THE INTONATION OF ENUMERATIONS IN CATALAN

by

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ABSTRACT

The aim of this study is to analyse the intonation patterns of enumerations or lists of elements in Catalan. Enumeration is a kind of linguistic structure whose intonation consists of a series of non-final tone groups. This work covers the intonation patterns of close and open lists. A close list involves several non-final tone groups followed by a group which denotes completeness. An open list, on the other hand, conveys a meaning of incompleteness since the intonation of the last member of the group indicates that more items are to follow.

Some studies on Catalan intonation consider that the most typical or unmarked pattern of Catalan enumerations consists of a series of falling tones for all the members of a list except for the antepenultimate one in close lists which exhibits a rising configuration. Our hypothesis, however, states that a series of falling contours is not the most recurrent pattern encountered in Catalan intonation and that other pitch contours, such as some sorts of rising configuration, are more frequent both in open and in close lists.

In order to analyse the behaviour of Catalan enumerations eight speakers of Central Catalan were recorded. Three different ways of eliciting the information were used: a spontaneous conversation, a response to visual cue task and a reading passage. The grammatical categories of the listed elements examined in this study involved words, phrases and clauses. The data were analysed both auditorily and acoustically. The analysis and interpretation of the results was carried out from a configurational perspective.

For each of the sequences we analysed the tonality, tonicity and tone configurations. The results showed that a tone unit is assigned to each member of the enumeration. Each tone unit exhibited a nuclear accent on the stressed syllable of the last lexical word. As predicted in our hypothesis, the most recurrent tone pattern of Catalan enumerations involved a series of rising contours, namely, a series of fall-rises or a series of simple rises. Other patterns, such as, a series of falls, levels, or mixed patterns were also observed but to a lesser extent. These results led us to propose a rising tone pattern as the unmarked intonation for Catalan enumerations. Speech style differences had an effect on the behaviour of Catalan enumerations. No relevant differences were observed for the various grammatical categories and among speakers.
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## CONTENTS

Chapter 1. The intonation of enumerations

1.1 Introduction 1
1.2 The concept of "enumeration" 1
1.3 Approaches to the analysis of intonation 2
  1.3.1 The configurational approach 3
  1.3.2 The level approach 4
1.4 Choice of approach 5
1.5 The behaviour of English enumerations 6
1.6 The behaviour of Spanish enumerations 7
1.7 Conclusion 8

Chapter 2. The intonation of Catalan enumerations

2.1 Introduction 9
2.2 The choice of enumerations 9
2.3 Some notes on Catalan 9
2.4 Catalan intonation 10
  2.4.1 Configurational studies 11
  2.4.2 Level studies 13
2.5 Conclusion 15

Chapter 3. Experiment

3.1 Introduction 16
3.2 Material 16
3.3 Data collection procedures 18
  3.3.1 Spontaneous speech 18
  3.3.2 Response to visual cues 19
3.3.3 Reading passage 19
3.4 The informants 19
3.5 Instrumentation and recording 20
3.6 Analysis procedure 20
   3.6.1 Orthographic transcription 20
   3.6.2 Auditory analysis 21
   3.6.3 Acoustic analysis 21
3.7 Conclusion 22

Chapter 4. Results 23
   4.1 Introduction 23
   4.2 The tonality of Catalan enumerations 23
   4.3 The tonicity of Catalan enumerations 26
   4.4 Tone contours of Catalan enumerations 29
      4.4.1 The tone contours of open lists 29
      4.4.2 The tone contours of close lists 35
   4.5 Differences between open and close lists 40
   4.6 Differences among speech styles 41
   4.7 Differences among grammatical categories and in length 42
   4.8 Interspeaker variability 43
   4.9 Conclusion 44

Chapter 5. Discussion 45
   5.1 Introduction 45
   5.2 The tone patterns of Catalan enumerations and the concept of unmarked intonation 45
   5.3 Status and meaning of the different tone contours 47
   5.4 Some notes on the tonality and tonicity of Catalan enumerations 49
5.5 The effect of different variables on the intonation of Catalan enumerations 49
5.6 Conclusion 49

Conclusion 51

Appendix 1 52

Appendix 2 53

Appendix 3 56

Appendix 4 57

References 73
CHAPTER 1. THE INTONATION OF ENUMERATIONS

1.1 Introduction

In this chapter, we will firstly describe the concept of "enumeration" or "list of elements" in line with Schubiger (1958). Secondly, we will introduce two different perspectives of intonational analysis (i.e. the "configurational" approach and the "level" approach) mainly based on English data. Then, we will illustrate how the intonation of enumerations is systematized according to these two lines of research. Thirdly, we will state the reasons for choosing the configurational perspective over the level approach for the analysis of our data. Finally, we will provide a brief review of some of the works that have accounted for the intonational behaviour of English and Spanish enumerations and we will see that the unmarked or most common intonational pattern differs in the two languages. The review of English literature on enumerations is due to English being one of the languages that has been better studied as far as intonation is concerned and hence some light may be given to the analysis and interpretation of our data. The inclusion of Spanish works is aimed at examining the intonational behaviour of a language which is close and similar to Catalan.

1.2 The concept of "enumeration"

According to Schubiger (1958, 72f), an enumeration or list of elements is a kind of sentence-form whose intonation consists of a series of non-final tone groups. A tone group is defined as any complete intonation pattern associated with the text. Depending on the intonation of the last element of the enumeration, two kinds of lists can be distinguished, namely, close and open lists. A close lists is defined as several non-final tone groups followed by a group that is felt to be the last one. The meaning conveyed by a close list if that of completeness. An open list, on the other hand, conveys incompleteness. The intonation of the last tone unit is equivalent, in Schubiger's terms, to the phrase "and so on". In this study the intonational behaviour of both open and close lists will be examined.

The tonality or division into tone groups of enumerations is in general terms a quite straightforward task, since every member of the list is usually treated as a separate tone unit. Thus, in a sentence such as the one illustrated in (1), each element of the enumeration exhibits a complete intonation pattern. The symbol (Ⅱ) is used to separate the different tone units. The pitch pattern is shown in interlinear tonetic transcription.
Mary bought apples \parallel bananas \parallel peaches \parallel oranges \parallel and lemons.

The way of systematizing and classifying the intonational behaviour of enumerations varies according to different approaches. In the next sections we will briefly outline the main differences between the configurational and the level analyses of English intonation and their immediately implications on the study of enumerations. Although the configurational and the level approaches can be used to describe the intonation of any language, in this section we will mainly refer to English since it is the language on which most studies have been done. Finally, we will see that the intonation of enumerations may present a great variety of patterns and that different languages (such as English and Spanish) seem to have different tendencies or "default values" for the intonation of enumerations.

1.3 Approaches to the analysis of intonation

In the last fifty years several studies on English intonation have been carried out with the aim of recognizing and systematizing the regular intonation patterns encountered in the language. Although several ways of analysing the intonation of English have been suggested, the different proposals can be grouped within two main lines of research, \textit{i.e.} the configurational approach and the level approach, which are respectively representative of the British and the American traditions of intonation analysis. Some of the main works that follow the configurational line of research are Schubiger (1958), Halliday (1967), O'Connor and Arnold (1973), Crystal (1969, 1975), Brazil (1975), Gussenhoven (1984) and Cruttenden (1986) among others. Within the level approach the most outstanding studies are: Pike (1945), Trager and Smith (1951), Liberman (1979) and Pierrehumbert (1980) among others.

The basic difference between the configurational and the level analyses of intonation lies in the treatment of tone or the realisations of pitch in accented syllables. For the configurational approach the analysis of intonation is based on pitch movement. This implies that the entities used to describe the pitch
contours are inherently dynamic in nature. Thus, some of the most common descriptive labels used in this analysis involve the concepts of "rising" and "falling". In a level analysis of intonation, on the other hand, the tonal elements that make up an intonation pattern are no longer treated as dynamic entities but consist of a specification of tonal levels or target heights. The categories used to describe the pitch contours involve labels such as "low" or "high". In the next two sections we will briefly review some of the most representative works within the two traditions. For the configurational perspective we will basically refer to the works of O'Connor and Arnold (1973) and Crystal (1969). For the level analysis we will pay particular attention to the works of Trager and Smith (1951) and Pierrehumbert (1980).

1.3.1 The configurational approach

One of the most representative studies within the configurational tradition is the work of O'Connor and Arnold (1973). According to their proposal an intonation group consists of a pre-head (unaccented syllable(s) before the onset or first accent), a head (string of syllables from the onset up to the syllable before the nucleus), a nucleus (last accent), and a tail (unaccented syllable(s) after the nucleus). In order to have an intonation group only the nuclear tone is obligatory, whereas the other tonal positions are optional. This entails that the whole pitch treatment of an intonation group centres on the nuclear syllable. The general scheme of an intonation group from O'Connor and Arnold's point of view is the one presented in (2), where the brackets indicate optionality.

(2) (pre-head) (head) nucleus (tail)

In O'Connor and Arnold's system, the different tones that can appear in a nuclear position are divided into: 1) falls (high fall ['mi:], low fall [,mi:], and rise fall ['mi:]), 2) rises (high rise ['mi:], low rise [,mi:], and fall rise ['mi:], 3) level (mid-level [mi:]) and 4) a compound (combination of a high fall and a low rise). The tones that can appear in a head position are: high [,mi:], low [,mi:], rising [mi:], and falling [mi:]. Preheads can only be low or high.

Although O'Connor and Arnold do not specifically analyse the behaviour of enumerations, their system of notational conventions has been extremely useful for the systematization of any intonational contours. Hence, in O'Connor and Arnold's system the intonational analysis of the pitch contour illustrated in (1) would be the following one.
(3) Mary bought apples, bananas, peaches, oranges and lemons.

Some other configurational analyses of intonation, such as Crystal (1969, 1975), present a more complex inventory of tones. According to Crystal the pitch characteristics of each syllable in a tone unit is the result of three different parameters: 1) the configuration (or pitch pattern), 2) the simple range (i.e. relationship between the pitch height of adjacent syllables), and 3) the complex range (or width of the speaker's voice range). Crystal's system of tone configurations includes: 1) three simple tones (falling [\~mi:], rising [\^mi:], and level [\-mi:]), 2) four complex tones (falling-rising [\v mi:], rising-falling [\^ mi:], falling-rising-falling [\^\v mi:], and rising-falling-rising [\v mi:]), and 3) two compound tones (fall plus rise [\+\,], and rise plus fall [\v\+\,]). The simple pitch range of adjacent syllables is marked by means of arrows, which point upwards when the initial pitch is higher (*), considerably higher (†) or very much higher (‡), downwards when the initial pitch is considerably lower (\!) or very much lower (\!*), and rightwards when the initial pitch is the same (\→). No mark is used when the initial pitch is slightly lower. The pitch contour of the enumeration illustrated in (1) will have the following notation in Crystal's approach.

(4) Mary bought\*\, apples, bananas, \v\, peaches, \!, oranges and \^\, lemons

1.3.2 The level approach

Two of the most common works that analyse intonation by means of pitch levels are Pike (1945) and Trager and Smith (1951). The two systems use four numbered levels to describe intonation with a reverse order of numbering for the two proposals. For Pike 1 is the highest and 4 the lowest pitch level, whereas for Trager and Smith it is the other way round. Trager and Smith also propose three terminal junctures which specify the last pitch direction at the end of the tone unit. The terminal junctures and their symbols are: falling (#), rising (//) and level (/). According to Trager and Smith the marking system proposed for sentence (1) would be the one illustrated in (5).

(5) 4 1 3 1 3 1 3 1 3 1 3 4 1
Mary bought apples // bananas // peaches // oranges // and lemons #
Other studies on English intonation based on the level approach (Liberman 1979) also distinguish four levels of analysis which are represented by specifications of two features: [± high] and [± low]. More recent studies, such as Pierrehumbert (1980), recognise only two tones, L (Low) and H (High). In Pierrehumbert's analysis each tone unit involves H and L tones of three types: 1) pitch accents, which are mapped into particular syllables, and 2) boundary and 3) phrase tones, which constitute part of the phrasal intonation. Pierrehumbert's complete inventory of tones consists of the following entities: 1) two monotonal accents (H* and L*), and 2) five bitonal accents (L*+H*, L'+H*, H*+L*, H'+L*, and H*+H*). The star marks a tone that falls on an accented syllable, whereas the raised dash marks the tone that leads or trails the starred one. Boundary tones are represented by means of the % symbol and occur at the extremes of the intonational phrase. Phrase accent tones, in their turn, are marked as L' or H' and are placed after the last pitch accent but before the boundary tone. In Pierrehumbert's analysis all accented syllables share the same status and the idea of a nuclear tone is disregarded. According to Pierrehumbert's approach, the enumeration in (1) will have the following analysis.

(6) Mary bought apples, bananas, peaches, oranges and lemons

\[ \text{H}^* + \text{H}^- \quad \text{L}^* + \text{H}^- \% \quad \text{L}^* + \text{H}^- \% \quad \text{L}^* + \text{H}^- \% \quad \text{L}^* + \text{H}^- \% \quad \text{H}^* + \text{L}' \% \]

1.4 Choice of approach

In this study the interpretation and systematization of our data will be in line with the configurational approach. The choice of the configurational analysis over the level one is due to two reasons. First, the configurational notation allows us to present the pitch directions or transitions in a clearer way than the level analysis. Although sometimes the level analysis uses terminal markers to indicate whether a tone is falling or rising, the real pitch directions are not clearly specified because the level notation only identifies the pitch target at a particular moment but not the actual pitch movement. Second, the use of a level approach involves further problems, such as on what basis we define the different pitch levels and how many pitch levels will be used in order to account for the data. It could be argued that the specification of configurational tones is also arbitrary since it is impossible to decide how many types of rise or fall can be differentiated. However, the basic direction of the pitch is better determined in the configurational approach. The notational conventions used in this paper, therefore, will be in line with O'Connor and Arnold's system.
1.5 The behaviour of English enumerations

Regardless of the approach that we may use to systematize and analyse the intonational patterns of enumerations, each list of words has its actual intonational contours. In the following sections, we will specify the main characteristics of English and Spanish enumerations and we will see that the two languages exhibit different tendencies for what we may consider the default or unmarked listing intonation. By default or unmarked intonation we imply the pitch patterns that speakers are inclined to use in normal situations, when no extra meaning (e.g. emphasis, tiredness, boredom, etc.) is conveyed. In other words, the default intonation of an enumeration is the one that conveys the bare meaning of listing, with no additional semantic or pragmatic charges or nuances. Generally, the unmarked intonation of a given sentence is the one that is most frequently used by the speakers of a language.

The default intonation pattern of English enumerations consists of a rising tone on each element to indicate that the list is open or incomplete and a falling tone on the final element to indicate that the list is close or complete (Schubiger 1958, Crystal 1969, Ladd 1978, Finch and Ortiz Lira 1982). The two patterns are illustrated in (7a) and (7b) for open and close respectively.

(7) a. Mary bought apples, bananas, peaches, oranges, lemons
    b. Mary bought apples, bananas, peaches, oranges and lemons

Schubiger (1958) distinguished other possible but less recurrent patterns of intonation for English enumerations, such as the ones illustrated in (8a-b) for close lists and in (8c) for open lists.

(8) a. Mary bought apples, bananas, peaches, oranges and lemons
    b. Mary bought apples, bananas, peaches, oranges and lemons
    c. Mary bought apples, bananas, peaches, oranges, lemons

According to Schubiger, the difference between the various patterns that convey completeness (7a, 8a, 8b) is one of apperception. In (7a) and (8a) the speaker's apperception is comprehensive. He knows from the very beginning of the enumeration all the items he is going to mention. In (8b), on the other hand, the apperception is gradual. The speaker thinks that each item is going to be the last one.
1.6 The behaviour of Spanish enumerations

According to different studies on Spanish intonation (Navarro Tomás 1966, and Canellada and Kuhlmann 1987), the default pitch contour of Spanish enumeration differs considerably from that of English. Before actually specifying the main intonational characteristics of listing in Spanish, we will provide a brief review of the main concepts introduced by Navarro Tomás (and subsequently used by Canellada and Kuhlman) for the analysis of Spanish intonation. The two works follow the configurational line of research.

According to Navarro Tomás (1966a, b) sentences are divided into one or more melodic units. The concept of "melodic unit" is equivalent to the English notions of "tone unit" or "intonation group". A melodic unit is divided into three parts: initial inflexion, body and end of the unit. The first two notions are comparable to O'Connor and Arnold's (1973) ideas of pre-head and head. The end of the unit consists of a nucleus and a tail in O'Connor and Arnold's terminology. Navarro Tomás calls the last pitch glide of a melodic unit a "toneme" and distinguishes five different tonemes in Spanish: 1) cadence, 2) anticadence, 3) semicadence, 4) semianticadence, and 5) toneme of suspension. The equivalent terminology in English would be 1) high fall, 2) high rise, 3) low fall, 4) low rise and 5) level. Navarro Tomás also mentions the possibility of finding a fall-rise intonation in Spanish but he considers that it does not have the same status as in English.

As far as enumerations are concerned, Navarro Tomás points out that the default intonation pattern of Spanish lists differs from that of other languages, such as English, French or German. In close lists, all members end up with a semicadence (low fall), except for the penultimate one which has a semianticadence (low rise) and the last one which finishes with a cadence (high fall). In open lists, on the other hand, the last two members end up with the same semicadence (low fall) as the preceding units. The intonational patterns of close and open lists are illustrated in (9a) and (9b) respectively. In these examples the notational conventions proposed by Navarro Tomás are used to systematize the pitch contours. The meaning of the symbols is the following one: c = semicadence, a = semianticadence, and C = cadence.

(9) a. María compró manzanas, plátanos, melocotones, naranjas y limones
   \[ \text{c} \quad \text{c} \quad \text{c} \quad \text{a} \quad \text{C} \]

   b. María compró manzanas, plátanos, melocotones, naranjas, limones
   \[ \text{c} \quad \text{c} \quad \text{c} \quad \text{c} \quad \text{c} \]
Navarro Tomás also distinguishes other possible intonational patterns for enumerations in Spanish but he stresses the extra nuances conveyed by those patterns.

1.7 Conclusion

In this chapter we have described the concept of "enumeration" from an intonational point of view and we have illustrated how different intonational approaches (configurational vs level) analyse English lists of words. Next, we have stated the reasons for choosing the configurational approach for the analysis of our data. Finally, we have seen the most common or default intonation patterns of open and close enumerations in English and in Spanish and we have pointed out the fact that the intonation of lists of words varies cross-linguistically.
CHAPTER 2. THE INTONATION OF CATALAN ENUMERATIONS

2.1 Introduction

In this chapter we will firstly state the reasons for analysing the intonation of Catalan enumerations. Next, we will give a brief outline of the main characteristics of the Catalan language. Finally, the research pursued on Catalan intonation will be presented with particular focus on the description of enumerations.

2.2 The choice of enumerations

The aim of this paper is to account for the intonation of enumerations or lists of elements in Catalan. The choice of enumerations as our research topic is due to three reasons. Firstly, since Catalan intonation is a relatively new field of study, we were looking for structures which were simple to evaluate in terms of their division into intonation groups, so as more attention could be paid to the pitch contour analysis. In this sense, the structure of an enumeration is quite simple, since it involves a series of independent tone groups. Secondly, with the analysis of the intonation of enumerations we also aimed at the possibility of making some generalizations about the way of expressing finality vs non-finality in Catalan. Thirdly, we wanted to test, in a more scientific way, whether the descriptions of other researchers on Catalan intonation, and specifically on the intonation of enumerations, coincide with our data or not.

2.3 Some notes on Catalan

Catalan is one of the Romance languages derived from the fusion between the Latin spoken by the conquerors of the Iberian Peninsula and the substratum languages of the native population. The first Roman invasions on the Mediterranean coast of the Iberian Peninsula are dated back to the 3th century B.C. However, the first traces of an already well-determined Catalan language did not emerge until the 7th century A.D. (Veny, 1993). From that moment onwards, the development of Catalan has been influenced by several other languages and tied to different historical events, such as the Arab invasion of the 8th century, the persistent political and cultural relationships with the French people, and the latest political domination by the Spanish regime.
Nowadays, Catalan is spoken by over seven million people in Spain, Andorra, the south-east of France and the city of Alguer in Italy (Badia i Margarit, 1995). In Spain, Catalan is spoken in four autonomous communities: Catalonia, Valencia, Aragon and the Balearic Islands. Catalan has several dialects which are commonly divided into two large groups: Western and Eastern Catalan (see the map in Appendix 1).

The dialect that will be analysed in this study belongs to the Western group and is known as Central Catalan. Although there is no well-defined standard Catalan pronunciation, Central Catalan is the better candidate to be treated as "standard", since it is the most widely spoken dialect of the whole Catalan linguistic domain. It is used by more than 80% of the population in Catalonia and is representative of an educated Catalan speaker of the provinces of Barcelona, Girona, and part of Tarragona. The choice of Central Catalan for the analysis of intonation is also due to comparative purposes, since all studies on Catalan intonation are based on this dialect.

2.4 Catalan intonation

So far, the research pursued on Catalan intonation has been very poor. The few studies that have been carried out are mostly descriptive and with no unified proposal for a notation system. In the next two sections we will review those works on Catalan intonation that aimed at the systematization of the pitch contours observed in the language and that included some sort of reference to the intonation of enumerations. In most of the studies only close lists are taken into consideration.

Despite the rather heterogeneous ways of accounting for the intonational behaviour, there is a general agreement in most of the articles in dividing speech into different tone units. This implies that whenever the analysis of an enumeration is present, each member of the list is treated as an independent tone unit. The only difference encountered among the articles is the different labels used to specify the same concept (e.g. "tonal phrase"

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1 Three articles on Catalan intonation are excluded from this review (Barnils 1916, Rigau 1984, and Salcioli 1987) because they do not refer to the intonation of enumerations. Barnils (1916) is the oldest paper on Catalan intonation. This article stresses the importance of intonation to distinguish the speech of individuals from different geographical areas but no account on the intonation of Catalan is given. Rigau (1984) contains some reflections from a generative point of view, on the interrelation between intonation, on the one hand, and syntax and semantics, on the other. Salcioli (1987) is an experimental study on the intonation of questions in Catalan.
(Recasens 1977, 1993), "phonological constituent" (Bonet 1984) or "tonal unit" (Badia i Margarit 1995).

In order to outline the main ideas reported in these studies we tried to divide the works into two blocks according to the kind of analysis they present (configurational approach vs level approach). The distinction between these two lines of research, however, is on many occasions not so obvious since some of the articles present a rather sui generis way of interpreting the data. Despite this fact, the works are still organized into configurational studies and level studies so as to make the report accessible to the reader.

2.4.1 Configurational studies

Three works analysed Catalan intonation from a configurational point of view, namely, Virgili i Blanquet (1971), Gutiérrez (1984) and Badia i Margarit (1995). Virgili i Blanquet (1971) studies the pitch contours of statements, questions and appeals in Catalan and compares the resulting intonation patterns with the Spanish counterparts. The contour analysis is carried out by means of spectrographic representations. Although Virgili i Blanquet does not present a system of notational conventions for the analysis of Catalan, the terminology she uses for describing the pitch contours is the one proposed by Navarro Tomás (1966a, b) for the analysis of Spanish intonation. The results of this study, however, are not very successful since the number of analysed sentences is very small and heterogeneous and no generalizations are made. This paper contains the analysis of three enumerations (two Catalan and one Spanish). The Spanish enumeration is included as a point of comparison with one of the two Catalan lists. However, it must be noticed that the two sequences are not comparable at all since the Spanish enumeration links the two last elements by means of the conjunction "and" whereas the Catalan one does not. This may explain the different behaviour of the two sequences, the former showing a series of falling tone units and the latter a series of rising tone units. The two Catalan enumerations present a completely dissimilar behaviour. In the first case, each tone group presents a falling pitch contour, whereas in the second case all tone units are rising. The two patterns are shown in (10) following the same examples and the same transcription system as the one proposed by Virgili i Blanquet.
a. Li va donar una avellana i una ametlla i una nou

*He gave him a hazelnut and an almond and a chestnut*

b. És una col.lecció de manuscrits, d'autògrafs, de pintures

*It's a collection of manuscripts, of autographs, of paintings*

Gutiérrez (1984) compares some aspects of English and Catalan intonation in line with Halliday (1967) and illustrates how some functional contrasts that in English are conveyed by means of intonation, in Catalan can be transmitted differently, namely by verbal mood, word order, or the use of a lexical item. Although this paper does not deal with the analysis of enumerations in a direct way, there is an example of a list of words when he contrasts the tonality of apositions with that of lists. The intonation of a Catalan list is marked to be the same as in English (a series of rising tones followed by a final falling one). The examples are reproduced in (11).

(11) L'Antoni, el meu fill i la seva dona

*Anthony, my son and his wife*

Badia i Margarit (1995) divides each tone unit in three different parts: 1) initial inflexion (similar to O'Connor and Arnold's concept of "pre-head"), 2) trunk (parallel notion to O'Connor and Arnold's "head") and 3) cadence (which involves "nucleus" and "tail" in O'Connor and Arnold's approach). In line with other studies on Catalan intonation, Badia i Margarit describes the intonation of statements with a last falling modulation. He defines an enumeration as a list of homogeneous elements and accounts for its intonation contours as a lowering tone for every element, except for the penultimate one, which exhibits a higher contour. The way of systematizing the intonation of an enumeration in Badia i Margarit's approach is the one illustrated in (12).
2.4.2 Level studies

The studies that analyse Catalan intonation by means of the level approach are Bonet (1984) and Recasens (1977, 1993). The only reason for including Bonet (1984) within the level approach is the terminology she uses to describe the data (e.g. low and high syllables instead of falling or rising syllables). This work, however, does not really analyse the data from any specific approach and only presents some sort of interlinear tonetic representation of the pitch contours by means of level lines. This study includes the analysis of a great variety of Catalan sentences, namely, statements, questions and commands. The description of enumeration is carried out by means of the height of the stressed syllables. She distinguishes two kinds of listing patterns. The first one consists of a series of constituents with high stressed syllables and a low last stressed syllable, except for the last constituent which has all stressed syllables low. This pattern is illustrated in (13).

(13) Volíem comprar quatre présecs, una síndria i un meló

We wanted to buy four peaches, a watermelon and a melon

The second pattern consists of a series of constituents with low first stressed syllables and a high last stressed syllable, including the last constituent. This pattern is illustrated in (14). According to Bonet the main difference between these two patterns is that of personal commitment.
The two studies by Recasens analyse Catalan intonation by means of a level notation, although the notational conventions are different in the two studies. In Recasens (1977) the notational system describes intonation contours by means of numeric values from 1 (the lowest) to 5 (the highest) and three tonal directions (terminals): rising, falling and level. Recasens analyses the pitch contour of the last accent of the tone unit in three different kinds of sentences: statements, questions, and commands. The general patterns reported in this study are: 1) a falling nuclear tone in statements and commands, and 2) a rising nuclear tone in questions. The normal intonation of an enumeration proposed by Recasens (1977) is illustrated in (15), which seems to involve some sort of rising pattern.

In Recasens (1993) both the notational conventions and the unmarked intonational behaviour of Catalan enumerations are changed. As far as the notation is concerned, he proposes an analysis consisting of three tone levels (high, medium and low) rather than numeric values. He distinguishes two kinds of enumerations, repetitive and emphatic, with different tonal characteristics for the first members of the enumeration before the penultimate tone unit. In the first case the tonal targets go from a high tone to a medium tone, whereas in the second they go from a medium tone to a high tone. The penultimate and the last
tone units exhibit the same pattern in all enumerations, high and low tones respectively in the stressed syllables. For Recasens the normal intonation for Catalan enumerations is the one corresponding to a repetitive enumeration. His way of analysis is illustrated in (16).

(16) high tone
   medium tone
   low tone
    — — — — — — —
  quatre préssecs II una síndria II un meló II i una pera
four peaches, a watermelon, a melon and a pear

2.5 Conclusion

In this section we have briefly described some of the basic characteristics of the Catalan language and we have given some reasons for choosing Central Catalan as the dialect under investigation. We have also given an overall account of the different (and few) works written on Catalan intonation, with particular interest in the behaviour of enumerations. Most of these articles report a falling or low tone pattern as the unmarked intonation of Catalan enumerations. Rising or high tone patterns are considered to be semantically or pragmatically marked.
CHAPTER 3. EXPERIMENT

3.1 Introduction

In this chapter the design of the experiment is presented. First, a description of the material used as well as the procedures for eliciting the data is provided. Then, the main characteristics of the informants and the instrumental tools used in the experiment are specified. Finally, the procedures for analysing the data are introduced.

3.2 Material

The material examined in this study includes lists of elements in Catalan. Two kinds of lists are covered: close and open lists. As pointed out in the previous chapter, a close list involves a complete series of items. The intonation of the last element of the list conveys the meaning of finality and completeness. An open list, on the other hand, consists of an incomplete series of elements. The last tone group of the enumeration involves non-finality and is equivalent to the phrase "and so on". (17a) and (17b) illustrate an open list and a close list respectively. Overall, this study includes the analysis of 237 sequences, out of which 77 are open lists and 160 close lists.

(17) a. Té teatres, cinemes, jardins, botigues ...
   It has theatres, cinemes, gardens, shops ...
 b. París, Atenes, Nova York i Londres

The grammatical categories of the listed elements examined in this study are 1) simple words, 2) phrases and 3) clauses. The main reason for introducing these three categories was to compare the intonational behaviour of enumerations that are made up of single items with the intonation of those lists whose constituents have more than one item (phases and clauses) and hence are longer. In this way we could see whether the length of the various constituents affects the intonational contours of the enumeration or if, on the contrary, the intonational behaviour is the same.

Within the word category we examined the intonation of lists of numerals, nouns and adjectives. Examples of lists containing simple words are provided in (18).
(18) a. un, dos, tres, quatre, cinc, sis, set, vuit, nou, deu
    one, two, three four, five, six, seven, eight, nine, ten
b. plànals, maduixes, anous, pomes i cireres
    bananas, strawberries, chestnuts, apples and cherries
c. blanc, vermell, verd, groc, blau i taronja
    white, red, green, yellow, blue and orange

At the phrase level we analysed the intonation patterns of lists of Noun Phrases (NP). The NPs studied in this paper involve the following structure: [determiner] + noun + [adjective]. The squared brackets indicate that the material inside is optional but either the determiner or the adjective must appear. An example of a list of NPs is provided in (19).

(19) dos gats negres, tres flors vermelles, dos globus blaus i un paraigües verd
    two black cats, three red flowers, two blue balloons and a green umbrella

Finally, at the clause level we analysed the intonation of lists of simple clauses. The types of structures included in the simple clause category are all possible combinations of the following pattern:

(S)V(O)

where S stands for Subject, V for Verb and O for Object. The O constituent consists of either a Noun Phrase, a Prepositional Phrase, an Adverbial Phrase or a non-personal Verb Phrase. The rounded brackets indicate that these constituents are optional and hence they may be present in only some of the analysed structures. The optionality of the S constituent is due to Catalan being a pro-drop language. (20) illustrates a list of clauses.

(20) Es va rentar, es va vestir, va esmorzar i va decidir anar al mercat
    She took a shower, got dressed, had breakfast and decided to go to the market

This study includes the analysis of 107 lists of simple words, 66 lists of phrases, 42 lists of clauses and 22 lists of combined structures. A combined structure consists of any possible combination of any of the analysed
categories. Combined structures appeared in spontaneuos speech where no control over the elicited data was applied.

3.3 Data collection procedures

The data used in this experiment were gathered by means of three different tasks: 1) a spontaneous conversation between the interlocutor (myself) and each of the informants, 2) the response to visual cues and 3) the reading of a passage. The reason for including two guided tasks (visual cue response and reading) besides the improvised talk was twofold. First, we wanted to guarantee the collection of all the structures under investigation, since it was not sure that they might come up in spontaneous speech. Second, we wanted to elicit some sequences which were equal for all the informants in terms of the items included. This allowed us to pursue a more consistent analysis of the intonation patterns that emerged since not much variation was present at the segmental level. Besides these three tasks, the speakers were also asked to provide several lists of numbers. The inclusion of counting enumerations was aimed at the analysis of one of the simplest forms of listing, such as numbering. Except for one case, the lists of items that were selected for the visual cue and the reading tasks included the greatest number of voiced sounds possible so as to obtain uninterrupted F0 contours. Different procedures for presenting the eliciting tasks were required.

3.3.1 Spontaneous speech

For the gathering of spontaneous speech, the speakers were told to imagine different scenarios and to answer to some questions related to them. For example, the first scenario to be put forward was a shopping situation. The informants were asked to report the items they usually buy in the supermarket. Overall, five different scenarios were presented (see Appendix 2). Besides this task, the speakers were also asked to report their main hobbies and to describe the different things they usually do in a normal day.
3.3.2 Response to visual cues

For the response to visual cue task, the informants were shown different cards with several pictures on them and were asked to spell out the elements that appeared in the pictures. Each card contained from two to five elements. The objects displayed in the cards were designed to be of easy identification, so that the reported items were the same for all speakers. The cards were presented in alternation with the spontaneous talk and were introduced as an additional story for each scenario. So, for example, after asking the informants for the items they usually buy in the supermarket, we ask them to list the things that an invented character (i.e. Mary) bought. The alternation between this task and the spontaneous conversation was aimed at distracting the speakers from the listing activity and hence avoiding a routine intonation in the elicited data. Appendix 2 includes an overall outline of the different scenarios and shows the alternation between spontaneous speech and the visual cue task.

3.3.3 Reading passage

For the reading task the speakers were asked to read a text of about four hundred words. The text contained several close and open lists with the different categories specified in section 3.2, so as to make sure that all the structures were gathered no matter what the behaviour of the speakers at the other two tasks was. The sequences that contained enumerations were mixed with other sorts of structures so as to avoid the speakers' being accustomed to a particular intonational behaviour. The reading of the text was the last task to be performed. Appendix 3 includes the reading passage in Catalan and its translation into English.

3.4 The informants

The subjects for this experiment were four male and four female adult native speakers of Catalan. They all had similar characteristics as far as age, social status and geographical origin are concerned. The age of the informants was between 45 and 50 years old. Each of the informants was born and lived in the same town situated in the area of Barcelona. They were brought up in middle class Catalan-speaking families and Catalan was the language they always used at home, work and in normal daily conversations. The variety of Catalan they
spoke is known as Central Catalan. The four male informants are identified as TE, JG, RE, and LV. The four female informants are identified as DV, FT, FP, and MR.

### 3.5 Instrumentation and recording

The instrumental tools used for the experiment were a UHER CR160 tape recorder, a Beyer Dynamic microphone on a stand, a Thandar portable DRO26 oscilloscope and a portable Laryngograph with two electrodes. The laryngograph is an apparatus used to record vocal fold vibration by means of a pair of silver electrodes placed in contact with the skin on both sides of the larynx. The oscilloscope was used to test the activity of the vocal folds. The recordings were conducted in a room of a private house. Several precautions were taken in order to avoid reverberations and environmental noises. The data were recorded onto two Fuji Chrome K2 Type II tapes.

### 3.6 Analysis procedure

The analysis of the data obtained in the recordings proceeded through three different stages: 1) orthographic transcription of both the spontaneous conversation and the responses to the visual cue task, 2) auditory analysis of the data (including the enumerations of the reading passage), and 3) acoustic analysis of the material by means of the PCpitch program.

#### 3.6.1 Orthographic transcription

The orthographic transcription of the data mainly consisted in listening to the recordings and noting down the discourse of the informants. The responses to the visual cue task were also transcribed individually since the behaviour of the informants was heterogeneous. The actual pronunciation of the words was not taken into account because we assumed that it has no effect on the intonational contours. However, repetitions of words, false starts and filled pauses were marked since they were important for the later pitch contour displays. Misreadings of the written text were also marked.
3.6.2 Auditory analysis

Before carrying out an auditory analysis of the data, we firstly selected the sequences that were relevant for this study. Thus, we only took into consideration those structures that contained lists of elements and disregarded other kinds of sentences. The intonational contours of the structures were marked by means of a notational system similar to the one proposed by O'Connor and Arnold (1973), which involves the marking of tone unit boundaries, the presence of a nuclear tone within each unit and a configurational analysis of tone. Appendix 4 includes all the sequences that were analysed in this study and their subsequent prosodic transcription. For each informant the sequences are divided into close and open lists and into the different speech styles in which they were produced. The reproduction of the whole bunch of spontaneous speech is not included due to its being too long.

3.6.3 Acoustic analysis

The aim for conducting an acoustic analysis of the data was to contrast our auditory intuitions with the real fundamental frequency contours. Fundamental frequency (Fx) is the acoustic correlate of the perceptual phenomenon of pitch or intonation. Changes in the fundamental frequency correspond to different rates of vocal fold vibration. The faster the vibration, the higher the Fx (and the higher the pitch). The slower the vibration, the lower the Fx (and the lower the pitch). The program used to carry out the acoustic examination was the PCpitch, which allowed us to display and analyse the fundamental frequency of pieces of voiced speech. Figure 1 illustrates the PCpitch main display screen. The graph shows frequency (Hz) in a log scale on the vertical axis against time (seconds) on the horizontal axis. The frequency range in all graphs was from 30 to 800 Hz and the number of seconds was the maximum allowed by the program (six seconds).
3.7 Conclusion

In this chapter, the design of the experiment was described. First, we reported the material selected for the experiment. Second, the different procedures for collecting the data were specified. Then, the main characteristics of the informants and the instrumental tools used in the experiment were described. Finally, we introduced the different steps that we followed for analysing the data.
CHAPTER 4. RESULTS

4.1 Introduction

In this chapter the results of the experiment are described following Halliday's (1967) distinction between tonality, tonicity and tone. First, we deal with the division into tone units (tonality) of Catalan enumerations. Second, the placement of accents within each tone group (tonicity) is specified. Third, we identify the different pitch contours encountered in the data (tone) and establish the main differences between the intonational behaviour of open and close lists. At this point, some notational conventions to account for the different pitch configurations observed in Catalan enumerations are proposed. Then, the effect of different kinds of speech on the intonational behaviour of Catalan enumerations is described. Afterwards, the intonation of simple words as opposed to longer structures (phrases and clauses) is reported. Finally, some interspeaker variability is taken into account.

4.2 The tonality of Catalan enumerations

In line with some of the studies on Catalan intonation reviewed in section 2.4 (Recasens 1977, 1993, Bonet 1984, and Badia i Margarit 1995), we assume the division of Catalan speech into tone units. A tone unit is a piece of speech enclosed within two intonational boundaries. The criterion used to demarcate a tone unit was the presence of pauses. From an auditory point of view, a pause is equivalent to a break in speech. Pauses can be unfilled (i.e. silence) or filled with some sort of vocalic (i.e. [ə]) or consonantic sound (i.e. [m]). From an acoustic point of view, pauses could be detected on the PC pitch displays as the absence of signal (unfilled pause) or as long level line (filled pause). The main difference between an unfilled pause and a voiceless sound is usually determined by the length of the gap, the absence of Lx signal being longer in pauses than in voiceless segments. The differences between unfilled and filled pauses as tone unit demarcators are illustrated in Figures 2 and 3. The two sequences are produced by speakers DV and FT in spontaneous speech.
FIGURE 2. Example of three tone units demarcated by the presence of unfilled pauses between them. The sequence "una televisió, una aspiradora, un vídeo" (a television, a vacuum cleaner, a video) is produced by speaker DV in spontaneous speech.

FIGURE 3. Example of two tone units demarcated by the presence of a filled pause (i.e. [ə]) between them. The sequence "un parell de litres de llet, dues cocacoles (a couple of litres of milk, two cokes) is produced by speaker FT in spontaneous speech."
The results obtained in this experiment exhibit a very consistent behaviour as far as the division into tone units of enumerations is concerned. All speakers tend to associate a complete intonation pattern or tone unit with each member of the list. This is the case of 97 per cent of the sequences. Thus, for example, in the enumeration illustrated in (21) each member corresponds to a separate tone unit. The sequence is uttered by speaker JG in spontaneous speech. Each tone unit is marked by means of the symbol (‖).

(21) les fregones ‖ les escombres ‖ el detergent per a la rentadora ‖ la sal
    the mops ‖ the brooms ‖ the powder for the washing machine ‖ the salt

Only in 3 per cent of the structures is there no one-to-one relationship between constituents and tone units. Sometimes, when the constituent is very long, it is divided into two word groups. However, this is the case of very few sentences since all members tend to be rather short. In most of the cases, the non-correspondance between constituent and tone unit is due to other factors, such as speaking rate or late programming of follow-up information. This is illustrated in (22). The two sequences are uttered by speaker AE in spontaneous speech. In (22a), the first four members of the list are pronounced in one word group. This seems to be due to rate of speech, since the speaker produces the sentence in a very fast tempo. (22b), in its turn, exhibits two structures which are identical in terms of their syntactic pattern (i.e. V + NP + PP) but differ in the assignment of intonational boundaries. Whereas the first constituent is produced in one tone group, the second constituent shows an intonational boundary between the NP and the PP. The reason for dividing the second member into two tone units seems to derive from the speaker's late programming of the last PP.

(22) a. blanc vermell verd groc ‖ blau ‖ taronja
    white red green yellow ‖ blue ‖ orange

b. (...) compraria llagostins de Sant Carles de la Ràpita ‖ compraria lluç ‖ del Cantábric (...)
   (...) I would buy prawns from Sant Carles de la Ràpita ‖ I would buy hake ‖ from the Cantábric sea (...
4.3 The tonicity of Catalan enumerations

The assumption that Catalan intonation can be accounted for by specifying the placement of accents and stresses within a tone unit is supported by some of the studies analysed in section 2.4 (Badia i Margarit 1995, and Virgili i Blanquet 1971). According to the behaviour observed in our data, the placement of accents in Catalan enumerations presents a very regular pattern. The results show that a nuclear accent (i.e. most prominent pitch accent in the intonation group) is assigned to the stressed syllable of the last lexical item in the tone unit. Thus, in a sequence such as "li explicà que havia anat a París" (he told her that he had been in Paris) where all the stressed syllables are underlined, the nuclear accent falls on the stressed syllable of the final word. This is illustrated in Figure 4 where a significant pitch movement takes place on the last stressed syllable of the intonation group. The sequence is produced by speaker JG in reading speech and corresponds to the first member of an enumeration.

FIGURE 4. Example of nuclear accent assignment on the stressed syllable of the final lexical word of the tone unit. The sequence "li explicà que havia anat a París" (he told her that he had been in Paris) is the first constituent of an enumeration. It is produced by speaker JG in reading speech.
Since an enumeration is made up of different tone units, a nuclear accent is present in each of the separate groups. This is illustrated in (23) where the nuclear syllable of each tone unit is underlined. The sequence is produced by speaker DV in spontaneous speech.

(23) Jo compraria escarxòfes || cebes || pastanagues || bledes || mongetes tendres || carbarsons || i pepí nos
   I would buy artichokes || onions || carrots || beet || green beans || marrows || and cucumbers

The assignment of the nucleus to the stressed syllable of the last lexical word in the tone unit is consistent in all sequences and for all speakers, even when the last lexical word contains old or given information. (24), for instance, shows the placement of the nuclear syllable on the last content word of the tone unit, despite its being previously mentioned in the conversation. The sequence is produced by speaker FT in spontaneous speech.

(24) Interlocutor: Què t'agrada?
   \textit{What do you like?}
   Informant: El cinema m'agrada (...) 
   \textit{Cinema I like}

Since most of the constituents only contain a single lexical word, the nuclear accent is the only pitch configuration of the word group. When a constituent is made up of more than one word, the data exhibit two possible patterns. In the first case, the first stressed syllable is accented and tends to be high in pitch. This can be seen in Figure 4 where the first stressed syllable (\textit{i.e.} last syllable of the word "explicà") shows a higher pitch than the preceding syllables. The other stressed syllables up to the nucleus are not accented and tend to remain level but in a lower pitch than that observed for the first accent. The second pattern involves a low pitch on the first stressed (and hence accented) syllable followed by a series of low and level syllables. This is illustrated in Figure 5 where the first stressed syllable of the tone unit (\textit{i.e.} last syllable of "demañ") shows a lower pitch than the previous ones.
FIGURE 5. Example of a low head with a first low accented syllable. The sequence "al demati normalment revelo bastant" (in the morning I use to develop a lot) is a clause constituent of an enumeration. It is produced by speaker JG in spontaneous speech.

Although these two patterns of pre-nuclear pitch configuration seem to be the most recurrent ones in our data, more research on this issue is needed. Due to lack of time, in this study we cannot deal with the pitch configuration of non-nuclear accents in much detail. In line with O'Connor and Arnold's system, the symbols used for the prosodic transcription of these patterns are (') for the first high accented syllable of a word group, (,) for the first low accented syllable and (°) for the subsequent stressed syllables. This is illustrated in (25a) and (25b). In the next section only the pitch configuration of the nuclear accent is examined.

(25) a. Li expli'cà que ha'via a'nat a Pa'ris  
_He told her that he had been in Paris_

b. Al dema,tí normal'ment re'velo bas'tant  
_In the morning I use to develop a lot_
4.4 Tone contours of Catalan enumerations

In order to analyse the tone contours of Catalan enumerations, we will specifically concentrate on the pitch configuration of the nuclear tones of each constituent. The data will be examined within the configurational framework of intonational analysis. First, the results on open lists will be presented. Then, the results on close lists will be reviewed. In each section we will propose the notational marks that may account for the contours.

4.4.1 The tone contours of open lists

In open lists, the most common behaviour observed in our data exhibits some sort of rising contour for all the word groups of the enumeration. This configuration is repeated in most of the sequences and for all speakers (67.5 per cent of the utterances). The rising contour of each constituent, however, exhibits two different patterns: 1) a simple rise (23.3 per cent of the utterances), and 2) a fall rise (44.2 per cent of the utterances). The simple rise contour starts from a low or mid pitch in the nuclear accent and rises steadily to the end of the tone unit. The fall-rise starts from a high pitch on the nucleus, falls to low and rises to the end of the tone unit. Figures 6 and 7 illustrate a series of simple rises and a series of fall-rises respectively. The first open list is produced by speaker LV and the second by speaker DV. Both sequences are uttered in spontaneous speech.
FIGURE 6. Example of an open list made up of a series of simple rises. The sequence "m'agradaria comprar pa, tomàquets, enciam, cebes, muscló" (I would like to buy bread, tomatoes, lettuce, onions, mussels) was produced by speaker LV in spontaneous speech.

FIGURE 7. Example of an open list made up of a series of fall-rises. The sequence "m'agradaria anar a Londres, a Roma, a Viena, a París" (I would like to go to London, to Rome, to Vienna, to Paris) was produced by speaker DV in spontaneous speech.
During the analysis of the data we were considering the possibility of not distinguishing a separate fall-rise contour and treating the falling pitch before the rise as a preparatory stage for the subsequent rising intonation. Different pieces of evidence, however, supported the existence of a separate fall-rise tone. From an auditory point of view, clear differences could be perceived between those sequences that were uttered with a simple rise and those sequences that presented a fall-rise. The later acoustic analysis supported our auditory intuitions, as observed in Figures 6 and 7.

Furthermore, the pitch contour displays provided two additional pieces of evidence to reinforce the hypothesis of a fall-rise contour. First, the falling movement of the fall-rise appeared on the display screen as a dark and well-defined line, which indicates that a fall-rise was intended rather than a simple rise. This can be observed in Figure 7. Second, the absence of signal in voiceless segments allowed us to detect the pitch contours of the surrounding voiced sounds in some of the items. This is the case presented in Figure 8 for the word "planxa" (iron), which has a voiceless sound between an accented syllable and an unstressed syllable (i.e. ['planʃə]). If the falling movement was only a preparation for a later rise rather than the first part of a fall-rise tone, the accented syllable before the voiceless segment would show a rising movement. However, the display exhibits a falling movement on the accented syllable before the voiceless gap and a subsequent rise on the unstressed syllable after the gap. This pattern (falling movement on the nuclear accent and later rising towards the tail) is the usual configuration of a fall-rise tone.

Finally, since both the simple rise and the fall-rise were present in the speech of all speakers, we treated the two contours as two separate tones available in the tone inventory of Catalan speakers.
FIGURE 8. Pitch contour display for the word "planxa" (iron) produced by speaker AE is spontaneous speech.

The notational conventions that we propose to account for the simple rise and the fall-rise tones are the symbols used by O'Connor and Arnold (1973), that is, (↑) for the simple rise and (✓) for the fall-rise. In O'Connor and Arnold's intonational system, a simple rise contour can come out as a low rise or a high rise, depending on whether the departure pitch is low or mid. O'Connor and Arnold's distinction, however, cannot actually be applied to our data, unless a more exhaustive analysis is carried out. This implies that the (✓) symbol used in our tonemic transcription represents the presence of a rising tone in Catalan enumerations but it does not specifically stand for a low or a high rise. Thus, the fact of placing the symbol above the spelling transcription is arbitrary. The tonemic transcriptions of the lists presented in Figures 5 and 6 are illustrated in (26a) and (26b) respectively.

(26) a. m'agrada ria comprar pa || tomàquets || en ciàm || cèbes || músculs
    b. m'agrada ria a Lòndres || a Ròma || a Vèn a || a Pàris
The third most recurrent pattern for open lists observed in the data involves a falling tone in each word group. The falling contour starts from a mid pitch on the nucleus and glides to a low pitch. This behaviour was encountered in 14.3 per cent of the utterances. This is illustrated in Figure 9. The sequence is produced by speaker FP in reading speech. Similar to the simple rise and the fall-rise, the fall is also analysed as a tone with phonological status.

![Diagram](image)

**FIGURE 9.** Example of an open list made up of a series of falls. The sequence "la Maria va quedar muda, desconcertada, sorpresa" (*Mary was speechless, confused, surprised*) was produced by speaker FP in reading speech.

The notation mark used to identify a fall is (\ ). Similar to the rise contour, O'Connor and Arnold distinguished two kinds of falls, namely, low fall and high fall, depending on whether the starting pitch was mid or high. As with the rise contour, the specification of two kinds of falls in Catalan intonation needs further research. However, from our observations of the data, the fall contours that appear in Catalan lists seem to glide from a mid pitch downwards. In the tonemic transcription, therefore, we place the falling symbols below the orthographic transcription. This is illustrated in (27).

(27) La Maria va quedat muda // desconcertada // sorpresa
The fourth intonational pattern that appeared in the analysis of open lists in Catalan (3.9 per cent of the utterances) consists of a series of level tones. A level tone involves mid pitch on the nucleus, extended to the end of the tone unit. This pattern is illustrated in Figure 10. The sequence is produced by speaker TE in spontaneous speech. Although the display does not show a very clear signal, it is good enough to illustrate a level contour with no significant falling or rising movements.

![Figure 10](image)

**FIGURE 10.** Example of an open list made up of a series of level tones. The sequence "trenta, quaranta, cinquanta, seixanta" (*thirty, forty, fifty, sixty*) was produced by speaker TE in spontaneous speech.

The level configuration is also analysed as a tone available in the inventory of tones of Catalan speakers. The notational convention used to identify a level tone is the symbol (>). This is illustrated in (28).

(28) trènta || quaranta || cinquanta || seixanta
Finally, 14.3 per cent of the utterances exhibited a mixed pattern. That is, each word group had a different nuclear tone. The possible nuclear tones encountered in mixed patterns are the tones described above, namely, a simple rise, a fall-rise, a fall or a level. Since the PCpitch displays for mixed patterns in open lists did not present a very clear signal, for an example of a mixed pattern see Figure 15, which illustrates a mixed pattern in a close list. The notational conventions used in mixed patterns are the same symbols stated above for each of the nuclear tones.

4.4.2 The tone contours of close lists

In close lists the results show the same kinds of intonational patterns as in open lists for the initial members of the enumeration, with different contours for the penultimate and final constituents, which exhibit rise and fall nuclear tones respectively. Similar to open lists, the most recurrent patterns for close lists encountered in our data involved a series of fall-rises (46.5 per cent of the utterances) or simple rises (35.5 of the utterances) for the initial members of the enumeration. The third most common pattern for close lists consists of a series of level nuclear tones for the initial constituents of the enumeration (8.9 per cent of the utterances). The less recurrent pattern (3.8 per cent of the utterances) is the one composed of a series of falls in the first members. Mixed patterns also occurred in 6.2 per cent of the utterances. All these patterns are illustrated in Figures 11-15, where a clearly different behaviour from open lists is observed for the last two constituents of the enumeration. For the mixed pattern (Figure 15) the speaker used a combination of falls and rises.
FIGURE 11. Example of a close list made up of a series of simple rises followed by a last falling tone. The sequence "la Maria ha triat París, Atenes, Nova York i Londres" (*Mary chose Paris, Athens, New York and London*) was produced by speaker DV in the response to the visual cue task.

FIGURE 12. Example of a close list made up of a series of fall-rises followed by an antepenultimate rising nuclear tone and a last falling tone. The sequence "taronges, raim, mores, avellanes i cireres" (*oranges, grapes, raspberries, hazelnuts and cherries*) was produced by speaker DV in the response to the visual cue task.
FIGURE 13. Example of a close list made up of a series of falls followed by an antepenultimate rising nuclear tone and a final fall. The sequence "es va rentar, es va vestir, va esmorzar i va decidir anar al mercat" (she washed, got dressed, had breakfast and decided to go to the market) was produced by speaker FT in reading speech.

FIGURE 14. Example of a close list made up of a series of levels followed by an antepenultimate rising nuclear tone and a final fall. The sequence "un, dos, tres, quatre, cinc, sis, set, vuit, nou i deu" (one, two, three, four, five six, seven eight, nine and ten) was produced by speaker MR.
FIGURE 15. Example of a close list made up of a mixed pattern which combines falls and rises. The sequence "es va rentar, es va vestir, va esmorzar i va decidir anar al mercat" (she washed, got dressed, had breakfast and decided to go to the market) was produced by speaker JG in reading speech.

Since the tones encountered in close lists are similar to those observed in open lists, the same notational conventions are used to specify the different pitch contours. The antepenultimate rising tone and the final falling tone are marked by means of the symbols (↗) and (↘) respectively. The tonemic transcription of the examples illustrated above is provided in (29).

(29) a. La Mária ha ñiat París, Atènes, Nova Yórk i Londres
b. Tarônges, rafm, mòres, avellànes i cireres
c. Es va rentar, es va vestir, va esmorzar i va decidir anar al mercat
d. Un, dos, tres, quatre, cinc, sis, set, vuit, nou i deu
e. Es va rentar, es va vestir, va esmorzar i va decidir anar al mercat

Although the most frequent nuclear tone of the last constituent of a close list (79.4 per cent of the utterances) involves a falling contour, there is another pattern which can also be observed in many of the utterances (20.6 per cent). This pattern consists of a falling contour followed by some kind of rising
pitch. This is illustrated in Figure 16, where the last constituent of a close list shows a rising movement after the falling contour.

![Diagram](image)

**FIGURE 16.** Example of a close list with a final falling contour followed by a rising pitch movement. The sequence "ha fet llagostins, salmó, turrons, i neules" (she made prawns, salmon, "sweets" and "biscuits") was produced by speaker DV in the response to the visual cue task.

Although the configuration of this pitch pattern is very similar to that of a fall-rise tone, we cannot analyse it as an actual fall-rise. Several differences can be observed between the two contours. First, the starting pitch of a real fall-rise is much higher than the starting pitch of the fall (+rising movement). Second, in a fall-rise the scope of the fall is usually a bit shorter than the scope of the rise, whereas in a fall (+rising movement) the scope of the fall is longer than that of the subsequent rise. Third, the PC pitch displays show a more intense and well-defined line for the rising movement of a fall-rise than for the rising movement of a fall (+rising). This indicates that the two contours cannot be treated in the same way. Hence, in order to model the pitch configuration of the fall (+rising)
contour, we propose a new symbol which consists of a falling line followed by a little rising tail, as in (\(\check{\vee}\)). This mark differs from the fall-rise symbol (\(\check{\vee}\)) in that the rising line is much shorter. Hence, more importance seems to be given to the falling part. In a fall-rise, on the other hand, both lines are equally prominent. (30) provides a transcription of the sentence presented in Figure 16, where a fall (+rising) contour is illustrated.

(30) Ha fet llagostins, salmó, turrons, i neules
\(\check{\vee}\)

From the results obtained in our data, it is quite difficult to specify the status of the fall (+rising) contour. In terms of the meaning it conveys, the fall (+rising) seems to have a similar interpretation to that of the simple fall, i.e. both contours are used to indicate finality. According to this perspective, therefore, the status of the fall (+rising movement) can be interpreted as a realizational possibility of the simple rise tone. Besides the semantic interpretation, we observed that the fall (+rising) contour is present in the data of all informants, which seems to indicate that it is an available phonological unit in the tone system of Catalan speakers. Both hypotheses need further research. In this study we decided to mark the presence of a fall (+rising) contour by means of the symbol (\(\check{\vee}\)) because it is a quite common and recurrent intonation pattern. However, contrary to the other marks used in this study to account for the different tones, this mark does not specifically stand for a phonological entity.

4.5 Differences between open and close lists

As pointed out in the previous sections, the main difference between the intonation of open and close lists in Catalan lies on the last two members of the enumeration. In close lists the antepenultimate tone unit consistently exhibits a rising contour, whereas the final tone group presents either a falling tone or a falling (+rising) contour. In open lists, on the other hand, the intonational behaviour of the last two members does not the differ from that of the initial members. The initial constituents of close lists and all the constituents of open lists present the same kinds of intonational patterns. Table 1 shows the percentage of occurrence of these patterns.
TABLE 1. Percentage of occurrence of the different tone patterns for the initial members of close lists and for all the members of open lists.

<table>
<thead>
<tr>
<th></th>
<th>OPEN LIST</th>
<th>CLOSE LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>fall-rise</td>
<td>44.2</td>
<td>46.1</td>
</tr>
<tr>
<td>rise</td>
<td>23.3</td>
<td>35.1</td>
</tr>
<tr>
<td>fall</td>
<td>14.3</td>
<td>3.8</td>
</tr>
<tr>
<td>level</td>
<td>3.9</td>
<td>8.8</td>
</tr>
<tr>
<td>mixed</td>
<td>14.3</td>
<td>6.2</td>
</tr>
</tbody>
</table>

These percentages exhibit that both in open and in close lists the most frequent tone pattern used in Catalan enumerations is the fall-rise. The second most recurrent pattern is the simple rise, whose appearance is higher in close than in open lists. Falls are more common in open lists than in close lists, whereas levels show the opposite behaviour. Mixed patterns are slightly more frequent in open lists than in close lists.

4.6 Differences among speech styles

In the next sections we will show the percentages of occurrences of the different tone patterns in relation to speech styles and grammatical categories as well as across subjects. In order to see whether these variables had a significant effect on the behaviour of Catalan enumerations, we might have analysed the results statistically. However, due to lack of time we can only present the percentage scores. Thus, our comments will be based on these figures. This indicates that the conclusions will express tendencies rather than judgements of empirical validity.

The percentages presented in Table 2 allow us to see the main differences between the intonation of enumerations in various speech styles, namely, spontaneous speech, response to visual cues and reading speech. The enumeration of numbers is also included as a separate category, since it does not specifically belong to any of the other speech groups. Similar to the previous section, the tone patterns are the ones encountered in all members of open lists and in the initial constituents of close lists.
TABLE 2. Percentage of occurrence of the different tone patterns for the initial members of close lists and for all the members of open lists in different speech styles.

<table>
<thead>
<tr>
<th></th>
<th>spontaneous</th>
<th>visual cue responses</th>
<th>reading</th>
<th>numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>fall-rise</td>
<td>64.1</td>
<td>67.1</td>
<td>5.3</td>
<td>0</td>
</tr>
<tr>
<td>simple rise</td>
<td>20.5</td>
<td>27.8</td>
<td>55.4</td>
<td>37.5</td>
</tr>
<tr>
<td>fall</td>
<td>0</td>
<td>0</td>
<td>33.9</td>
<td>0</td>
</tr>
<tr>
<td>level</td>
<td>5.1</td>
<td>1.3</td>
<td>1.8</td>
<td>45.8</td>
</tr>
<tr>
<td>mixed</td>
<td>10.3</td>
<td>3.8</td>
<td>3.6</td>
<td>16.7</td>
</tr>
</tbody>
</table>

The results show that, except for numbering, the most common pattern observed in Catalan enumerations exhibits some sort of rising contour (fall-rise or simple rise) in all speech styles. The meanings associated with rises usually involve non-finality and continuity. The percentages also show that the fall-rise is the most recurrent pattern observed in spontaneous speech and in the responses to visual cues but it hardly appears in reading speech and it does not appear at all in the listing of numbers. This seems to indicate that the fall-rise may carry some extra semantic connotations, involving some sort of tentative value, typical of unplanned speech. The simple rise, on the other hand, does not share the tentative meaning. The fall tone pattern only appears in reading speech which seems to denote the speaker's certainty of what is coming next. The level tone, on the other hand, is typical of counting. The monotonous tone of this pattern seems to correlate with the totally predictable activity of numbering. Finally, mixed patterns appear in all kinds of speech but not in very high percentages. These results, therefore, indicate that differences in speech styles seem to have an effect on the tone patterns observed in Catalan enumerations.

4.7 Differences among grammatical categories and in length

The material analysed in this study included lists of elements which belong to different grammatical categories, namely, words, phrases, clauses and combined structures. The main reason for introducing these variables was to see whether differences in the grammatical categories and subsequent differences in length of
the constituents could have any effect on the intonational behaviour of enumerations. The percentage of occurrence of the different tone patterns on each of the four categories is presented in Table 3. The scores include the behaviour of both open and close lists. For close lists the behaviour of the last two constituents was not taken into account.

**TABLE 3.** Percentage of occurrence of the different tone patterns for the initial members of close lists and for all the members of open lists in different grammatical categories.

<table>
<thead>
<tr>
<th></th>
<th>words</th>
<th>phrases</th>
<th>clauses</th>
<th>combined structures</th>
</tr>
</thead>
<tbody>
<tr>
<td>fall-rise</td>
<td>31.8</td>
<td>63.1</td>
<td>41.4</td>
<td>71.4</td>
</tr>
<tr>
<td>simple rise</td>
<td>38.3</td>
<td>20.0</td>
<td>36.6</td>
<td>14.3</td>
</tr>
<tr>
<td>fall</td>
<td>10.3</td>
<td>7.7</td>
<td>4.9</td>
<td>0</td>
</tr>
<tr>
<td>level</td>
<td>13.1</td>
<td>3.1</td>
<td>4.9</td>
<td>0</td>
</tr>
<tr>
<td>mixed</td>
<td>6.5</td>
<td>6.1</td>
<td>12.2</td>
<td>14.3</td>
</tr>
</tbody>
</table>

The results show that the fall-rise pattern is the most recurrent one in phrases, clauses and combined structures, whereas in words the simple rise is slightly more frequent than the fall-rise. The fall and level patterns mainly occur in simple words and to a lesser extent in phrases and clauses. They do not appear in combined structures. Mixed patterns can be present in all kinds of categories. Despite these differences, the occurrence of the various tone patterns in each of the four categories does not show much variability. This seems to indicate that differences in the grammatical categories of the constituent and in its subsequent length do not have a major effect on the intonational behaviour of Catalan enumerations.

### 4.8 Interspeaker variability

The percentages exhibited in Table 4 allow us to see the main differences in the intonation of Catalan enumeration across speakers. Although overall the behaviour of the informants was quite homogeneous, there are still some points of variability that are worth taking into account. First, all speakers made a greater use of the fall-rise pattern than the simple rise pattern, except for speaker
LV who used the rise pattern in more occasions. Second, the fall tone pattern presents a rather inconsistent behaviour. Whereas for speakers MR, JG and LV the fall pattern is used quite regularly, for the rest of the speakers it is much less frequent. Even speaker TE does not use the fall tone pattern at all. Something similar happens with the level pattern, which seems to be used for most of the speakers, except for DV and RE.

TABLE 4. Percentage of occurrence of the different tone patterns for the initial members of close lists and for all the members of open lists across speakers.

<table>
<thead>
<tr>
<th></th>
<th>DV</th>
<th>FT</th>
<th>FP</th>
<th>MR</th>
<th>TE</th>
<th>JG</th>
<th>RE</th>
<th>LV</th>
</tr>
</thead>
<tbody>
<tr>
<td>fall-rise</td>
<td>51.7</td>
<td>48.1</td>
<td>51.6</td>
<td>47.1</td>
<td>48.2</td>
<td>46.7</td>
<td>46.4</td>
<td>28.6</td>
</tr>
<tr>
<td>rise</td>
<td>34.5</td>
<td>26.0</td>
<td>22.5</td>
<td>17.6</td>
<td>34.5</td>
<td>26.7</td>
<td>42.4</td>
<td>42.9</td>
</tr>
<tr>
<td>fall</td>
<td>3.4</td>
<td>3.7</td>
<td>3.2</td>
<td>14.7</td>
<td>0</td>
<td>13.3</td>
<td>3.7</td>
<td>17.9</td>
</tr>
<tr>
<td>level</td>
<td>0</td>
<td>11.1</td>
<td>12.9</td>
<td>11.8</td>
<td>13.8</td>
<td>3.3</td>
<td>0</td>
<td>7.1</td>
</tr>
<tr>
<td>mixed</td>
<td>10.3</td>
<td>11.1</td>
<td>9.7</td>
<td>8.8</td>
<td>3.4</td>
<td>10.0</td>
<td>7.4</td>
<td>3.6</td>
</tr>
</tbody>
</table>

4.9 Conclusion

In this chapter the results of the experiment were reported. First, we analysed the division of Catalan enumerations into tone units and we saw the correspondance between tone units and constituents. Second, the placement of accents within each tone group was analysed. Third, the different pitch contours encountered in the data were identified for open and close lists. The notational conventions to account for the different pitch configurations observed in Catalan enumerations were proposed. Next, the effects of speech styles and grammatical categories (as well as length of the constituents) on the behaviour of Catalan intonation were examined. Finally, interspeaker differences were taken into account.
CHAPTER 5. DISCUSSION

5.1 Introduction

In this chapter, we discuss some of the results obtained in the experiment. First, we contrast the behaviour of Catalan enumerations encountered in our data with the behaviour reported in previous studies and we reexamine the notion of unmarked intonation for Catalan enumerations. Then, we analyse the phonetic vs phonological status of the different tone contours and their semantic properties. In this section we also mention some generalizations about the expression of finality vs non-finality in Catalan and we point out some topics of interest for future research. Afterwards, a brief account on the tonality and tonicity of Catalan enumerations is provided. Finally, the effects of speech style and grammatical category (and length) on Catalan enumeration are also reviewed.

5.2 The tone patterns of Catalan enumerations and the concept of unmarked intonation

In this study we analysed the intonation patterns of enumerations in Catalan. Our hypothesis stated that the most frequent intonational pattern of Catalan enumerations involves a series of rising pitch contours rather than a series of falling pitch contours as reported in some of the previous works on Catalan intonation. This study included the analysis of open and close lists. The results on the tone configurations of Catalan enumerations observed in this study exhibited the following patterns:

<table>
<thead>
<tr>
<th>OPEN LISTS</th>
<th>CLOSE LISTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) □ □ □</td>
<td>□ □ □ ( □ )</td>
</tr>
<tr>
<td>2) □ □ □</td>
<td>□ □ □ ( □ )</td>
</tr>
<tr>
<td>3) □ □ □</td>
<td>□ □ □ ( □ )</td>
</tr>
<tr>
<td>4) □ □ □</td>
<td>□ □ □ ( □ )</td>
</tr>
<tr>
<td>5) mixed pattern</td>
<td>mix. pat. □ □ ( □ )</td>
</tr>
</tbody>
</table>
Each pattern is made up of three different tone contours, which stand for different members of the list. The first tone (beginning from the left) represents the initial constituents of the enumeration, excluding the penultimate and the final members. The second configuration represents the penultimate constituent and the last one stands for the final member of the enumeration. The symbol between brackets suggests an alternative but less recurrent pronunciation of the previous tone. As can be seen in these patterns, the main difference between the intonation of open and close lists lies on the last two members of the enumeration. Whereas in open lists there is no difference between the pitch contours of the last two members and the pitch contours of the initial members, in close lists the antepenultimate and the final tone units always exhibits a rising tone and falling tone (or a falling (+rising) contour) respectively.

Despite the different intonational patterns encountered in the data, the predictions formulated in our hypothesis were fulfilled, since over 75 per cent of the sequences exhibited a series of rising contours (simple rise or fall-rise), whereas only 10 per cent of the sentences presented a series of falling contours. This seems to indicate that the default or most normal intonational pattern for Catalan enumerations involves a rising tone pattern rather than a falling tone pattern, as it was reported in some of the previous works on Catalan intonation, such as Bonet (1984), Recasens (1993) or Badia i Margarit (1995). Similarly, this behaviour contrasts with the unmarked falling patterns described in Navarro Tomás (1966) or Canellada and Kuhlmann (1987) for Spanish enumerations and seems to be more in line with the rising patterns of English enumerations reported in Schubiger (1958), Crystal (1969), Ladd (1978), or Finch and Ortiz Lira (1982).

The fact that some studies have considered the falling pattern as the default behaviour of Catalan enumerations may be due to the speech style on which the analysis of the data was based. Most of these studies only examined reading speech data, which seems to prompt the appearance of falling contours. Although our results showed a greater use of falling contours in reading speech than in spontaneous speech, still the most common pattern in reading speech involved a series of rising tones. This seems to corroborate the idea of a default rising pitch pattern for Catalan enumerations.

In many of the works on Catalan intonation (Virgili i Blanquet 1971, Recasens 1977, Bonet 1984 and Recasens 1993) the appearance of rising patterns in enumerations was also reported. However, the interpretation given
to these patterns always involved some kind of marked connotation. Bonet (1984), for example, pointed out that enumerations with a rising pattern show a greater involvement of the speaker in the conversation. Recasens (1977), in his turn, stated that rising pattern enumerations are more emphatic than those with a falling pattern. In this study, on the other hand, the rising contours are shown to be the most recurrent ones in all kinds of speech and no special (marked) semantic or pragmatic connotations seem to be attributed to them.

The appearance of level tones is not reported in any of the previous accounts of Catalan intonation. In our study a level pattern is typical of lists of numbers. Although we were considering the possibility of treating the level pattern as the default intonation for lists of numbers, we cannot actually make this generalization because two of the speakers did not use this pattern at all. Finally, mixed patterns, including the combination of various tones, also appeared in our data. These patterns, however, were not very frequent and mainly occurred in spontaneous speech.

5.3 Status and meaning of the different tone contours

As stated in the results, all tones were treated as phonological entities available in the intonational system of Catalan speakers, except for the fall (+rising) contour, which needs to be studied in greater detail. The phonological vs phonetic status of the different tones was assessed by means of two aspects. First, we checked whether a given tone was used by all or only by some of the speakers. If a contour appeared in the speech of all the informants, it had greater chances of having phonological status. Second, we tried to see whether the use of a particular tone involved some semantic differences. If that was the case, the possibilities of its being a separate entity were also higher.

The rising patterns of Catalan enumerations observed in our data exhibited two different pitch configurations, namely, a simple rise and a fall-rise. The two contours were treated as two separate tone units available in the tone system of Catalan speakers since all informants used them repeatedly. Despite the two tones' appearing in all kinds of speech style, the fall-rise is more common in spontaneous and semi-spontaneous speech (the visual cue response task) than the simple rise, which is more typical of reading speech. This distributional difference seems to be derived from a semantic or attitudinal distinction. Although both tones imply non-finality or continuity, the fall-rise
exhibits some sort of tentative meaning, which is easily found in unplanned speech. The simple rise, in its turn, has some connotations of certainty, which may be encountered in reading speech since the reader may foresee what is coming next.

The fall tone was also treated as a phonological entity, since it appeared in the speech of all speakers and presented a clearly different meaning from the other tones. The fall was used to indicate finality and conclusion. One of the main differences between open and close lists derived from the presence of a final fall tone in close lists, indicating completeness, and the non-appearance of such a tone in open lists, showing that more elements might be included in the enumeration. When falls were used for the initial members of the enumeration, they expressed some sort of neutral meaning.

Although the level tone was not present in the speech of all informants (two speakers did not use it), we analysed it as a phonological entity because it still appeared in the data of most of the speakers. Similar to the rising contours, the level tone also seems to convey a meaning of non-finality but imbued with uneventful connotations. This is most probably the reason why it is used in lists of numbers, since no unpredictable information is expected.

The most controversial contour in terms of the specification of its status was the fall (+rising) configuration. On the one hand, the fall (+rising) contour seemed to be a separate phonological tone since all speakers used it. However, as far as its semantics is concerned, the fall (+rising) contour seemed to share the same meaning (i.e. finality) as the simple fall. This might lead us to interpret the fall (+rising) contour as a realizational option of the fall tone. In order to identify the status of this contour, further perceptual research is needed.

An important issue derived from the analysis of the intonation of enumerations as well as from the meaning of the different tones is the expression of finality vs non-finality in Catalan. Several studies, such as Bolinger (1978) or Cruttenden (1981, 1986) reported that there are several universal differences in the distinction between falling and rising tones: the former involving some sort of final or closed meaning, whereas the latter denotes non-finality or open meaning. The behaviour observed in Catalan enumerations seems to be in line with this distinction since falls are used to express finality and rises continuity. However, the appearance of the fall (+rising) contour as a way of conveying finality in Catalan seems to be an interesting topic for further research.
5.4 Some notes on the tonality and tonicity of Catalan enumerations

Other aspects analysed in this study were the tonality and tonicity of Catalan enumerations. The results on these two issues exhibited a very regular behaviour. A tone unit was assigned to each member of the enumeration. Each tone unit had a nuclear accent on the last stressed syllable of the last lexical item. When a tone unit was made up of more than one word, some kind of pitch configuration was observed on the first stressed syllable of the tone unit. However, more research should be pursued on this topic, since it is impossible to generalize from our reduced amount of data. Similarly, the placement of the nuclear accent on the last content word of the tone unit needs to be studied in further detail so as to see if Catalan exhibits any cases of nucleus displacement as in English.

5.5 The effect of different variables on the intonation of Catalan enumerations

In order to analyse the intonational behaviour of Catalan enumerations, two variables were taken into account, namely, speech style and the grammatical category (and length) of the constituents. Also interspeaker variability was taken into account. The results showed that speech style differences had an effect on the tone patterns of enumerations, since different speech styles prompted the occurrence of certain patterns. Fall-rises, for example, were common in spontaneous and semi-spontaneous speech, whereas simple rises were more recurrent in reading speech. Falling tones only appeared in reading speech but with less frequency than rising tones. Levels were the typical pattern of numbering.

No major grammatical category and constituent length effects were encountered in the data. Interspeaker variability was not very high, although it is worth noticing the non-appearence of level patterns in the data of two speakers and of falling patterns in the data of one speaker. This seems to reinforce the idea that the unmarked intonation for Catalan enumerations involves a series of rising tones.
5.6 Conclusion

In this chapter, we discussed some of the results obtained in this study. First, we saw that the behaviour of Catalan enumerations reported in previous works did not coincide with our findings and we proposed a new unmarked intonational pattern for Catalan lists, consisting of a series of rising contours rather than a series of falling tones. Then, we analysed the phonetic vs phonological status of the different contours encountered in this study on the basis of the speaker's use and differences in meaning. At this point some notes on the contrast between finality vs non-finality in Catalan were introduced. Then, we reviewed the main characteristics of tonality and tonicity in Catalan enumerations. Finally, the effect of different variables on the behaviour of Catalan enumerations was considered.
CONCLUSION

The aim of this study was to analyse the intonation patterns of enumerations in Catalan. Specifically, we wanted to test the hypothesis that the most frequent intonational pattern of Catalan enumerations involves a series of rising pitch contours rather than a series of falling pitch contours as stated in some of the previous works on Catalan intonation. In order to carry out this study, we examined the intonational behaviour of open and close lists in different speech styles and involving different grammatical categories. Eight speakers of Central Catalan were analysed. The data were examined auditorily and acoustically. Each of the sequences was analysed according to three parameters: tonality, tonicity and tone.

As far as the tonality of Catalan enumerations is concerned, the results exhibited a very regular behaviour. A separate tone unit was assigned to each constituent or member of the enumeration. Similarly, the results on the tonicity of Catalan enumerations were very consistent, since each tone unit presented a nuclear accent on the stressed syllable of the last lexical item.

The results on the tone configurations of Catalan enumerations exhibited different patterns. As stated in our hypothesis, the most typical patterns observed in the data consisted of either a series of fall-rises or a series of simple rises. Other tone patterns such as a series of falls, levels or mixed patterns were less recurrent. This led us to propose a rising intonational pattern as the unmarked intonation of Catalan enumerations. In open lists all the members of the enumeration exhibited the same tone configuration, whereas in close lists the penultimate and the final members showed a rising and a falling contour respectively. A falling (+rising) pitch contour was also observed for the last member of the enumeration.

Speech style variability prompted the occurrence of different tone patterns, the fall-rise being more typical of spontaneous speech or semi-spontaneous speech and the simple rise or the fall of reading speech. Levels were very common in lists of numbers. Grammatical and length differences showed no major effect on the behaviour of enumerations. Little interspeaker variability was observed.
APPENDIX 1

This appendix includes a map of the territories where Catalan is spoken. The vertical line drawn on the middle of the map separates the two dialectal areas: Western and Eastern Catalan.
APPENDIX 2

This appendix introduces the different scenarios that were presented to the speakers in order to elicit the data and illustrates how the spontaneous conversation (first part of each section) alternated with the response to visual cue task (second part of each section). For this task we do not include the pictures themselves because they were presented in big cards which cannot be reproduced in here. Instead, we enumerate in italics the elements that appeared in each card. The elements are in Catalan as well as in English.

Scenario 1

1. Imagine that you are going to the supermarket to buy the food for next week. Could you please tell me a list of the things that you would like to buy in each of the departments, like the butcher’s, the greengrocer's, the pastryshop, ...

2. Now let us imagine that there is a girl called Mary that went to the supermarket this morning and bought the things that you will see in the following cards. Could you please tell me which are the items that Mary bought?

   a. plàtans, maduixes, anous, pomes i círeres
      bananas, strawberries, chestnuts, apples, and cherries

   b. pèsoles, faves i pebrots
      peas, broad beans, and peppers

   c. taronges, raim, mores, avellanes i llimones
      oranges, grapes, raspberries, hazelnuts and lemons

   d. tomàquets, patates, escarxofes i espàreg
      tomatoes, potatoes, artichokes and asparagus
Scenario 2

1. Imagine that Christmas is coming soon and that you have to prepare the Christmas lunch. Which dishes would you like to prepare for a good Christmas lunch?

2. Which are the dishes that Mary chose for her Christmas lunch?

llagóstins, salmó, turrons i neules

prawns, salmon, turrons and neules (two typical Catalan sweets)

Scenario 3

1. Imagine now that the Three King's day is coming soon (the tradition of the Three Kings in Spain is equivalent to the English tradition of Santa Claus) and you have to write a list of presents you would like them to bring you. Which presents would you like to receive from them?

2. Which are the presents that Mary ask for?

una nevera, una planxa i uns gerros

a refrigerator, an iron and some vases

Scenario 4

1. Imagine that you are preparing your summer holidays. Which countries or cities would you like to visit?

2. Which are the cities that Mary is planning to visit?

París, Atenes, Nova york i Londres

Scenario 5

1. Imagine now that you are looking through a window. Can you tell the number, the object and the colour of the things you see?

a. dos gats negres, tres flors vermelles, dos globus blaus i un paraigües verd
   two black cats, three red flowers, two blue balloons and one green umbrella

b. dues pastanagues taronges, tres arbres verds, unes ulleres blaves, una pera vermella i quatre llapisos negres
   two orange carrots, three green trees, one blue pair of glasses, one red pear and four black pencils
APPENDIX 3

This appendix includes the Catalan text that the speakers were asked to read with its correspondent translation into English. The sentences that were used for this study are typed in bold.

La Maria es va llevar a les nou. Es va rentar, es va vestir, va esmorzar i va decidir anar al mercat. Era tard. Plovia molt però no podia esperar més. L'àvia li va dir que compres taronges, raim, mores, avellanes i llimones.

- No vull taronges, va dir la Maria. No m'agraden.
- Si no vols taronges, compra cireres, replíc l'àvia.

La Maria va agafar el paraigües i se’n va anar. Quan va arribar al mercat, es va trobar a en Joan. En Joan havia acabat de tornar de vacances. Li explicà que havia anat a París, Atenes, Nova York i Londres. El que més li havia agradat era Nova York.

- És una ciutat magnífica-va dir en Joan. No t’hi avoreixes mai. Te teatres, cinemes, museus, jardins, botigues, ... És fantàstic!

La Maria no havia estat mai a Nova York i de sobte li van venir unes ganes enormes d’anar-hi. Quan s’acomia d’en Joan, no podia para de pensar en la ciutat dels gratacels i de l’estàtua de la llibertat. Mentre caminava cap a casa la Maria es submergí en els seus pensaments: viatjar, conèixer món, fer nous amics, sortir de casa, ... seria magnífic! Estava tan concentrada en aquestes idees que no se n’adonà que la Cristina la cridava des del balcó de casa seva. La Cristina i la Maria eren amigues des de feia molts anys. Quan la Cristina va veure a passar a la Maria, va deixar el llibre que estava llegint, va agafar el jersei d’una revolada i va baixar les escales de casa seva a corre-cuita per enxampar a la seva amiga. Feia una setmana que no es veien i li havia d’explicar un munt de coses.

- Maria! Maria! Saps què tenim concurs literari on em vaig presentar ara fa tres mesos? Avui he rebut la carta i m’han premiat l’escrit! No és fantàstic! Un viatge a Nova York per a dues persones! En Pere no pot venir perquè treballa. No et faria pas il·lusió venir tu? Ja sé que també tens molta feina, però una ocasió com esta cosa val la pena aprofitar-la, no?

La Maria va quedar muda, desconcertada, sorpresa ... La vida té cops amagats.

Mary got up at nine. She washed herself, got dressed, had breakfast, and decided to go to the market. It was late. It was raining but she could not wait anymore. Her grandmother told her to buy oranges, grapes, raspberries, hazelnuts and lemons.

- I don’t want oranges - said Mary. I don’t like them.
- If don’t want oranges, buy cherries replied the grandmother.

Mary took the umbrella and left. When she arrived at the market, she met John. John had just arrived from holidays. He told her he had been in Paris, Athens, New York and London. What he liked most was New York.

- It’s a wonderful city - said John. You never get bored. It has theatres, museums, gardens, shops ... It’s great!

Mary had never been in New York and all of a sudden he really felt like going there. When she left John, she could not stop thinking on the city of the skyscrapers and the statue of liberty. While she was walking back home, Mary became immersed in her thoughts: travelling, discovering the world, getting acquainted with new people, leaving home ... It would be so nice! She was so absorbed in these ideas that she didn’t noticed that Cristina was calling her from the balcony of her house. Cristina and Mary were friends since a long time. When Cristina saw Mary, she left the book she was reading, took her jumper in passing, and went downstairs very quickly in order to catch her friend. It was a week since they last saw each other and she had to tell Mary lots of things.

- Mary, Mary! Do you remember this literary competition that I took part three months ago? Today I got a letter and I won the prize! Isn’t that wonderful? A trip to New York for two persons! Peter cannot come because he is working. Would you like to come? I know you are very busy but an opportunity like that should be taken into account, shouldn’t it?

Mary was speechless, confused, surprised ... Life is unpredictable!
This appendix includes all the sequences that were analysed in this study. The sentences are presented according to the speakers that produced them. For each informant the sequences are divided into close and open lists and into the different speech styles in which they were uttered. The sentences appear in orthographic transcription with an additional prosodic transcription. The symbols used to account for the nuclear pitch contours are: (\(\downarrow\)) for a fall-rise, (\(\uparrow\)) for a rise, (\(\downarrow\)) for a fall, (\(\uparrow\)) for a level and (\(\downarrow\)) for a fall (+rising movement). Non-nuclear accents can be high (\(\uparrow\)) or low (\(\downarrow\)). Stressed syllables are marked by means of a little circle (\(\circ\)). Each word group is separated with the mark (\(\|\)). The only sequences that are translated into English are that ones produced in spontaneous speech since all other sentences are already translated in appendices 2 and 3.

**SPEAKER DV**

1. **CLOSE LISTS**

**Spontaneous speech**

Escar\(\text{-}\)xofes \(\|\) cebes \(\|\) pasta\(\text{-}\)nagues \(\|\) blèdes \(\|\) mongetes tendres \(\|\) carbassons \(\|\) i pepinos
Artichokes \(\|\) onions \(\|\) carrots \(\|\) beet \(\|\) green beans \(\|\) marrows \(\|\) and cucumbers

Pollastre \(\|\) cu\(\text{-}\)mill \(\|\) o\(\text{-}\)ús \(\|\) i una\'mica de formatge \(\|\) perquè ara també en venen
Chicken \(\|\) rabbit \(\|\) eggs \(\|\) and a bit of cheese \(\|\) since now it\'s also sold

Llengu\(\text{-}\)ado \(\|\) llagostins \(\|\) mú\(\text{-}\)sclos \(\|\) calamàrs \(\|\) i potser una\'mica de lluç
Sole \(\|\) prawns \(\|\) mussels \(\|\) squid \(\|\) and a bit of hake

Podria fer escudella i \(\text{carn d'\text{-}vila}\) \(\|\) però m\'agrada\(\text{-}\)ria fer un \(\text{bon \text{\text{-}foie}}\) \(\|\) m\'agrada\(\text{-}\)ria fer uns llagostins \(\|\) m\'agrada\(\text{-}\)ria fer un pollastre relig\(\text{-}\)no \(\|\) m\'agrada\(\text{-}\)ria fer per postres turr\(\text{-}\)ons \(\|\) i neules
I could do some broth \(\|\) but I would also like to do a good foie \(\|\) I would like to do prawns \(\|\) I would like to do a stuffed chicken \(\|\) I would like to do for dessert turr\(\text{-}\)ons \(\|\) and neules

Un vestit \(\|\) una jaqu\(\text{-}\)eta \(\|\) unrell\(\text{-}\)lòtle \(\|\) unes arrec\(\text{-}\)cades \(\|\) una televisió \(\|\) una aspiradora \(\|\) un video \(\|\) i un bolso
A dress \(\|\) a jacket \(\|\) a watch \(\|\) a pair of earrings \(\|\) a television \(\|\) a vacuum cleaner \(\|\) a video \(\|\) and a handbag

M\'agrada\(\text{-}\)ria anar a Londres \(\|\) a Roma \(\|\) a Wien \(\|\) a Paris \(\|\) m\'agrada\(\text{-}\)ria anar a Venècia \(\|\) i m\'agrada\(\text{-}\)ria anar a Nova York
I would like to go to London \(\|\) to Rome \(\|\) to Viene \(\|\) to Paris \(\|\) I would like to go to Venice \(\|\) and I would like to go to New Yotk

M\'agrada molt fer teatre \(\|\) m\'agrada també cantar \(\|\) m\'agrada anar de bons restaurants \(\|\) m\'agrada llegir \(\|\) m\'agrada viatjar \(\|\) però el què m\'agrada més de tot \(\|\) és anar a teatre \(\|\) i fer teatre
I like very much acting || I also like singing || I like going to good restaurants || I like reading || I like travelling || but what I like most is going to the theatre || and acting

Em llevo vaig al lavabo || em riento || vaig a la cuina || em preparo l'esmorzar || esmorzo || mentres esmorzo m'agrada llegir el diari || alešhores men'vaig a vestir || i cap a treballar
I get up || go to the toilet || wash myself || I go out || I go to the kitchen || I prepare breakfast || I took it || while I'm having breakfast I like to read the newspaper || then I get dressed || and I go to work

Després vaig a passeig || després tornó sopem una mica || mirem una mica la tèlle || i cap a dormir
Then I go for a walk || then I come back || we have dinner || we watch TV || and go to bed

Responses to visual cues

Plátanos || fresones || anóus || pomés || i cireres
Pêsoles || faîes || i pebrets
Taronges || raïm || mòres || avellanes || i llimones
Tomàquets || patates || escarxótes || i espàrrecs
Llagostins || salmó || turrons || i neules
Una nevèra || una planxa || i uns gerros
París || Atenes || Nova York || i Londres
Blanc || vermell || verd || groc || blau || i taronja
'Dos gats negres || tres flors vermèlles || dos globus blaus || i un paragües verd
'Dues pastaneses taronges || tres arbres verds || dues ulleres blaves || una pèra vermella || i quatre llapis negres

Numbers

Ún || dos || tres || quatre || cinc || sis || set || vuit || nou || i deu
Déu || vint || trènta || quaranta || cinquanta || seixanta || setanta || vuitanta || noranta || i cent
Dos || quatre || sis || vuit || deu || dotze || catòrze || setze || divuit || i vint

Reading passage

Taronges || raïm || mòres || avellanes || i llimones
París || Atenes || Nova York || i Londres
Es va rentar || es va vestir || va esmorzar || i va decidir anar al mercat
Va deixar el libbre que estava llegint || va agafar el jersei d'una revoluda || i va baixar les escales de casa seva || a corre-cuita || per enxampar a la seva amiga
2. OPEN LISTS

Spontaneous speech

Responses to visual cues

Reading passage

Teatres || cinémas || musées || jardins || boutiques

Viajar || conéixer món || fer nous amics || sortir de casa

Muda || desconcertada || sorpresa

SPEAKER FT

1. CLOSE LISTS

Spontaneous speech

Un quilo de càrn || de vài || dos quilos de tomàquets || tres de pères || un enciam || dos quilos de patates || tres o quatre quilos de cèbes

A kilo of meat || of lamb || two kilos of tomatoes || three of pears || a lettuce || two kilos of potatoes || and three or four kilos of onions

Dues pescadilles || un tall de ràp || un parell de llenguados || tres o quatre quilos de petxines

Two whittings || a piece of angler || two soles || and three or four kilos of clams

Suïssa || el Nord d'Espanya || i llavors l'Àfrica

Switzerland || the North of Spain || and then Africa

Llegir una mica || mirar una mica la televisió || a dormir

Reading a bit || watching TV || then to bed

Responses to visual cues

Plátanos || maduixes || anòus || pomes || cireres

Pèsoles || fàves || pebrot

Taronges || raïm || mòres || avellanes || limones

Tomàquets || patates || escarxófes || espàrrecs

Gàmbes || salmó || turrons || neules

Una nevera || una planxa || un parell de ceràmiques

Paris || Grècia || Estats Units || Londres
El blànc || el vermèll || el verd || el groc || el blau || i el taronja
Dos gats || negres || tres flors || vermelles || dos globus blaus || i un paraigües || verd
Dues pastanagues || taronges || tres arbres verds || dues ulleres blaves || una pera vermella
|| i quatre llàpis negres

Numbers
Un || dos || tres || quatre || cinc || sis || set || vuit || nou || i deu
Dieu || vint || trenta || quaranta || cinquanta || seixanta || setanta || vuitanta || noranta || i cent
Dos || quatre || sis || vuit || deu || dotze || catórze || setze || divuit || i vint

Reading passage
Taronges || raiím || móres || avellanes || i llimones
Paris || Atenes || Nova York || i Londres
Es va rentar || es va vestir || va esmorzar || i va decidir anar al mercat
Va deixar el llibre que estava llegint || va agafar el jersei d'una revoluda || i va baixar les escales de casa seva || a corre-cuïta || per enxampar a la seva amiga

2. OPEN LISTS

Spontaneous speech
Un parell de litres de liet || dues cocacoles || un quilo de platanos || tres ampollas de llei ||
una ampolla de laca
Two litres of milk || two cokes || a kilo of bananas || three bottles of bleach || a bottle of
hair spray
Una camisa de dormir || un parell de bruixes || una vaixella
A nightdress || two blouses || and a dinner service
El cinema m'agradà || el teatre també || anar d'excursió || anar a esquiar
Cinema I like || theatre too || going to excursions || skiing

Responses to visual cues

Reading passage
Teatres || cinemes || museus || jardins || botigues
Viatjar || conèixer món || fer nous amics || sortir de casa
Muda || desconcertada || sorpresa
SPEAKER FP

1. CLOSE LISTS

Spontaneous speech

Uns llagostins fredes || posem per cäs || i al darrera un pollastre farçit
Some cold prawns || let's say || and afterwards a stuffed chicken

Responses to visual cues

Platans || mađuxes || anous || pomés || i cireres
P?sols || fa?es || i pebrots
Després aix? són taronges || ra?m || mo?res || avellanes || i limones
Tom?quets || patates || escarxofes || i esparreccs
Llagostins || salmol || turro || i neules
Una nevra || una'planxa de vapor || i uns'gerros de ceramica
Paris || At?nes || Nova York || i Londres
Blanc || vermell || verd || groc || blau || i taronja
 Dos'gats negres || tres'flors vermelles || dos'globus blaus || i'un paraigues verd
Dues pastanagues de color taronja || tres'arbres de color verd || dues ulleres de color blau
Una'pera de color vermell || i quatre'ilapis blancs i negres

Numbers

Zero || un || dos || tres || quatre || cinc || sis || set || vuit || nou || i deu
Zero || deu || vint || trenta || quaranta || cinquanta || seixanta || setanta || vuitanta || noranta || i cent
Zero || dos || quatre || sis || vuit || deu || dotze || catzze || setze || divuit || i vint

Reading passage

Taronjes || ra?m || mo?res || avellanes || i limones
Paris || At?nes || Nova York || i Londres
Es va rentar || es va vestir || va esmorzar || i 'ya decidir anar al mercat
Va deixar el llibre que estava llegint || va agafar el jersei d'una revolada || i 'va baixar les esc?ales de casa seva || a corre-cuita || per enxampar a la seva amiga
2. OPEN LISTS

Spontaneous speech

Péres || prunes || abricots || també∪ compro plàtans || quan hi,ha cirères || cirères ||
malúixes || pères || melò || sindria
Peaches || plums || apricots || I also buy bananas || when there are cherries || cherries ||
strawberries || pears || melon || and watermelon

¡Compro tomàquets || compro encàm || compro mongeta tendra || compro ceba tendra
I buy tomatoes || I buy lettuce || I buy green beans || I buy onions

Amb gambetes d’aquelles pelades petes || trècets de pinya || amb una’mica de salsa rosa
With peeled shrimps || pieces of pineapple || and a bit of pink sauce

Unes arrecadetes || un braçalet || un rellotge
A pair of earrings || a bracelet || a watch

Alguna cosa de robe || algun complement com un bolso || o un muncador de coll
Something to wear || an accessory such as a handbag || or a scarf

M’agradaia tornar a París || m’agradaia tornar a Londres || m’agradaia tornar a Florencia || a Roma
I would like to go to Paris || I would like to go back to London || I would like to go back
to Florence || to Rome

M’agrada passejar || m’agrada viatjar || m’agrada nadar
I like walking || I like travelling || I like swimming

Esmorzar || m’arréglo || vaig a escola || surto a la una del migdia
I have breakfast || I get dressed || I go to school || I go out at one o’clock

¡Faig el dinar || dinem || reçullo la cuina || faig la teina de la casa més urgent
I prepare lunch || we eat || I clean the kitchen || I do the most urgent housework

¡Miro una estona la televisió || faig el sopar || sopem
I watch a bit of TV || I prepare dinner || we eat

Responses to visual cues

Reading passage

Teatres || cinemes || museus || jardins || botigues
Viatjar || coñèixer mòn || fer nous amics || sortir de casa
Muda || desconcertada || sorpresa
1. CLOSE LISTS

Spontaneous speech

Responses to visual cues

Plátanos || maduixes || anòus || pomes || i cireres
Pèsoles || fàves || i pebròts
Taronges || raïm || gèrds || fruits secs com avellanes || i després || llimones
Tomàquets || patates || escarxòfes || i espàrrecs
Llagostins || salmó || turrons || i neules
Una nevèra || una plànxa || i uns gerros
París || Grècia || Estats Units || i Londres
Blanc || vermell || verd || gròc || blau || i taronja
Dos gats negres || tres flors vermélles || dos globus blaus || i, un paràigües verd
Dues pastanagues de color taronja || tres arbres de color verd || dues ulleres blaves || una pera vermella || i, quatre llapis negres

Numbers

Un || dos || tres || quatre || cinc || sis || set || vuit || nou || i deu
Déu || vint || trenta || quaranta || cinquanta || seixanta || setanta || vuitanta || noranta || i cent
Dos || quatre || sis || vuit || deu || dotze || catorze || setze || divuit || i vint

Reading passage

Taronges || raïm || mòres || avellanes || i llimones
París || Atènes || Nova Yòrk || i Londres
Es va rentar || es va vestir || va esmorzar || i, va decidir anar al mercat
Va dejar el llibre que estava llegint || va agafar el jersèi d'una revolada || i, va baixar les escales de casa seva || a corre-cuita || per enxampar a la seva amiga

2. OPEN LISTS

Spontaneous speech

La verdura de la setmana || la fruita de la setmana
The vegetables for the whole week || the fruit for the whole week
Compro llegums || que en gasto només un día || pero bueno || frutes || fruits secs || compro avelínies || amêstilles
* I buy legumes || which I only prepare once || but anyway || fruit || dry fruits || I buy hazelnuts || almonds

Taronjes || mandarines || els prèsssecs || les cirèrres || els melòn
* Oranges || mandarines || peaches || cherries || melons

Compro verdura || compro mongeta tendra || compro verdura pel caldo || patates || cèbes
* I buy vegetables || I buy green beans || I buy vegetables for the broth || potatoes || onions

Com farina || com arros || com fideus || despérs galètes || despérs algun caña
* Like flour || like rice || like noodles || then biscuits || then a bottle of champain

Lléom || car de xai || vedella
* Pork || lamb || beef

Turróns || caña || vi dòc || amb els turróns
* Turrons || caña || sweet wine || with turrons

Unes arrebades de plàta || un penjoll || un braçalé
* A pair of silver earrings || a necklace || a bracelet

Alguna peça de ròba || un jersei boní || o una bufanda || o un mucador de coll
* Something to wear || a nice pullover || a wool scarf || or a silk scarf

He estat a Àustria i em va agrada molt || despérs m'agradària l'Amèrica Llatina || m'agradària anar al Canadà
* I've been in Austria and I liked a lot || then I would like Latin America || I would like to go to Canada

M'agradà llegir || m'agradà cantar || m'agradà fer gresca amb els amics
* I like reading || I like singing || I like partying with friends

Estar amb la família || amb els fills || compartir coses sèves || viure les seves coses doncs... no sé de l'escola
* Being with the family || with the children || sharing their things || living their things I don't know from school

Faig cl disar per a tots || al migdia recull la casa || a la tarda torno a treballar
* I prepare lunch for everybody || at midday I clean the house || in the afternoon I go back to work

O, tinc reunions de junta || de col.lègi || o vaig a cantar || o si estic a casa em quedo a llegir
* Either I have meetings || from school || or I go to sing || or if I am at home I read

Responses to visual cues

Reading passage

Teatres || cinemes || museus || jardins || botigues
* Theaters || cinemas || museums || gardens || boutiques

Viatjar || conèixer món || fer nous amics || sortir de casa
* Travel || get to know the world || make new friends || go out of the house

Muda || desconcertada || sorpresa
* Change || unexpected || surprise
1. CLOSE LISTS

Spontaneous speech

M'agrada | comprar mongola tendrà | m'agrada | comprar espàrrecs | m'agrada | comprar peòs | m'agrada | comprar enciam | m'agrada | comprar escaròla | m'agrada | comprar pebròts | m'agrada | comprar patàtes | m'agrada | comprar cèbes | i alt.

I would like to buy green beans | I would like to buy asparagus | I would like to buy peas | I would like to buy lettuce | I would like to buy endive | I would like to buy peppers | I would like to buy potatoes | I would like to buy onions and garlic.

Comprarà llenguadòs | comprarà llagostins de Sant Carles de la Ràpida | comprarà lluç | del Cantàbric | comprarà llagosta | comprarà uns calamaròs per fer a la brasa | o per fer a la planxa | i si trobes gòmbes de Palamòs | doncs també compraràs gòmbes de Palamòs.

I would buy sole | I would buy prawns from Sant Carles de la Ràpida | I would buy hake | from the Cantabric sea | I would buy squid to braise | or to fry | and if I could find prawns from Palamòs | I would also buy prawns from Palamòs.

Un bon cava | Un bon xampany francès | amb un bon Pedro Ximènes | amb un bon cava | amb uns bons conyacs | i amb uns bons armagnacs.

A good cava | a good French champain | with a good Pedro Ximènes | with a good coffee | with good cognacs | and good armagnacs.

França | evidentment Itàlia | i Gran Bretanya | France | of course Italy | and Great Britain.

Responses to visual cues

Uns plàtanos | uns fresos | unes anòus | unes pomes | i unes ciòrees.

Uns peòs | unes fàves | i uns pebròts

Unes tarònques | un raïm | unes frambuèges | unes avellanes | i llimones.

Uns llagostins | un salmó | uns turròns | i unes neules

Una nevèra | una planxa | i unes ceràmiques.

Ha triat París | ha triat Atènes | ha triat Nova York | i ha triat Londres.

'Blanc vermell verd groc | blau | i taronja.

'Dos gats negres | tres flors | vermellons | dos globus | blaus | i un paraigües | verd.

Duès | pastanàgues | tarònques | tres arbres verifying | dues ulleres blaves | una pera de color vermellons | o marrons | i quatre llapis negres.
SPEAKER JG

1. CLOSE LISTS

Spontaneous speech

Els ous || després vegen les galetes || la xocolata || els iogurts || i llavors anem al teulé || i comprem els èmbotits || i aquestes coses
_The eggs || after that the biscuits || the chocolate || the iogurts || and then we go to the counter || and we buy the sausages || and that sort of things_

Pedres || museus || i coses així
_Stones || museums || and things like that_

A mig matí faig un tallat || al demà doncs normalment revo elo bastànt || vaig a fer el cafè || i torno cap a la botiga
_In the morning I drink a coffee || then I usually develop a lot || I take a coffee || and go back to the shop_

"Faig una mica de jardí" || una mica de piscina || sopar || mirar la tèle || i a dormir
_I take care of the garden || I swim a bit || have dinner || watch TV || and to bed_

Responses to visual cues

Plàtanos || maduixes || anòus || pomes || i cireres

Pèsoles || façols || i pebrots

Taronges || raim || framubueses || avellanes || i limones

Tomàquets || patates || escarxifes || i espàrrecs

Llagostins || salmó || uns bombons de xocolata || i neules

Una nevèra || un congelador || un còmbi || una planxa de vapor || i uns gerros

Paris || Atènes || Nova York || i Londres

Blanc || vermeill || verd || groc || blau || i taronja

'Dos gats negres || tres flors vermelles ||'dos globus blaus || i 'un paraigües verd

'Dues pastanagues || tres arbres verds ||'dues ulíferes blàves ||'una pèra vermellà || i quatre llapis negres

Numbers

Un || dos || tres || quatre || cinc || sis || set || vuit || nou || i deu

Deu || vint || trenta || quaranta || cinquanta || seixanta || setanta || vuitanta || noranta || i cent

Dós || quatre || sis || vuit || deu || dotze || catòrze || setze || divuit || i vint
Reading passage

Taronges || raïm || mòres || avellanes || i llimones

Paris || Atènes || Nova York || i Londres

Es va rentar || es va vestir || va esmorzar || i va decidir anar al mercat

Va deixar el llibre que estava llegint || va agafar el jersei d'una revolada || i va baixar les escales de casa seva || a corre-cuita || per enxampar a la seva amiga

2. OPEN LISTS

Spontaneous speech

¡Pasta de dents || desodorants || sabó || la crema d'afaitar
The toothpaste || the deodorants || soap || the shaving cream

Les fregoneses || les escobres || el detergent per la rentadora || la sal || després ve la pasta || després ve el mefjar de la gossa
The mops || the brooms || the powder for the washing machine || the salt || and then there is the pasta || the food for the dog

Força marisc || algunes oústes || algunes navalles
Lots of seafood || some oysters || and some razor clams

Un abric || unes, botes àltes || desodorant || el massatge || la colonia || les corvates
A coat || a pair of high boots || the deodorant || the massage || the eau de Cologne || the ties

Veure selves tropicals || veure animals rares || un safari en algun puest d'aquests
To see tropical forests || to see strange animals || a safari in one of those places

Coses d'herbes || i natures || i besties
Things related to herbs || nature || and animals

Em, llevo bastant d'horta al demà || esmorzo poquet || vaig a la botiga
I get up quite early in the morning || I have a light breakfast || I go to the shop

Responses to visual cues

Reading passage

Teatres || cinémas || museus || jardins || botigues

Viatjar || conèixer món || fer nous amics || sortir de casa

Muda || desconcertada || sorpresa
SPEAKER RE

1. CLOSE LISTS

Spontaneous speech

Filet de bòu II costèlles II i be
Beef sirloin II chops II and lamb

El salmó II les anxoves II i després cap a casa
The salmon II the anchovies II and then back home

El bàll II les planses II i el maquetisme ferroviari
Dancing II plants II and railway maquetting

Responses to visual cues

Plàtanos II fresños II anûss II pômes II i cireres

Pêsols II fâves II i pebrots

Tarônges II raín II móres II avellánes II i llimones

Tomáquets II patâtes II escarxófes II i espàrrecs

Arjòs amb gambes II salmó II i turçons de xocolata

Una nèvera congeladora II una plànxa II i uns gerros

El primer blanc II el segon vermell II el tercè verd II el quart gròc II el cinquè blau II i el sisè taronja

'Dos' gats negres II tres flors vermèlles II 'dos' globus blaus II i un paraigües verd

'Dues pastelagues II tarônges II tres arbres verds II dues ulleres blaves II una pera vermell II i quatre llàpis negres

Numbers

Ún II dos II tres II quatre II cinc II sis II set II vuit II nou II i deu

Déu II vint II trènta II quarantà II cinquanta II seixanta II setanta II vuitanta II noranta II i cent

Dós II quatre II sis II vuit II déu II dotze II catòrze II setze II divuit II i vint

Reading passage

Tarônges II raín II mores II avellánes II i llimones

París II Atenès II Nova Yòrk II i Londres

Es va rentar II es va vestir II es va esmorzar II i va decidir anar al mercat

Va deixar el llibre que estava llegint II va agafar el jersey d'una revolada II i va baixar les escàles de casa seva II a corre-cuña II per enxampar a la seva amiga
2. OPEN LISTS

Spontaneous speech

Carrego les taronges || carrego les patates || llavors enciàms || llimones || als || bledes
I take the oranges || I take the potatoes || then the lettuce || lemons || garlic || and beet

¡Compro llenguado || ràp || i despues o sardines || o una dorada
I buy sole || angler || then either sardines || or dorado

Púllastre farcit amb prunes || salitsxes || i pinyons
Chicken stuffed with plums || sausages || and pine nuts

Holanda || Canadà || i Brasil
Holand || Canada || and Brazil

Em dútxo || m’afaito || em faig el llit
I take a shower || I shave myself || I make the bed

Treballar fins a la una || llavors surt a la una || diño
I work till one || then I go out at one || I have lunch

Em llevo || em rento || em vestixo
I get up || I washed myself || I get dressed

O faig gymnàstica || o tinc classe de ball || o estúdio
Either doing gymnastics || or having a dance class || or studying

Responses to visual cues

Reading passage

Teatres || cinemes || museus || jardins || botigues

ViatjAR || conèixer món || fer nous amics || sortir de casa

Muda || desconcertada || sorpresa

SPEAKER LV

1. CLOSE LISTS

Spontaneous speech

Libres sobre la geografía d’aquí nostra || llibres de viatges || i biografies
Books about the geography of our land || books about travels || and biographies

SopAR || dormir || veure una amiga la tèlev || i ja està
Having dinner || going to bed || watching TV || and that’s all
Responses to visual cues

Elis plàtanos || les maduixes || les anòus || les pòmes || i les círeres
Pèsols || fàves || i pebrots
Taronges || raïm || mòres || avellanes || i llimones
Postre de música || i despés ha comprat maionesa
Tomàquets || patates || escarxófes || i espàrrecs
Llagostins || salmó || turrons || i neules
Un refrigerador || una planxa || i uns gerros
Paris || Atènes || Nova Yórk || i Londres
Blanc || vermell || verd || gòsc || blau || i taronja
'Dos gats negres || tres flors || marrons || dos globus || blaus || i un paraigües verd
'Dues pastaragues de color rosa || tres arbres verds || dues ulleres blaves || una pera vermella || i quatre llapis blancs i negres

Numbers

Un || dos || tres || quatre || cinc || sis || set || vuit || nou || i deu
Deu || vint || trenta || quaranta || cinquanta || seixanta || setanta || vuitanta || noranta || i cent
Dois || quatre || sis || vuit || deu || dotze || catorze || setze || divuit || i vint

Reading passage

Taronges || raïm || mòres || avellanes || i llimones
Paris || Atènes || Nova Yórk || i Londres
Es va rentar || es va vestir || va esmorzar || i va decidir anar al mercat
Va deixar el llibre que estava llegint || va agafar el jersei d'una revoluda || i va baixar les escales de casa seva || a corre-cúita || per enxampar a la seva amiga

2. OPEN LISTS

Spontaneous speech

Pà || tomàquets || enciam || cèbes || mésclus
Bread || tomatoes || lettuce || onions || mussels
Fruita || uns presseces || i també uns abrecocs
Fruit || some peaches || and also some apricots
França || Alemanya || Itàlia || Grècia
France || Germany || Italy || Greece

Caminar || llegir || llegir libres || sobretot || visitar el meu país
Walking || reading || reading books || above all || visiting my country

Llevar-me || anar a esmorzar || sortir || vaig a treballar
To get up || to have breakfast || to go out || to go to work

Responses to visual cues

Reading passage

Teatres || cinemes || museus || jardins || botigues
Viatjar || conèixer món || fer nous amics || sortir de casa
Muda || desconcertada || sorpresa
REFERENCES


