimum than for the f_0 maximum. However, it is high in any case, indicating that it is perfectly possible that an information-seeking request presents the same range excursion as a confirmation-seeking request.

Comparing our findings with previous studies (see § 1.2.2.1), we can state that our data are consistent with previous literature on the same variety of Italian. As stated earlier, for Bari Italian, the various studies of Grice and Savino indicate a clear difference in the intonation of polar questions asking for information or clarification and the use of three different pitch accents in confirmation-seeking questions, depending on the degree of speaker confidence about the correctness of the inferred material asked in the question. On the contrary, the functional distinction between information- and confirmation-seeking yes-no questions does not seem to be systematically marked by intonation in Neapolitan Italian (Crocco, 2006a, 2006b; Gili Fivela *et al.*, 2015). Our data suggest that an information-seeking request and a confirmation-seeking request can present the same intonation and the same range excursion. Therefore, their functional distinction is not associated with a univocal linguistic coding but is conveyed through a variety of linguistic and extralinguistic factors.

We saw, in fact, that confirmation-seeking requests could present, among other realizations, an intonative pattern similar to that for declaratives, represented by the pattern **T(M) S S D B(D)**. This means that, in these cases, the context plays a crucial role in the correct identification and interpretation of the request.

⁶³ The calculation is based on 34 *query_y* and 20 *check* requests. We have excluded T/C structures and *checks* with a confirmatory tag.

In our corpus of Italian dialogues, a *check* can be similar to a declarative and, at the same time, similar to an information-seeking request. Along the lines of Savino and Grice's proposal (Grice, Savino, 1997, 2003a, 2003b, 2004; Savino, 2014), we could consider the hypothesis according to which the choice of speaker could depend on the degree of speaker confidence about the correctness of the inferred material asked in the question. That is to say, the speaker uses an intonation similar to declaratives when his/her degree of confidence is high and uses an intonation similar to an information-seeking request when his/her degree of confidence is low. However, the scheme for pragmatic annotation that we have adopted in our classification of requests (see § 2.4.2) does not code different degrees of confidence on the part of the speaker; indeed, it is difficult to establish reliable criteria to measure it, without running the risk of arbitrariness.

Further analysis is needed to establish whether and to what extent, in Neapolitan Italian, intonation reflects the degree of speaker confidence about the correctness of the inferred material asked in the question.

4.1.2.2 Spanish

Table IV-16 shows the realization of *check* moves in Spanish. We can see, for each occurrence, informative, as well as morphosyntactic and intonative realization⁶⁴. In the cases of a very short utterance (for example, in c_p2#194_A06ES “¿Seguro?”, “Are you sure?”), we indicate “P=TC” in the table, since the division between a P and a TC was senseless.

Table IV-16 - *Intonative transcriptions of Spanish check moves*

<i>Check</i>	Inf.	Ms.	T	P	TC	Ctag
c_p2#154_A03ES	C	°Ph		M, D, T(U), D	D, B(D)	B(M), S, T(H)
c_p2#224_A03ES	C	°Ph		T(M), S, S, D	D, B(S)	B(M), T(H)
c_p2#192_A04ES	C	°Ph		T(M), D, S, S	S, B(D)	B(M), T(H)
c_p2#158_A05ES	C	°Ph		P=CT	D, B(D)	B(M), U, T(H)
c_p1#201_A06ES	C	°Ph		M, U, D, S	S, B(D)	B(M), U, T(H)
c_p1#221_A06ES	C	°Ph		P=CT	T(M), D, B(D)	B(M), T(H)
c_p1#271_A06ES	C	°Ph		P=CT	T(M), D, B(D)	B(M), U, T(H)
c_p2#148_A03ES	C	°VP		M, U, B(D)	B(D), T(H)	M, B(L), T(H)
c_p2#170_A04ES	C	°VP		T(M), D, S, D	D, B(D)	B(M), T(H)
c_p1#175_A04ES	C	°VP		M, T(U), D, D	D, B(D)	B(M), T(H)
c_p1#197_A04ES	C	°VP		M, S, U, D	D, B(D)	B(M), T(H)
c_p2#172_A05ES	C	°VP		T(M), D, S, D, D	D, B(S)	B(M), T(H)
c_p1#185_A06ES	C	°VP		T(M), D, D	D, B(D)	B(M), T(U)

⁶⁴ For the abbreviations used in the tables, see the list of abbreviations in the Appendix A. Moreover, the diacritic symbol “°” used in Table IV-16 indicates existential-presentative sentences and the diacritic symbol “◌”, placed beforehand, signals the presence of a confirmatory tag (for example, c_p2#192_A06ES, “Y no hay nada dentro del coche ¿no?”, “And there is nothing in the car, is there?”, °VP-SUB*).

<i>Check</i>	Inf.	Ms.	T	P	TC	Ctag
c_p1#239_A06ES	C	°VP		M, T(U), D	D, B(D)	B(M), T(U)
c_p2#186_A03ES	C	°VP-OBJ-IO		T(M), D, S, S, U, D, B(L)	B(L), S	B(M), T(H)
c_p2#166_A04ES	C	°VP-OBJ		T(M), S, D, H, D, D	D, B(D)	B(M), T(H)
c_p2#178_A04ES	C	°VP-OBJ		T(M), L, S, D, S, B(D), H, L	L, S	B(M), T(H)
c_p1#105_A05ES	C	°VP-OBJ		T(M), S, D, D	D, B(D)	B(M), T(H)
c_p2#198_A04ES	C	°VP-SUB-IO		T(M), S, D, D, B(L), S	S, S	B(M), T(H)
c_p2#46_A04ES	C	°VP-SUB*		T(M), D, D, S	S, B(D)	B(M), U, T(H)
c_p2#54_A04ES	C	°VP-SUB*		T(M), D, S, D	D, B(S)	B(M), U, T(H)
c_p2#130_A04ES	C	°VP-SUB*		P=CT	D, B(D)	B(M), S, T(H)
c_p2#138_A06ES	C	°VP-SUB-CE*		T(M), S, D	D, B(D)	B(M), U, T(H)
c_p2#192_A06ES	C	°VP-SUB-CE*		M, D, T(H), D	D, B(L)	B(M), T(H)
c_p1#105_A04ES	C	OBJ-VP-CE		B(M), H, S	S, S, T(H)	
c_p2#216_A03ES	C	Ph		P=CT	S, T(U)	
c_p1#225_A03ES	C	Ph		P=CT	D, B(D)	
c_p1#49_A04ES	C	Ph		P=CT	T(U), B(D)	
c_p1#71_A04ES	C	Ph		P=CT	B(M), T(H)	
c_p2#108_A04ES	C	Ph		P=CT	M, B(S), T(H)	
c_p2#88_A06ES	C	Ph		P=CT	B(M), T(H)	
c_p2#102_A06ES	C	Ph		P=CT	B(M), S, T(H)	
c_p2#160_A06ES	C	Ph		P=CT	B(M), T(H)	
c_p2#194_A06ES	C	Ph		P=CT	T(M), B(L)	
c_p1#213_A03ES	C	VP		T(M), D	D, B(D)	
c_p1#209_A03ES	C	SUB-VP		M, T(H), D, S	S, B(D)	
c_p1#141_A03ES	T/C	°SUB-VP-OBJ	M, S, T(U), D, U	U, D, D, S	S, B(S)	B(M), T(H)
c_p2#94_A03ES	T/C	°SUB-VP-IO	M, T(H)	T(H), D, D, S	S, B(D)	B(M), T(H)
c_p2#92_A06ES	T/C	°CE-VP-OBJ	M, S, T(H), D, U	U, L	L, B(D)	B(M), T(H)
c_p2#136_A03ES	T/C	°CE-VP-OBJ*	M, S, T(H)	T(H), L	L, S, B(L)	B(M), S, T(H), D
c_p1#15_A04ES	T/C	°IO-VP-SUB*	M, S, D, T(H)	S, S	S, B(D)	B(M), T(H)
c_p2#104_A04ES	T/C	°Ph	T(M), D, S	S, S	S, B(D)	B(M), T(H)
c_p2#72_A04ES	T/C	°SUB-VP	T(M), D, D	M, D, S, S	S, B(D)	B(M), S, T(H)
c_p2#206_A04ES	T/C	°SUB-VP-OBJ	M, L, T(H)	T(H), L, S, B(D)	B(D), S	B(M), T(H)
c_p2#230_A04ES	T/C	°SUB-VP-OBJ	M, L, S, T(H)	L, S, D	D, B(S)	B(M), T(H)
c_p1#121_A03ES	T/C	CE-VP-OBJ	M, S, S, T(U)	T(U), B(L)	B(L), S	
c_p2#196_A06ES	T/C	CE-VP-OBJ	M, S, U, L, U, S, T(H)	T(H), D, S, B(D)	B(D), S	

Most of these moves (77%) present a comment structure (36 out of 47 cases), whereas only 11 cases present a sentence topic (T/C structure). As usual, we will compare, in both informative structures, the parts corresponding to the comment.

We will discuss the realization of the profile (P) and then the terminal contour (TC). We will also consider the confirmatory tag (Ctag), which is present in 70% of the cases (as “no”, in 30 out of 33 occurrences, and “verdad” in the remaining three cases).

As usual, we will conclude our description by discussing the intonation of the topic in *checks*.

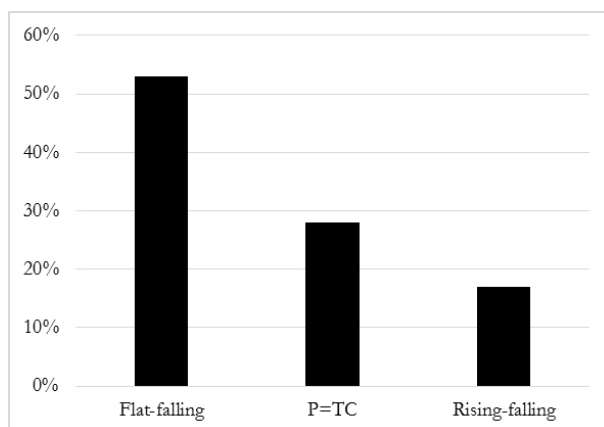
As for morphosyntactic structures, when comparing all the INTSINT tag sequences, we cannot find any differences directly attributable to morphosyntactic differences in the P or in the TC. The same P or TC is not associated with a specific morphosyntactic type, while the same morphosyntactic type can also have a different intonative realization of the P and of the TC. Therefore, we will consider the whole group of *check* requests.

As for the P, we identified the following configuration (as classified in § 4.1.1.2):

- flat-falling,
- rising-falling,
- P=TC.

In Figure IV-48, we can see the frequency of occurrence of the Ps recognized for Spanish *check* moves and easily appreciate that there is not a unique prototypical P. In 28% of the cases, P=TC; the flat-falling P is the most common one (53%), followed by the rising-falling P (17%). The difference between these two Ps is mainly found in the presence of an f_0 peak, usually located in the initial part of the utterance.

Figure IV-48 - Frequency of occurrence (%) of the Ps identified in Spanish *check* moves



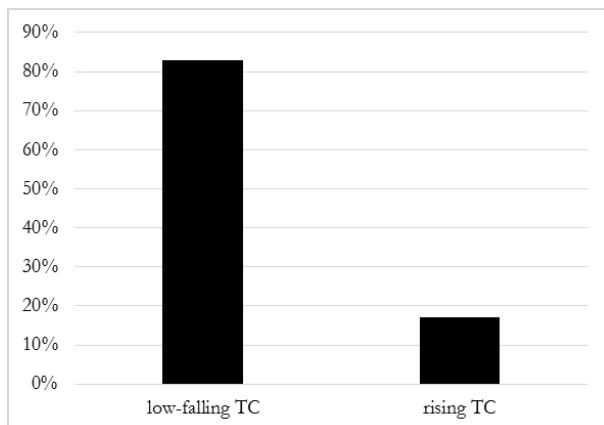
Following the same procedure for TC, we classified two types:

1. low-falling,
2. rising⁶⁵.

⁶⁵ For more details on the classification of the types, see § 4.1.1.2.

Figure IV-49 shows the frequency of occurrence of the types of TC, where one can clearly see that the most frequent TC is the low-falling type (83%).

Figure IV-49 - *Frequency of occurrence (%) of the TCs identified in Spanish check moves*



Observing the relation between the type of P and TC, they can occur with several possible combinations, even if the most frequent P is the flat-falling one and the most frequent TC is the low-falling one.

We can make some observations about the relation between the P and the TC.

We find that the rising TC occurs in most cases (six out of eight occurrences) when the utterance is short ($P=TC$). When the entire request corresponds to a confirmatory tag (for example, “¿sí?” or “¿no?”, “right?”), the utterance presents a rising configuration (as we will see, similar to a confirmatory tag that follows another tonal unit, usually made by a flat-falling melody). However, we have two cases of a rising TC occurring in different conditions: when the request is made by a declarative part plus a confirmatory tag (c_p2#148_A03ES “Está como abierto, ¿no?”, “It is somehow open, right?”) and when there is no confirmatory tag (c_p1#105_A04ES, “¿Lo tiene hacia arriba?”, “Is it pointing upwards?”). In both cases, these two requests have a pattern that we can compare to the one for *query_y* moves (pretending that there is no confirmatory tag in the first one). Analysing these realizations, we can presume that, in the first case, there may be a sort of replanning and that the confirmatory tag is neither pre-planned nor added online, whereas in the second case there is no possible explanation to account for the different TC.

As for the low-falling TC, we find it associated with both flat-falling and rising-falling Ps.

Finally, in the cases of short utterances ($P=TC$), we can observe the following distribution: a low-falling TC in seven out of 13 cases and a rising TC in six out of 13.

Figure IV-50 presents two examples of the intonative realizations of short utterances ($P=TC$). From left to right, we can see a rising TC (c_p2#216_A03ES “¿Tú también?”, “You too?”) and a flat-falling TC (c_p1#225_A03ES “¿Así en negro?”, “Like black?”).

Figure IV-50 - Some examples of Spanish check requests where P=TC (“¿Tú también?” and “¿Así en negro?”)

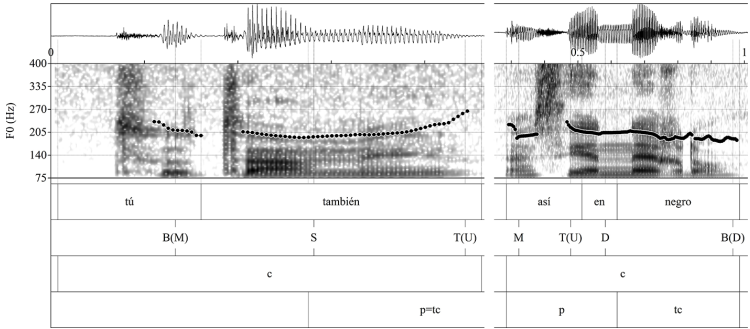


Figure IV-51 gives an example of a *check* with a rising-falling P and a low-falling TC (c_p1#175_A04ES, “Está como en una plaza, ¿no?”; “He is in a sort of square, isn’t he”), while Figure IV-52 is an example of a check with a flat-falling P and a low-falling TC (c_p2#170_A04ES, “Está como dividida en tres, ¿no?”; “It is somehow divided into three parts, isn’t it?”).

Figure IV-51 - An example of a Spanish check with a rising-falling P and a low-falling TC (“Está como en una plaza, ¿no?”)

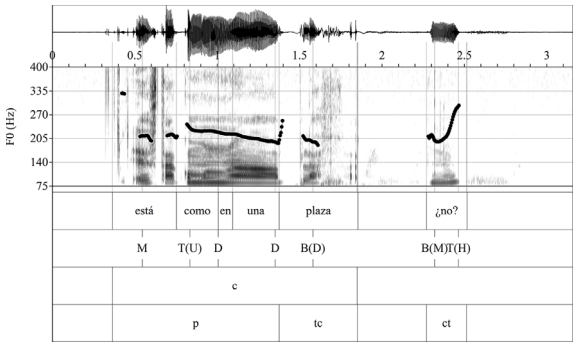
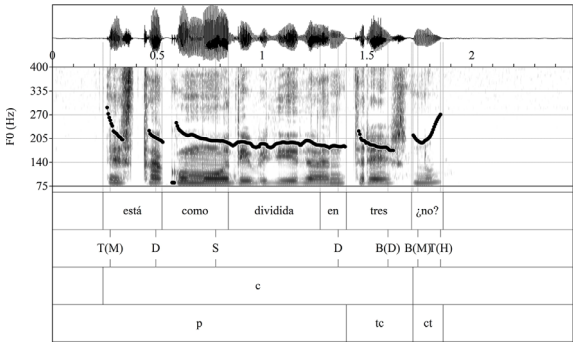


Figure IV-52 - An example of a Spanish check with a flat-falling P and a low-falling TC (“Está como dividida en tres, ¿no?”)



We consider the last element to be the confirmatory tag, which is quite frequent in Spanish *check* requests (70%). In our corpus, it constitutes another intonation unit and presents a rising configuration, coded as B(M) T(H), B(M) S T(H) or B(M) U T(H).

Figures IV-53 (c_p2#46_A04ES “¿Y hay hierba también, no?”, “There is grass too, isn’t there?”) and IV-54 (c_p2#158_A05ES “Uno negro, ¿verdad?”, “One black, right?”) show some examples of its realization.

Figure IV-53 - *An example of a Spanish check with the confirmatory tag “no” (“¿Y hay hierba también, no?”)*

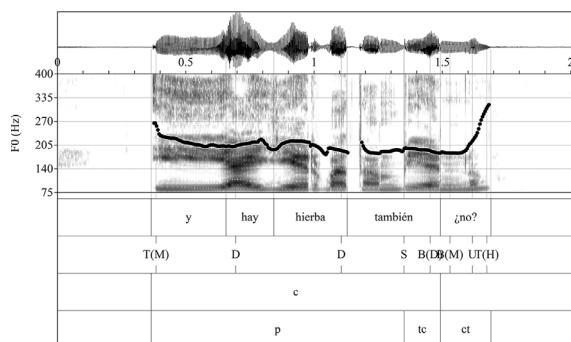
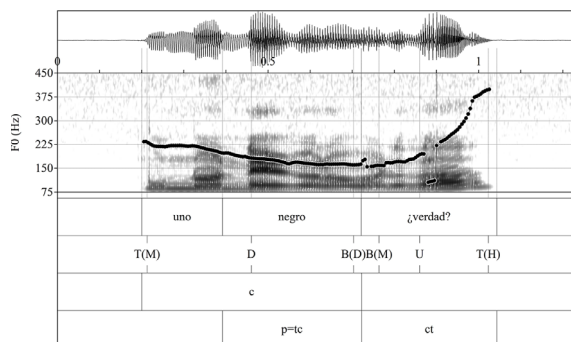


Figure IV-54 - *An example of a Spanish check with the confirmatory tag “verdad” (“Uno negro, ¿verdad?”)*



Comparing the two confirmatory tags present in our corpus (“no” and “verdad”⁶⁶), we can state that they present the same configuration. As we saw for Pisa Italian, Gili Fivela (2008) makes the hypothesis that different phonetic implementations depend on segmental material. According to this hypothesis, in a monosyllabic word, where both the nuclear pitch accent and the edge tone are associated with the same syllable, the edge tone would be truncated and not realized. As we can see

⁶⁶ Even if we have only three cases of “verdad” (see Table IV-16 and Appendix B).

when comparing Figures IV-53 and IV-54, this is not the case for our data, at least in the case of Spanish.

Therefore, considering that, in 100% of the cases, the confirmatory tag presents a rising configuration, we can formalize its abstract pattern in the sequence **B(M) T(H)**.

As for the realization of the topic in *checks*, we have at our disposal 11 cases to consider (see Table IV-16). Apart from two of them⁶⁷, the intonation fits with the description of topics in *query_y* requests (cf. § 4.1.1.2). Independently of its syntactic function and structure/weight, the topic presents a rising configuration, ending in a rise in the boundary with the comment.

As was the case for Italian, we focus on the overall pitch range excursion of the curve in the part corresponding to the comment by comparing the pitch range in *query_y* moves with the pitch range in *check* moves. The aim is to verify whether there are differences in pitch range excursion between information- and confirmation-seeking requests. As we have seen in the literature review (see § 1.2.2.2), for Madrid Spanish, we find that information-seeking yes-no questions and confirmation-seeking yes-no questions share the realization of the pre-nuclear part (L*+H), but do present a different nuclear configuration: L* HH% (for information-seeking yes-no questions, namely, our *query_y* requests) and H+L* L% (for confirmation-seeking yes-no questions, namely, our *check* requests).

Moreover, another pattern for confirmation-seeking questions is attested through the use of a rising contour L* H%. One might think that, in this case, the difference between the two categories is not prosodically signalled, but Estebas, Prieto (2010) insist that there still exists a phonological contrast between these two types of rising contours: L* HH% for information-seeking questions and L* H% for confirmation-seeking questions. In other words, this means that, even if the two types of questions share the same rising configuration, confirmation-seeking questions present a lower pitch range excursion than information-seeking questions.

Basing on this assumption, we chose to compare the range of *query_y* requests with the range of *check* requests, which presented a final rise (therefore excluding the realizations of *checks* with a confirmatory tag and the ones with a low-falling TC yet distinguished from *query_y* requests from the comparison)⁶⁸.

For both categories, we calculated the range to be the difference between mean values of f_0 maximum and f_0 minimum (Hz), as illustrated in table IV-17.

⁶⁷ We are talking about c_p2#104_A04ES, “Y el rabito así hacia arriba, ¿no?”, “And the tail is pointing up, right?” and c_p2#72_A04ES “Y el tronco es finito, ¿verdad?”, “And the trunk is thin, isn’t it?”. In these two cases, the topic presents a different realization, coded T(M) D.

⁶⁸ Excluding the T/C structures and *checks* with a confirmatory tag (most of the *check* requests in Spanish) reduced the number of occurrences for comparison. The calculation is based on 53 *query_y* and only 7 *check* requests.

Table IV-17 - Mean values of f_0 maximum and f_0 minimum (Hz) in Spanish check and query_y requests

	f_0 minimum	f_0 maximum	Range
<i>check</i>	145	308	163
σ	47,4	78,3	96,6
<i>query_y</i>	153	372	219
σ	44,1	66,2	76

If we compare the range in both categories, we can state that the range in *check* requests is reduced. More precisely, *query_y* requests have an f_0 minimum higher than the that of *checks* (153 vs. 145 Hz) and an f_0 maximum higher than that for *checks* (372 vs. 308 Hz), triggering a difference in range excursion close to 60 Hz.

Nevertheless, if we consider each *check* and compare its f_0 maximum and minimum with the mean values found for *query_y* requests, we can discover that, in some cases, the real values of a *check* are perfectly compatible with those identified for *query_y* requests. Even if the mean values indicate a trend towards a reduced range in *checks*, standard deviation values are high, clearly indicating that mean values are not so reliable.

Therefore, our data suggest that, even if a *check* tends to have a lower pitch range excursion than a *query_y*, they can present the same range excursion, in other words, that the range excursion cannot easily be considered as a distinctive parameter between information- and confirmation-seeking requests.

In conclusion, the analysis of our corpus of Spanish dialogues provides new data on confirmation-seeking requests with a confirmatory tag (Ctag), whereas it only offers preliminary observations on confirmation-seeking requests with no Ctag.

The first type of request (with a Ctag) shows a stable intonative realization in two intonation units, the first one represented by the sequence **T(M) U S D B(D)** and the second (the Ctag) by the sequence **B(M) T(H)**.

The second type (without a Ctag) presents a main realization, **T(M) U S D B(D)**, which is shared with the first intonation unit of *checks* with a Ctag, but also other possibilities. There can be *check* requests realized through an analogous P but with a rising TC, expressed by the sequence **T(M) U S D B(D) H**, or through a rising pattern in the case of a short utterance made only by a Ctag (“¿No?” or “¿Sí?”, for example).

The reduced number of occurrences does not allow us to reach any conclusion about this type, which suggests the need for further investigation. Moreover, in order to interpret correctly the differences between these patterns, it would be necessary to find a method to measure the degree of speaker confidence about the correctness of the inferred material requested, possibly related to intonative differences.

Analysing our data in light of the previous literature on Madrid Spanish (Pérez *et al.*, 2011), one could make the hypothesis that the type of TC (low-falling or rising) could be related to the degree of speaker confidence. Confirmation-seeking

requests with a low degree of confidence (that is, when the speaker is not so sure of his/her hypothesis) would present an intonative realization similar to information-seeking requests. On the contrary, “real” confirmation-seeking requests, namely, the ones with a high degree of confidence (that is, when the speaker is very sure of his/her hypothesis) would show an intonation similar to declarative sentences.

CHAPTER 5

The role of intonation in the system of requests

In this chapter, we will present a brief summary of the results in order to establish if and how intonation, when examined with a phonetic perspective involving phonetic parameters, provides a contribution in the distinction of the functional system of requests (§ 5.1). Moreover, we will discuss our findings by also considering the methodological choice of performing a phonetic analysis of f_0 curves on semi-spontaneous speech (§ 5.2). Finally, we will outline the conclusions of this work (§ 5.3).

5.1 *Summary of results*

Before summarizing our findings, we want to point out two issues arising out the analysis.

The first aspect that we want to highlight concerns the amount of variability that is globally found in our data. Only in some cases we did easily identify a uniquely abstract pattern matching the type of request. More often, we have seen an amount of variability and a coexistence with more than one pattern for the same request. In a certain sense, this was an expected result, since a one-to-one correspondence between the function and the intonative form was not a possible scenario. However, we can say that we have found order in the chaos and that the variability occurs in a different way for the different types of requests.

The second aspect deals with informative and morphosyntactic levels. Even if we do not focus on the characteristics of the requests at these two levels, we want to stress the importance of considering the interface between the intonation and the other levels of linguistic analysis. We have seen, in fact, that the topic and the comment have a specific intonative realization. A functional analysis that aims to establish how speakers express their communicative intentions cannot ignore the main informative units, as well as syntactic functions. In this respect, our analysis has allowed us to identify a correspondence between morphosyntactic units and intonative realizations, albeit in only a few cases. This means, on the one hand, that syntactic differences do not always imply differences in intonation (at least in relation to the parameters that we have observed in our analysis), while, on the other hand, that we have to consider that differences in information structure are differences at the syntactic level too.

In this sense, we can say that both levels in turn affect the intonation level.

In respect of the order of the other chapters, we will first summarize the results relative to information-seeking requests, before looking at confirmation-seeking re-

quests. Moreover, we will initially summarize the findings concerning the comment in each request, then shift the focus onto the topic.

5.1.1 Information-seeking requests

As for information-seeking requests, we have examined the intonation of three categories, whose move tags in Pr.A.T.I.D (Savy, 2010) correspond to *info_request*, *query_w* and *query_y* (§ 2.4.2).

We should recall that *info_request* moves elicit a generic contribution and correspond, in our analysis, to disjunctives (for example, “È bianco o nero?”, “Is it white or black?”) or to different kinds of phrases (for example, “Il cappello?”, “The hat?”).

Query_w moves invite an informative contribution and are characterized by the presence of a *wh*-element (an interrogative pronoun, adverb or adjective), which can appear in different positions. We consider two groups for this request, in which the *wh*-element occupies the initial vs. non-initial position in the utterance (“Dov’è la macchina?”, “Where is the car?”, and “La macchina dov’è?”, “The car, where is it?”, respectively).

Finally, *query_y* moves demand a specific contribution and present a great variability in their syntactic structures; in short, however, we can say that they are yes-no questions (for example, “Fa caldo?”, “Is it hot?”).

Moreover, as previously stated, we divided the comment (see § 2.4.2) of the request into two parts, unless the utterance was too short (see § 3.3.1), as follows:

- profile (P), by which we mean the overall trend of the curve from the beginning of the comment to before the last stressed syllable in the intonation unit,
- terminal contour (TC), by which we refer to the direction of the pitch, starting from the last stressed syllable of the intonation unit.

In the following paragraphs, we summarize our findings on these categories in both languages, retracing the abstract patterns found for each request (for the number of occurrences of each type in the corpus, see § 2.5).

5.1.1.1 Italian

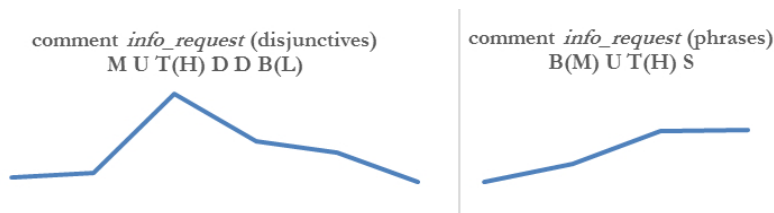
Figure V-1 shows the abstract patterns found for *info_request* moves¹ (see § 4.1.1.1). For the first morphosyntactic type, corresponding to disjunctives (to the left in Figure V-1), we can observe a rising-falling configuration. More precisely, the first member of the alternative presents a rising-falling configuration, **M U T(H) D**, while the second member shows a falling tune, ending with a low termination, **D D B(L)**. These findings are in accordance with what indicated for other Italian varieties (even if an H edge tone is also attested, see Gili Fivela, 2008; Gili Fivela *et al.*, 2015).

Regarding the second type, which corresponds to phrases (to the right in Figure V-1), we find a rising configuration, with a rise in correspondence with the stressed

¹ The representations of the curves are created thanks to line charts for illustrative purposes only and do not correspond to average values of real curves.

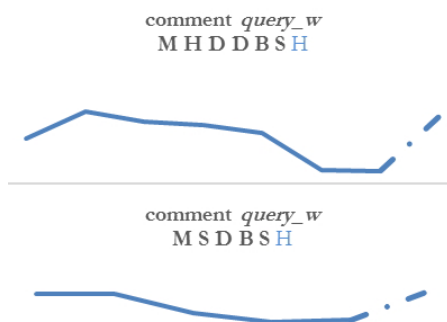
syllable: **B(M) U T(H) S**, in line with Gili Fivela (2008) for Pisa Italian and Alfano, Savy (2010) for Neapolitan Italian.

Figure V-1 - *Abstract patterns for Italian info_request moves*



In Figure V-2, we can observe the abstract patterns found for *query_w* moves (see § 4.1.1.1). Independently of other factors, the two variants of abstract intonation patterns depend on the realization of the wh-element, which can be prominent (**M H D D B S H**) or weak (**M S D B S H**)².

Figure V-2 - *Abstract patterns for Italian query_w moves*



We have seen that its prominence can depend on the type of wh-element (as stated by Marotta, 2001; Sorianoello, 2006; Bocci, 2013), even if further investigation is needed, but this does not seem to depend on the length of the utterance (as indicated by Sorianoello, 2006). Comparing our data with the relevant literature, we find in our corpus that some occurrences confirm the expectations depending on the type of wh-element (such as “perché”, “why”, associated with a prominence), but that the same wh-elements can be realized as prosodically weak or strong. Therefore, our data suggest the possibility of an intrinsic variation in the wh-element, expressed by the two patterns of Figure V-2.

² Bold type indicates the sequence of the abstract pattern. Regular type indicates a possible but infrequent element, that is to say, an element with a frequency of occurrence higher than 10% but lower than 25% (see § 3.3.2). This is the case for the final rise in *query_w* moves, represented in the figure with a dashed line.

Moreover, in terms of the TC, while our results indicate that there is a majority of low-falling termination (in accordance with Gili Fivela *et al.*, 2015, among others), it is possibly an infrequent rising termination (as indicated by Magno Caldognetto, Ferrero, Lavagnoli & Vaggies, 1978; Canepari, 1985; Rossano, 2010 for other Italian varieties), without a clear connection to other factors.

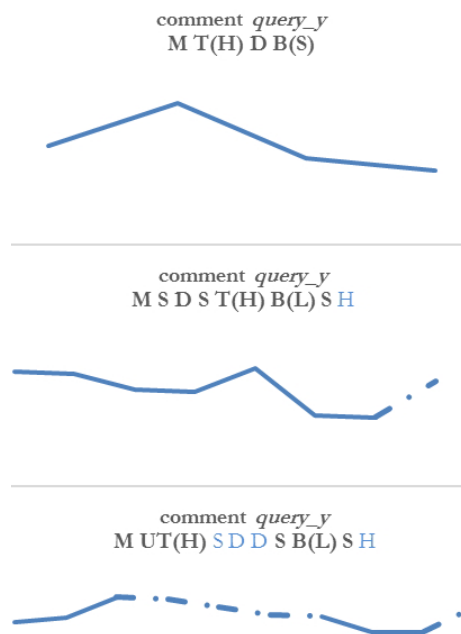
Figure V-3 shows the abstract patterns found for *query_y* moves (see § 4.1.1.1).

The first one, **M T(H) D B(S)**, describes the abstract pattern for short utterances, for which we did not separate the TC from the P. The second one, **M S D S T(H) B(L) S H**, represents the case of a flat-falling P and a circumflex TC. The third pattern, **M U T(H) S D D S B(L) S H**, corresponds to a rising or a rising-falling P, followed by a low-falling TC. In the second and third pattern, a final rise is possible, even if infrequent.

We have seen that, independently of other factors, a rising-falling sequence occurs in each pattern.

Therefore, we have found that the variations in the patterns seem to depend on the size of the focus, which is a variable that we do not study in this work. Comparing our findings with previous studies (D'Imperio, 1997, 2000, 2001; Crocco, 2006a, 2006b; Gili Fivela *et al.*, 2015; § 1.2.1.1), it seems quite reasonable to assume that the rising-falling sequence involves the variable that corresponds to the *requested* element of the utterance, which can occupy different positions in the utterance.

Figure V-3 - *Abstract patterns for Italian query_y moves*



As far as the topic of information-seeking requests is concerned, we show the abstract patterns found in the different moves in Figure V-4.

Even if we consider all the realizations proceeding from the different kinds of requests, as previously discussed, most of the occurrences belong to *query_y* moves (for the number of occurrences of each type in the corpus, see § 2.5). For this category, we have observed the realization of topics depending on the syntactic function of the constituent, the type of phrase by realizing the topic in the function of its “weight” and composition and the discourse role played by the topic (see § 4.1.1.1).

Figure V-4 - *Abstract patterns for topics in Italian info_request, query_w and query_y moves*



Our results on topics located in the left periphery indicate an important rise in the topicalized constituent, which affects the stressed syllable, supporting the hypothesis that these topics are generally associated with a prominence. Their intonative realization seems to depend neither on the type of phrase (noun or prepositional, for instance), nor on the discourse role (even if almost all the rising realizations found in our corpus correspond to contrastive topics, realized as H* according to Frascarelli, Hinterhölzl, 2007).

We find in our corpus two of the three possible realizations indicated by Firenzuoli, Signorini (2003), namely, the first two frequent types (the rising-falling type, with the rise aligned in the stressed syllable, and the rising one). Whereas, we find neither the falling-rising configuration described by Firenzuoli, Signorini (2003) and by Cresti, Firenzuoli (2002), nor the falling configuration indicated, among other possible types, by Crocco, Savy (2007).

Concerning the syntactic role played by the topic, when observing our occurrences (where in most cases, the topic is the subject), no direct correspondence is vis-

ible between syntactic function and intonative realization (in line with Frascarelli, Hinterhölzl, 2007).

As for the complexity of the constituent realizing the topic, we mainly focus on “light” topics (structures composed of only the nucleus, with or without a determiner, such as “La freccia”, “The arrow”), which can present one of the pattern represented in Figure V-4. As for “heavy” topics (structures made by the nucleus plus one or more than one modifier, such as “il guinzaglio del cane”, “the dog’s leash”), we can limit our findings to some preliminary considerations. Once again, we find a rising-falling configuration, which occurs in the nucleus of the phrase and in its modifier. Contrary to what indicated by Frascarelli, Mereu (2006: 275), in our corpus, f_0 maximum value does not coincide with the last stressed syllable of the phrase (“cane”, in “il guinzaglio del cane”), but occurs in correspondence with the nucleus of the phrase (“guinzaglio”).

Summarizing all the considerations made for different kinds of topics, we can state that, regardless of its syntactic structure and composition, the topic placed in the left periphery shows an important rise in the first stressed syllable of the phrase. In most cases, this rise reaches the f_0 maximum value (T) and is followed by a fall. Therefore, considering the constants in the realizations, we have indicated the sequence **M S T(H) D** as the coding that represents the most frequent abstract intonation pattern of the topic (the rising-falling one), while the abstract sequence **M H** represents the less frequent abstract intonation pattern of the topic, that is, the rising one.

We have not considered topics placed in the right periphery of the utterance because we do not have a sufficient number of the cases to do so. However, we want to indicate that the position of the topic seems to be relevant in its intonative realization. In contrast to the prominent topic located in the left periphery, topics that follow a comment and are located in the right periphery clearly seem to be intonatively unmarked.

5.1.1.2 Spanish

In Figure V-5, we can observe the abstract patterns found in the case of *info_request* moves (see § 4.1.1.2). For the first morphosyntactic type, corresponding to disjunctives (to the right in Figure V-5), we can observe a rising-falling configuration. More specifically, the first member of the alternative presents a rising configuration, **M S T(H)**, while the second member shows a falling tune, ending with a low termination, **T(H) D D B(L)**. We can consider this pattern in line with what has been reported by other authors (Alarcos, 1994; Estebas, Prieto, 2010).

As for the second type, corresponding to phrases (to the left in Figure V-5), we find a rising configuration, with the rise occurring in correspondence with the tonic and post-tonic syllables: **B(M) U T(H)**. As far as we know, this kind of utterance has not yet been investigated.

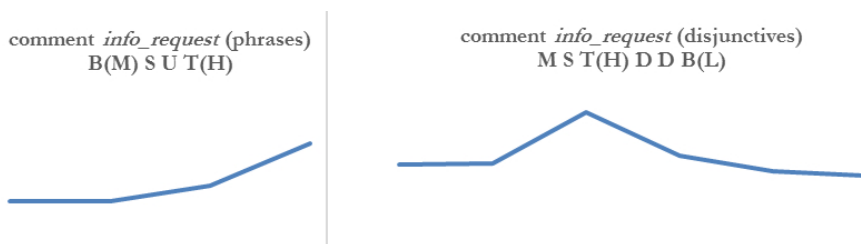
Figure V-5 - *Abstract patterns for Spanish info_request moves*

Figure V-6 shows the abstract patterns found for *query_w* moves (see § 4.1.1.2). The two abstract intonation patterns depend on the realization of the *wh*-element, which can be prominent, as indicated by Sosa (1999), Prieto (2004), Hualde (2005) (**M H D D B S H**) or otherwise (**M S D B S H**)³, without a clear dependence on morphosyntactic or informative factors, as well as on the length of the utterance and the type of *wh*-element.

Finally, regarding the TC, while our results indicate that there is a majority low-falling termination, it is possibly an infrequent rising termination, without a clear connection with other factors.

A final rising inflection is in accordance with what has been reported by other authors on this issue (§ 1.2.1.2). However, in most cases, they indicate that it conveys a nuance of politeness or the speaker's involvement and special interest in the answer (Navarro Tomás, 1974; Quilis, 1993; Estebas, Prieto, 2010; Hualde, Prieto, 2015).

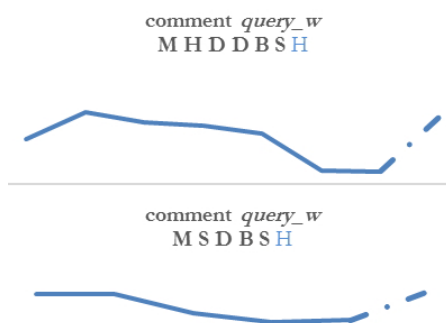
Figure V-6 - *Abstract patterns for Spanish query_w moves*

Figure V-7 illustrates the abstract patterns found for *query_y* moves in Spanish (see § 4.1.1.2). The first abstract pattern, **M B(S) U T(H)**, indicates the realization of

³ Bold type indicates the sequence of the abstract pattern. Regular type indicates a possible but infrequent element, that is to say, an element with a frequency of occurrence higher than 10% but lower than 25% (see § 3.3.2). This is the case with the final rise in *query_w* moves, represented in the figure with a dashed line.

short utterances, for which we did not consider a division between the P and the TC. The second one, **M S U D D S B(D) U T(H)**, indicates a flat-falling configuration or a rising pattern until the first peak, situated in the first post-tonic syllable, and a globally slight fall, which lasts approximately until the last stressed syllable⁴, followed by a steep rise in the final inflection, which systematically leads to the f_0 maximum value.

We can say that our results are broadly in line with the patterns described in the literature for Peninsular Spanish and for the Spanish spoken in Barcelona (Quilis, 1993; Sosa, 1999; Martínez Celdrán, Fernández Planas, 2003; Martínez Celdrán *et al.*, 2005; Ramírez Verdugo, 2005; Romera *et al.*, 2007, 2008; Estebas, Prieto, 2010; Cantero, Font 2010; Garrido, 2012; Prieto, Hualde, 2015), but it is interesting to note that, in our corpus of Spanish dialogues, the final inflection always reaches the f_0 maximum of the utterance (as indicated by Quilis (2003) and Estebas, Prieto (2010) for Madrid Spanish, but not for Barcelona Spanish).

To these abstract patterns, we have to add a variation in the function of the presence of circumstantial elements, which, if located at the end of the utterance, may vary the way in which the global melody presents a pattern, which we can reconstruct through the sequence **H L S H**, that is to say, a falling-rising configuration. However, it is noteworthy that, despite morphosyntactic features or other factors, the highest peak and greater f_0 range excursion occurs systematically in the final part of the utterance.

Figure V-7 - *Abstract patterns for Spanish query_y moves*



As far as the topic of information-seeking requests is concerned, we show the abstract patterns found in the different moves in Figure V-8.

Even if we consider all the realizations proceeding from the different kinds of requests, as previously mentioned, as for Italian, most of the occurrences belong to *query_y* moves (for the number of occurrences of each type in the corpus, see § 2.5). For this category, we have observed the realization of topics depending on the syntactic function of the constituent and the type of phrase realizing the topic in the function of its “weight” and composition (see § 4.1.1.2).

In most cases, the topic shows a rising configuration, even if it can also present a falling-rising configuration. We have indeed formalized its intonative realization through the coding **M D S H**. A rising nuclear configuration is described by

⁴ As previously stated, the rise starts in the stressed syllable for oxytone words, whereas, for the other accentual patterns, the rise starts in the post-tonic syllables.

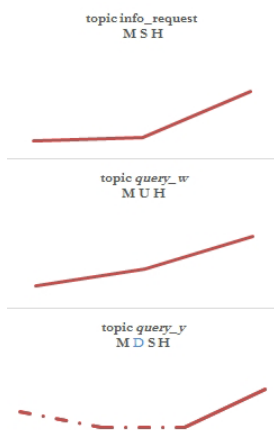
Feldhausen (2016), together with differences between interrogatives and declaratives (as also stated by Le Gac, 2014).

Our data are mainly concerned with topics placed in the left periphery that perform the function of the subject and are composed of one constituent (“light” topics, § 4.1.1.2, such as “El caballo”, “The horse”). They can present a rising configuration (in more than 60% of the cases) or a falling-rising configuration, which are represented in Figure V-8.

As for “heavy” topics (structures made by the nucleus plus one or more than one modifier, § 4.1.1.2, such as “La estatua de la rotonda”, “The statue on the roundabout”), we can limit our findings to some preliminary considerations. Once again, we find a rising or falling-rising configuration, which occurs in the nucleus of the phrase and in its modifier.

Our findings indicate that independently of its syntactic function and its structure/weight, the topic located in the left periphery of the utterance presents a configuration, which ends in a rise in its boundary with the comment.

Figure V-8 - *Abstract patterns for topics in Spanish info_request, query_w and query_y moves*



As for Italian, we have not considered, with the same method of analysis, post-verbal topics, located in the right periphery of the utterance. However, we can suggest that the falling-rising configuration described for left topics also characterizes post-verbal topics (even if the fall is steeper since it is preceded by a rise in the TC of the comment). In other words, the hypothesis of an unmarked intonative realization, or at least of a reduced pitch range⁵, does not seem to be supported by our data. If we compare the realizations of topics in the function of their position in the utterance, that is, topics placed in the left periphery of the utterance vs. topics located in the right periphery, we can appreciate a different pitch excursion: for the

⁵ As indicated by Feldhausen, Lausecker (2018) for declarative sentences in Murcia Spanish.

ones located in the left periphery, the f_0 maximum value of the utterance occurs in the TC of the comment and not in the topic; on the contrary, for the ones located in the right periphery, the f_0 maximum value of the utterance occurs in the topic. In other words, wherever the topic is located, the maximum pitch excursion takes place at the end of the utterance.

On the one hand, if we analyse our findings by adopting an intralinguistic perspective, we can say that the different information-seeking requests present different intonative realizations in their comment. In some cases, their distinctiveness lies in the P of the request, while, in other cases, it lies in the TC and the P. In others, it lies in a particular relation between the P and the TC. In both languages, we can say that, even if the same request can present more than one abstract intonation pattern, intonation plays a crucial role in the construction of the functional systems of requests.

On the other hand, if we consider our findings from an interlinguistic contrastive perspective, we can state that there are several (sometimes expected) differences between the two languages. When listing the main specificities, we can consider the following:

- in *info_request* moves made by disjunctives, a different realization of the first member of the alternative proposed in the request (rising-falling in Italian and rising in Spanish);
- in *info_request* moves made by phrases, a different realization of the rising configuration (this tends to start in the stressed syllable in Italian, while, in Spanish, it mainly involves the post-tonic syllable);
- in *query_y* moves, a completely different intonation pattern (both in the P and in the TC);
- in the topic of all the requests, a different configuration (for the topic located in the left periphery, a rise in the stressed syllable of the lexical item of the phrase, generally followed by a fall, in Italian vs. a rising or, less frequently a falling-rising pattern in Spanish. For the topic located in the right periphery, even if we cannot reach exhaustive conclusions due to the reduced number of occurrences, we have observed an unmarked realization in Italian vs. a falling-rising realization in Spanish).

Therefore, in terms of both an intralinguistic and an interlinguistic comparison, we can state that the main differences are found in *info_request* and *query_y* moves, which appear to be intonatively more “specified”.

5.1.2 Confirmation-seeking requests

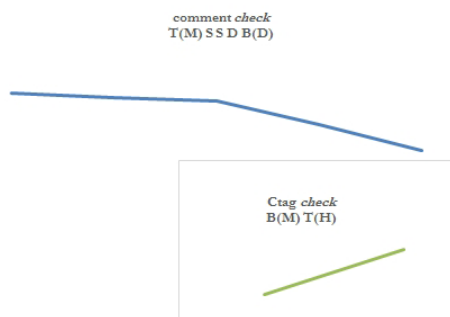
As for confirmation-seeking requests, we have examined the intonation of *check* moves in Pr.A.T.I.D (Savy, 2010). As stated, *check* moves ask for confirmation on the part of the hearer and thus convey a previous presupposition on the part of the speaker. They share the same variability of *query_y* moves in their syntactic structures, plus the possibility of presenting an affirmative part, followed by a confirmatory tag (for example, “È nuovo, vero?”, “It is new, isn’t it?”). We will summarize the

findings concerning the comment of this request without paying attention to the topic, since, in both languages, its realization matches the description of the intonation pattern found in the case of *query_y* moves.

5.1.2.1 Italian

In Figure V-9, we illustrate one of the possible abstract patterns for *check* moves in Italian (see § 4.1.2.1), which is clearly similar to the pattern traditionally associated with declaratives, namely, **T(M) S S D B(D)**, made by a flat-falling P and a low-falling TC, and the pattern for confirmatory tags⁶, which presents a rising configuration, namely, **B(M) T(H)**.

Figure V-9 - *An abstract pattern for Italian check moves and the confirmatory tag in Italian check moves*



Comparing this pattern with the ones previously described by some studies on other Italian varieties, we can consider this result consistent with the case of a *check* move in which the degree of speaker confidence about the givenness of information is very high (“very confident check”), similar to declarative utterances: H+L* L-L% (Grice, Savino, 1997, 2003a, 2003b, 2004; Savino, 2014).

Nevertheless, analysing our data, we have seen that these moves can present different Ps, different TCs and unpredictable associations between the types of P and the types of TC (see § 4.1.2.1).

In finding a distinctive parameter, which is neither the P nor the TC, based on some suggestions in the literature (see § 1.2.2.1), we have focused on the overall pitch range excursion of the curve, comparing the pitch range in *check* moves with that for *query_y* moves. Neither pitch range makes a clear distinction between the two categories, since an information-seeking request can share the same range excursion as a confirmation-seeking request⁷.

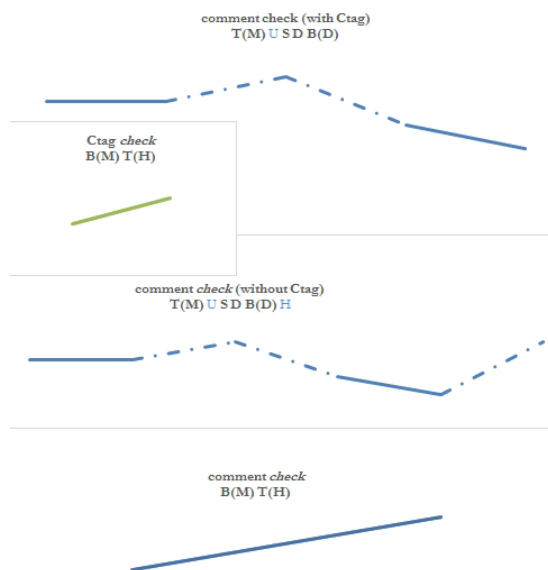
⁶ As stated, this is infrequently the case in our corpus of Italian dialogues; see § 4.1.2.1.

⁷ We have seen that a *check* can show the same intonation for a declarative sentence or the same intonation for an information-seeking request. Further investigation is needed to verify whether the choice of the pattern made by the speaker is related to the degree of speaker confidence about the correctness of the inferred material requested in the *check*.

5.1.2.2 Spanish

In Figure V-10, we illustrate abstract patterns for *check* moves in Spanish and the pattern found for confirmatory tags (see § 4.1.2.2).

Figure V-10 - *Abstract patterns for Spanish check moves and the confirmatory tag in Spanish check moves*



We have seen that, in most cases, in our corpus of Spanish dialogues, speakers ask for confirmation from their interlocutor using a *check* move made by a declarative part, followed by a confirmation mark (“¿verdad?”, “¿no?”, “¿sí?”). In this case (*check* with a Ctag), we have found a flat-falling P (or an infrequent rising-falling P) and a low-falling TC, that is, **T(M) U S D B(D)**, followed by a confirmatory tag realized through a rising pattern, that is (in line with Estebas, Prieto, 2011), **B(M) T(H)**.

In the case of *check* moves that do not present a confirmatory tag (*check* without a Ctag), we can observe a main realization, namely, **T(M) U S D B(D)** (shared with the first intonation unit of *checks* with a Ctag). Comparing this pattern with the ones previously indicate by Pérez *et al.* (2011: 53) for Madrid Spanish, we can consider that our finding is consistent with the case of a *check* move in which the degree of speaker confidence about the givenness of information is very high, L* L%. In spite of that, we also find other possibilities. There can be *check* requests realized through an analogous P but with a rising TC, that is, **T(M) U S D B(D) H**, or through a rising pattern in the case of a short utterance made only by a Ctag (“¿No?” or “¿Sí?”, for example).

The reduced number of occurrences of *check* moves without a Ctag does not allow us to reach any conclusion about this type, which suggests the need for further investigation.

As previously undertaken for Italian, having found a distinctive parameter, which is neither the P nor the TC, based on several previous studies conducted on other varieties of Spanish (see § 1.2.2.2), we have focused on the overall pitch range excursion of the curve. Therefore, we have compared the pitch range in *check* moves (without a Ctag) with that for *query_y* moves. Neither pitch range can make a clear distinction between the two categories, since an information-seeking request can share the same range excursion as a confirmation-seeking request⁸.

Considering our results for *check* moves from an intralinguistic perspective, we have to stress the difficulty in extracting abstract patterns. The distinctiveness of this request does not seem to lie in the P, nor in the TC or the pitch range. More possibilities and combinations do exist in both languages. Indeed, not even the combination of the P and TC is a distinctive factor. That said, in our opinion, this does not mean that intonation is without a role in conveying the meaning of asking for a confirmation, but it does mean that its contribution is not as codified as for the other requests.

Considering our findings from an interlinguistic perspective, a comparison can hardly be made, since the most frequent structure differs in the two languages (as stated, the use of a confirmatory tag is infrequent in Italian and significant in Spanish). However, we can note that both languages share the pattern made by a flat-falling P and a low-falling TC (even if it is frequent in Italian and rare in Spanish because, in the latter, we have only a few occurrences of *checks* without a Ctag). Secondly, the Ctag shows an analogous realization. Moreover, in both languages, *check* and *query_y* moves do not present systematic differences. Finally, a great amount of variability characterizes the intonation of this request in both Italian and Spanish.

5.2 Discussion: variability vs. reliability of intonation

Speaking of variability in the realizations, if we ordered the parameters in a table that appear to be distinctive in terms of the function of the request in the two languages, we would obtain a representation identical to that in Table V-1, where, as usual, P indicates the profile and TC the terminal contour. In the box P+TC, we put the cases where the P and the TC, in isolation, do not distinguish the request, but their sum appears to be distinctive, in the sense that no other request presents that P and TC together. By the box P&TC, we mean the case where specific combinations of Ps and TCs characterize and distinguish the request.

⁸ We have already indicated that there were only seven occurrences of *check* moves without a Ctag (see § 4.1.2.2).

Table V-1 - *The role of parameters in the two languages*

	Italian				Spanish			
	P	TC	P+TC	P&TC	P	TC	P+TC	P&TC
<i>info_request</i> (disjunctives)	✓				✓			
<i>info_request</i> (phrases)			✓				✓	
<i>query_w</i>			✓				✓	
<i>query_y</i>				✓			✓	
<i>check</i>								

This representation is obviously a simplification, but it can help to reveal interesting aspects on the role of the elements considered in the analysis.

Despite the obvious interlinguistic differences, which we do not examine in this work and have only briefly outlined in the summary of results (see § 5.1), the analogies between Italian and Spanish highlight some properties of intonation, not in the specific realization of the P or TC, but in their different role in each request.

We have seen that, in both languages, *info_request* moves present a stable intonative realization. In the case of disjunctives, the P contributes to their distinction: no other request shows the same P. In the case of phrases, the P and the TC together provide for the distinction: no other request shows a rising P and a rising TC.

More complex is the situation for *query_w*. We could consider that the P and the TC together specify the intonation of this request, even if we find more variability in the realizations in exactly the same way for both languages. The possibility for variance deals mainly with P (with the variability of the wh-element), since the TC clearly presents a more frequent realization (the low-falling one). The problem lies in the fact that the TC of this request does not present a specific characteristic that differs from the other TCs of the other requests.

As for the *query_y* moves, we have seen that, in Italian, a particular combination of the two elements appears to be a distinction of this request: a flat-falling P with a circumflex TC or a rising-falling P with a low-falling TC. In Spanish, the situation is even clearer, with the request presenting a stable realization both in the P and in the TC.

Finally, no parameter seems to be distinctive for *check* moves, nor the sum or a specific combination of the P and the TC. Moreover, even if the pitch range is, on average, reduced in *check* moves rather than in *query_y* moves, it is perfectly possible that they present the same range excursion, which does not appear to be a distinctive parameter, either in Italian or in Spanish (see §§ 4.1.2.1 and 4.1.2.2).

Therefore, even if the contribution made by intonation in conveying the different requests is clear, its functional role seems to vary depending on the kind of

request, considering that it interacts in a different way with other linguistic and extralinguistic factors. More specifically, we can say that its support seems to vary in proportion to the contribution of the other factors: the more distinctive the other factors – linguistic or extralinguistic resources –, the less necessary its contribution seems to be.

In the case of *info_request* and *query_y* moves, we have observed a rather stable realization through the distinctive role of both P and TC. For *query_w* moves, we have found a certain amount of variability, basically due to whether or not the *wh*-element is prominent (more or less, with the same probability). Finally, for *check* moves, traditionally studied in opposition to “genuine” yes-no questions, it is difficult to identify a unique intonative coding. Apart from other possibilities, they can present a realization similar to declarative sentences and another realization that is not distinguishable from that for *query_y* moves, at least considering the intonative characteristics considered in the analysis. In summary, in *info_request* and *query_y* moves, intonation is more stable and less variable and provides a greater contribution than in the case of *query_w* and *check* moves.

In *query_w* moves, the *wh*-element functions as a grammatical mark, which conveys the meaning of the request. Therefore, we can suppose that the intonative specification could be unnecessary, in line with what has been reported by other authors on this issue (Quilis, 1993; Hualde, 2005; see § 1.2.1). Even if our analysis has not succeeded in finding out what the prominence of the interrogative element depends on, we can conclude that its prominence is possible but unnecessary.

An analogous situation characterizes the intonation of *check* moves; but, in this case, the functional resource is not morphologic, as for *query_w* moves, but extralinguistic. The degree of (un)certainty that characterizes the utterance seems to be expressed (and consequently perceived) by speakers, thanks to strategies directly related to extralinguistic and contextual factors: speakers detect the communicative intention of the utterance through the context. In terms of confirmation-seeking requests, our interpretation is that intonation does not always play a crucial role in conveying the communicative intention, which is, to a considerable extent, inferred on account of extralinguistic factors. In other words, as for *query_w* moves, but due to a different resource, in this case, a unique intonative coding would also be unnecessary, thanks to the presence of confirmatory tags or contextual cues.

Another interpretation lies in the possibility of different realizations in the function of the degree of the speaker's (un)certainty, self-confidence and polarity concerning the answer. Based on the assumptions found in the literature for other languages and varieties of Italian in terms of different prosodic patterns expressing different degrees of presupposition about the answer on the part of the speaker (§ 1.2.2), we could suppose that this aspect may account for the apparent extreme variability found in the realizations. In order to determine if different prosodic patterns found for *check* moves express different degrees of presupposition about the answer on the part of the speaker, we would have considered an ad hoc corpus made by

analogous items uttered under varying levels of certainty. Unfortunately, our corpus and method of analysis do not allow us to reach a conclusion in this respect.

As far as the role of the elements considered in the analysis is concerned, namely, the P and the TC, our data indicate that, even if the TC provides a contribution to determine the conversational function of the request, we can probably say that, traditionally, its role has been overestimated: its function is to convey meaning, together with the P, but it does not seem to play a decisive role in isolation.

In our view, it does not imply that the TC is not relevant in the expression of meaning, but underlying the continuously variable melody of speech, there exists a wide range of meanings. Therefore, our findings could make us hypothesize that TC can function in context – and often not singly, but in combination with the P –, to convey the specific conversational function of the request. However, the whole of the results reflects favourably upon the idea that conversational functions correlate with intonative characteristics, even if not in a one-to-one correspondence. Both languages show a rich and complementary interplay in the signalling of conversational functions between intonational marking, contextual cues and morphosyntactic marking.

Prieto (2015) reviews pragmatic and semantic models in trying to account for the relationship between intonation, contextual factors and meaning, underlying that researchers have emphasized the need to consider dialogical, interactive and argumentative dimensions of meaning. She claims that: “Empirical research has revealed the importance of contextual factors in prosodic interpretation, highlighting how important it is to factor in contextual knowledge when attempting to describe the mapping between prosody and meaning” (Prieto, 2015: 374).

It seems to us that Prieto’s review indicates that while some aspects of specific tune meanings appear to be stable and can be considered “codified”, others are more dependent on the context. In our view, our findings can be considered consistent with this observation: the role played by intonation in conveying the different requests seems to vary depending on the kind of request and is not always codified in the same way. One of the most plausible explanation is that this interplay between several linguistic and extralinguistic resources functions so as to reduce the overall effort required from both speakers and listeners.

We have seen, both in the explanation of the methodology (§ Chapter 3) and in the presentation of the results (§ Chapter 4), that the decision to perform a phonetic analysis of f_0 curves and the choice of a semi-spontaneous corpus pose several problems when analysing linguistic regularities.

The adoption of a phonetic perspective, which is not based on a set of phonological categories, has a consequence whereby the analysis of the curves and their interpretation are two separated steps. The analysis of intonation within the theoretical framework that we have chosen implies that the phonetic representation of an utterance is adequately defined as a sequence of points with their symbols. Each symbol is aligned with a turning point in the signal, without taking into account timing differences and alignment with lexical stress. Therefore, target points are coded for

their height and, in this sense, they are simply descriptive. However, the algorithm is based on the signal processing, but incorporates a perceptive component and exploits the occurrence of prominent syllables to reduce the complexity of stylization in perceptually less relevant areas of the pitch curve. Basing on the assumption that relevant things happen to the pitch around prominent syllables, the algorithm tends to use fewer points in pitch curve sections that fall inside non-prominent syllables. Seen from this perspective, we can state that even if we adopt a phonetic approach, our analysis integrates phonological notions.

The INTSINT annotation seeks to obtain an automatic extraction of the relevant macroprosodic information from the speech signal, thanks to f_0 stylization and a symbolic (semi-automatic) coding.

If we evaluate what can possibly be done in an automatic way, we could say that the system fails in its purposes: the INTSINT sequence of tags does not succeed in expressing linguistic information. We have found that, in order to find invariant linguistic elements, a further step involving the analysis and interpretation of data is required. It has been necessary to isolate all contingent variables (differences in speaking rate, pauses, the structure of constituents, the length of the utterance, among others) and to “adapt” the resulting intonative transcription through a comparative process (i.e., contrasting all the analogous informative and morphosyntactic types of moves), while always carefully considering the specific nature of the case. This methodological solution has allowed us to perform an analysis by adopting a phonetic approach and arriving at abstract intonation patterns (§ 3.3.2). Thus, the intonative coding is not interpretative in this framework, but provides a starting point for interpretation with a very useful systematization of data.

5.3 *Conclusions*

We are aware that this research has some significant limitations. The first problem concerns the speech style that we have examined. Even if we can reasonably suppose that it is rather spontaneous (at least at the phonetic-prosodic level), especially if we compare it to read speech, we cannot say to what extent our results are corpus-independent, nor whether we can generalize them to other speech styles.

Moving onto the corpus, the choice of the elicitation technique implies that we have not used a balanced corpus in terms of the function of all the variables investigated in the study. This choice, prompted by the need to study speech that is supposed to be closer to everyday life conversations, involves many disadvantages. If we had used an ad hoc corpus, designed for a specific purpose and collected to take all the variables that are supposed to affect intonative realizations under control, we would have performed a less problematic analysis, although inevitably we would have chosen read speech.

Therefore, the results that we have presented are based on a different number of occurrences and, as such, we have to nuance their functional reliability.

Finally, it should be noted that an exhaustive prosodic analysis cannot exclusively take into account intonation, but has to consider the other prosodic elements as well. Moreover, our description is partial and does not consider, in a systematic way, for example, the alignment of turning points with the segmental material.

To end with another major limitation, the study offers an overview on the realization of requests, which only concerns the production side, without considering perception at all. In particular, on the issue of the supposed different intonation between information- vs. confirmation-seeking requests, taking perception into account could have potentially been useful in order to establish what is linguistically relevant for speakers.

Despite its limitations, through a description of requests in Italian and Spanish, this work offers insight into the role of intonation in conveying functions and meanings.

The primary goal of the analysis was not to compare Italian and Spanish, but to evaluate the role of intonation in the context of both languages.

However, globally contrasting the results for the two languages, it is worth noticing that, independently of the functional distinctions among the analysed requests, in each language, speakers tend to most often use a specific configuration: in particular, in Italian, the rising-falling configuration and, in Spanish, the rising one. We can appreciate this different use if we focus on: i) the circumflex TC in Italian vs. the rising TC in Spanish; ii) the realization of the first member of the alternative in *info_request* moves; iii) the different realization of the topic.

Moreover, the request that presents the most different interlinguistic realization is the *query_y* move. Once again, the contribution of intonation is necessary for this category, not only from an intralinguistic perspective, but also from a contrastive perspective.

Turning to the role played by intonation, independently of the language, the situation described for both Italian and Spanish indicates that information structure does indeed affect intonative realizations: we have always found that the topic and the comment of all requests show their own intonation pattern. As for the influence of syntactic structure, we have found a direct relation in a few cases, but we have to consider that the data at our disposal do not allow for a systematic observation in this respect. Rather than saying that syntactic structures do not influence intonation patterns, we should conclude that intonative characteristics exist, which facilitate the extraction of an abstract pattern, but do not necessarily change varying syntactic structures.

In line with our expectations informed by the literature, we found no one-to-one correspondence between intonational contours and functions expressed by the different requests. In most cases, more than one of the patterns were employed by speakers, with the addition of further elements of variability, for example, in the possible realization of alternative TCs.

This kind of situation leads to major theoretical questions concerning the phonological (or otherwise) nature of intonation and the phonological (or otherwise)

status of intonative categories in non-tonal languages, such as those under investigation in this work. Some authors have positioned themselves against the idea of a phonological role of intonation, drawing a clear boundary between the language core, i.e., its grammatical structure, and its edges, where intonation should be placed (for instance, Marotta, 2008).

Other authors assume a different position, which takes into account an intrinsic variability, but does not deny the phonological role played by intonation and prosody. Gili Fivela (2008) suggests that many factors affect the form of intonational events, which are not exactly distinctive and discrete in the sense of a categorical nature in one-to-one correspondence, but that, for each category, various possible instances within a set exist. She proposes an “area of existence” of tonal events, in which variation can be observed with respect to the coding of information in intonation. Among the possible instances, some of them will be more prototypical, while others will be less prototypical, depending on their position with respect to the core meaning and possibly other closer meanings. In this respect, intonation is conceived as categorical, although categories within intonation and prosody appear to be more varied and flexible than ideal linguistic categories⁹.

Even though in a completely different framework to the Autosegmental Metrical Theory of intonation, and while not sharing her theoretical background nor methodology, our results encourage us to suppose a similar conception of the intonation role. Without considering the phonological (or otherwise) implications of the issue, through our analysis, we have experimented with and appreciated the “need” for some requests to be differentiated from others, but only by means of intonation and the lack of this need for other requests.

In accordance with Gili Fivela (2008), our data show that speakers can usually choose more than one intonation pattern to express a function, besides a range of variation in the same pattern.

Even in a semi-spontaneous speech, which is supposed to be less spontaneous and variable than the spontaneous speech of everyday conversations, we have seen a reasonably wide range of different possibilities. This leads us to consider that a certain degree of variability is inherent in intonation patterns and somehow more pervasive than some accounts in the literature seem to suggest.

But the most interesting aspect concerns the way in which the amount of variability is present: that is, in an inversely proportional way to other linguistic and extralinguistic resources in the message. When the intonative coding is redundant for the interpretation of the message and not the unique cue (i.e., when a morphological mark as a *wh*-element or a decisive contextual support is present), we find more variability and a less stable intonative realization. In these cases, the contribu-

⁹ The author also examines perception and states that subjects coherently appear to perceive different tonal events and patterns, but not always as a result of categorical perception. Speakers clearly identify meanings at the extremes of gradient variations, that is to say, tonal events distinguish meanings that do not necessarily correspond to discrete units (apart from those cases where intonation is represented as the only cue for a linguistic change).

tion of intonation is not strictly required or, better still, does not correspond to a univocal linguistic coding. On the contrary, when the meaning of the message can only be conveyed by means of intonative resources, the amount of variability, while still present, decreases considerably. This is the case with generic requests, *info_requests* and *query_y* requests.

In conclusion, even if intonation patterns do not appear as clear-cut categories and are, by nature, varied and flexible, intonation plays a crucial role in conveying meaning in the functional system of requests in both Italian and Spanish. However, its contribution varies depending on the request, and in the function of its different interaction with other parallel linguistic and extralinguistic factors: the less distinctive the other factors, the more reliable, stable and necessary its contribution.

Appendix A

List of abbreviations

Adverbial Phrase	ADVP
Circumstantial elements	CE
Comment	C
Confirmatory tag	Ctag
Disjunctive	DISJ
Indirect Object	IO
Noun Phrase	NP
Object	OBJ
Phrase	Ph
Prepositional Phrase	PP
Profile	P
Subject	SUB
Subordinate Clause	SC
Terminal Contour	TC
Topic	T
Verb Phrase	VP
Wh-element	whE

Appendix B

<i>Italian info_request moves</i>	<i>Orthographic transcription</i>
i_p2#17_A02N	è una donna o un cane ?
i_p2#47_A02N	ci sta o non ci sta ?
i_p2#34_A03N	verso sinistra o verso destra ?
i_p2#56_A03N	il cane sorride o c'ha la bocca all'ingiù ?
i_p2#19_A02N	lui o lei ?
i_p2#80_A03N	al cavallo o lui ?
i_p2#2_A03N	dentro al televisore ?
i_p2#95_A02N	sotto?
i_p2#101_A02N	poi?
i_p2#181_a_A02N	poi ?
i_p2#110_A03N	e dentro ?
i_p2#162_A03N	e sotto ?
i_p2#159_A02N	e poi il tetto ?
i_p2#181_b_A02N	le ruote ?
i_p2#203_A02N	le ruote ?
i_p2#58_A03N	l'occhio ?
i_p2#74_A03N	i comignoli ?
i_p2#142_A03N	le scarpe ?
i_p2#146_A03N	le scarpe ?
i_p2#256_A03N	le zampe ?
i_p2#62_A06N	e l'orecchio ?
i_p2#66_A06N	e i capelli ?
i_p2#88_A06N	le orecchie del cavallo ?
i_p2#92_A06N	ech la la zampa ?
<i>Italian query_w moves</i>	
qw_p1#184_A02N	a che distanza dal faro ?
qw_p1#9_A06N	quante finestre ?
qw_p2#97_A02N	che vedi?
qw_p1#230_A02N	perchè non ti metti nella macchina ?
qw_p1#133_A05N	quanti ne sono ?
qw_p1#222_A02N	qual è la ruota che si vede ?
qw_p1#234_A02N	qual è la ruota che si vede
qw_p1#185_A05N	e dove arriva questo filo ?
qw_p2#76_A03N	a te com'è ?
qw_p1#187_A05N	e poi a terra dove finisce ?
qw_p2#187_A02N	ma la macchina tu dove la vedi ?

qw_p2#56_A06N	l'antenna a fianco quante linee tiene ?
qw_p1#47_A03N	i capelli dell'uomo come sono ?
qw_p2#52_A06N	eeh l'antenna della ra+ della radiolina quant'è lunga ?
qw_p2#72_A06N	eeh i tasti a te quanti sono ?
qw_p2#96_A06N	e lo zoccolo che forma ha ?

Italian query_y moves

qy_p2#120_A03N	ce l'ha disegnata tutta ?
qy_p2#141_A02N	ma d+ eeh t+ da tutt'e due i lati ?
qy_p2#153_A02N	uno più piccolo dell'altro ?
qy_p1#69_A03N	due camini ?
qy_p1#89_A03N	zampa alzata ?
qy_p1#91_A03N	zampa abbassata ?
qy_p1#97_A03N	quella con la cinghia sotto ?
qy_p1#183_A03N	nero ?
qy_p2#128_A05N	sulla sinistra ?
qy_p2#74_A06N	tutti uguali ?
qy_p1#131_A06N	e anche sul tetto ?
qy_p2#69_A02N	è lunga dietro ?
qy_p2#155_A02N	è più piccolo ?
qy_p2#12_A03N	si collega col colletto del tipo ?
qy_p1#133_A06N	ci sono anche su que+ sul pantalone ?
qy_p2#107_A02N	eeh è ha il bordo spiovente ?
qy_p1#105_A05N	hai qualche disegno ?
qy_p1#17_A06N	as+ ha entrambi gli specchietti ?
qy_p2#44_A06N	vedi pure la punta ?
qy_p2#228_A03N	e c'è anche il paraurti ?
qy_p1#19_A05N	eeh ci sono due file di quattro tasti ciascuna ?
qy_p1#29_A05N	c'è lo specchietto retrovisore ?
qy_p1#181_A05N	non c'è un filo ?
qy_p2#240_A03N	c'ha pure lui la nuca appuntita ?
qy_p1#22_A02N	ma si vede chiaramente che è una donna ?
qy_p1#27_A06N	e ha anche il cappello l'uomo ?
qy_p1#29_A06N	ha qualche occhio il cavallo ?
qy_p2#144_A06N	non è che ha magari una staffa eeh la sella del cavallo ?
qy_p2#159_A02N	a te è colorato ?
qy_p2#214_A03N	sopra non c'ha niente ?
qy_p1#165_A03N	a te c'è una linea interna tra il tronco e il e la cornice ?
qy_p1#85_A06N	ma attorno a questa statua c'ha ehm c'è l'erba ?
qy_p1#163_A06N	e sopra la mar+ la il paraurti ci sta anche una linea ?
qy_p1#21_A03N	e il guinzaglio ce l'ha ?
qy_p1#31_A03N	la coda ce l'ha ?
qy_p2#124_A03N	la freccia ce l'ha ?
qy_p1#177_A03N	l'interruzione giù ce l'ha ?
qy_p1#159_A06N	porte non ne vedi ?
qy_p2#264_A03N	la criniera il cavallo non ce l'ha ?
qy_p1#7_A05N	nella seconda due ?

qy_p2#47_A02N	tu lo vedi ?
qy_p1#112_A02N	anche il tuo è spiovente ?
qy_p2#165_A02N	il tronco è dritto ?
qy_p1#13_A03N	la panchina sotto è nera ?
qy_p1#27_A03N	il naso è nero ?
qy_p1#63_A03N	e poi dietro la lo schienale la panchina è tutto rigato ?
qy_p2#96_a_A03N	il fantino sta su una ca+ su una sella all'americana ?
qy_p1#185_A03N	l'orecchio è fatto con due striscioline ?
qy_p1#17_A05N	e l'antenna è alzata ?
qy_p1#33_A05N	la spada è v+ è rivolta verso l'alto ?
qy_p1#35_A05N	e la gamba del cavallo è alzata ?
qy_p1#119_A05N	ma la gamba accavallata del signore sulla panchina è eeh la destra ?
qy_p1#47_A06N	il guinzaglio del cane c'è ?
qy_p2#276_A03N	la spada alla base c'ha un'imperfezione ?
qy_p2#196_A03N	il cavallo c'ha due orecchie attaccate ?
qy_p1#15_A05N	eeh tu hai un'immagine femminile ?
qy_p1#37_A05N	e il cavallo ha qualche segno di occhio ?
qy_p2#138_A05N	il signore ha i capelli neri ?
qy_p2#32_A06N	neanche l'uomo c'ha qualche occhio o qualcosa ?
qy_p2#36_A06N	ehm il cane , non lo so , tiene le orecchie a punta alzate ?
qy_p2#114_A06N	i comignoli della casa c'hanno il p+ il tetto a punt+ ehm a triangolo ?
qy_p1#161_A06N	la macchina ha tutti e due i fari davanti ?

Italian check moves

c_p2#37_A02N	è l'indice ?
c_p2#235_A02N	e infatti non si vede la fine , no ?
c_p2#166_A03N	penso sia l'altro lato del tronco , no ?
c_p1#130_A02N	proprio alla fine ce l'hai
c_p2#43_A02N	di tasto bianco
c_p2#59_A02N	a terra
c_p1#184_A02N	poco ?
c_p1#125_A03N	la freccia ?
c_p2#200_A03N	giusto ?
c_p2#26_A05N	anche a te ?
c_p2#32_A05N	anche a te ?
c_p1#39_A05N	al a punta
c_p2#132_A05N	pure a te ?
c_p2#90_A06N	uguali
c_p2#71_A02N	è dritta ?
c_p2#145_A02N	sei sicura ?
c_p2#104_A05N	è così ?
c_p1#69_A06N	ci sta ?
c_p2#242_A03N	cioè come se avesse due pizzi a sinistra
c_p2#146_A05N	non ha occhi
c_p2#148_A05N	non ha bocca
c_p1#159_A05N	non ci sono segni di s+ di sedili
c_p2#3_A02N	la la figura credo che sia simile , no ?

c_p1#115_A05N	a te è proprio uno stivale
c_p2#46_A05N	anche a te c'è ?
c_p1#183_A05N	tu lo interpreti come il filo del telefonino
c_p1#21_A05N	e le due file di tasti neri sono di quattro ciascuno
c_p1#157_A05N	e la gamba alzata del cavallo è la (la zampa del cavallo) è la destra
c_p1#127_A05N	la piegatura del braccio ha una specie di ricciolo
c_p2#148_A06N	il cane pure ha la bocca chiusa

Spanish info_request moves

i_p2#174_A05ES	¿ es recta o acaba de alguna manera especial ?
i_p2#20_A05ES	¿ el espejo retrovisor es el lateral o el de dentro del coche ?
i_p1#137_A05ES	¿ el hombre está montado sobre una silla de montar o está montado directamente en el caballo ?
i_p1#183_A05ES	¿ los pliegues que tiene son dos o uno ?
i_p2#190_A03ES	¿ el de fuera de la izquierda o el de la derecha?
i_p2#204_A03ES	¿ extremo por arriba o el extremo por el margen ?
i_p1#11_A05ES	¿ y la tuya ?
i_p1#47_A05ES	¿ y la tuya?
i_p2#12_A05ES	¿ en los zapatos ?
i_p1#13_A05ES	¿ y en el tuyo ?
i_p1#15_A05ES	¿ y en el tuyo ?
i_p1#39_A05ES	¿ y en tu dibujo ?
i_p2#36_A06ES	¿ y en el pedestal de la estatua ?
i_p2#272_A06ES	¿ y en la silla ?

Spanish query_w moves

qw_p1#33_A05ES	¿ de qué color ?
qw_p1#69_A04ES	¿ cuántas partes?
qw_p2#30_A05ES	¿ con cuántas rayas ?
qw_p2#58_A03ES	¿ cuántas ventanas hay en la casa ?
qw_p1#23_A04ES	¿ cuántos botones tiene ?
qw_p1#5_A05ES	¿ cuántos coches hay en el dibujo ?
qw_p1#7_A05ES	¿ cuántos árboles hay en el dibujo ?
qw_p2#8_A05ES	¿ cuántos arbustos se ven dentro del árbol ?
qw_p2#12_A05ES	¿ cuántos cordones se ven ?
qw_p1#77_A05ES	¿ cuántas patas del perro puedes ver ?
qw_p2#122_A05ES	¿ cuántas líneas ves ?
qw_p2#156_A05ES	¿ y cuántos ojos le ves ?
qw_p2#232_A03ES	¿ cuántos botones tiene la pantallita del señor ?
qw_p2#4_A04ES	¿ cuántas ventanas tiene tu casa ?
qw_p2#150_A04ES	¿ cuántas partes tiene la antena de la televisión?
qw_p1#3_A05ES	¿ cuántas ventanas tiene tu edificio ?
qw_p2#6_A05ES	¿ cuántas piernas tiene levantada el caballo ?
qw_p2#10_A05ES	¿ cuántas teclas tiene esta mini televisión ?
qw_p2#60_A05ES	¿ cuántos faros tiene el coche?
qw_p1#127_A06ES	¿ y cuántos cordones tiene el zapato ?
qw_p1#39_A04ES	¿ cuántos tienes ?
qw_p2#96_A04ES	¿ cuántas tiene ?

qw_p2#14_A05ES	¿ cuántos ves ?
qw_p1#69_A05ES	¿ cómo están dibujadas ?
qw_p2#174_A05ES	¿ cómo acaba ?
qw_p2#88_A05ES	¿ dónde tiene la mano puesta?
qw_p1#9_A05ES	eeh ¿ qué está viendo por la televisión el hombre ?
qw_p1#35_A05ES	¿ de qué color tiene el pelo el hombre?
qw_p1#75_A05ES	¿ qué forma tiene el tejado del edificio que se ve al fondo?
qw_p2#154_A05ES	¿ de qué color es la nariz del perro ?
qw_p2#168_A05ES	¿ qué es lo que llegas a ver ?
qw_p2#180_A05ES	¿ cómo son los del los del codo ?
qw_p1#69_A06ES	¿ cómo es tu perro ?
qw_p2#38_A05ES	¿ cómo tiene las piernas el hombre ?
qw_p2#164_A05ES	¿ cómo es el zapato del hombre?
qw_p2#4_A05ES	¿ y el tuyo cuántas chimeneas tiene ?
qw_p1#95_A05ES	¿ y la pantalla qué forma tiene ?
qw_p1#129_A05ES	¿ las ventanas que ves en el edificio cómo est+ dirías que están situadas ?
qw_p2#162_A05ES	¿ y las patas cómo están dibujadas ?

Spanish query_y moves

qy_p2#16_a_A03ES	¿ una rotonda ?
qy_p2#40_A03ES	¿ y una antena ?
qy_p2#64_A03ES	¿ y un casco ?
qy_p2#78_A03ES	¿ y cejas ?
qy_p1#85_A03ES	¿ con cuatro dedos en la mano ?
qy_p1#151_A03ES	¿ portátiles ?
qy_p1#255_A03ES	¿ alguna decoración o algo ?
qy_p1#85_A04ES	¿ dos chimeneas , una antena con dos rayas ?
qy_p1#23_A05ES	¿ y el lateral ?
qy_p2#100_A05ES	¿ con ojos y una especie de pelo ?
qy_p2#118_A05ES	¿ con puerta ?
qy_p2#128_A05ES	¿ con la forma de la cabeza un poco rara ?
qy_p2#142_A05ES	¿ y el mentón un poco pronunciado ?
qy_p1#75_A06ES	¿ en forma de zanahoria ?
qy_p1#203_A03ES	¿ llegan hasta el extremo del papel ?
qy_p1#13_A04ES	¿ y está montado en un caballo ?
qy_p1#19_A04ES	¿ y está sentado?
qy_p2#88_A03ES	¿ tien+ teclas ?
qy_p2#90_A03ES	¿ y tiene el dedo como encima de las teclas ?
qy_p2#8_A04ES	¿ tiene alguna antena o chimenea ?
qy_p2#26_A04ES	¿ y tiene una antena también ?
qy_p2#52_A04ES	¿ lleva un sombrero ?
qy_p2#128_A04ES	¿ y tiene el pelo oscuro ?
qy_p2#16_A05ES	¿ ves hierba ?
qy_p2#66_A05ES	¿ ves las luces intermitentes ?
qy_p2#74_A05ES	¿ tiene pedestal?
qy_p2#140_A05ES	¿ tiene botas ?
qy_p2#144_A05ES	¿ ves algo debajo del caballo ?

qy_p2#146_A05ES	¿ ves algo dibujado en el pedestal ?
qy_p2#160_A05ES	¿ tiene collar ?
qy_p2#170_A05ES	¿ tiene calcetines ?
qy_p2#178_A05ES	¿ ves algún pliego ?
qy_p2#42_A06ES	¿ que tiene seis , siete , ocho ventanas ?
qy_p1#135_A03ES	¿ solo hemos encontrado una diferencia ?
qy_p1#37_A04ES	¿ tienes como puntitos ?
qy_p1#57_A04ES	¿ y tiene la nariz pronunciada ?
qy_p1#139_A04ES	¿ tiene un espejo retrovisor?
qy_p1#55_A05ES	¿ tiene sombra por la parte de abajo ?
qy_p1#149_A05ES	¿ ves algo ?
qy_p2#30_A03ES	y ¿ hay césped en en la rotonda ?
qy_p2#56_A03ES	¿ y hay una antena en la casa también además de dos chimeneas ?
qy_p2#42_a_A04ES	¿ hay algo ?
qy_p2#42_b_A04ES	¿ hay como un cuadrado ?
qy_p2#54_A05ES	¿ hay tronco del árbol?
qy_p2#188_A05ES	¿ hay algo en el cielo ?
qy_p2#250_A03ES	¿ y tiene un pliegue en el pantalón en la pierna que está debajo de la que tiene encima ?
qy_p2#42_A05ES	¿ eh tiene una cuerda que sale de de su mano hacia el perro ?
qy_p2#22_A04ES	¿ aparece alguna imagen ?
qy_p2#16_b_A03ES	¿ es una rotonda ?
qy_p1#115_A04ES	¿ se le ven las dos rayas como las arrugas del pantalón ?
qy_p2#126_A04ES	¿ se ve una raya?
qy_p2#156_A04ES	¿ se marca la boca del caballo ?
qy_p2#176_A04ES	¿ se te ve algo ?
qy_p1#123_A04ES	¿ está en posición pulsando el botón de la televisión ?
qy_p1#17_A05ES	¿ tiene espejo retrovisor el coche que ves en la imagen ?
qy_p2#46_A05ES	¿ eh ¿ tiene espada el el hombre de la estatua ?
qy_p1#49_A05ES	¿ tiene casco o gorro la estatua ?
qy_p1#51_A05ES	¿ tiene orejas el caballo ?
qy_p1#63_A05ES	¿ tiene parachoques tu coche ?
qy_p1#103_A05ES	¿ tiene como tapadera esta televisión ?
qy_p1#125_A05ES	¿ tiene como tiene un reflejo la la nariz del perro ?
qy_p2#192_A03ES	¿ pero en tu dibujo también aparecen como si hubieran unas manchas blancas , como si alguien hubiera borrado cosas ?
qy_p2#208_A04ES	¿ y en el coche no se ve a nadie ?
qy_p2#190_A04ES	bueno , en tu dibujo ¿ tiene marcada la ceja ?
qy_p1#57_A05ES	¿ en la parte trasera del banco puedes ver líneas verticales ?
qy_p2#96_A06ES	¿ y por el cielo ves algo ?
qy_p2#32_A03ES	¿ y a la derecha del perro hay como unas pisaditas ?
qy_p1#113_A05ES	¿ en el parachoques del coche hay una línea horizontal negra ?
qy_p2#116_A05ES	¿ y en el lateral izquierdo del coche también hay una línea horizontal?
qy_p1#85_A05ES	¿ y debajo se puede ver en los puños un una camisa ?
qy_p2#34_A04ES	¿ en el banco se ve se ve una pata ?
qy_p2#18_A04ES	¿ en tu dibujo el perro está atado?
qy_p1#43_A05ES	¿ en tu dibujo la televisión tiene antena?
qy_p1#21_A05ES	¿ el de dentro tiene ?

qy_p2#28_A04ES	¿ y al hombre se le ve el pie ?
qy_p2#128_A03ES	¿ el hombre está con las piernas cruzadas ?
qy_p1#59_A04ES	¿ y el brazo que tiene alzado es el derecho?
qy_p2#90_A05ES	¿ y las teclas del televisor son todas del mismo color ?
qy_p2#92_A05ES	¿ una de ellas es más grande que las otras dos ?
qy_p2#136_A05ES	y las chimeneas eeh ¿ acaban en forma de triángulo ?
qy_p1#27_A06ES	¿ luego la estatua es un hombre con una espada y un caballo ?
qy_p1#45_A03ES	¿ el coche lleva retrovisor ?
qy_p2#52_A03ES	¿ el hombre lleva cordones en el zapato ?
qy_p2#54_A03ES	¿ el perro tiene , (no sé qué es esto) , pero como manchas en la cara ?
qy_p2#62_A03ES	¿ *er el general de la estatua tiene una espada en la mano ?
qy_p1#67_A03ES	¿ el banco tiene patas ?
qy_p2#76_A03ES	¿ el hombre tiene el pelo negro ?
qy_p2#98_A03ES	¿ el banco tiene como detrás como unas rayas ?
qy_p2#112_A03ES	¿ y el árbol tiene frondosidad ?
qy_p2#124_A03ES	¿ y el caballo tiene un pie levantado ?
qy_p2#126_A03ES	¿ y el perro en la nariz tiene una cosa blanca ?
qy_p2#138_A03ES	ah ¿ y el tejado de la casa tiene unas rayas también ?
qy_p1#165_A03ES	¿ y el hombre tiene la nariz como redondeada ?
qy_p1#185_A03ES	¿ las ruedas del coche tienen algún particular en las llantas o algo ?
qy_p1#253_A03ES	¿ la estatua de la rotonda no tiene nada por abajo ?
qy_p2#10_A04ES	¿ el hombre tiene algo en la mano ?
qy_p1#47_A04ES	¿ el caballo tiene la pata delantera alzada?
qy_p2#94_A04ES	¿ el perrito tiene , bueno , como manchas en la cara ?
qy_p2#132_A06ES	¿ el hombre ese tiene unas cejas muy gordas ?
qy_p2#248_A03ES	¿ y el hombre lleva una chaqueta que debajo se le ve la manga de la camisa ?

Spanish check moves

c_p2#154_A03ES	como la la abertura , ¿ no ?
c_p2#224_A03ES	la luz del intermitente ¿ no ?
c_p2#192_A04ES	así cuadra+ como cuadrada ¿ no ?
c_p2#158_A05ES	uno negro ¿ verdad ?
c_p1#201_A06ES	es como cuadrado , ¿ no ?
c_p1#221_A06ES	dos pliegues , ¿ no ?
c_p1#271_A06ES	siete , ¿ no ?
c_p2#148_A03ES	está como abierto , ¿ no ?
c_p2#170_A04ES	está como dividida en tres ¿ no ?
c_p1#175_A04ES	está como en una plaza , ¿ no ?
c_p1#197_A04ES	está un poco torcido ¿ no ?
c_p2#172_A05ES	pero no se ven di+ no se ven claramente ¿ no ?
c_p1#185_A06ES	mirando para arriba , ¿ no ?
c_p1#239_A06ES	está como sonriente , ¿ no ?
c_p2#186_A03ES	que diferencia la llanta de del metal , ¿ no?
c_p2#166_A04ES	y lleva como un pantalón corto ¿ no ?
c_p2#178_A04ES	y han borrado también una parte de del árbol ¿ no?
c_p1#105_A05ES	es como si no tuviese tapadera ¿ no ?
c_p2#198_A04ES	está diferenciada la espada del brazo ¿ no?

c_p2#46_A04ES	¿ y hay hierba también , no ?
c_p2#54_A04ES	y se le ve el pie también ¿ no ?
c_p2#130_A04ES	hay dos rayas ¿ verdad ?
c_p2#138_A06ES	se le ve el cuello por encima ¿ no ?
c_p2#192_A06ES	y no hay nada dentro del coche ¿ no ?
c_p1#105_A04ES	¿ lo tiene hacia arriba ?
c_p2#216_A03ES	¿ tú también ?
c_p1#225_A03ES	¿ así en negro ?
c_p1#49_A04ES	la derecha
c_p1#71_A04ES	¿ sí ?
c_p2#108_A04ES	¿ no ?
c_p2#88_A06ES	¿ no ?
c_p2#102_A06ES	¿ no ?
c_p2#160_A06ES	¿ no ?
c_p2#194_A06ES	seguro
c_p1#213_A03ES	como de haber borrado
c_p1#209_A03ES	y entonces la línea se corta
c_p1#141_A03ES	el tronco del árbol no tiene rayas ni nada , ¿ no ?
c_p2#94_A03ES	¿ el perro está atado a la cuerda , no ?
c_p2#92_A06ES	y dentro del coche no ves nada , ¿ no ?
c_p2#136_A03ES	¿ en las ventanas no hay nada , no ?
c_p1#15_A04ES	el coche (va a ten+ tiene) se le ven las ruedas ¿ no ?
c_p2#104_A04ES	y el rabito así hacia arriba ¿ no ?
c_p2#72_A04ES	y el tronco es finito , ¿ verdad ?
c_p2#206_A04ES	el tuyo no tiene ningún color tampoco ¿ no ?
c_p2#230_A04ES	y la mano izquierda coge al caballo ¿ no ?
c_p1#121_A03ES	en el cielo no hay nada
c_p2#196_A06ES	y en la parte izquierda del libro este tampoco hay nada

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