

The form and function of extra-sentential elements*

Lluïsa Astruc

University of Cambridge

Extra-sentential elements have been described as being both syntactically and prosodically independent from the phrase to which they are appended. It is commonly assumed that their prosodic independence follows from their syntactic independence. This paper argues that since extra-sentential elements do not form a single syntactic class, their common properties are better explained in terms of their role in the information structure of the discourse. All members of the class of extra-sentential elements accomplish a similar functional role and all of them share a specific prosodic form that helps to optimise the communicative relevance of the utterance by minimizing the effort required to process it.

1 INTRODUCTION

Altering the normal order of words and clauses is a basic strategy in the organization of discourse, which in classical rhetoric is exemplified by a number of related figures of speech grouped under the collective term ‘transposition’. For instance, *anastrophe*, as in ‘Glistens the dew upon the morning grass’, or ‘She looked at the sky dark and menacing’, or ‘Troubles everybody’s got’ implies an alteration of the normal syntactic order (Matthews 1997, *Silva Rhetoricae* on-line). Another figure of speech which was commonly used in classical literature is that of *hysteron proteron* (‘valet atque vivit’, ‘he is well and lives’, or, in conversational English, ‘put your shoes and socks on – not in that order, of course!’) which involves the transposition of the temporal order of related events (*Silva Rhetoricae* on-line).

Such figures of speech rely for their effect on expectations about a normal order in the succession of communicative events, the alteration of which brings about the desired stylistic effects. More than being mere changes in word order, they imply a shift in the expected order of the building blocks of information structure.

In this paper I argue that constructions such as dislocated phrases, as in ‘It’s ready, *your meal*’, appositions, as in ‘Anna, *the cook*, baked the cake’, parentheses, as in ‘Your dinner, *as we agreed*, is ready’ constitute alterations of an expected or unmarked order of the elements in the sentence. Such examples of ‘fancy syntax’, to use the label given by Prince (1985), perform a communicative purpose and this purpose is generally accompanied by a specific prosodic form.

1.1 The organisation of information

‘Information packaging’ (Halliday 1967), ‘information structure’ (Chafe 1974), and ‘functional sentence perspective’ (Firbas 1964) are related terms that refer to the organisation of the constituents of the sentence according to the demands of the communicative situation. In every language sentences are composed of two parts, whereby something is said (the ‘comment’ or ‘rheme’) about something else (the ‘topic’, or ‘theme’), as seen in the following example (Hockett 1961).

* Many thanks to my supervisor, Francis J. Nolan, for his constant support, and to the speakers who kindly volunteered to take part in the experiments reported in this paper.

© 2005 by Lluïsa Astruc

Faye Chalcraft & Efthymios Sipezidis (eds.)

Cambridge Occasional Papers in Linguistics 2:100-120.

- (1) John wouldn't lend me his car
[topic] [comment]

In Vallduví's proposal, 'information packaging' is 'a structuring of sentences by syntactic, prosodic, or morphological means that arises from the need to meet the communicative demands of a particular context', so that hearers can easily identify which part of the sentence represents an actual contribution to their information state at the time of the utterance and which part represents material that is already subsumed by this information state (Engdahl and Vallduví 1996: 2). The organisation of the phrase thus conveys the speaker's assumptions about the hearer's state of knowledge at the time of the utterance and provides cues for the hearer to interpret correctly the meaning intended. Information packaging is thus a mechanism to ensure efficient communication. For instance, in (2),

- (2) 'He_i wouldn't lend me his car, *the stupid bastard_i*'

the confluence of prosodic detachment and deaccenting in *the stupid bastard* indicates to the hearer that it refers anaphorically to an antecedent, 'he', which is already present in the discourse.

The division of the information into a part which is accessible to the hearer and a part which is not is a basic concept in theories of information structure. The former part, the information supposed to be accessible to the hearer, has been called the 'theme', the 'topic', and the 'ground', as well as 'given' and 'familiar' information. It is accessible to the hearer because it has been brought up in the discourse or because the hearer is supposed to be already familiar with it. For instance, the speaker might be reasonably certain that her interlocutor knows a given name because it has just been mentioned, or because it is that of a common friend, or because it is the name of a well-known celebrity. On the other hand, there are levels of information which the speaker knows that the hearer cannot possibly be familiar with. The latter part has been called the 'rheme', the 'comment', the 'focus', and the 'new' information, and this is the part which the speaker needs to convey to the hearer. The terms 'theme' and 'rheme' will be used throughout this paper, in keeping with the Prague tradition and with Vallduví (1991, 1994, and elsewhere).

From the early work of the Prague School of Linguistics to contemporary work, it has been proposed that most languages, among them languages as diverse as Chinese, Japanese, English, and Catalan, share a common order of the informational elements of the sentence, in which the theme or topic precedes the rheme or comment, so that 'the speaker first chooses the topic and then formulates what to say about it, i.e. the comment' (Dahl 1969: 12), (Mathesius 1928: 66, Daneš 1967: 222, Firbas 1964, 1980, Halliday 1967, Gundel 1985, 1988, Givon 1988, among others). The reverse order, namely rheme-theme is also grammatically correct, and by no means infrequent. It might be used for stylistic reasons, such as enhancing the expressiveness of the message or improving the rhythm of the utterance, or for pragmatic reasons, such as signalling some contextual contrast. Owing to either stylistic or pragmatics reasons, the rheme-theme order is perceived as marked, as noted by Halliday (1967: 212-213, 219ff), and by Firbas (1964: 273).

1.2 Extra-sentential elements

The so-called extra-sentential elements are elements such as dislocated phrases ('They are nice, *those girls*'), vocatives ('*Anna*, your meal is ready'), certain adverbs ('*Obviously*, she is wrong'), direct speech markers ('Your meal is ready, *she said*'), appositions ('*Anna, the cook*, baked the cake'), parentheses ('Your dinner, *as we agreed*, is ready'), and restrictive relative sentences ('*Anna's friends, who are loyal*, supported her'), among others.

They have also been called ‘parentheses’, ‘incises’, ‘tags’, ‘tag sentences’, ‘*contour flat*’, and ‘D-contour’, ‘sentence external elements’, and *constituents externs*. Different terminology reflects theoretical differences, and hence different underlying assumptions about what these elements have in common.

The terms ‘tag’ or ‘tag sentence’ are the names chosen by Liberman (1979), Pierrehumbert (1980, Pierrehumbert & Hirschberg 1994, Beckman & Pierrehumbert 1986, and elsewhere), and Ladd (1980, 1996, and elsewhere). These studies belong to the autosegmental-metrical tradition, which is the framework most widely used in intonation studies since the 1980s.¹

The terms ‘parenthesis’, *contour plat* (Delattre 1972; Martin 1987; Wunderli 1987) and ‘D-contour’ (Bing 1984) denote an approach mostly concerned with the description of the characteristic intonation of these elements, which is typically described as a monotone with an optional final rise, so as to eventually draw generalizations about grammatical form and meaning.

‘Extra-sentential elements’, ‘sentence external elements’, and *constituents externs* (in Catalan; Bonet 1984, Recasens 1993, Prieto 2002) reflect the prevailing assumption that these elements share some syntactic and prosodic characteristics. Syntactically, they are assumed to be adjoined to the highest node in the phrase structure, S. In this sense, they are external to the phrase. Prosodically, they form independent tonal units, marked by prosodic boundaries (Cooper & Paccia-Cooper 1980, Cruttenden 1986; Nespor & Vogel 1986; Nespor 1993). This approach is mostly concerned with the phrasing of extra-sentential elements (the term used in this study throughout, henceforth abbreviated as ESEs) into independent units. The main problem with this account is that ESEs do not fall into a single syntactic class. Parentheses, for instance, are commonly analysed as being outside the syntactic tree. Relatives and appositions are attached to the NP they complement, not to S, the root sentence. Furthermore, the analysis needs to take into consideration the differences between restrictive and non-restrictive relatives.

Consequently, the first difficulty in the study of ESEs arises when deciding which elements belong to this class. Previous studies did not aim at compiling an exhaustive list, and furthermore, they were relying on different criteria for defining which members belong to the class of ESEs. The decision adopted in this study is to take as the core members of the class those categories identified on the basis of grammatical criteria in the Cambridge Grammar of the English Language (henceforth CGEL) and on the basis of prosodic criteria in phonological studies. The intersection of both sets of categories yielded the list presented in Example (3), namely:

- (3) Dislocated phrases, sentential adverbs, non-restrictive relative clauses, appositions, parentheses, epithets, quotations, vocatives, tags, and interjections

Question tags and interjections were not included in the study, because the former are typical of English and are not found in other languages such as Catalan and the latter are arguably susceptible to much paralinguistic variation. Consequently, the study presented in this paper has dealt with the following categories, using speech data in English and Catalan:

- (4) Dislocated phrases, sentential adverbs, non-restrictive relative clauses, appositions, parentheses, epithets, quotations, and vocatives

¹ Liberman (1975) does not strictly belong to the autosegmental-metrical framework, which was first fully articulated in 1980 with Pierrehumbert’s seminal thesis, but rather belongs to the metrical part of the autosegmental-metrical framework.

Therefore, ESEs do not form a homogenous class from a grammatical point of view. Rather, ESEs can be ranked according to their degree of integration into the grammar, as shown below:

(5) Hierarchy of Grammatical Integration

syntax	dislocated phrases sentential adverbs
semantics	non-restrictive relatives parentheses appositions epithets
pragmatics	quotation markers vocatives

Categories such as dislocated phrases and sentential adverbs are clearly integrated in the syntactic structure while non-restrictive relatives, appositions, and parentheses, which are semantically linked to the element they modify, are integrated in the semantic structure and parentheses, epithets, quotations and vocatives fall within the pragmatic component of the grammar.

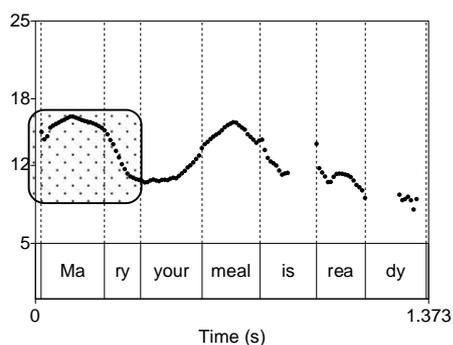
Given the lack of syntactic homogeneity of ESEs, the commonly assumed view that they form independent phrases because they are syntactically independent has to be rejected. Two alternative explanations can be considered: one, that there is no motivation to treat ESEs as a single category; and two, that the core property that defines the set resides somewhere else, namely, in their structural role. In this paper I argue for the second explanation, citing as evidence Catalan and English data.

2 THE INTONATION OF EXTRA-SENTENTIAL ELEMENTS

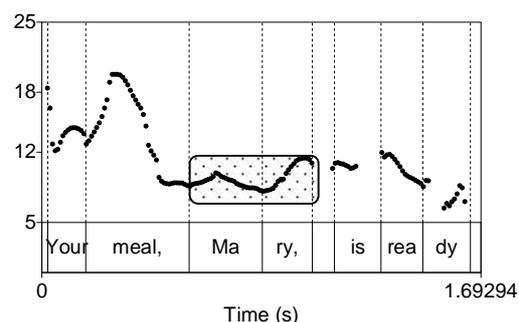
2.1 Background

A previous study (Astruc 2003a) identified the main problems in work on the intonation of ESEs, which are mainly the reported asymmetry between elements that are initial in the sentence and elements that are not. Initial elements form completely independent intonation patterns, as seen below in (5), while sentence medial and final elements have a pattern that is dependent on that of the main phrase. They sound either monotonous, less loud, and less clearly articulated than the surrounding words, or alternatively, they can sound like a copy of the previous intonation.

(5) Example of vocative ('Mary') in initial position



(6) Example of vocative ('Mary') medial position



'Mary' in (5) sounds as though it were an independent word, while in (6) 'Mary' sounds much less loud and less lively than the adjacent words. Such intonation, which is called 'deaccentuation', usually indicates that part of the phrase is to be interpreted differently from the rest, namely as containing information which is already known to the hearer and, hence, which does not need to be highlighted. Nevertheless, it is not clear why the same element in the same phrase should be pronounced in a different way depending on whether it appears in first position or not. In Astruc (2003a), I proposed (after Jackendoff 1972) that ESEs are 'adjuncts': they add supplementary information, and thus can be optionally eliminated with little loss in meaning. Their subordinated syntactic-semantic role is marked by a matching subordinated intonation. This, however, left unsolved the problem of the asymmetries between initial and final elements shown in (5) and (6).

In the second paper (Astruc 2004), this syntactic account is therefore rejected, and new data (a series of three experiments using a different methodology) is presented as evidence that the behaviour of ESEs is mainly governed by their role in the discourse, which is that of signalling the theme, the part of the phrase that provides contextual information. Thus, the behaviour of ESEs is not amenable to syntax, but rather to the pragmatic component of language. In my doctoral dissertation, I refine this account and, building on Vallduví's proposal (1999, 2002), propose an explanation for the reported asymmetry between initial and non-initial elements (Astruc 2005).

2.2.1 Methodology

For this study, a corpus of 884 phrases was gathered (480 phrases in English and 404 in Catalan) containing the target ESEs listed in Example (4). The English part was formed by 30 sentences which were read twice by eight Southern British English speakers. The target sentences were mixed in pseudo-random order with sentences containing adverbs which were intended for another experiment. Likewise, following the standard practice in experimental

design, other phrases containing completely unrelated grammatical constructions, so-called ‘distractors’, were also inserted, to prevent readers from falling into a monotonous reading style, and thus repeating the same pattern over and over again.

The Catalan part was formed by 404 phrases, which were gathered at three different stages. The first stage was a pilot experiment intended to investigate the effects of changes in pitch range upon ESEs. Later on, more data on dislocations, appositions, and sentential adverbs were gathered, as part of the two further studies (Astruc 2003b, Astruc 2004).

2.2 Prosodic characteristics of extra-sentential elements

The data was digitised and analysed by listening to and looking at the pitch traces obtained with Praat 4.1.21. The following generalizations can be drawn about the main prosodic properties of ESEs. First, all categories of ESEs tend to be prosodically independent of the main phrase. The exceptions are appositions and vocatives. It has been observed that they can appear integrated in the main phrase, which in the case of vocatives correlates with a different communicative function, as will be explained in section 2.2.7 below.

Second, there is a prosodic difference between initial and non-initial ESEs. In initial position they are both rhythmically and intonationally independent (with the exception of vocatives and appositions, which can be integrated in the main phrase), while in medial and final position they are tonally subordinated to the main phrase.

Third, this tonal subordination is carried out by means of two principal strategies, which are:

- (7) (a) by reductions in pitch span leading to total deaccentuation
- (b) by reduplicating the contour in the main phrase, which can be accompanied by the use of an overall lower pitch level and a much lower voice volume

ESEs fall into two groups according to the type of tonal subordination they display. Dislocated phrases, quotation markers, and epithets follow strategy (7a); that is, they show deaccentuation. Parentheses, non-restrictive relatives, and appositions follow strategy (7b): they show tonal reduplication at a lower level and with a compressed pitch range. Sentential adverbs and vocatives do not fit clearly into either (7a) or (7b). Sentential adverbs, and adverbs in general, are more heterogeneous prosodically than any of the other categories, as they are more heterogeneous semantically than any of the other parts of speech. However, they have one prosodic property in common with the other categories of ESE, namely they always form independent phrases. They behave according to what is predicted in the literature about ESEs in general. Vocatives show a different behaviour in English and Catalan. In English they are mostly deaccented, while in Catalan they are accented, as will be shown in section 2.2.7 below.

Sections 2.2.1 to 2.2.8 examine in more detail the prosodic characteristics of dislocated phrases, quotation markers, epithets, parentheses, non-restrictive relatives, appositions, vocatives, and sentential adverbs.

2.2.1 Dislocations

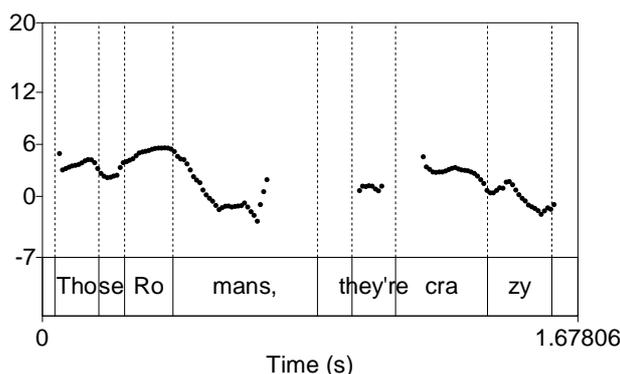
The main function of the dislocated phrase is to create a new information unit, thus making cognitive processing easier for the hearer. Left and right dislocations perform different functions. The left-dislocated phrase serves the purpose of avoiding the presence of a discourse-new element in initial position, where familiar information is expected. The right-dislocated phrase serves the reverse function, namely that of introducing familiar information

in a position where a high informative content is expected (CGEL; Geluykens 1992, 1994; Lambrecht 1994). Another function is clarification by means of an afterthought.

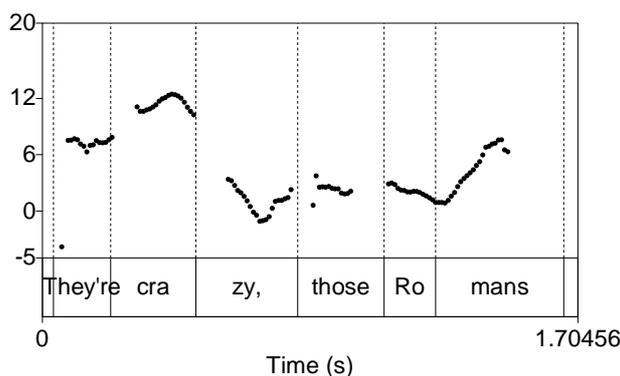
2.1.2 Prosodic differences between left- and right-dislocations

Prosodic differences between left- and right-dislocations are akin to those between initial and non-initial ESEs. Whereas the former receive totally independent tonal contours, as shown in the pitch trace in (8), the latter have contours which are intonationally subordinated, as can be seen in (9):

(8) An example of left-dislocated subject: ‘*Those Romans, they’re crazy*’



(9) An example of right-dislocated subject: ‘*They’re crazy, those Romans*’



We observe in the pitch traces that dislocations have a prosodically detached contour, separated by either pauses and boundary tones, as in (8), or by tonal movements (which are generally low), as shown in (9). We notice also a fundamental difference between both figures: while the left-dislocation in (8) has a nuclear accent (in ‘crazy’), the right-dislocation on (9) has none. It shows complete deaccentuation: a contour that is totally flat except for the final rising tone (H%) (which appears, incidentally, 20 times in the 32 instances of right-dislocation, that is, 62.5% of the time). That right-dislocated phrases are truly deaccented was corroborated in a previous experiment using tightly controlled material (Astruc 2003b).

Therefore, deaccentuation coupled with prosodic separation is the prosodic form typical of right-dislocations, and also of quotation markers and epithets, both in English and in Catalan, as will be described in the next sections.

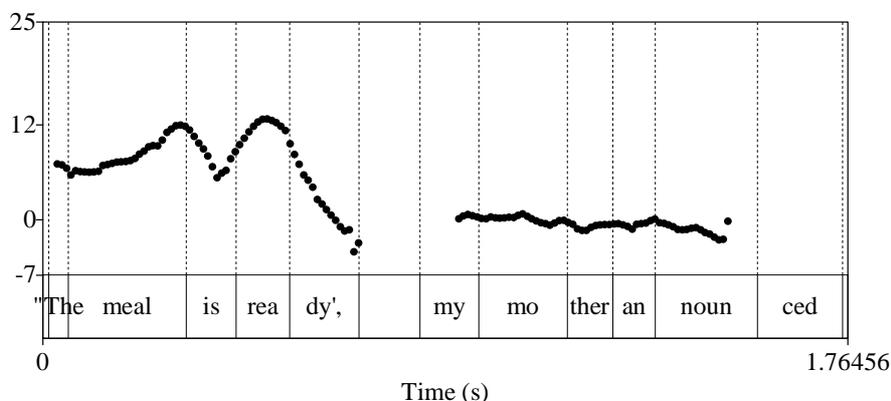
However, as seen in the other examples of left- and right-dislocation in the corpus, ‘*Your meal, it’s ready*’ and ‘*It’s ready, your meal*’, some variation is also possible. The dislocated phrase may belong to the same unit as the main phrase, although this happens seldom, about 9.4% of times, or it may also receive some specific pronunciation, such as a calling intonation, a fall-rise intonation, or another pronunciation.

Interestingly, when the dislocated phrase belongs to the same unit of the main phrase, the former is deaccented. Moreover, the reverse also holds, namely, that when the dislocated phrase is deaccented, it is also prosodically detached, thus hinting at a trade-off between melodic and rhythmic cues.

2.2.2 Quotation markers

‘Quotation markers’, ‘quotation-attributions’, or ‘direct speech markers’ are clauses such as, for instance, ‘she said’ in ‘She lived alone, *she said*’. They are not integrated in the syntax, and their function is that of adding supplementary information. Thus, they are optional. The phonological description of quotation markers is simple. As is the case with dislocations, they are prosodically detached in any position, and in final position they are deaccented also, as can be seen in (10) below:

(10) An example of quotation marker

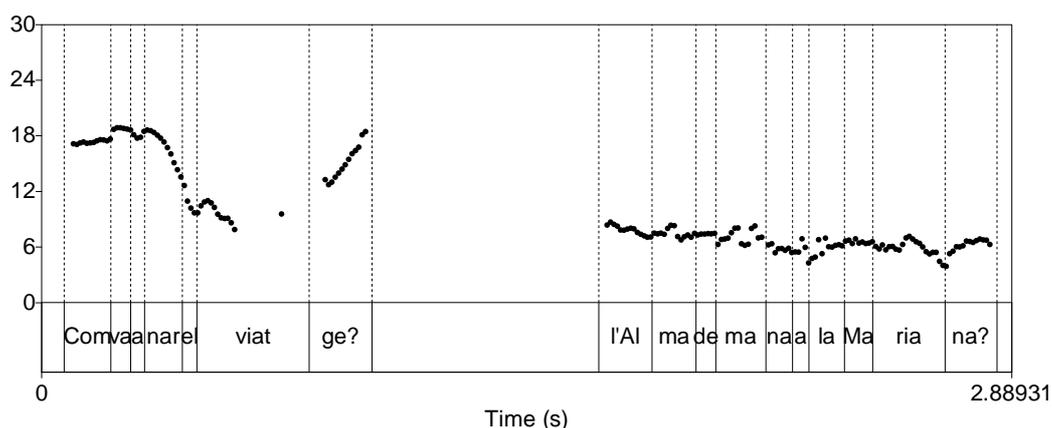


We observe that the clause ‘my mother announced’ appears completely deaccented, although it is separated by a clear pause. This is also the tendency for the other examples in the corpus - four phrases, read twice by eight speakers, thus yielding 64 phrases.

Quotation markers are invariably deaccented and they show a conspicuous prosodic separation from the main phrase. Very often (65% of the time) they are separated by pauses (with either L% or H%), even though low phrase tones (L-) are also very frequent (while H-tones are notably absent).

Although there are fewer tokens in Catalan, and in the case of quotation markers these are all by just one speaker, the same tendencies as in English are observed nonetheless. Quotation markers in Catalan appear equally set off by prosodic breaks and deaccented. In the Catalan corpus there are also some instances of quotation markers following a question, and these are equally deaccented as shown in (11):

(11) Com va anar el viatge? – l’Alma demana a la Mariana’
 (‘How was the trip?’, Alma asks Mariana’)



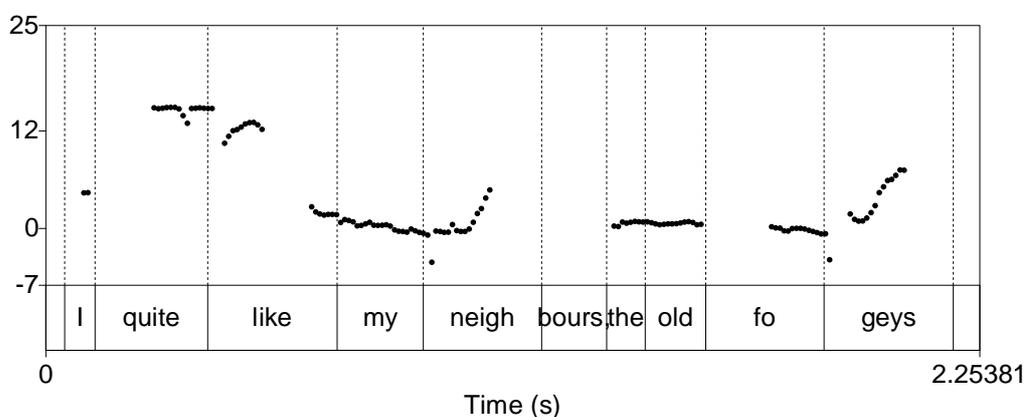
In Catalan, quotation markers in initial position take the standard declarative contour, which is high on the first accent and falls down all the way to the nucleus. In the corpus there is a version of the phrase in (11) with the quotation marker in initial position ('L'Alma demana a la Mariana – Com va anar el viatge?'), which forms an independent contour separated by a low tonal movement.

A possible explanation for the prosodic behaviour of quotation markers can be advanced by arguing that they are metalinguistic devices, outside the discourse and addressed mainly to the reader. They are, as is the case with the rest of ESEs, of an eminently optional and supplementary character. They can be eliminated without any ungrammaticality and with little loss of information. The analysis of some cases of parentheses in the section 2.2.4 provides more evidence to support this view.

2.2.3 Epithets

Epithets are NPs such as 'the old fogeys' in 'I quite like my neighbours, the old fogeys'. Similar to the case of right-dislocations and appositions, epithets are also a type of anaphora. As seen before, the antecedent of right-dislocations is an anaphoric pronoun, while that of epithets and appositions is a full lexical NP. As will be seen later, epithets are also similar to appositions in that they add supplementary detail, in other words, they are optional, and can be substituted for the whole construction in a way that yields an entailment of the original, as for instance in 'I quite like the old fogeys'. The important difference between epithets and appositions is that appositions have literal meaning, whereas epithets have a non-literal interpretation. Example (12) corresponds to an epithet:

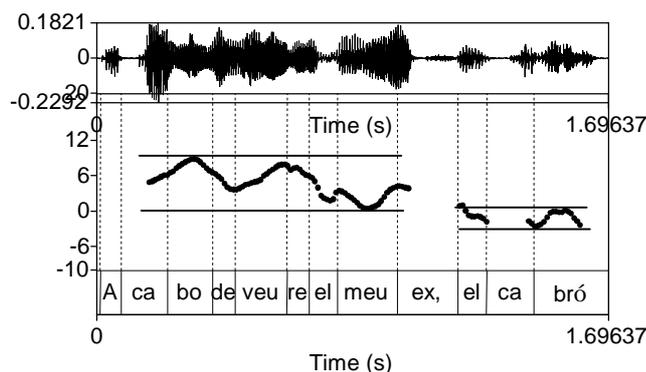
(12) An example of epithet in English



We observe that the epithet ‘the old fogeys’ is deaccented and is followed by a rise. This is the intonation that typically corresponds to epithets, and the one that receive the other five examples of epithet in the corpus.

Unlike in English, in Catalan² epithets can be accented and they never carry a final rise. The epithets in the corpus are at times produced so that they form part of the same intonation unit as the main phrase, and at other times produced so that they form a separate intonation unit and are accented (although with a very reduced pitch range). Even in those cases where the speaker added extra emphasis, the emphatic accent had a pitch range subordinated to that of the main phrase, as can be seen in the pitch trace below, which corresponds to (13) and is read by the male speaker:

- (13) An example of epithet in Catalan: ‘Acabo de veure el meu ex, *el cabró*’ (‘I’ve just seen my ex, *the bastard*’)



Parallel lines have been fitted by hand to facilitate the comparison of the pitch range and pitch level in the main clause and in the epithet. From the pitch trace it is easy to appreciate that the epithet is pronounced at a lower level and with a narrower pitch range than the main phrase, and the speech wave indicates that it also has less intensity.

2.2.4 Parentheses

According to the CGEL, parenthetical clauses, such as ‘I think’ in ‘There are, *I think*, some grounds for optimism’, have the form of main clauses, but they are structurally incomplete. Another relevant property is that they can also have a non-parenthetical use, as can be seen in the examples in (14):

- (14) (a) I think it is safe (non-parenthetical use)
 (b) It is safe, *I think* (parenthetical use)

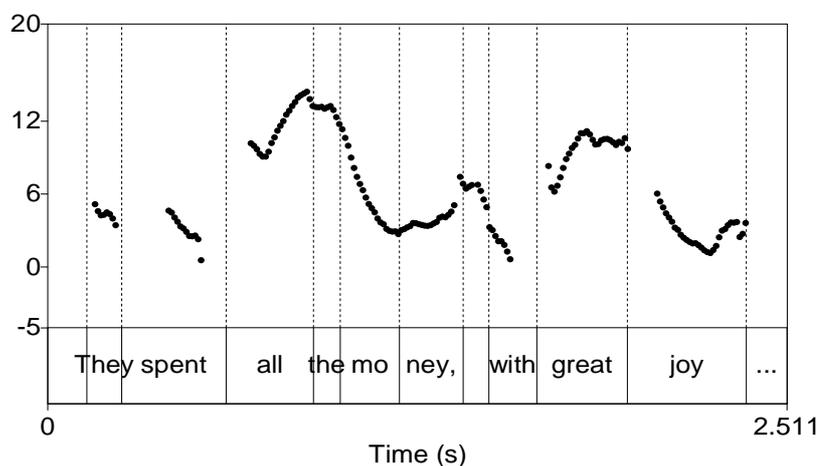
Parentheses constitute one of the most central categories in ‘traditional’ accounts of ESEs. They are considered to be external to the syntactic structure (as for instance, McCawley 1982) and they are described as having a very reduced pitch range (Karcevskij 1931, Bolinger 1972: 137-138; 1985: 33-34). Often, the term ‘parenthesis’ has served as an umbrella denomination for several (or all) of the categories in the class of ESEs (Delattre 1966, among many others). Even taken in a narrow sense, parenthesis is still quite a heterogeneous category, because ESEs can be formed by non-finite clauses (‘It’s not a bad result, *all things considered*’),

² Epithets however can carry an emotional load, in which case they are accented, irrespective of language. This seldom happens, and moreover, the few occurrences of accenting correspond to the same phrase, ‘I’ve just caught a glimpse of my ex, the bastard’ and to its interrogative counterpart ‘Have you seen my ex, the bastard?’.

verbless clauses ('Many students came, *most of them foreigners*'), AdjP ('Anna, *angry at the delay*, complained loudly'), or other types of clauses (Payà 2002).

The analysis shows that the parentheses in the corpus mostly form independent phrases and they are mostly accented, often with a reduplicating contour (53.3% of the time). We see below an example:

- (15) An example of parenthesis in English: 'They spent all the money, *with great joy*, on a trip to a tropical island'



As shown in the pitch trace in (15), parentheses form independent units which are mostly separated by pauses. Even though there is a small percentage of deaccentuation (about 20%) in both English and Catalan, most of the time the parenthesis is pronounced in a lower level and with a reduplicating contour. It is hypothesized that reduplication serves to reinforce the semantic connection between the parenthesis and the anchor phrase.

The examples of parentheses in the Catalan corpus are equally prosodically detached and are mostly separated by pauses, which is in line with predictions in the literature (Payà 2002, 2003, Prieto 2002). As in English, they appear to be accented, with a lower and compressed pitch range, and also often with a reduplicating contour.

There were some cases of parentheses that were omitted by the speaker. These included clauses such as '*rient com una boja*' ('laughing like mad'). They can be considered as reduced quotation markers, that is, as a reduced version of, for instance, 'she said, laughing like mad' and, as such, as a sort of meta-textual comment. In such cases, the speaker read the text while laughing and she omitted to read the clause, which indicates that she understood the parenthesis in a true meta-textual sense, as a sort of off-the-record stage direction, addressed to the reader for her to know how to enact the dialogue, but not meant for the audience. It can be argued that this type of parenthesis, this 'reduced quotation marker', is typical of written language and is oriented towards the reader. It indicates how the reader should read the text. The same explanation can be extended from reduced quotation markers to full quotation markers, as suggested in section 2.2.2. The prosodic form of quotation markers, that is, their total deaccentuation, indicates that they should be interpreted as part of the textual background.

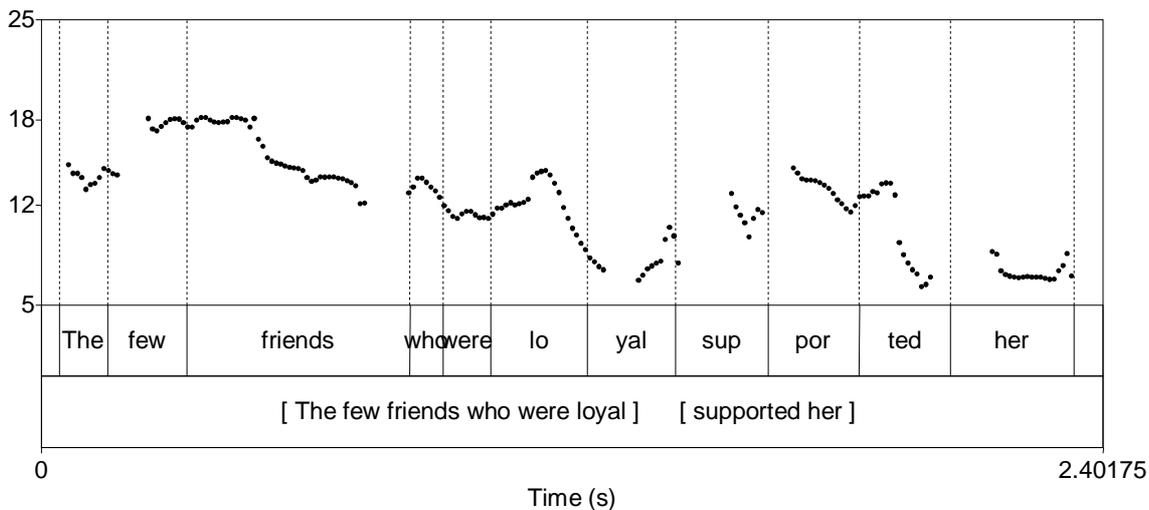
2.2.5 Non-restrictive relatives

Relatives clauses (together with sentential adverbs) are one of the syntactic categories that can have both a supplementary and a non-supplementary function. Only when they perform the former role, that of a supplement, does their prosodic form correspond to the typical prosodic form of ESEs. This duality makes them excellent cases for study.

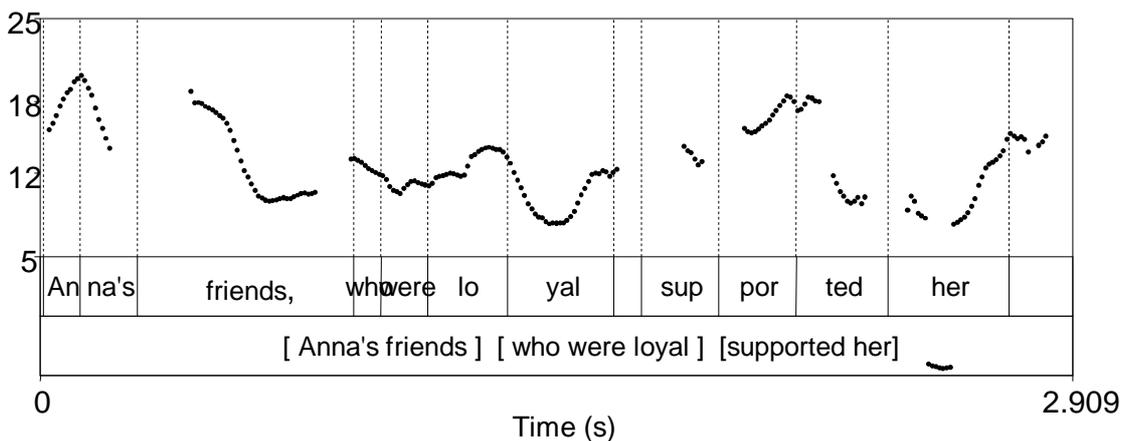
Restrictive relatives appear integrated into the syntactic structure, but non-restrictive relatives are only integrated into the semantic component of language. Whereas the former have the function of specifying a referent, non-restrictive relatives only add supplementary information and, therefore, do not serve to distinguish one referent from another. Consequently, they can be removed without any disruption or infelicity – they are optional. Furthermore, it has been noted that they cannot appear in absolute initial position since they necessarily follow the NP they modify.

The pitch trace of the phrase ‘The few friends *who were loyal* supported her’, which contains a restrictive relative clause, is shown in (16) and the pitch trace of ‘Anna’s friends, *who were loyal*, supported her’, which contains a non-restrictive version of the same clause is shown in (17).

(16) A restrictive relative: ‘The few friends *who were loyal* supported her’



(17) A non-restrictive relative: ‘Anna’s friends, *who were loyal*, supported her’

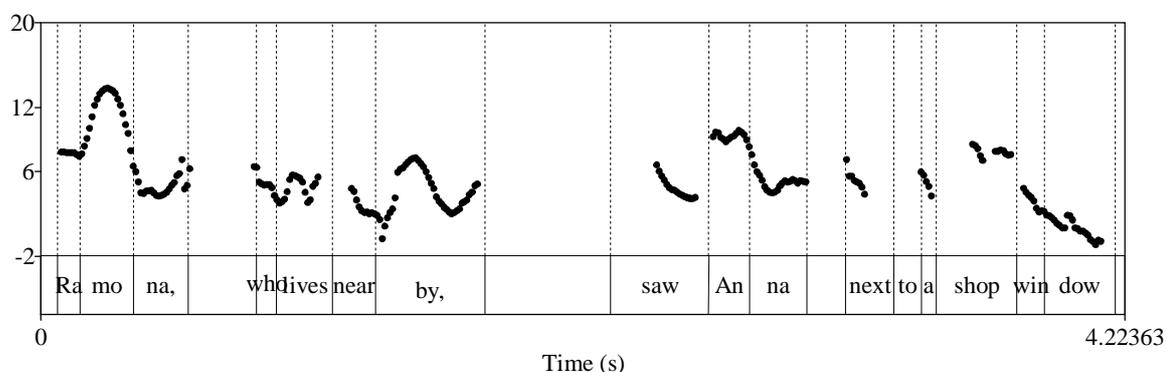


The restrictive relative in (16) is divided into two units (‘The few friends who were loyal’, and ‘supported her’), separated by a high boundary tone, H-. In contrast, the contour in (17) is divided into three units, since the interpolated relative clause forms an independent unit, separated by a low phrase accent (L-, manifested as a dip in pitch after ‘friends’) and by a pause preceded by a high boundary tone (H%, the rising tonal movement after ‘loyal’). In Figure (17) the accent in ‘loyal’ is the same as in ‘friends’, a H*, and consequently the non-restrictive relative reduplicates the contour of the precedent clause, though in a more reduced

pitch range than in the surrounding clauses. Non-restrictive relatives typically show the strategy described in (7.b), namely prosodic detachment and tonal subordination.

The pitch trace in (18) shows another example which can be compared to the Catalan version of the same phrase in (19).

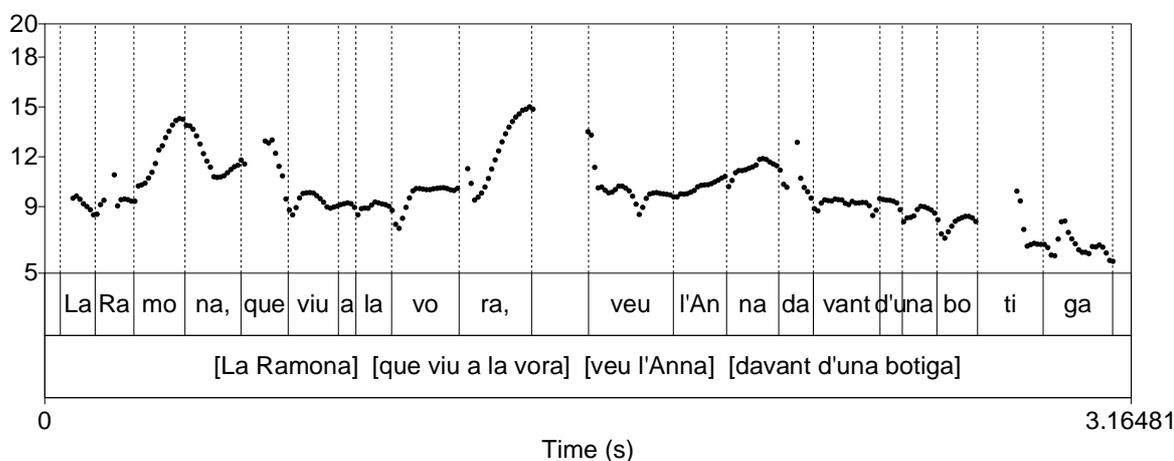
- (18) The non-restrictive relative clause ‘Ramona, *who lives nearby*, saw Anna next to a shop window’



This much longer pitch trace clearly shows how the pitch is lowered and compressed for the relative clause, and how the relative receives an independent pattern that copies that of the first clause. The patterns of the third and the last clause (‘saw Anna’ and ‘next to a shop window’) are also independent. Moreover, the second pause is twice as long as the first pause. It can be argued that non-restrictive relative clauses show more cohesion with their antecedent, which contains the referent, than with the clause to the right, even though prosodic separation from both is compulsory. This is manifested in the higher frequency of high tonal boundaries accompanying the preceding pause, in the shorter duration of this pause, and also in the tonal subordination of the relative clause to its antecedent.

The same applies to Catalan, as can be observed in the 24 tokens in the corpus (eight phrases, read three times by one speaker). The pitch trace in Figure (19) shows the Catalan counterpart of (18):

- (19) An example of non-restrictive relative in Catalan: ‘La Ramona, que viu a la vora, veu a l’Anna davant d’una botiga’ (‘Ramona, who lives nearby, saw Anna next to the shop window’)



As in English, the relative clause in (19) gets an independent unit, in this case set off by a preceding L- and by a following H% and a boundary. As in the English examples, the pitch range is compressed and lowered, that is, it is subordinated to the main clause. The prosodic

unit containing the relative clause shows more cohesion with the clause to its left, as observed in the English data. This behaviour is not surprising, since non-restrictive relatives are semantically attached to the preceding clause, their anchor, which they complement, and with which they agree in person, number, and in case (in those languages where such morphological markers apply).

2.2.6 Appositions

Appositive NPs are structurally and functionally very similar to non-restrictive relatives. As with relative clauses, they perform the dual role of modifiers and of supplements, depending on whether or not they are integrated into the syntactic structure. As modifiers, appositions are integrated into a definite NP matrix clause, as seen in the two examples below:

- (20) (a) This is my husband *Norman*
 (b) She sang in the opera *Carmen*

They behave in a way akin to restrictive relatives in that they provide identifying information about the referent, although the specification provided by the modifier is not necessarily restrictive. For instance, in (20a) there is no implication that the speaker has more than one husband. The construction ‘my husband Norman’ does not serve the purpose of identifying which husband is being referred to but rather is just a way of referring succinctly to the person concerned (CGEL: 447). Both in this role and in their ESE role (that of supplement, in the terminology of the CGEL), the appositive entails the anchor NP. Accordingly, we can say ‘This is Norman’ instead of ‘This is my husband Norman’.

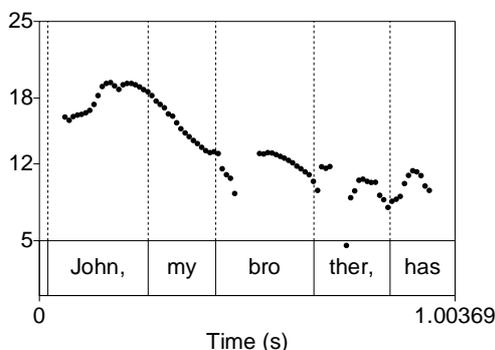
There is an important difference between an NP in the role of a modifier, as in (20a) and (20.b), and one acting as ESE, as for instance in (21a) and in (21b) below:

- (21) (a) This is my husband, *Norman*
 (b) She sang in that opera, *Carmen*

The difference is that modifiers are presented as an integral part of the meaning of the clauses containing them, while ESEs are presented as an addition, and thus, their semantic content is interpreted as being less relevant than that of the main clause (CGEL: 1064).

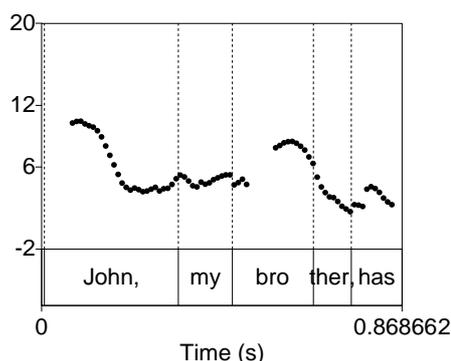
When the apposition is integrated into the syntactic structure, as in the two examples in (22), it is also prosodically integrated into the contour of the matrix clause. An example of this is shown in (23) below:

- (23) An example of appositive modifier: ‘John *my brother* has baked the cake’



In the pitch trace in (23), ‘John my brother’ forms a single prosodic unit. Only when the apposition has the role of an ESE, is it also prosodically detached from the rest of the contour, as seen in (24):

(24) An example of appositive ESE: ‘John, my brother, has baked the cake’



The distinction between the contours in (23) and in (24) corresponds to the distinction proposed by Gussenhoven (2002: 290-292) between ‘incorporating’ and ‘enclitized’ elements. The supplementary apposition ‘my brother’ and its anchor NP, ‘John’, belong to different units, and these are separated by low phrases tones. The pitch range of the apposition is subordinated to that of the matrix clause. The same happens with those appended to final position.

In general, as observed in the data, English appositions are accented and reduplicate the contour of the main clause at a lower level and also with a compressed pitch range. In Catalan, as in English, appositions behave very much like non-restrictive relatives in that they reduplicate the contour of the main phrase.

2.2.7 *Vocatives*

As noted above, vocatives are difficult to analyze. Grammar studies treat them as independent elements, without any specific syntactic function (McCawley 1989, Taglicht 1998, CGEL). They seem to have, however, a communicative function, such as attracting the addressee’s attention, or expressing the speaker’s attitude towards the hearer – attitudes such as respect (‘Yes, sir!’) or affection (‘Yes, my dear’, ‘mummy’, etc). Arguably, the former role (singling out the addressee and/or attracting his attention) can be better carried out when the vocative appears in initial position, while the latter role (expressing the speaker’s attitude towards the hearer) is better performed in final position. A possible hypothesis is that the addressee is not yet included in the communicative situation, and therefore the referent of the vocative can be regarded as discourse-new. In final position, when the speaker expresses her attitude towards the addressee, the referent is already present in the communicative situation, and it can thus be thought of as discourse-old.

Vocatives are the ESE category that has received most attention by far, and also possibly the one with the lowest level of consensus in the literature, at least in English. Studies in Catalan agree that vocatives form independent units and that they are accented (Bonet 1984, Recasens 1993 Prieto 2002), although there are some references (in Bonet and in Prieto) to the fact that vocatives following a declarative phrase receive a subordinated intonation. In English, there is much less agreement. Whereas early studies observe that vocatives form independent units and are deaccented (Lieberman 1979, Ladd 1980, Bing 1984, Cruttenden 1987), later studies, following the AM framework, associate prosodic detachment with accentuation and either claim that vocatives can be accented at times but do not form independent phrases (as in Pierrehumbert 1980) or, if they do form independent units, that they belong to a lower level in the hierarchy, the intermediate phrase. And finally, the correspondence between the dual function and the dual form of vocatives (unaccented when

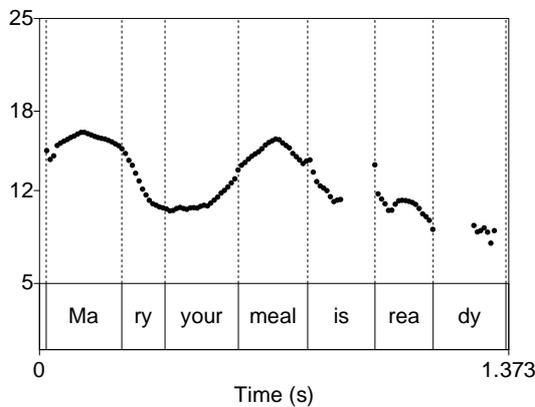
fulfilling an expressive function, accented when carrying out an attention-catching function) is only mentioned in Gussenhoven 1985 and Cruttenden 1987.

According to the descriptions in the literature, it is expected that both in English and in Catalan vocatives in initial position receive an independent tonal contour. As for non-initial position, predictions can be made only for Catalan: they are expected to be detached and accented, but with a tonally subordinated contour. No predictions are possible in English, except that they are, contrary to descriptions in the literature, expected to form independent phrases, as the rest of ESEs do.

2.2.7.1 Vocatives in the corpus

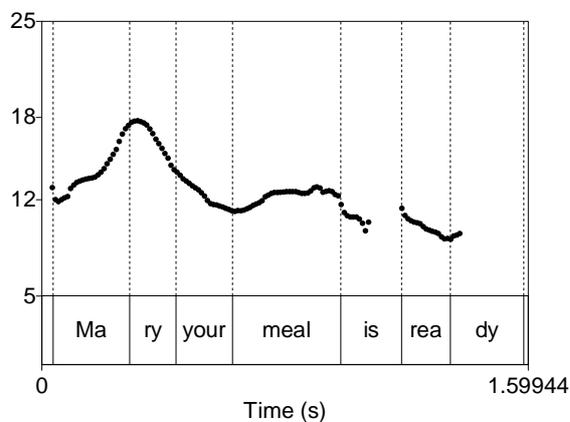
In the corpus there are 129 phrases with vocatives in initial, in medial, and in final position, in both English and in Catalan³. In general, initial vocatives behave as expected, which is to say that they show tonal contours that are totally independent, as can be seen in (25):

(25) An example of vocative: ‘Mary, your meal is ready’



Cases like the one in (25) constitute the norm. However, there are isolated instances (about 13 % of the total) of the vocative being integrated in the same contour as the main phrase, as in the example below:

(26) An example of vocative integrated into the main phrase: ‘Mary, your meal is ready’



³ There are 96 phrases in English (six phrases, repeated twice by eight speakers) and 33 in Catalan (11 phrases repeated three times by one speaker)

As is apparent in the pitch trace, the vocative is not detached from the phrase. To the ear, it sounds less loud. It can be interpreted as a (rare) case of a ‘communicative’ vocative occurring in initial position, instead of the position associated with this function (either central or final).

Vocatives interpolated in central position mostly form independent intonation units (88%) separated by tonal movements, generally a falling movement at the start of the vocative (L-) and a rising movement at the end (H-), as seen in (27).

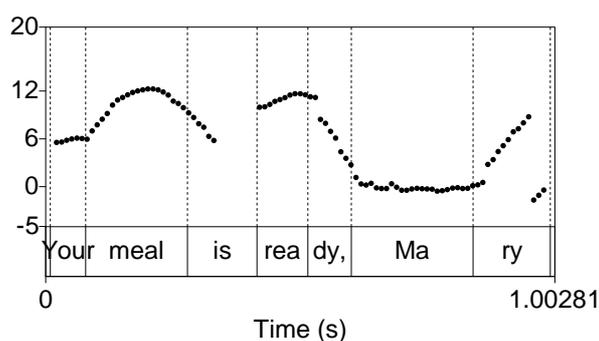
(27) ‘Your meal, Mary, is ready’



‘Mary’ is separated by a low phrase tone and by a pause. Also, the vocative is deaccented (the ‘bump’ over the stressed syllable ‘Ma’ is interpreted as an effect of the stress).

In English, vocatives in final position behave exactly as they do in medial position: they form phrases of their own, generally separated by L- tones, and more rarely by H- or H%. Figure (28) below provides an example of this:

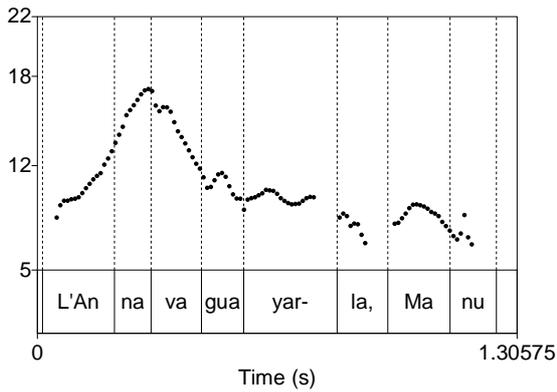
(28) An example of English vocative: ‘Mary’



Here, the vocative is also deaccented, and is separated by a low phrase accent (L-) from the main clause. Very often, as in the above example, the vocative ends with a final rise (H%).

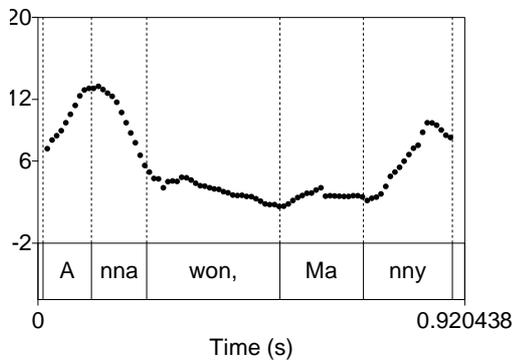
Catalan vocatives in final position have a different behavior from those in English. Although they form independent units, as occurs in English, these units are accented, as can be seen in Figure (29):

(29) An example of Catalan vocative: ‘Manu’ (‘Anna won it, Manu’)



The above phrase can be compared to the semantically equivalent English phrase, in (30):

(30) An example of English vocative in final position: 'Manny'



In English, 'Anna won, Manny', Pierrehumbert's famous example, is both deaccented and prosodically detached from the main phrase (from which it is separated by a L- phrase tone), while in Catalan it is accented.

2.2.8 Sentential adverbs

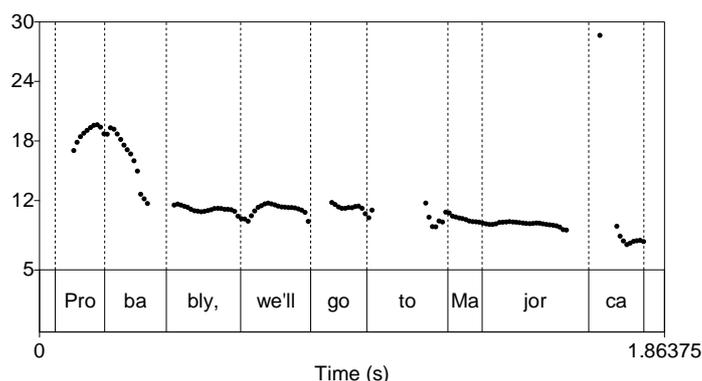
Sentential adverbs, as is the case with adverbs in general, constitute one of the syntactic classes which is less amenable to classification, since adverbs often have fairly idiosyncratic meanings. It becomes necessary to find a balance between faithful description and useful generalization, and, in this spirit, a classification into three main categories (speech-act adverbs such as 'honestly', evaluation adverbs such as 'fortunately', and modality adverbs such as 'probably') is proposed.

In initial position, sentential adverbs form independent prosodic units, and they are accented. Depending on the type of adverb, however, there is a tendency for the speaker to prefer high or low tonal boundaries. There are two adverbs in initial position, 'honestly' and 'probably', which are read twice by eight speakers:

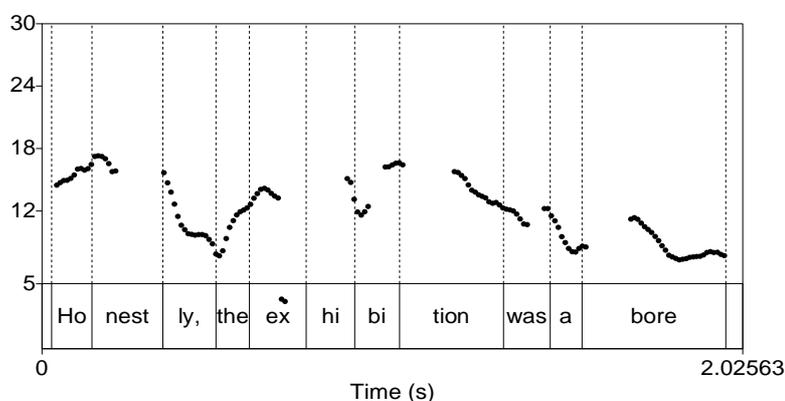
- (30) a. Probably, we'll go to Majorca
b. Honestly, the exhibition was a bore

'Probably' and 'honestly' are semantically different. While 'honestly', which can be paraphrased as 'honestly speaking', mainly qualifies the way something is said, 'probably' evaluates the likelihood that something will happen or be true.

(31) An example of sentential adverb in initial position: 'probably'



(32) An example of sentential adverb in initial position: 'honestly'



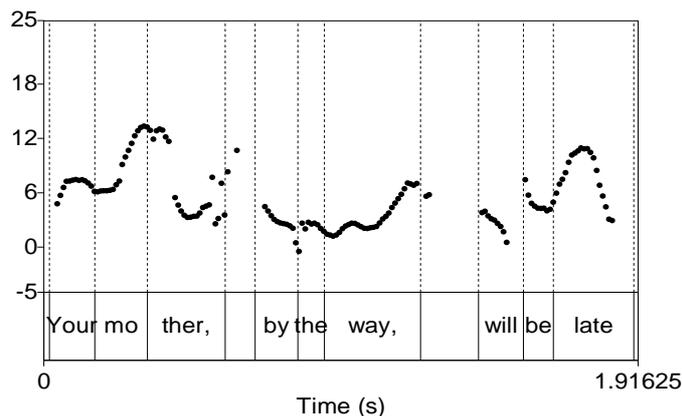
Both adverbs behave in a very similar way: they form independent units, each with its own contour, and these contours mainly contain H* accents, except in 2/3 of cases which have H*+L. As seen above, 'probably' with a H*+L pitch accent sounds more dubitative than with the H* pitch accent.

In medial position, however, they behave in a different way depending on which semantic class they belong to. They can be deaccented (as is the case of 'by the way') or accented with a reduplicating contour (as is the case of 'of course', and, to an even greater extent, of 'probably'). This behaviour can be explained by their different functions, that of introducing a new theme in the discourse, 'for by the way', and that of qualifying a theme which is already present in the discourse and is familiar to the listener, for the other two types.

There are three adverbs in medial position ('by the way', 'of course', and 'probably') which are read twice by eight speakers.

'By the way', does not convey much information in itself. It neither completes nor modulates information; it just keeps the discourse going, by introducing a new theme. It can be paraphrased as 'speaking about your mother, she will be late'. Looking at the prosodic form of these, it can be observed that all the occurrences of 'by the way' are deaccented and that they form separate prosodic units, as shown in the pitch trace below:

(33) An example of interpolated sentential adverb in English: 'Your mother, *by the way*, will be late'



‘By the way’ is mostly separated by low tonal movements (62.5%). Pauses can occur either before or after the parenthesis, or at both sides. There is no clear preference for a given type of boundary tone. Tonal movements without rhythmic breaks tend to be low.

‘Of course’, unlike ‘by the way’, only appears as deaccented 19% of times. Mostly it is accented, with a contour that reduplicates that of the main phrase at a lower level (57%). There are as well three cases of extreme pitch range subordination, bordering on deaccentuation. It is mostly separated by tonal movements (88% of times) which are generally low.

‘Probably’ shows reduplication 62.5% of the time, a higher percentage than that of ‘of course’. It shows as well a higher percentage of pauses (44%) which are mostly double pauses, and when there is only one pause, this is usually the first pause. As for tonal boundaries without rhythmic break, there is no clear preference for either low or high tones.

Sentential adverbs in final position in English and in Catalan differ in the frequency of their accentuation, which is higher in English than it is in Catalan, and in the use of the final rise, which is used in English but not in Catalan. Catalan sentential adverbs can also be accented, as was the case with epithets, and they are not so frequently followed by a final rise (only 6% of the times) as their English counterparts are. In fact, in Catalan, the final rise is more frequent with manner adverbs (‘They grow their fruit *naturally*’) than with sentential adverbs (‘They grow their fruit, *naturally*’), and furthermore, it only appears with accented sentential adverbs.

3 CONCLUSION

Initial ESEs form independent tonal units while non-initial ESEs have intonational patterns which are subordinated to that of the main phrase by means of reductions in pitch range leading to total deaccentuation or by tonal reduplication. The purpose of this specific prosodic marking is to facilitate the correct interpretation of the utterance, as will be argued in the following paragraphs.

The functional role of ESEs can be succinctly described by saying that they belong to the thematic part of the sentence. As seen above, the information conveyed by the discourse is structured in two main parts: the part that sets the context (the theme) and the part that constitutes the core message (the rheme). Building on Vallduví’s account of right-dislocations (1990, 1994), where it is argued that the theme is further subdivided into a part that connects the phrase to the linguistic (or metalinguistic) context (link) and another part that modifies the core message (tail), I propose that ESEs are themes and that they can be further subdivided into links and tails, according to the specific function they carry out.

- (34) John, he wouldn’t lend me his car, unfortunately
 link rheme tail

Catalan, but, while in English they are mostly deaccented and followed by a final rise, in Catalan they are accented and without this final rise). However, in English, it is also possible to find instances of accented vocatives. These cases are interpreted as attention-attracting devices. In English, thus, the dual functional role of vocatives neatly corresponds to their dual prosodic form. This raises the question: why are vocatives accented in Catalan (and in other languages such as German and Norwegian), while they are quite consistently deaccented in English? Is this tendency shaped by cultural factors?

The case of appositions is different from that of vocatives, as discussed in section 2.2.6. Appositions may occasionally be integrated into the same tonal unit as the main phrase. However, the decision to utter them in a separate intonational unit or not seems to correspond to a stylistic choice on the part of the speaker, not to any specific functional role; their role is that of a tail.

Dislocations, epithets, and quotations markers show deaccentuation (and also rhythmic separation). As shown in section 2.2.1 right-dislocations are completely deaccented and also separated by prosodic breaks. In Astruc (2003b), the deaccentuation of right-dislocations was quantified and statistically tested, and it was pointed out that there seemed to be a trade-off between the use of rhythmic separation and the use of deaccentuation, although this was not confirmed statistically. It was similarly pointed out that the deaccentuation of right-dislocations serves as evidence of the deaccentuation of the other categories, which do not need to be tested individually. Some cross-linguistic differences were observed in section 2. For instance, in English, dislocations and epithets are followed by a final rise which is absent in Catalan. Another difference concerns epithets, which in Catalan can be accented or not depending on the preferences of the speaker. Quotation markers in both languages are mostly set off by pauses, while the other categories mostly use tonal movements. They show the greatest prosodic separation of them all, which makes them stand out very conspicuously as external to the phrase. As argued above, they can be interpreted as performing the role of tails in any position in the sentence, or they can also be interpreted as being extra-linguistic instead of being extra-sentential elements. Some evidence in favour of the latter interpretation, is, first, their greater than usual prosodic separation, and second, the fact that in initial position they can also have a deaccented contour, separated by a pause. They are unlike the rest of ESEs, which do not need any special tonal marking to signal them as themes when they occur in initial position, a position where themes are expected.

Non-restrictive relatives, appositions, and parentheses equally show rhythmic separation, but this is coupled with accentuation, that is, with tonal reduplication at a lower level and with a compressed pitch range. These three categories signal their semantic relationship with their anchor by these prosodic means, which clearly indicate that they are to be interpreted as tails which complement or modify the information provided by their anchor. Tonal reduplication signals their semantic role while prosodic separation facilitates cognitive processing for the hearer (and planning for the speaker). With regard to these categories being interpolated in medial position in the sentence, if they are separated by pauses, then these pauses appear on both sides of the element (that is, the non-restrictive relative, the apposition, or the parenthesis). Or, if there is only one pause, this pause precedes the element, which indicates the need to mark their prosodic separation.

Adverbs constitute one of the most heterogeneous parts of speech. Sentential adverbs are no exception, and consequently, they are as difficult to classify semantically as they are intonationally. It has been proposed, however, a functional classification of sentential adverbs into speech-act related adverbs such as ‘honestly’, evaluation adverbs such as ‘fortunately’, and modality adverbs such as ‘probably’, and. As shown in section 2.2.8, sentential adverbs in initial position are rhythmically separated and accented. In medial position, however, they behave in a different way depending on which class they belong to. They can be deaccented (as is the case of ‘by the way’) or accented with a reduplicating contour (as is the case of ‘of course’, and even to a greater extent, of ‘probably’). This behaviour can be explained by their

different function, that of a link for 'by the way', since it introduces a new theme in the discourse, and that of a tail for the other two types, since they qualify a theme which is already present in the discourse and is familiar to the listener.

In final position, both in English and in Catalan, sentential adverbs differ in the frequency of their accentuation, and in the use of the final rise, which is used in English but not in Catalan. However, in both languages, sentential adverbs consistently form separated tonal units. This seems to be the strongest prosodic cue, although the trade-off between rhythm and melody observed in right-dislocations is also observed with sentential adverbs and is indeed confirmed statistically (in the Catalan data). Sentential adverbs appear to be the only category that consistently form separate intonational units, as would be expected of ESEs.

REFERENCES

- Astruc, Ll. (2003a) 'Sentence-external elements in Catalan.' *Catalan Journal of Linguistics* 2, special issue on Romance Intonation. Universitat Autònoma de Barcelona: Barcelona, pp. 15-31.
- Astruc, Ll. (2003b) 'Right-dislocations in Catalan'. *Proceedings of the 15th International Congress of the Phonetic Sciences (ICPhS)*, Barcelona 2003, pp.1265-1268.
- Astruc, Ll. (2004) 'Right-dislocations: influence of information structure on prosodic phrasing and intonation.' In Ll. Astruc, and M. Richards, (eds). *Cambridge Occasional Papers in Linguistics*. Cambridge Document Output Centre: Cambridge, pp. 1-14.
- Beckman, M. and J. Pierrehumbert (1986). 'Intonational Structure in Japanese and English.' *Phonology Yearbook* 3, pp. 225-310.
- Bing 1984, J. M. (1984) 'A Discourse Domain Identified by Intonation.' In D. Gibbon, and H. Richter (eds). *Intonation, accent and rhythm: studies in discourse phonology*, Berlin/New York; Mouton de Gruyter, pp. 429-451.
- Bing, J. M. (1985) *Aspects of English prosody*. New York/ London: Garland Publishing.
- Bolinger, D. (1972) *Intonation*. Harmondsworth: Penguin.
- Bolinger, D. (1986) *Intonation and its parts: melody in spoken English*. Palo Alto, California: Stanford University Press.
- Bonet, E. (1984) *Aproximació a l'entonació del català central*. Universitat Autònoma de Barcelona, Master's dissertation.
- Chafe, W. (1974) Language and consciousness. *Language*, 50, 1, pp. 111-133.
- Cooper, W. E. and J. (Paccia-Cooper, 1980). *Syntax and speech*. Cambridge, Massachusetts/ London: Harvard UP.
- Cruttenden, A. (1986, 1997, 2nd edition). *Intonation*. Cambridge: Cambridge UP.
- Daneš, F. (1967, 1972nd edition) 'Order of elements and sentence intonation'. In D. Bolinger (ed.) *Intonation. Selected Readings*. Harmondsworth, Middlesex, England/ Baltimore, USA/Ringwood, Victoria, Australia: Penguin, pp. 216-217.
- Delattre, P. (1972) 'The Distinctive Function of Intonation.' In: D. Bolinger, (ed.) *Intonation*. Harmondsworth: Penguin, pp. 159-174.
- Firbas, J. (1964) 'Non-thematic subjects in English'. *Travaux linguistics de Prague* 2. *Les problèmes du centre et de la périphérie du system de la langue*. Prague: Éditions de l'Académie Tchécoslovaque des Sciences.
- Firbas, J. (1980) 'Post-intonation-centre prosodic shade in the modern English clause.' In S. Greenbaum, G. Leech, and J. Svartvik, (eds) *Studies in English linguistics for Randolph Quirk*. London/New York: Longman, pp. 125-133.
- Geluykens, R. (1992) *From discourse process to grammatical construction: on left-dislocation in English*. Amsterdam: John Benjamins
- Geluykens, R. (1994) *The Pragmatics of discourse anaphora in English. Evidence from conversational repair*. Berlin: Mouton de Gruyter.

- Givón, T. (1988) 'The pragmatics of word-order: predictability, importance and attention.' In M. Hammond, E. Moravcsik, and J. Wirth, (eds) *Studies in syntactic typology*. Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 243-284.
- Gundel, J. K. (1985) 'Shared knowledge and topicality.' *Journal of Pragmatics* 9, pp. 83-107.
- Gundel J. K. (1988) 'Universals of topic-comment structure.' In (M. Hammond, E. Moravcsik, and J. Wirth (eds). *Studies in syntactic typology*. Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 209-239.
- Gussenhoven, C. (1985) 'The intonation of George and Mildred: Post-nuclear generalizations.' In: C. Johns-Lewis (ed.). *Intonation in discourse*. San Diego: College Hill, pp. 77-123.
- Gussenhoven, Carlos. (2004) *The Phonology of Tone and Intonation*. Cambridge: Cambridge University Press.
- Halliday, M.A.K. (1976) 'Notes on transitivity and theme in English.' *Journal of Linguistics*, 3, pp. 177-224.
- Hockett, C. F. (1961) 'The Problem of universals in language.' in J.H. Greenberg, (ed.) *Universals of Language*, Cambridge, Mass.: The M.I.T. Press, 1963, pp. 1-22. Reprinted in C.F. Hockett (ed.) *The view from language. Selected essays*. Athens: The University of Georgia Press, pp. 163-186.
- Huddleston, R. and G. K. Pullum (2002) *The Cambridge grammar of the English language*. Cambridge: Cambridge University Press.
- Jackendoff, R. (1972). *Semantic interpretation in generative grammar*. Cambridge, Massachusetts/ London, England: The MIT Press.
- Karcevskij, S. (1931) 'Sur la phonologie de la phrase.' *Travaux de cercle linguistique de Prague 4. Réunion phonologique internationale tenue a Prague (18-21/XII 1930)*. JCMAP: Prague, pp. 188-227.
- Lambrecht, K. (1994) *Information structure and sentence form*. Cambridge studies in linguistics. Cambridge: Cambridge University Press.
- Ladd, R. D. (1980) *The structure of intonational meaning*. Bloomington/London: Indiana University Press.
- Ladd, R. D. (1996) *Intonational Phonology*. Cambridge: Cambridge University Press.
- Liberman, M. (1979) *The Intonational system of English*. New York/London: Garland Publishing, Inc.
- McCawley, J. D. (1989) 'Individuation in and of Syntactic Structures.' In M.R. Baltin, and A.S Kroch, (eds.). *Alternative conceptions of phrase structure*. Chicago/London: The University of Chicago Press.
- McCawley J.D. (1982) 'Parentheticals and discontinuous constituent structure.' *Linguistic Inquiry* 13, 1, pp. 91-106.
- Mathesius, V. (1928) 'On linguistic characterology with illustrations from Modern English'. Actes du premier congrès international de linguistes à La Haye, pp. 56-63. Reprinted in J. Vachek (ed.) *A Prague school reader in linguistics*. Bloomington: Indiana University Press 1967, pp. 59-69.
- Matthews , P.H. (1997) *The concise Oxford dictionary of linguistics*. Oxford/New York: Oxford University Press.
- Martin, P. (1987). 'Prosodic and Rhythmic Structures in French'. *Linguistic Inquiry* 8, pp. 249- 33.
- Nespor, M. and I. Vogel (1986) *Prosodic Phonology*. Dordrecht: Foris Publications.
- Nespor, M. (1993) *Fonologia. Le strutture del linguaggio*. Bologna: il Mulino.
- Payà, M. (2002) 'Incidental clauses in spoken Catalan: Prosodic characterization and pragmatic function'. In B. Bel, and I. Marlien, (eds). *Proceedings 1st International Conference on Speech Prosody*, Aix-en-Provence, France, pp. 559-562.
- Payà, Marta (2003) 'Prosody and Pragmatics in Parenthetical insertations in Catalan.' *Catalan Journal of Linguistics* 2, *Special issue on Romance Intonation*, pp. 207-227.

- Pierrehumbert, J. (1980) *The Phonetics and phonology of English intonation*. M.I.T., doctoral dissertation.
- Pierrehumbert, J. and J. Hirschberg, (1994) 'The Meaning of Intonational Contours in the Interpretation of Discourse.' In: P.R. Cohen, J. Morgan, L. Jerry, and M. Pollack (eds). *Intentions in communication*. Cambridge, Massachusetts/LondonEngland: M.I.T. Press, pp. 271-311.
- Prieto, P. (2002) 'Entonació'. In J. Solà,; M.R. Lloret, J. Mascaró and M. Pérez Saldanya (eds.) *Gramàtica del català contemporani*. Barcelona: Editorial Empúries, pp. 393-462.
- Prince, E. F. (1985) Fancy syntax and 'shared knowledge'. *Journal of Pragmatics* 9, 65-81.
- Recasens, D. (1993) *Fonètica i fonologia*. Barcelona: Enciclopèdia Catalana.
- Silva Rhetoricae on-line: <http://humanities.byu.edu/rhetoric/Figures>
- Sperber, D. and D. Wilson (1995) *Relevance: communication and cognition* (2nd Ed). Oxford: Blackwell.
- Taglicht, J. (1998) 'Constraints on intonational phrasing in English.' *Journal of Linguistics* 34, pp. 181-211.
- Wunderli, P. (1987). *L'intonation des sequences extraposées en français*. Tübingen: Gunter Narr Verlag.
- Vallduví, E. (1990) 'The role of plasticity in the association of focus and prominence.' *Proceeding of the Eastern States Conference on Linguistics (ESCOL)* 7, pp. 295-306.
- Vallduví, E. (1994) 'Detachment in Catalan and information packaging.' *Journal of Pragmatics* 22, pp.573-601.
- Vallduví, E. and E. Engdahl (1996) 'The linguistic realization of information packaging.' *Linguistics* 34, pp. 459-519.
- Wilson, D. and D. Sperber (2004) 'Relevance theory.' In L.R. Horn and G. Ward (eds.) *The Handbook of Pragmatics*. Malden, USA/Oxford, UK/Victoria, Australia: Blackwell Publishing, pp.607-632.

Lluïsa Astruc

Linguistics Department
Sidgwick Avenue
University of Cambridge
Cambridge
CB3 9DA
United Kingdom

mla28@cam.ac.uk