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The topic unit in spontaneous American English
a corpus-based study

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The topic unit in spontaneus American Engish -- a corpus-based study

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Abstract

This thesis is dedicated to the analysis of the topic information unit in spontaneous American English speech as the unit is defined within the *Language into Act Theory*. In order for the study to be possible, a sample of the *Santa Barbara Corpus of Spoken American English was* extracted. The sampling strategy adopted and the methodological steps followed in this phase were carefully chosen seeking to create an American English (AE) minicorpus with the same overall structure of the minicorpora of the C-ORAL projects for Italian and Brazilian Portuguese. Accordingly, the sample taken from the *Santa Barbara Corpus* was submitted to prosodic segmentation into tone units and utterances and to text-to-speech alignment at the utterance level. Following the alignment phase, the AE minicorpus received informational annotation based on the so-called *Informational Patterning Hypothesis*, which establishes a correspondence between the units of the prosodic pattern and those of the information pattern. The topic information unit — like all the units of the information pattern — is defined with respect to prosodic, distributional and functional criteria. Regarding the functional aspect, the topic is defined as the unit which supplies the domain of identification according to which the illocutionary force — carried by the comment — must be interpreted. After the phase of informational tagging, which involved the identification of all information units in the AE minicorpus, the analyses were carried. Both the transcription and the acoustic signal of utterances containing topic units were set apart for detailed examination. The transcriptions were saved in spreadsheets and the sound files organized into separate folders. The spreadsheets were used for the analysis of morphosyntactic features and semantic properties of the topics found, as well as for the counts provided in this thesis; the sound files were used for the prosodic analysis. In the prosodic analysis, the nuclear portion of the topics were identified, and their relevant acoustic parameters were assessed. The topic units were then classified with respect to the prosodic form through which they were realized**.** In this study, certain prosodic features that had never been found in topic units in other languages were found, which comprises one of the contributions of this thesis to a better understanding of the prosodic codification of the topic unit. Furthermore, the outcomes of this study yielded the proposition of a new account for the possible prosodic realizations of the topic unit. Finally, the AE minicorpus is offered as a contribution to researchers within the *Language into Act Theory* as well as for the general field of spontaneous speech studies.

Keywords: information structure; topic; spontaneous speech corpus; prosody

Resumo

Esta dissertação dedica-se à análise da unidade informacional de tópico assim como ela é definida pela *Teoria da Língua em Ato*. Para que este estudo pudesse ser realizado, foi obtida uma amostra do *Santa Barbara Corpus of Spoken American English*. A estratégia de amostragem adotada e os passos metodológicos seguidos nessa fase foram criteriosamente escolhidos a fim de se criar um minicorpus do inglês americano com a mesma arquitetura geral dos minicorpora dos projetos C-ORAL para o Italiano e o Português Brasileiro. Com essa finalidade, a amostra obtida do *Santa Barbara Corpus* foi submetida à segmentação prosódica em unidades tonais e enunciados e ao alinhamento texto-som ao nível de enunciados. Após a fase de alinhamento, o assim chamado AE minicorpus recebeu anotação informacional com base na *Informational Patterning Hypothesis*, a qual estabelece uma correspondência entre as unidades do padrão prosódico e aquelas do padrão informacional. A unidade de tópico — assim como as demais unidades do padrão informacional — é definida em termos prosódicos, distribucionais e funcionais. Funcionalmente, o tópico é definido como a unidade que fornece o âmbito de aplicação da força ilocucionária, que, por sua vez, é veiculada pela comentário. Após a fase de etiquetagem informacional, a qual envolveu a identificação e anotação de todas as unidades informacionais no AE minicorpus, as análises foram conduzidas. Tanto a transcrição quanto o sinal acústico dos enunciados contendo tópicos foram separados para uma análise detalhada. As transcrições foram salvas em planilhas eletrônicas e os áudios dos enunciados foram dispostos em pastas separadas. As planilhas eletrônicas foram usadas para a análise das características morfossintáticas e das propriedades semânticas dos tópicos encontrados, bem como para a a geração das contagens apresentadas neste trabalho, ao passo que os áudios foram usados para a análise prosódica. Na análise prosódica, as porções nucleares dos tópicos foram identificadas e os parâmetros acústicos relevantes para a unidade foram avaliados. As unidades de tópico foram então classificadas quanto ao tipo de forma prosódica em que eram realizadas. Neste estudo, certos parâmetros prosódicos da unidade de tópico foram pela primeira revelados, os quais não haviam sido detectados nas outras línguas em que a unidade já havia sido estudada. Isso constitui uma novidade alcançada por meio do estudo. Além disso, os resultados aqui alcançados permitiram que se propusesse uma nova visão com relação às possíveis realizações prosódicas do tópico. Finalmente, o AE minicorpus é oferecido como uma contribuição aos pesquisadores trabalhando no âmbito da *Teoria da Língua em Ato* bem como ao campo dos estudos da fala espontânea em geral.

Palavras-chave: estrutura informacional; tópico; corpus de fala espontânea; prosódia

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List of abbreviations

AdjP	Adjectival phrase	ms	Milliseconds
AdvP	Adverbial phrase	NP	Noun phrase
AE	American English	PAR	Parenthetic
ALL	Allocutive	PB	Brazilian Portuguese
APA	Appendix	PE	European Portugues
APC	Appendix of Comment	PHA	Phatic
APT	Appendix of Topic	pub	Public
AUX	Unspecified dialogic unit	SCA	Scanning unit
BP	Brazilian Portuguese	TMT	Time taking
CMM	Multiple Comment	TOP	Topic
COB	Bound Comment	TPL	List of topic
COM	Comment	[TAG]_r	Unit in Reported Speech
CNT	Conative	UNC	Unidentifiable information
cv	Conversation		unit
dB	Decibel	VP	Verb phrase
DCT	Discourse Connector	XP	Any morphosyntactic phrase
dl	Dialogue		
EMP	Unit without informational value		
EP	European Portuguese		
EXP	Expressive		
fam	Private/familiar		
f0	Fundamental frequency		
Hz	Hertz		
i-[TAG]	Interrupted information unit		
INP	Incipit		
INT	Locutive Introducer		
IT	Italian		
mn	Monologue		

List of symbols

*	Beginning of dialogic turn
[/n]	Tone unit boundary with retracting
/	Non-terminal prosodic break
//	Terminal prosodic break
+	Utterance interruption
<	Beginning of overlapping speech
>	End of overlapping speech
&	Beginning of interrupted word
&he	Hesitation or time-taking
%ill	Illocutionary value
xxx	Incomprehensible word
yyy	Incomprehensible words
yyyy	Anonymization
hhh	Paralinguistic noise

1 Introduction

This thesis deals with the organization of information structure in spontaneous American English. The study was carried based on speech data collected from texts that make up the Santa Barbara Corpus of Spoken American English (DU BOIS *et al*. 2000-2005), which were carefully organized into a minicorpus comparable to the minicorpora of the C-ORAL projects for Italian and Brazilian Portuguese (CRESTI; RASO, 2012).

Following previous studies on Italian (FIRENZUOLI; SIGNORINI, 2003, SIGNORINI, 2005), Brazilian Portuguese (MITTMANN, 2012) and European Portuguese (ROCHA, 2012) carried within the framework of the Language into Act Theory (L-AcT), the topic information unit was chosen as the object of study for this thesis. The topic is an information unit present in nearly 40% of compound utterances — i.e. utterances made up of more than one tone/ information units — in spontaneous speech (CRESTI; MONEGLIA, 2010: 18).

One of the motivations underlining this work stems from the fact that the theoretical principles and the methodology of the L-AcT was yet to be taken beyond the realm of Romance languages. The theory, developed on the basis of extensive observation of spontaneous speech collected in corpora, had not been applied to the description of languages other than Italian, French, Spanish, European Portuguese and Brazilian Portuguese, primarily because there was no linguistic resource — i.e. speech corpora — that allowed for research to be carried on languages other than those.

This thesis, therefore, brings about two main contributions. On the one hand, it deals with an information structure phenomenon that is widely present in spontaneous speech — namely, the topic — and on the other hand, if offers to the scientific community working within L-AcT approach a minicorpus that allows for the application of the principles and methodology of the L-AcT to a language of vast academic reach and importance.

1.1 Goals and objectives

Goals:

I. To create an informationally tagged minicorpus — the AE minicorpus — from the Santa Barbara Corpus of Spoken American English, following the same principles that

guided the creation of the Brazilian Portuguese and Italian minicorpora of the C-ORAL family corpora;

II. To describe and analyze the topic information units found in the AE minicorpus.

The objectives associated to (I) above are as follows

a. To apply the transcription conventions and criteria (MELLO *et al.*, 2012) to the texts selected from the Santa Barbara Corpus of Spoken American English to make up the AE minicorpus;

b. To segment and annotate all the texts into tone units and utterances, following the principles of L-AcT (CRESTI, 2000).

c. To align all the selected texts to their corresponding acoustic source using the software WinPitch (MARTIN, 2005) — alignment at the utterance level;

d. To perform informational annotation on the AE minicorpus, following the so-called Information Patterning Hypothesis (CRESTI; MONEGLIA, 2010).

The objectives associated to (II) are

a. To quantify topic units in the AE minicorpus;

b. To identify the prosodic features of topic units found;

c. To analyze the morphosyntactic and semantic features of the locutive content of the topic units found;

d. To compare the behavior and features of the topic unit in the AE minicorpus to the same unit in Italian, Brazilian Portuguese and European Portugueses.

1.2 Organization of the text

This thesis is organized as follows. Chapter 2 provides an outline of the Language into Act Theory, which comprises the framework followed in the study. The theoretical constructs of the approach are illustrated with examples taken from the AE minicorpus. All the units of the

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information pattern are introduced, and special focus is given to the topic information unit, which constitutes the very object of this study.

In Chapter 3, other approaches that have also dealt with the notion of topic are reviewed. It is shown that those approaches, in contrast to the L-AcT, do not draw a clear distinction between speech and writing, which results in theoretical elaborations that seem insufficient to account for the phenomenon of topic in spontaneous speech.

Chapter 4 is dedicated to the methodological procedures and resources that allowed for this study to be successfully conducted. The C-ORAL projects are briefly presented, as well as their corpora and minicorpora. The steps followed in the making of the AE minicorpus are shown, focusing on the measures taken in order to ensure comparability with the minicorpora of the C-ORAL projects. Finally, the methods employed in the analysis of the topic units found in the AE minicorpus are shown.

Chapter 5 deals with the distribution, morphosyntactic features and semantic properties of the topic units in the AE minicorpus. The phenomenon of compound topics — i.e. iterated topics, topics integrated by an appendix unit and the so-called list of topics — are also dealt with. Chapter 6 is dedicated to the prosodic analysis of the topic unit. The concept of prosodic form, as proposed in Firenzuoli (2003), comprises the guiding thread of the prosodic analysis. Finally, Chapter 7 summarizes the main achievements and outcomes of this thesis.

2 The Language into Act Theory

The *Language into Act Theory* (L-AcT) is a pragmatic framework for the study of spontaneous speech that provides a coherent methodology for compilation and annotation of speech corpora (CRESTI, 2000; MONEGLIA, 2005; CRESTI; RASO, 2012; MONEGLIA; RASO, 2014). The framework was developed at the *Laboratorio Linguistico del Dipartimento di Italianistica dell'Università di Firenze* (LABLITA), at the University of Florence, by Emanuela Cresti and collaborators, on the basis of extensive empirical observation of speech data collected in corpora. A corpus-driven theory, it was first formalized on the basis of Italian data from the LABLITA corpora, particularly the *Corpus del parlato spontaneo adulto LABLITA*[1]. Over the past few decades, the theory has been refined through a number of studies conducted on Brazilian and European Portuguese, Spanish, French, and, more recently, American English.

The L-AcT is based on an inductive methodology, and as Mittmann (2012) points out, constitutes an approach in which the corpus is not regarded as a mere repository of examples used to validate previously conceived assumptions. On the contrary, the theory was formalized *on the basis of* evidence found in corpora, after decades of extensive work with spoken data.

The L-AcT is an extension of Austin's Speech Act Theory (AUSTIN, 1962). Therefore, s*peech* is regarded as the result of pragmatic activities by the speaker (CRESTI, 2000). The *utterance* — the reference unit of speech behavior — is defined as the minimal stretch of speech featuring pragmatic autonomy and prosodic autonomy. The prosodic component of the theory (see Section 2.5) is drawn from the IPO methodology for the perceptual study of intonation, whose general principles are provided in 't Hart *et al.* (1990).

The C-ORAL-ROM (CRESTI; MONEGLIA, 2005) and C-ORAL-BRASIL (RASO; MELLO, 2012) corpora constitute the main achievements of the framework with respect to speech corpora compilation. The C-ORAL resources comprise multilingual comparable corpora that document spontaneous speech in accordance with the L-AcT framework. The C-

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[1] See http://lablita.dit.unifi.it/corpora/ for specific information about the LABLITA corpora.

ORAL corpora will be presented in Chapter 4. In what follows, an outline of the principles of the L-AcT framework will be provided.

2.1 Foundations of Language into Act Theory

Following Austin (1962), the L-AcT maintains that the *speech act* — i.e. the act that is performed by the speaker in making an utterance — consists of three levels, the so-called locutive, illocutive and perlocutive acts. The *locutive act*, as the level corresponding to the act *of saying something*, consists of the linguistic make-up of what is uttered by the speaker, encompassing the phonological, semantic and syntactical strata.

The *illocutive act*, on the other hand, is regarded as the act performed *in saying* something. It is the action that the speaker performs in uttering a locutive content in a certain manner (e.g. Assertion, Polar Question, Order, Instruction, etc.). Both the locutive and illocutive acts comprise conventionalized levels in the structure of the speech act. In order for the locutive content of a speech act to make any sense, it must comply with the linguistic rules of a linguistic code, just as much as the illocutionary act must conform to rules of linguistic and cultural natures. As will soon be shown, prosody is what serve as the interface between the locutive and the illocutive levels of the utterance.

In Austin (1962), the perlocutive act is defined as the results achieved by the speech act upon the speaker's audience. Therefore, the perlocutive act cannot be "predicted" and, consequently, this level of the speech act is not conventionalized. Cresti (2000), however, proposes that the *perlocutive act* corresponds to the *affective base* or the *libido asset* that drives the performance of the speech act. Despite the different definitions, the two approaches agree in that the perlocutive act is not conventionalized.

2.2 The utterance as the reference unit for speech

The utterance, as the result of pragmatic activities by the speaker (AUSTIN, 1962), is regarded as the linguistic counterpart of a speech act (CRESTI, 2000), i.e. it is the linguistic unit that accomplishes the speech act (CRESTI; MONEGLIA, 2010). This definition is based on the *Illocutive principle* (CRESTI, 2000), which proposes that every locutive act corresponds, in principle, to one illocutive act. The detection of utterances in the speech flow

is carried on the basis of pragmatic principles, which are crucially signaled by prosody. Hence, the definition of utterance as a linguistic unit featuring pragmatic and prosodic autonomy.

The completion of an utterance is necessarily signaled by a prosodic break perceived as terminal[2] (*conclusive* in Crystal, 1975). A prosodic break is a perceptually salient variation of prosodic parameters such that it causes the parsing of the speech flow into discrete prosodic "envelopes", called tone or prosodic units ('t HART *et al.*, 1990, MONEGLIA, 2005). Utterances may be prosodically segmented into more than one tone units, in which case prosodic breaks are perceived as non-conclusive, being called *non-terminal* breaks.

The methodology for the annotation of prosodic breaks determines that terminal breaks be indicated in transcriptions by a double-slash sign ("//") and non-terminal breaks by a one-slash sign ("/"). Non-terminal prosodic breaks segment utterances into non-autonomous constitutive parts. The internal segmentation of utterances, as will be shown below, is also governed by pragmatic principles (CRESTI, 2000).

There are utterances that are made up of only one prosodic unit. Those utterances do not show internal prosodic parsing and are called *simple* utterances, as they contain only the tone unit that specifies the illocutionary force (AUSTIN, 1962), which, at the informational level, is referred to as the *comment unit* (CRESTI; MONEGLIA, 2010). Accordingly, the comment unit (COM) is the only one that is necessary and sufficient for the performance of a speech act and, thus, for the realization of an utterance. The COM is always realized by a *root* prosodic unit ('t HART *et al*., 1990).

On the other hand, there are utterances with more than one tone units realized by a compound prosodic/information pattern; those are called *compound* utterances. Besides the *root* prosodic unit, compound utterances show other optional prosodic units, e.g. *prefix* and *suffix* units[3]. ('t HART *et al.*, 1990). Each type of prosodic unit is devoted to the fulfillment of different functions at the informational level. Prosodic units of types other than root are signaled by

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[2] As pointed out in Moneglia (2005), traditional studies on prosody have consistently maintained that utterances end in a terminal prosodic profile (see, for instance, Crystal (1975); Karcevsky (1931)).

[3] See Section 2.5.

non-terminal prosodic breaks. The nature of the units of the prosodic and informational patterns, as well as the relation among them, will be further discussed in Section 2.3 below.

The utterance in (2.1) below[4], for example, is realized by two different prosodic units in a *prefix-root* pattern. By listening to its tone units separately (see (2.1b) and (2.1c)), it can be verified that the prosodic break that segments the utterance into two prosodic envelopes — i.e. the break after "Jim" — is non-terminal; in other words, the break is perceived as non-conclusive and, therefore, the tone unit to the left of the break can not be pragmatically interpreted in isolation.

(2.1) afammn03[58][5]

> (a) that's why Marcia and Jim / could get up and move // (Audio 2.1a)
> (b) that's why Marcia and Jim (Audio 2.1b)
> (c) could get up and move (Audio 2.1c)

The identification of prosodic breaks on the basis of detection of perceptual salience of prosodic variations is a task to be performed by a speaker who is able to deal with the language in a natural and pragmatically adequate manner. Furthermore, the task does not involve either evaluation or assignment of any linguistic functions to the perceptually identified units (MONEGLIA, 2011). This method has proven to be highly reliable, showing an excellent degree of inter-rater agreement at a cross-linguistic level, especially for terminal breaks (see MONEGLIA *et al.*, 2005, RASO; MITTMANN, 2009, MONEGLIA *et al.* 2010, MELLO *et al.* 2012).

The definition for utterance as the minimal stretch of speech featuring pragmatic and prosodic autonomy results independent from other traditionally accepted definitions based on syntactic and semantic criteria (CRESTI, 2000, CRESTI, 2001, CRESTI; GRAMIGNI, 2004). Consequently, the definition adopted within the L-AcT framework diverges from formal approaches that associate the concept of utterance with the syntactic realization of a

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[4] All the examples provided in this thesis, unless noted otherwise, are taken from the AE minicorpus, which is presented in Chapter 4.

[5] Texts from the AE minicorpus, like those from the C-ORAL family corpora, are identified through an abbreviation of the language (a= American English), the context (fam= familiar/private; pub= public) and the interactional type (mn= monologue; dl= dialogue; cv= conversation). The first two digits identify the order of the texts in each interactional session of the minicorpus, while the digits between square brackets indicate the order of the utterance in the text from which it was extracted.

proposition and with semantic completeness. In those approaches, the concept of utterance is closely related to that of predication. However, empirical studies based on spoken Romance languages (MONEGLIA, 2005) and English (BIBER *et al.,* 1999) show that about 30% of speech utterances do not contain a verb[6]. Taking into account that almost one third of utterances in spontaneous speech are verbless, it is clear that defining utterance on the basis of syntactic and semantic criteria is inaccurate.

The following example shows two contiguous utterances, (2.2a) and (2.2b), which have been identified solely on the basis of perceptually relevant prosodic cues. The utterances are first presented separately so that the prosodic break that marks the completion of each of them can be easily notices. This example is meant to show some evidence of the inadequacy of a syntax-based definition for the concept of utterance.

(2.2) apubmn01[91-92]

      (a) but / they didn't feel that they had enough eggs // (Audio 2.2a)
      (b) to send over // (Audio 2.2b)
      (c) but / they didn't feel that they had enough eggs // to send over // (Audio 2.2c)

The non-finite clause isolated in (2.2b), "to send over", despite being a syntactically incomplete sequence, is in fact pragmatically autonomous, as Audio (2.2b) clearly shows. The mere transcription of the utterances in (2.2), without the acoustic source and the prosodic annotation, would probably induce the interpretation of (2.2a) and (2.2b) as comprising one single utterance. However, if one listens to the their acoustic source — especially that in (2.2b) —, it becomes clear that "to send over" is realized autonomously: it can receive pragmatic interpretation, since it performs a speech act, just as is the case with the preceding utterance, which features a complete syntactic structure. Figure 1 below presents the f0 tracks of the utterances in (2.2).

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[6] The proportion of verbless utterances in the languages studied within the L-AcT approach is 38.1% in Italian, 24.1% in French, 37.23% in Spanish, and 36.57% European Portuguese (MONEGLIA, 2005).

Figure 1: Oscillogram and f0 tracks of utterances apubmn01[91-92]
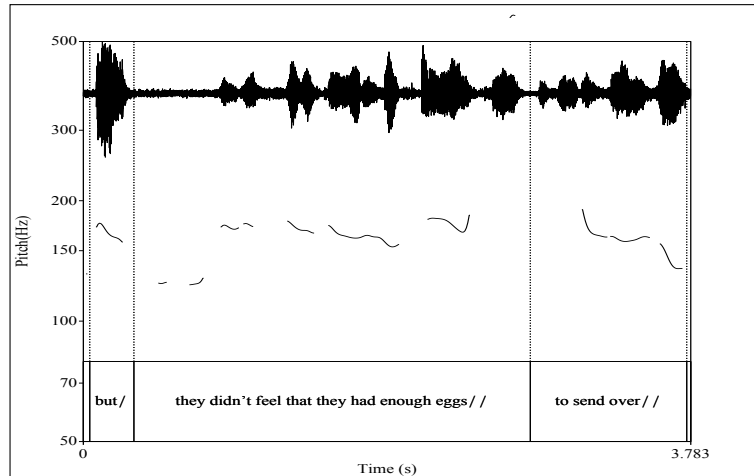
Another criterion that is often adopted for the definition of speech reference units is the one that associates the presence of a *pause* with completion of a coherent discourse unit[7]. This criterion, however, is problematic in at least two respects. On the one hand, pauses are oftentimes found separating integral parts of the same utterance — as it is defined in the L-AcT framework. The example below illustrates this first case.

(2.3) afammn02[99]

      this incredible / film legend // (Audio 2.3)

By listening to Audio (2.3), it is possible to verify that the sequence "this incredible" cannot stand alone as a complete utterance, even though it is followed by a pause of 430 milliseconds (see Figure 2). Therefore, a pause-based criterion would yield the detection of two utterances where in fact there is just one. Nevertheless, this is not the only problem that such a criterion poses, for there are utterances in spontaneous speech that are not separated one from the other by pauses, like (2.4) below shows.

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[7] See Raso *et al.* (2015) for a comprehensive discussion about the role of pauses in the segmentation of speech corpora.

Figure 2: Oscillogram and f0 tracks of utterance afamdl02[99]
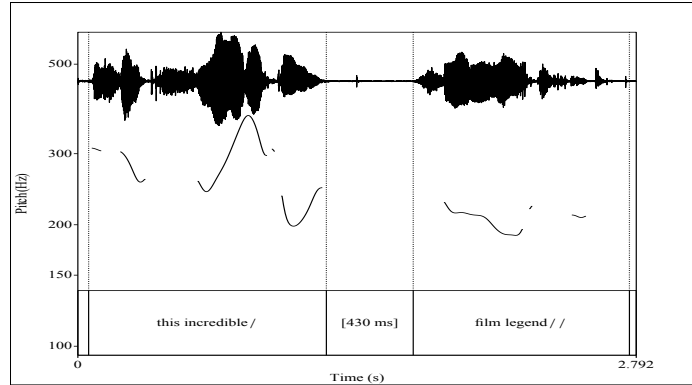
(2.4) afamdl03[7-8]

(a) so she's / all of 'em / are not short enough // (Audio 2.4a)
(b) she's / these are the shorter one / and they're about two inches too long hhh // (Audio 2.4b)
(c) so she's / all of 'em / are not short enough // she's / these are the shorter one / and they're about two inches too long hhh // (Audio 2.4c)

The sequences reproduced above as (2.4a) and (2.4b) comprise two distinct utterances, as can be verified by listening to the respective sound files. However, as signaled in Figure 3 by the discontinuous vertical line closer to the center, the utterances are not separated by any interruption in the acoustic signal. The discontinuity observed in the *f0* track is due to segmental features, since the final item in (2.4a) ends in a voiceless fricative, [f]. It is easy to verify that each sequence is fully pragmatically autonomous. And this autonomy is independent from there being a pause.

Figure 3: Oscillogram and *f0* tracks of utterances afamdl03[7-8]
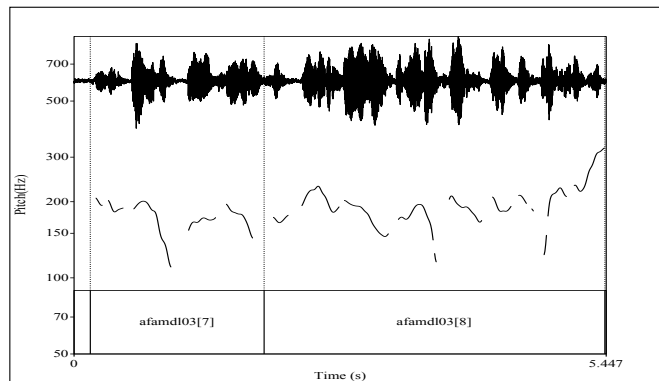
As reported in Moneglia (2005), the French component of the C-ORAL-ROM was segmented and annotated based on two different and independent criteria: one based on the perception of terminal and non-terminal prosodic breaks and the other temporal based on the automatic detection of pauses of at least 200 milliseconds. The comparison of the two annotations showed that about 37% of terminal breaks were *not* followed by a pause; i.e. more than one third of those sequences would not have been detected should only the temporal criterion have been employed. This provides further empirical evidence for the inadequacy of the pause-based criterion for utterance detection.

It is important to highlight that, while prosodic features like pauses, boundary tones, *f0* reset, sudden change in intensity, etc. may accompany prosodic breaks, none of such features are, per se, predictive. Whenever there is a pause, there is also a prosodic break. However, evaluating the break as terminal or non-terminal can only be done on a perceptual basis. The reliability of the detection of prosodic breaks is supported by a high degree of inter-rater agreement shown by studies carried out in a cross-linguistic perspective (MONEGLIA *et al.* 2005; MONEGLIA *et al.* 2010; RASO; MITTMANN 2009; MELLO *et al.* 2012).

The notion of dialogic turn, defined in terms of speaker alternation in the spoken exchange, has also proven inefficient as a means for detecting reference units in speech (CRESTI, 2000, CRESTI; GRAMIGNI, 2004). Dialogic turns, as (2.5) below shows, may range from one single word to a large argumentative stretch of speech, thus not showing the unity required for the identification of a linguistically relevant reference unit.

(2.5) apubmn01[79-101][8] (Audio 2.5)

> *KIR: hhh and so that is the background information for the reason for quarantining &he with our other penguins &he we brought them over from Scotland and as it turned out in a quarantine period that they had that a &vi or I should say a fungus okay this Aspergillosis fungus had come to fruition and we had lost you know a good portion of penguins
>
> *AMY: <wow>
>
> *KIR: <so> okay now it's time to consider replacing these penguins how do we want to go about doing that well hhh really didn't want to go through transporting

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[8] The three capital letters preceding each turn identify the speaker, "hhh" indicates paralinguistic noise (e.g. laughter, cough, etc.), and angled brackets indicate overlapping speech. The other symbols used for the transcription of the AE minicorpus are presented in Chapter 4.

the birds didn't work last time a potential for bringing over diseases is obviously there so the thought was okay le'ts get some eggs &he Sea World San Diego has Gentus and apparently just not enough eggs to share if they had them they would gladly same situation with the Edinburgh Zoo they would gladly send us birds but they didn't feel that they had enough eggs to send over so we really didn't want to go the bird route and so that left us the choice of going down to Antarctica and collecting some &peng some penguin eggs ourselves hhh so they went to and I don't know if this is pronounced correctly Wiencke <Island>

*LOR: <yeah> that's <where> a lot of seals are from as well

*DON: <hum>

*KIR: okay

*LOR: hum hum

*KIR: cool

The extract presented above was taken from a monologic interaction recorded at a training meeting at an aquarium — the prosodic annotation was left out. The speaker identified as KIR is giving explanations about the work conducted at the aquarium. Her turns are intercalated with those of other speakers, which are considerably smaller and less complex. KIR's turns are not only filled with hesitations, false starts and other fragmentation phenomena, but also show a degree of semantic and syntactic elaboration clearly absent in the other speakers' turns. Those superficial differences should suffice to show that the concept of dialogic turn cannot be satisfactorily equated with a linguistically relevant reference unit for speech analysis.

The use of prosodic cues for the detection of utterances in the speech flow has been successfully adopted as a heuristic method for the retrieval of reference units in the C-ORAL family corpora (see, for example, CRESTI; MONEGLIA, 2005, RASO; MELLO, 2012). As Moneglia (2005) points out, the strong acoustic salience that prosodic breaks show accounts for the reliability of the method. The acoustic salience of breaks, particularly in the case of terminal ones, makes their detection a relatively simple task, even for those individuals with little or no training.

Within the L-AcT framework, prosody is regarded as the necessary interface between the pragmatic and linguistic domains of speech acts (CRESTI, 2000); i.e. prosody is what links, as it were, the illocutive and illocutive acts. That means that the communicative value of linguistic expressions in speech can only be reliably determined through the examination of

their prosodic features. For this reason, studies conducted following the theoretical and methodological principles of the L-AcT framework rely not only on transcriptions, but also on their corresponding acoustic source. Hence, corpora compiled in accordance with the methodology proposed by L-AcT provide transcripts aligned to the acoustic source (see Chapter 4).

2.3 The prosodic and information patterns

The organization of information in spoken language, as it is regarded in the L-AcT approach, is governed by pragmatic principles that are crucially mediated by prosody (CRESTI, 2000, CRESTI; MONEGLIA, 2010). Prosody is seen as the medium that, among other things, promotes the association between illocutionary value and locutive content, which together make up utterances. As previously mentioned, the core of an utterance is the root prosodic unit, which specifies the illocution. Drawing on Halliday (1976), who first recognized a general relation between tone units and information units (MONEGLIA, 2005), a systematic correspondence is proposed between the prosodic pattern — i.e. the sequence of prosodic units that make up utterances — and the information pattern — i.e. the way in which information is encoded in speech. This assumption is formalized in the *Information Patterning Hypothesis* (CRESTI; MONEGLIA, 2010), which is outlined in the Table 1 below.

Each type of unit in the prosodic pattern (to the left of Table 1) corresponds to a specific type of unit in the information pattern (to the right of the Table), as the arrows in the table indicate. Prosodic units are defined as *intonation profiles*, which constitute configurations that result from the combination of one or more perceptually relevant pitch movements (FIRENZUOLI, 2003). The core prosodic unit, as previously mentioned, is the root, as it is capable of making up an utterance by itself. It is in relation to the root unit that the other types of prosodic units are distributed within the utterance. The root is obligatory in every utterance, while the others are not — this is indicated by the parentheses in Table 1.

In principle, each utterance realizes one illocution, and each of its possible tone units corresponds to one information unit (CRESTI, 2000; CRESTI; MONEGLIA, 2010). That comprises the basic assumption underlying the Illocutive principle (CRESTI, 2000). Every utterance necessarily has a tone unit of the root type ('t HART *et al.*, 1990), which at the

informational level corresponds to the comment unit (CRESTI, 2000). The comment unit is the one that carries the illocutionary force and the only information unit that is necessary and sufficient for the realization of a speech act (CRESTI, 2000). The cases in which the Illocutionary principle does not hold are dealt with in Section 2.4.3.

Among the optional information units, one that is central for the articulation of information in speech is the topic (CRESTI; MONEGLIA, 2010). The topic is realized by a prosodic unit of the prefix type (see Table 1). The function of the unit is to supply the field of application for the illocutionary force (CRESTI, 2000), thus making it possible for the illocutionary force to refer to domains of identification not necessarily present in the extralinguistic context. According to data reported in Cresti and Moneglia (2010), about 40% of compound utterances, i.e. utterances made up of more than one tone/information unit, are structure around a topic-comment relation.

Table 1: Relation between prosodic and information patterns

Prosodic Pattern			Information Pattern		
Root		→		Comment Tag: COM	
(prefix)	(suffix)	→	(Topic) Tag: TOP		(Appendix) Tag: APC, APT
(introducer)		→		(Locutive Introducer) Tag: INT	
(parenthetical)		→		(Parenthetic) Tag: PAR	
(incipit)	(phatic)	→	(Incipit) Tag: INP		(Phatic) Tag: PHA

Information units can be of two types, depending on whether they participate in the syntactic and semantic construction of the utterance or, conversely, in the regulation of the interaction (CRESTI, 2000). In the former case, they are called *textual information units*; in the latter, *dialogic information units*. Textual units make up (or refer to) the syntactic/ semantic dimension of utterances. Dialogic units, on the other hand, serve as interactional supports, as they address the interlocutor(s) and/or regulate the interaction.

The textual information units are: the comment (COM) and the topic (TOP) — which were briefly presented above — the appendix of comment (APC) and the appendix of topic (APT), the parenthetic (PAR), and the locutive introducer (INT). The dialogic units are the incipit (INP), the conative (CNT), the phatic (PHA), the allocutive (ALL), the expressive (EXP) and the discourse connector (DCT).

In the next section, the units of the information pattern will be presented. The limits of the correspondence between information units and tone units, on the one hand, and between utterance and illocution — i.e. the limits of the Illocutive principle —, on the other, will also be discussed.

Before proceeding, it is important to stress that, similarly to the definition of utterances, the definition of information units is not based on their lexical, syntactic or semantic filling. Furthermore, the relation among units belonging to the same information pattern is a functional relation (CRESTI, 2000), with each unit, in principle, comprising a *syntactic island* delimited by prosodic breaks. As Cresti (2014: 604) puts it:

> [B]asic syntactic/semantic relations such as scope of predication, regency, modification, quantification, subordination and coordination relations, and modal values fall inside the textual island. The final linguistic output of the utterance that we note is the combination of semantic/syntactic islands.

2.4 The units of the Information Pattern

The units of the information pattern are identified and described based on three different criteria: the function fulfilled by the unit within the information pattern, the prosodic features of the tone unit that realizes the information unit — including fundamental frequency (*f0*, in Hz), duration (in milliseconds) and intensity (in dB) —, and the position of the unit within the utterance in relation to the comment. In the next subsections, the units of the information pattern will be presented in accord with those three criteria.

2.4.1 Textual information units

2.4.1.1 The Comment

The comment is the information unit whose function is to carry the illocutionary force. Therefore, it is the information unit that is necessary and sufficient to realize a speech act; utterances may be made up of a comment only. The unit has no distributional constraint.

As already mentioned, the comment is realized through a root prosodic unit (see 't HART *et al.*, 1990). It always carries a functional prosodic salience, called *nucleus*, which usually consists of some of the syllables that make up the locutive content of the unit. The nucleus of the comment carries the prosodic cues that specify the illocution. The root prosodic unit may show different forms, which vary depending on the type of illocution and the attitude with witch it is conveyed (see MELLO; RASO, 2011, RASO; ROCHA, 2015).

From a pragmatic standpoint (CRESTI, 2000), an utterance always performs a new, unpredictable act. Therefore, the illocutionary content of the comment is always new, even if it expresses referents that have been previously mentioned in the discourse. As Mittmann (2012) points out, the comment is the most informative unit in an utterance. The example below helps to clarify this point.

(2.6) afamdl02[183-185] (Audio 2.6)

```
*DAR: do what you want / with the time you have // learn / give / whatever //
*PAM: love //=COM=              %ill: directive (proposal)
*DAR: love //=COM               %ill: expressive (irony)
*PAM: love //=COM=              %ill: representative (conclusion)
```

Figure 4: Oscillogram and *f0* tracks of utterances afamdl02[183-185]
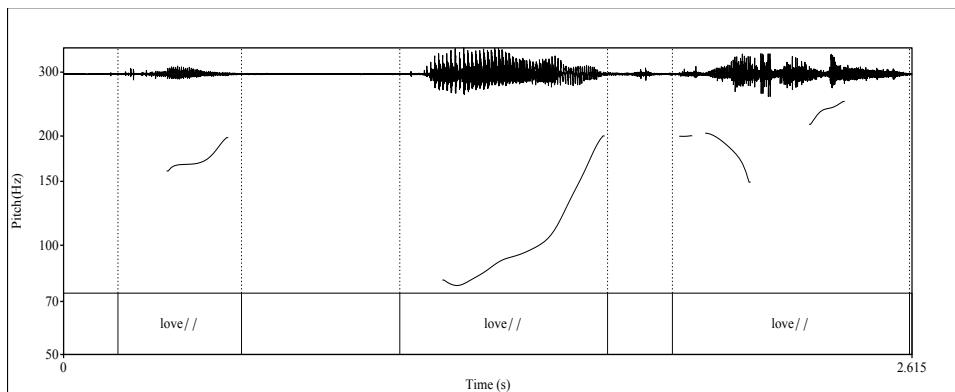
Without the aid of prosodic cues, the three occurrences of the word "love" in the utterances above could be considered as a mere tautology. Nevertheless, "love" is realized as a different illocution every time it is uttered, as can be readily noticed by listening to the acoustic source.

Therefore, from an illocutionary standpoint, all of them are informative (see RASO, MITTMANN, 2011).

2.4.1.2 The Topic

The function of the topic is to supply the the domain of application for the illocutionary force, which is in turn carried by the comment. The topic selects a domain of pragmatic relevance for the illocution (*pragmatic aboutness*), supplying the semantic and cognitive representations to which the comment is referred. Without a topic unit, the utterance necessarily refers to a contextually given domain. Therefore, the topic is more frequently found in monologues, in which utterances frequently refer to domains that are not necessarily present in the immediate context.

The topic is realized through a prefix prosodic unit ('t HART *et al.*, 1990). As the comment, it always carries a prosodic nucleus that signals its function. As a matter of fact, the topic and the comment are the only information units that have a functional prosodic nucleus. The prefix configuration can have different forms. Research carried on Brazilian Portuguese, European Portuguese and Italian (FIRENZUOLI; SIGNORINI, 2003, MITTMANN, 2012, ROCHA, 2012) identified four different types of prefix units[9] (see Section 2.6 below).

The topic always occupy a position to the left of the comment, although not necessarily in a contiguous "slot". Its distribution, therefore, is constrained. It is possible to find more than one topic in an utterance, three being the largest number found up till now (MONEGLIA; RASO, 2014). Topic units can be either simple or compound, as it can be iterated, be integrated by an appendix (see Section 2.4.1.3) or participate in a list of topics. Compound topics will be taken up in Chapters 5 and 6, where the unit will be extensively discussed.

In order for a topic to be able to fulfill its function, it has to supply a semantic domain of identification (MONEGLIA; RASO, 2014). Therefore, the most frequent types of linguistic filling in topic units — in the languages studied up till now — are nouns and prepositional phrases. Verbal and adverbial phrases are also common; adjectival phrases, however, are rare.

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[9] Chapter 6 provides a discussion about each type of prefix and a new account for one of them is therein proposed.

There are topic units that convey modal values, e.g. certain clauses, prepositional phrases and adverbials. Units of this kind, commonly referred to as "modal topics", have also been identified by researchers working within other approaches (see CHAFE, 1994, MITHUN, forthcoming). Modal topics represent a theoretical problem within the L-AcT framework, for, as Moneglia and Raso (2014) point out, they infringe the adequacy of pragmatic aboutness, since they do not supply a domain of reference for the illocution. Likewise, modal topics infringe the requirement of non compositionally between units of the information pattern, since the semantic scope of their locutive content extends over the limits of the unit itself. Those theoretical issues have not been solved up till now, and they are still open to debate.

The following examples show two utterances structured around a TOP-COM relation. In the first one, the original audio was broken down into two, (2.7a) contains just the topic and (2.7b) just the comment. In this way, it is possible to verify that the topic cannot stand alone as a complete utterance, as it is not pragmatically interpretable in isolation. The comment, on the other hand, is perfectly interpretable in isolation. Audio (2.7c) contains the entire utterance. Example (2.8) shows a modal topic realized by a conditional clause.

(2.7) afammn02[115]

    (a) this fellow LeRoy Neiman / (Audio 2.7a)

    (b) over here // (Audio 2.7b)

    (c) **this fellow LeRoy Neiman /=TOP=** over here //=COM= (Audio 2.7c)

Figure 5: Oscillogram and *f0* tracks of utterance afammn02[115]

31
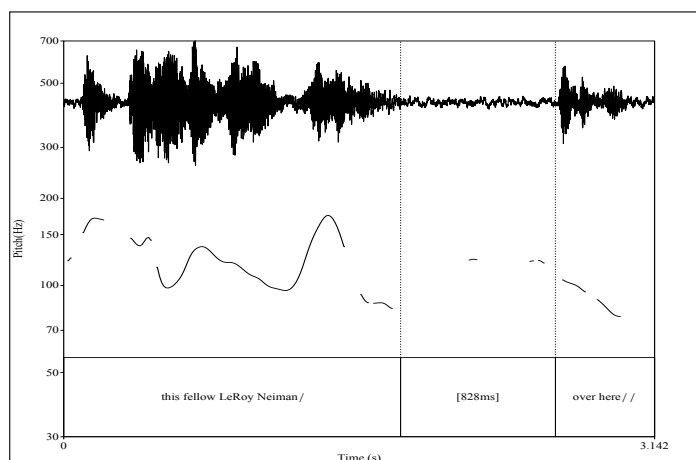
(2.8) afammn01[5]

if you want to /=TOP= you can only take it for eight weeks //=COM= (Audio 2.8)

Figure 6: Oscillogram and *f0* tracks of utterance afammn01[5]
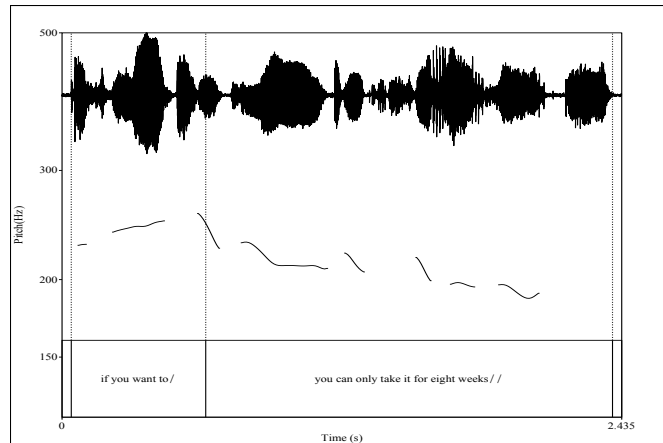
Finally, the relation between the topic and the comment is a functional relation that is mediated by prosody. That entails that morphosyntactic features are not indicative of the function fulfilled by information units. Accordingly, only by examining the prosodic features of a certain unit is one able to determine the information function that it fulfills.

2.4.1.3 The Appendix of comment and the Appendix of topic

The appendix has the function of integrating the text of the comment or the topic. Therefore, it must follow the unit whose text it integrates, from which it may occasionally be separated by the interpolation of a dialogic information unit (see Section 2.4.2 below). The APC and APT are realized through a suffix prosodic unit ('t HART *et al.*, 1990) and have no functional nucleus.

The appendixes are realized with flat or falling prosodic movements, but the prosodic profile of the APT may reproduce that of the topic — although in a smaller scale and without the nucleus. Regarding the APC, it cannot be considered a postponed topic, for it does not supply an identification domain for the comment, a function that is fulfilled by topics only. Examples (2.9) and (2.10) below show an APT and an APC, respectively.

(2.9) afamdl02[53]

the thing I know most /=TOP= **about life and death /=APT=** come from [/1] from my grandmother //COM (Audio 2.9)

Figure 7: Oscillogram and *f0* tracks of utterance afamdl02[53]
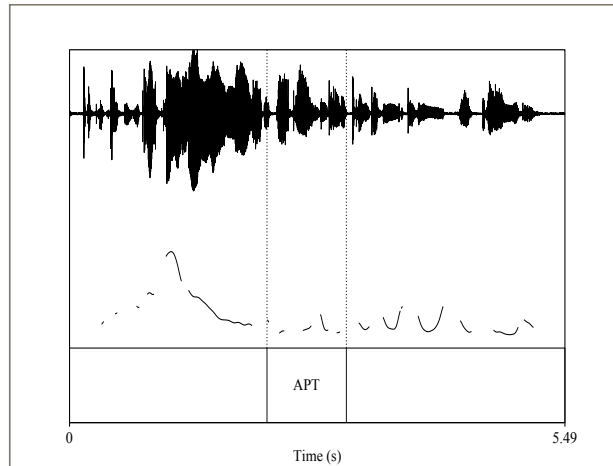
(2.10) afammn01[3]

dad /=COM= you know /=AUX= **has done some of it //=APC=** (Audio 2.10)

Figure 8: Oscillogram and *f0* tracks of utterance afammn01[3]
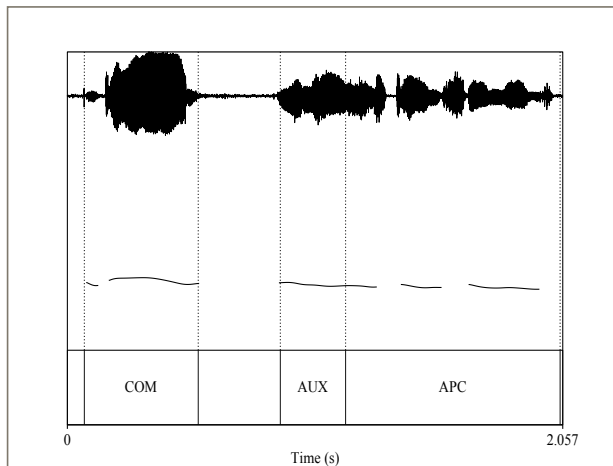
2.4.1.4 The Parenthetic

The parenthetic fulfills a metalinguistic function, as it provides instructions as to how the text of the utterance or part thereof should be interpreted, supplying explanations or pragmatic

instructions (TUCCI, 2004, 2010). Accordingly, the parenthetic provides the addressee with information about the speaker's attitude, aiding in the interpretation of the utterance.

The parenthetic commonly features modal expressions, such as modal or stance adverbials and parenthetical clauses. The unit is never found at the absolute beginning of an utterance, and, apart from this constraint, it is freely distributed within the utterance. Interestingly, parenthetics may even occur inside another textual unit, generating a type of momentary interruption that is eventually picked up, after the parenthetic has been realized. Moneglia and Raso (2014) report that parenthetics are more usually found interrupting topic and comment units.

Realized through a *parenthetical* prosodic unit, the parenthetic has no functional nucleus. It shows an overall flat prosodic profile, occasionally with minor and local movements. Its melodic contour is clearly distinct from that of the hosting utterance, featuring *f0* values that are usually lower than the *f0* values of the utterance. Parenthetics realized with particularly low *f0* values are usually concluded in a rising movement. Additionally, the unit may show increased speech rates.

(2.11)

afamcv01[17]
<this is a town> /4 =EMP= there is a town right around here /=COB= that it still has a zocalo /=COB= **it's built around a zocalo /=PAR=** you were telling me <about that> //=COM= (Audio 2.11)

Figure 9: Oscillogram and *f0* tracks of utterance afamcv01[17]
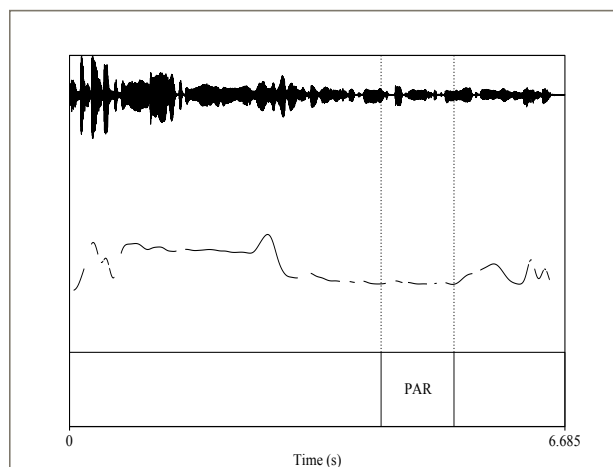
By listening to the example above, it is possible to verify that the parenthetic is not interpretable in isolation, a feature only presented by comment units.

2.4.1.5 The Locutive introducer

The primary function of the Locutive is to "bring in" meta-illocutions — more frequently Reported speech, but also List, Emblematic exemplification, Spoken thought, etc. The INT signals that its following unit(s) should be interpreted as pertaining to a hierarchical level different from that of enunciation. The other function that the INT may fulfill is to signal semantic salience, as Moneglia and Raso (2014) point out.

Locutive introducers always precede the information unit(s) of the meta-illocution that they bring in. They are realized through an *introducer* prosodic unit, which has no functional nucleus. The INT is characterized by a rapidly falling prosodic profile and high speech rate. Usually, the INT is clearly separated from the subsequent unit, which is in turn characterized by a salient *f0* reset leading to a higher prosodic level. Thus, INTs are frequently concluded with *f0* values that are lower than those of the introduced unit(s).

The example below shows a case of INT unit introducing a reported speech, which is signaled in the transcript by the "_r" symbol added to the information tags.

(2.12) afammn04[147]

> **and I keep telling him** **/=INT=** get out of that relationship /=CMM[10]_r= before you have children //=CMM_r= (Audio 2.12)

Figure 10: Oscillogram and *f0* tracks of afammn04[147]

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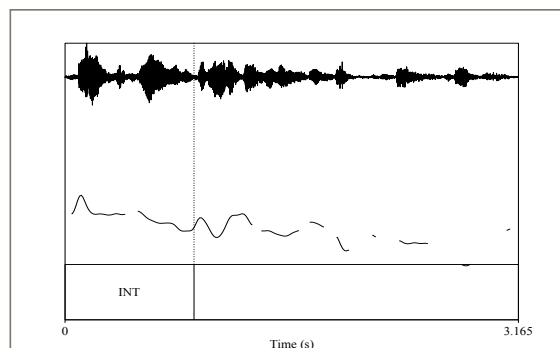
[10] Multiple comments (CMMs) are discussed in section 2.4.3 below.

2.4.2 Dialogic information units

Dialogic information units address the interlocutor and function as a support for the interaction (CRESTI, 2000, FROSALI, 2008, RASO, 2014). They generally correspond to what is traditionally referred to as "discourse markers" (RASO, 2014). Not comprising a primary concern in this thesis, dialogic information units will be briefly presented below.

2.4.2.1 The Incipit

The INP signals the beginning of utterances or stanza sub-patterns[11]. The unit may also function as a turn-taking device. It marks an *affective* contrast — not a logical one — with what precedes it. The unit is found at the beginning utterances or stanzas sub-pattern. It can be realized through three different prosodic movements: (i) rising-falling, (ii) falling or (iii) rising, always reaching (or departing from) high *f0* values. The possibility for different prosodic movements probably result from intrinsic segmental features of the unit (VIEIRA; RASO, 2015). The INP typically shows high *f0*-variation rate (Hz/ms), high intensity values and short duration.

2.4.2.2 The Phatic

The PHA has the function of signaling that the communicative channel is open. There is no distributional constraints for the PHA. It shows a flat or falling prosodic profile, short duration and very low intensity. The PHA frequently shows reduced phonetic realization — to the point that the unit might not even be hearable in isolation. When at final position in an utterance, the PHA usually shows higher intensity and, occasionally, rising prosodic profile.

2.4.2.3 The Expressive

The primary function of the EXP is to provide emotional support for the illocution, but this unit also plays a part in the sharing of social cohesion. Like the INP, it can also function as a turn-taking device, announcing, as it were, that the utterance "has begun". However, the EXP does not mark affective contrast, as does the INP. The EXP has no distributional constraint, but it is frequently found at initial position. It is characterized by some prosodic variation —

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11 For *stanzas*, see Section 2.3.3.3 below.

which, according to Raso (2014: 708), probably results from the function of the EXP as a support for the illocution. More frequently, the EXP shows a modulated prosodic profile, but it can also be flat. It shows intermediate intensity and duration.

Both the PHA and EXP units call for more in-depth analysis, for it appears that those units actually comprise more than two information units. From a functional perspective, the EXP not only provides emotional support, but also participates in the utterance as a turn-taking strategy. This functional overlap suggests the existence of another type of dialogic unit.

2.4.2.4 The Allocutive

The function of the ALL is to identify the addressee and, especially, to mark social cohesion. It has no distributional constraint, but each language/culture seems to show different slot preferences (see RASO, 2014). Its prosodic profile is usually falling (occasionally flat), presenting low intensity and short duration. When at utterance-final position, the ALL may be lengthened.

2.4.2.5 The Conative

Functionally, the CNT pushes the interlocutor to do something or prevents him or her from doing it. It has no distributional constraint but is more frequently found either at the beginning or at the end of utterances. It shows a falling prosodic movement on the stressed syllable (VIEIRA; RASO, 2015), high intensity and short duration. When at the end of an utterance, the CNT is lengthened.

2.4.2.6 The Discourse Connector

The DCT signals that its subsequent sequence — either an utterance or a stanza sub-pattern — is in a relationship of continuation with the prior sequence — the previous utterance or sub-pattern. The DCT does not mark contrast and is always found at the beginning of utterances or stanza sub-patterns. It has a flat, slightly rising or falling prosodic profile, long duration, high intensity and low *f0* variation rate.

2.4.3 The limits of the Isomorphism

In the preceding sections, the core units of the information pattern were presented. In what follows, some issues related to the non-correspondence between one utterance and one illocution, on the one hand, and one information unit and one tone unit, on the other, will be dealt with.

2.4.3.1 Scanning units

Cases are observed in which the one-to-one correspondence between the units of the prosodic and information patterns does not occur. In such cases, an information (always a textual one) is realized in more than one tone units. This phenomenon may result from different factors, such as performance inability on the part of the speaker, large syllabic size of the unit or even from issues related to emphasis (RASO, 2012). Regarding syllabic size, Martin (2009, 2014), among others, show that physiology places severe constraints on the syllabic size of tone units, which usually do not exceed seven syllables. Therefore, whenever the locutive content of a textual information unit surpasses this threshold, it is likely that the information unit be parsed into more than one tone units.

When a textual information unit is realized in more than one tone units, the tone unit(s) to the left is called *scanning unit* (SCA). The informational function of a scanned unit is exclusively conveyed by the rightmost prosodic unit, as SCA units only carry part of the locutive content of the information unit, thus playing no direct informational role. Scanning units are always compositional from a syntactic-semantic standpoint.

Example (2.13) below shows a comment unit realized in three prosodic units. The two initial ones, as can be verified by listening to the audio file, simple carry part of the locutive content of the comment, thus playing a syntactic-semantic role rather than a functional one.

(2.13) afammn01[114]

we start out /=SCA= with /=SCA= dead horse hooves //=COM= (Audio 2.13)

Figure 11: Oscilaram and *f0* tracks of afammn01[114]
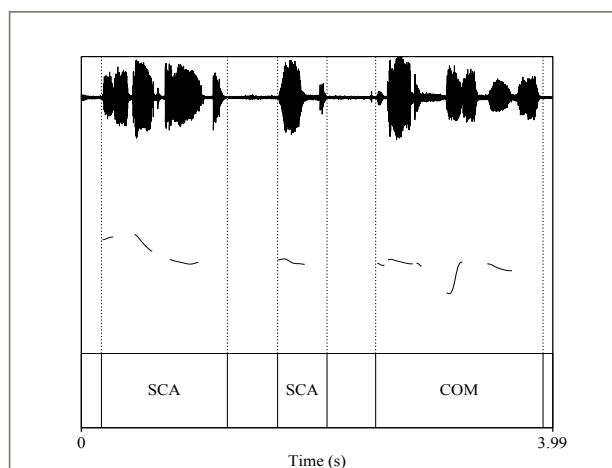
2.4.3.2 Multiple Comments

There are cases in which one utterance carries more than one illocution, thus infringing the Illocutive principle, which states that every utterance performs one illocution. For instance, two or more comments may be jointly realized as a rhetoric pattern of illocutions, known as *compositional illocutionary pattern*. The units carrying the illocutions in this type of pattern are called multiple comments (CMM).

Multiple comments show a highly conventionalized prosodic pattern and may be accompanied by other information units, either textual or dialogic ones. The illocutionary values carried by CMMs in a compositional pattern entail a global interpretation that exceeds, as it were, the interpretation of each CMM in isolation. The most common types of illocutionary patterns that CMMs realize are list, comparison, reinforcement, necessary binding, functional recall and alternative questions (MONEGLIA; RASO, 2014).

The example below shows an illocutionary pattern of *reinforcement*. The two illocutions that make up the pattern can be heard separately in (2.14b) and (2.14c). Each CMM is interpretable in isolation, but, when heard in the illocutionary pattern that they form, their combined meaning becomes clear.

(2.14) afammn03[140]

(a) today you're gonna act like a human /=CMM_r= you got that //=CMM_r= (Audio 2.14a)
(b) today you're gonna act like a human /=CMM_r= (Audio 2.14b)
(c) you got that //=CMM_r= (Audio 2.14c)

Figure 12: Oscillogram and *f0* tracks of afammn03[140]
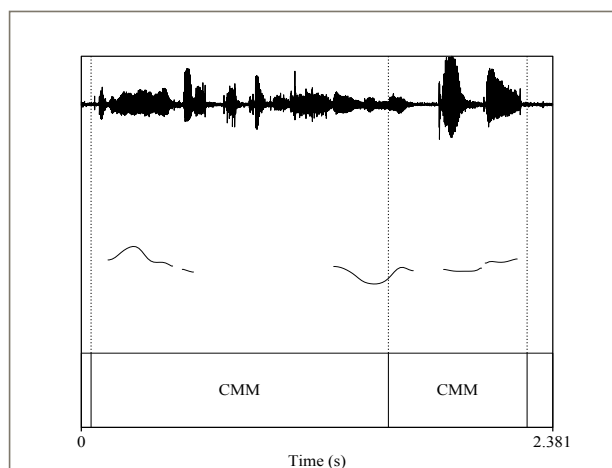
Illocutions in a compositional illocutionary pattern are assumed to be the result of one single intention (MONEGLIA; RASO, 2014), i.e. they spring from a common affective base and, consequently, fit within one single utterance accomplishing a certain type of rhetoric effect.

2.4.3.3 Stanzas

Reference units with more than one illocution may also occur in what is called a stanza (CRESTI, 2010). A *stanza* is basically a terminated sequence that realizes more than one illocution. The information units carrying the illocutions in a stanza are called *bound comments* (COB), except the last one in the pattern, which is conventionally identified as COM. Bound comments are not perceived as conclusive, as they feature a prosodic tail signaling continuity. The COBs in a stanza are characterized by "weakened" illocutionary forces pertaining to the same illocutionary class.

Besides the illocutionary units, stanzas may contain other information units, both textual (most frequently TOPs and PARs) and dialogic ones. The following example shows a stanza consisting exclusively of illocutionary and dialogic units (indicated by the "AUX" tag in the transcription). By listening to the corresponding audio file, it is possible to verify that COB

units are pragmatically interpretable as illocutions, but — once more — they are not perceived as conclusive.

(2.15) afammn01[17]

> <and> then /=AUX= **so we had to know these tendons and ligaments /=COB=** and then /=AUX= **all the bones /=COB=** and /=AUX= you know /=AUX= **all the way up from the shoulder down /=COB=** and then from the hip down //=COM= (Audio 2.15)

Figure 13: Oscillogram and *f0* tracks of the stanza afammn01[17]
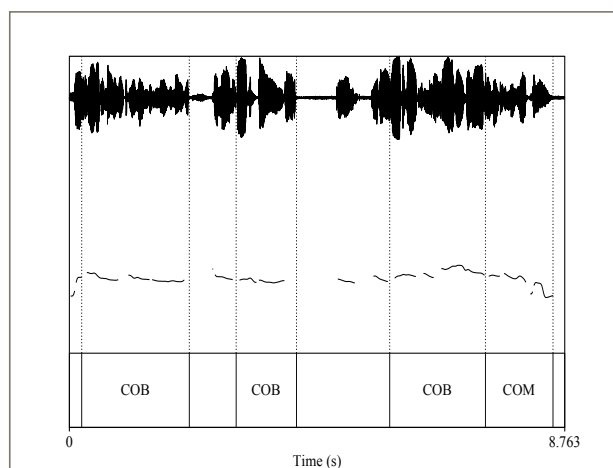
Stanzas are very frequent in monologues, particularly in formal ones (PANUNZI; MITTMANN, 2014). They constitute linguistic units whose primary concern is the production of textual content, while the primary concern of utterances is the performance of speech act. Accordingly, illocutions in a stanza normally feature weak assertive forces. stanzas differ from CMMs inasmuch as a sequence of COBs show no rhetoric effect, like a pattern of CMMs do. Therefore, COBs can be regarded as the result of "a work in progress", i.e. as the result of a processual production whose cadency reflects its continuous elaboration (MONEGLIA; RASO, 2012).

Stanzas are not rigorously governed by pragmatic principles, but rather by principles related to textual construction (PANUNZI; SCARANO, 2009). Therefore, a stanza is not considered an utterance. Stanzas are typically present in linguistic exchanges in which the degree of interactivity between speakers is low. When interactivity is low, semantic elaboration takes

over and speech act production decreases. Therefore, stanzas typically occur in argumentations, explanations, narrations, and monological interactions in general.

(2.16) afammn02[10]

&he /=TMT= **flew down to Mexico City /=COB=** &he /=TMT= **we &c [/1]=SCA= think of the name of my hotel /=COB=** which wouldn't mean anything now /=PAR= **but we ended up in a /=SCA= fabulous hotel /=COB=** &he /=TMT= first night / =TOP= **we were very unhappy with our rooms /=COB=** we got down there // =COM= (Audio 2.16)

The stanza in (2.16) is part of a narrative stretch in which the speaker talks about a trip that he had taken to Mexico City. The speaker elaborates on and performs each illocution in a processual manner. There are five "weak", assertive illocutions in the stanza; and only the last one — tagged as COM — is perceived as terminal. By listening to the audio file, it is possible to perceive the prosodic signs of continuity in each COB. The first and the last illocutions are provided separately in (2.17a) and (2.17b) below.

(2.17) First and last illocutionary units of afammn02[10] (see entire stanza in (2.16))

    (a) flew down to Mexico City /=COB= (Audio 2.17a)
    (b) we got down there //=COM= (Audio 2.17b)

2.5 The prosodic model adopted in L-AcT

In the L-AcT framework, information units are defined with respect to three criteria: (i) position of the unit within the hosting utterance, (ii) function of the unit within the information pattern, and (ii) prosodic features of the tone unit. The three criteria were present in the definitions provided in Section 2.4 above. This section will be concerned with prosodic model adopted in the L-AcT for the description of the formal realization of information units, focusing on the topic unit, which comprises the very object of study of this thesis.

The prosodic model on which L-AcT is based, known as the *IPO approach*, was developed at the Institute for Perception Research, Eindhoven University of Technology. The primary principles of the model are presented in 't Hart, Collier and Cohen (1990). The IPO is based on the perceptual relevance of prosodic parameters, particularly of *f0* variations.

Grounded on experimental psychoacoustics and psychophonetics findings, the IPO approach claims that the acoustic signal of speech consists of two classes of *f0* variation: one that is

voluntarily produced by the speaker and another that is unprogrammed and involuntary, resulting from intrinsic features of speech sounds, and ultimately determined by physiological constraints.

The basic proposition of the model is that only the first class of *f0* variation, i.e. the variation that results from voluntary production by the speaker, is perceptually relevant to the listener ('t HART *et al.* 1990: 39). Therefore, a distinction is drawn between *perceptually relevant pitch movements*, on the one hand, and *minute detail* or *fluctuations*, on the other.

The IPO approach is a multilevel model for the description of perceptually relevant pitch movements. The first level of description deals with single units of *pitch movements*, which are regarded as the smallest unit for perceptual analysis. Pitch movements are described with respect to: (i) direction of the movement (rise, fall), (ii) timing in relation to syllable boundaries (early, late, very late), rate of change (fast, slow), and size (full, half). Rising pitch movements are represented with numbers and falling pitch movements are represented with capital letters. Table 2 below shows the inventory of possible pitch movements according to the IPO approach.

Table 2: IPO inventory of pitch movements

	/1/	/2/	/3/	/4/	/5/	/A/	/B/	/C/	/D/	/E/
rise	+	+	+	+	+	-	-	-	-	-
early	+	-	-	-	+	-	+	-	-	+
late	-	+	-	+	-	-	-	+	+	-
spread	-	-	-	+	-	-	-	-	+	-
full	+	+	+	+	-	+	+	+	+	-

Source: t'Hart *et al.* 1990

The second level of description comprises the possible combinations of pitch movements, which are called *configurations*. Pitch configurations are highly constrained macro-entities, since their occurrences are restricted to very specific melodic environments ('t HART *et al.* 1990: 78). Therefore, pitch configurations can be formally expressed in a grammar of intonation. A pitch configuration is normally made up of more than one pitch movements, but, as utterances can be made up of only one pitch movement, there are configurations with only

one movement. Depending on whether a configuration is optional, recursive or obligatory, they are classified as:

- *root configuration*: obligatory and non-recursive;

- *prefix configuration*: optional and recursive, always preceding a root or another prefix;

- *suffix configuration*: optional and non-recursive, always follows a root.

The third level of description is the utterance *contour*, which corresponds to the global melodic shape of the utterance, made up of — at least — one configuration of the root type. Accordingly, in the IPO approach contours are formally represented as:

$$(\text{Prefix})^n \text{ Root (Suffix)}$$

In this formalization, the parentheses indicate optionality. Hence, this rule reads: contours are made up of an obligatory root that is optionally preceded by one or more prefixes (the superscripted *n* indicates that the prefix is recursive) and optionally followed by a suffix.

Out of the principles outlined above, the IPO approach developed a methodology for the perceptual study of intonation. A crucial part of the methodology consists of separating the irrelevant, minute *f0* variation from the perceptually relevant pitch movements. This procedure involves generating *stylized* versions from original utterances through a process called *close-copy stylization*. A *close copy* is a stylized version that meets two conditions: (i) it is perceptually indistinguishable from the original and (ii) "it contains the smallest possible number of straight-line segments with which the desired perceptual equality can be achieved" ('t HART et al., 1990: 42).

In the Information Patterning Hypothesis (see Section 2.3 above), the utterance is regarded as an entity formally realized by one or more tone units — or, in the IPO terminology, pitch configurations — fulfilling different functions in the information pattern. As in the IPO approach, the units of the prosodic pattern are considered for their perceptually relevant prosodic features.

An important contribution offered by L-AcT through proposing the Informational Patterning Hypothesis (CRESIT; MONEGLIA, 2010) is a pragmatic account for why the root

configuration is obligatory while other configurations are optional. Root configurations are obligatory, according to this account, because they are the formal "vehicle" for the illocutionary force, which constitutes the very core of the utterance (see Section 2.2). Likewise, the optionality of the other configurations are due to the fact that they do not directly partake in the realization of illocutions. They may serve various functions in the information pattern, either textual or dialogic ones (see Section 2.3 for details), none of them deemed necessary for the accomplishment of the speech act.

2.6 The concept of prosodic forms in the L-AcT framework

Studies carried within the L-AcT framework (CRESTI; FIRENZUOLI, 2002, FIRENZUOLI, 2003, CRESTI; GRAMIGNI, 2004, FROSALI, 2008) identified that certain arrangements of pitch movements, despite their having different acoustic effects, consistently realize the same informational function. Thus, the concept of *prosodic form* was created (FIRENZUOLI, 2003) — an integration of the IPO approach outlined above. A prosodic form is described with respect to (i) perceptually relevant pitch movement(s), (ii) *f0* values (at the onset, the mean and the minimum), (iii) syllabic alignment of pitch movements (timing), (iv) intensity, and (v) syllable duration.

The identification of the systematic correspondence between the prosodic and information patterns comprises another of L-AcT's important contributions (see CRESTI; MONEGLIA, 2010, FIRENZUOLI, 2003). As previously mentioned, every utterance is realized by at least one obligatory tone unit of the root type, which is optionally accompanied by other types of tone units. In the informational pattern, the root prosodic unit serves the function of carrying the illocutionary force and is called comment (see Section 2.4).

In the L-AcT framework, the concept of *prosodic nucleus* is defined not simply in terms of acoustic salience, but rather in terms of a specific type of acoustic prominence, one which is related to the realization of an informational function (FIRENZUOLI, 2003). Only certain types of tone units have prosodic nuclei: the prefix, which realizes the function of topic, and the root, which realizes the function of comment (see Section 2.4).

The prosodic nucleus may be preceded and/or followed by optional portions. When a portion precedes the nucleus, it is called *preparation*; when it follows the nucleus, it is called *coda*.

Since the locutive content of roots and prefixes — the only prosodic units that can have functional nuclei — frequently exceeds the size of their nuclei, preparations and codas are commonly found in topics and comments. When preparations and codas are cut out from a root or a prefix unit, the interpretability of the informational function of the unit is not compromised, as codas and preparations serve functions restricted to the syntactic and semantic level.

As already mentioned, this section focuses on the prosodic forms of the topic/prefix unit. The function of the topic is to supply an identification domain for the application of the illocutionary force. For details about the prosodic forms of the comment/root unit, see Firenzuoli (2003), Rocha (2013), and Rocha (forthcoming), among others. Regarding the topic unit, four prefix prosodic forms — called type 1, 2, 3, and 4 — have been identified up till now. The pioneering study on Italian by Firenzuoli and Signorini (2003) was responsible for the identification of the first three types through which the prefix unit may be realized. More recently, Mittmann (2012) identified the fourth type in Brazilian Portuguese, which was then detected in European Portuguese by Rocha (2012). Up till now no functional difference has been found among the prefix prosodic forms, which are informally referred to as alloforms. Nevertheless, each language seem to show a preference for a type of prefix. This point will be taken up in Chapter 6.

Before proceeding, it must be clarified that the description of a prosodic form is centered on its nucleus, since it is precisely the nucleus that carries out the function of the unit. The prosodic forms of the prefix/topic unit are presented below. Nuclear syllabic alignments and *f0* movements are illustrated in the figures below.

   (a)   **Type 1** prosodic form (FIRENZUOLI; SIGNORINI, 2003)

- Pitch movement: rising-falling nucleus (or /1A/ in the IPO notation).

- Mean syllabic length: 0.222s; the last syllable of the unit is lengthened.

- Timing: the rising-falling movement is aligned with the last stressed syllable of the nucleus. If the last word of the unit is oxytone, then its stressed syllable is even more lengthened, in order to fully accommodate the rising-falling movement.

- f0 values

  - maximum: 177 Hz (M), 308 Hz (F)

  - minimum: 107 Hz (M), 180 Hz (F)

  - onset (of the unit): 122 Hz (M), 201 Hz (F)

Figure 14 below illustrates the type 1. It was extracted from the Italian section of C-ORAL-ROM corpus. Only the last two syllables of the unit, i.e. "-nale", constitute the nucleus; the previous ones, transcribed in parentheses, constitute a preparation.

(2.18) ifamdl14[40]

> (a) di guarnizione finale /=TOP= ci potrebbero essere anche le mele //=COM= (Audio 2.18a)
>
>> Translation: *as final garnish* / *we could put the apples too* //
>
> (b) di guarnizione finale /=TOP= (Audio 2.18b)

Figure 14: Oscillogram and *f0* tracks of type 1 topic unit (ifamdl14[40])
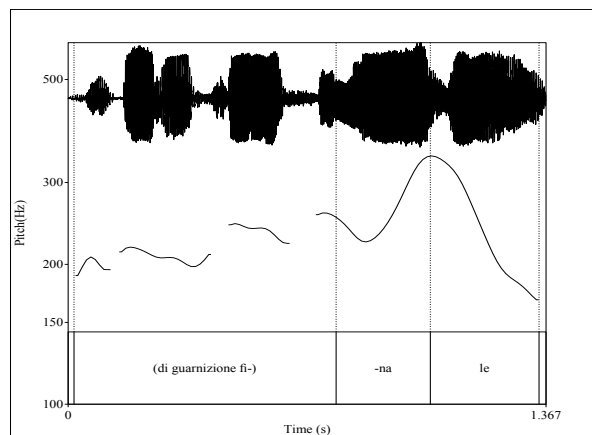
(b) **Type 2** prosodic form (FIRENZUOLI; SIGNORINI, 2003)

- Pitch movement (on the nucleus): rising (or /1/ in the IPO notation).

- Mean syllabic length: 0.201s; the last syllable of the unit is lengthened.

- Timing: the rising movement is aligned with the last stressed syllable of the nucleus and the possible post-stress ones.

- *f0* values

  - maximum: 225 Hz (M), 320 Hz (F)

  - minimum: 135 Hz (M), 176 Hz (F)

  - onset (of the unit): 139 Hz (M), 189 Hz (F)

The type 2 form in Figure 15 below was also extracted from the Italian section of the C-ORAL-ROM. The nucleus of the unit is realized in its last syllable. The parentheses indicate that the portion is not nuclear.

(2.19) ifamcv01[370]

> (a) da quando ti conosco io /=TOP= tu sei [/2]=EMP= <tu sei sempre magra> / =COM= (Audio 2.19a)
>
> Translation: *since I know you / you have always been thin* //
>
> (b) da quando ti conosco io /=TOP= (Audio 2.19b)

Figure 15: Oscillogram and *f0* tracks of type 2 topic unit (ifamcv01[370])
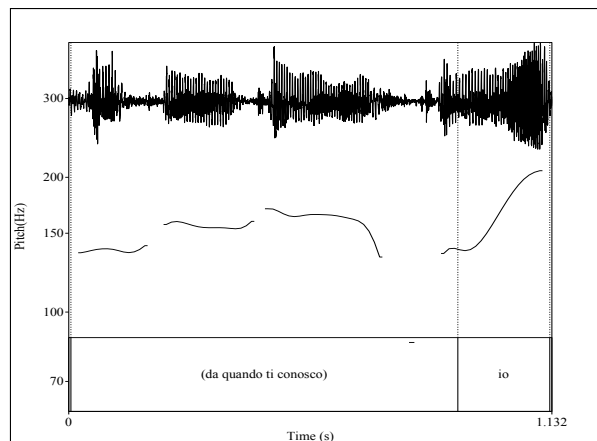
(c) **Type 3** prosodic form is characterized by having two semi-nuclei, normally distributed across the entire unit (FIRENZUOLI; SIGNORINI, 2003).

- Pitch movement (on the nucleus): falling-flat-rising (or /A01/ in the IPO notation).

- Mean syllabic length: 0.302 s; the last syllable of the unit is lengthened.

- Timing: the rising movement is aligned with the last syllable of the nucleus, regardless of its being stressed or unstressed.

- *f0* values

  - maximum: 206 Hz (M), 318 Hz (F)

  - minimum: 84 Hz (M), 167 Hz (F)

  - onset (of the unit): 161 Hz (M), 209 Hz (F)

(2.20) ifamdl16[220]

(a) come lei va via la sera /=TOP= nell'ascensore 'un c'è più luce //=COM= (Audio 2.20a)

Translation: *since she goes away at night / there is no more light in the elevator //*

(b) come lei va via la sera /=TOP= (Audio 2.20b)

Figure 16: Oscillogram and *f0* tracks of type 3 topic unit (ifamdl16[220])
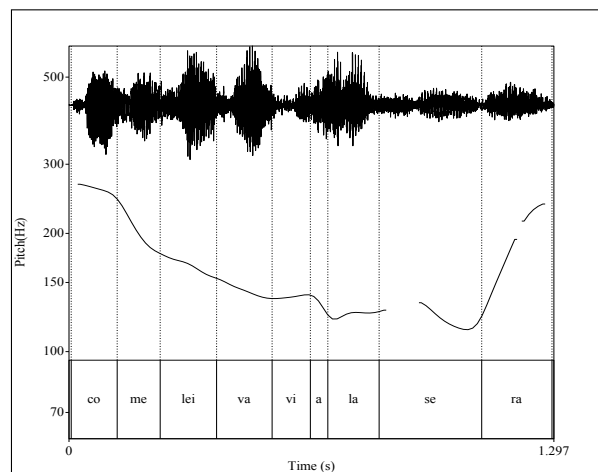
Firenzuoli and Signorini (2003) report that none of the three types of prosodic forms that they identified in Italian admits the possibility of codas. Preparations, on the other hand, were found in all of the three types of prosodic forms.

More recently, a fourth type of the prefix prosodic unit was found (see MITTMANN, 2012, ROCHA, 2012). This form is described as follows.

(d) **Type 4** prosodic form is characterized by having two holistically interpretable semi-nuclei, each consisting of at least one stressed syllable: the first and last ones in the unit. According to Mittmann (2012), the most relevant features shown by this prosodic form are as follows:

- Extra-high $f0$ values in the first stressed syllable of the unit, which may or may not be the first syllable of the unit.

- Lower $f0$ values in the last stressed syllable and possible post-stressed ones. The last stressed syllable is lengthened.

- Nuclear syllables show high intensity.

- Preceding the last stressed syllable, the overall $f0$ movement is falling; from the last stressed syllable on, the movement may be flat, rising or falling. When the direction of the final movement is rising, it never reaches the level of the departing point of the initial falling movement.

(2.21) bfammn05[1]

(a) primeiro lugar /=TOP= eu vou dizer pra você é uma [/1]=SCA= uma história triste /=COM= Mara //=ALL= (Audio 2.21a)
Translation: *first of all / I am going to tell you a / a sad story / Mara //*
(b) primeiro lugar /=TOP= (Audio 2.21b)

Figure 17: Oscilaram and $f0$ tracks of type 4 topic unit (bfammn05[1])
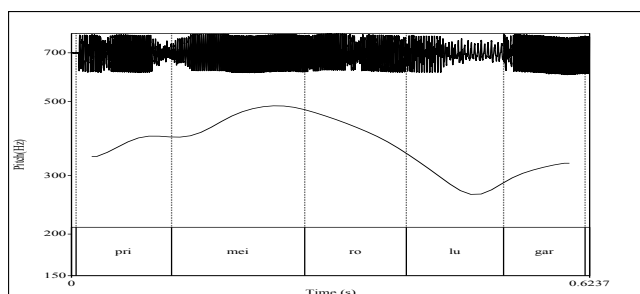
Figure 18 below provides a schematic representation of the *f0* movement of the prosodic forms presented above. Solid lines indicate nuclear portions, while dotted ones indicate non-nuclear portions.

Figure 18: Schematic representation of prefix prosodic forms
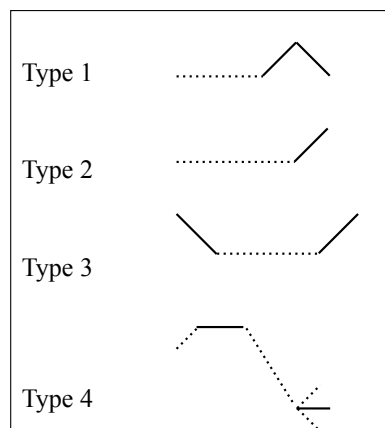
2.7 Speech and Writing: some considerations

Before ending this chapter, a word is due about the distinction between speech and writing as these two modalities of communication are regarded within the L-AcT framework. Contrary to approaches that regard speech and writing as modalities in a continuum (e.g. MARCUSCHI, 2001), the framework adopted in this thesis regards speech and writing as two discrete modalities.

Speech is a natural endowment of the human species (MCMAHON; MCMAHON, 2013). Human beings, unless suffering from some sort of innate or acquired disability, are born with the natural potencial to acquire language, just as they are born capable of developing cognitive and motor abilities. Writing, on the other hand, is a technology that is only learned by those individuals who undergo specific training. While speech is a natural product of evolution that surged some 100,000 years ago (MCMAHON; MCMAHON, 2013) —, writing is a relatively recent historical product, which first appeared probably with the Sumerians, around 5,500 years ago. Therefore, speech predates writing both ontogenetically and phylogenetically.

Historical and evolutionary differences apart, speech and writing comprise two modalities characterized by distinct features and the non-consideration of this distinction entails a series of problems for linguistic analysis (RASO, 2013). The two modalities are realized by different diamesic variables (BERRUTO, 1987), i.e. they are realized by different mediums and different channels. What follows is an account of speech and writing in their standard forms.

The medium of speech is the acoustic wave produced by the vibration of the vocal cords in the larynx. The acoustic wave then travels though the air and reaches the ear of the addressee, where the decoding process starts. Accordingly, the channel of speech is the air, the vehicle that allows the signal to be transmitted from the speaker to the addressee. In spontaneous speech, the speaker has little time for planning and the addressee has little time for processing; as a consequence, only the basic unit of meaning is preserved in long term memory. Once uttered, the only thing that can be recovered from an utterance is the meaning it conveyed, never the utterance itself, since it is impossible to produce two exactly equal utterances. Even if utterances could actually be reproduced, the "original" and the "copy" would comprise two different objects. Other consequences deriving from speech's distinctive features are those that come as a result of the natural tendency to avoid the silence, which causes interruptions, retractings, repetitions, hesitations, ill-formed structures and low lexical density (RASO, 2013).

Writing, on the other hand, is realized by graphic symbols, which are visually decoded by the reader. Graphic symbols may be set down on different supports, e.g. clay tablets, stone, paper, etc. Thus, the medium of writing are the graphic symbols, and its channel, the different supports. As a result, writing is — generally — durable and transportable, allowing the transmission of content in different places and times. Additionally, the time of the writer is independent from that of the reader, who, in turn, has access to a final product which hardly keeps the marks of the process that brought the text into existence (RASO, 2013).

Raso (2013: 22) highlights that while the speaker and the addressee are immersed together in an ongoing process, the writer and the reader independently perform the activities of writing and reading. Furthermore, the interaction between the speaker and the addressee is given by the processes of speaking and listening taking place in the *here* and *now*, while the "possible"

interaction between the writer and the reader is necessarily mediated by a product (i.e. the text).

As shown in Section 2.2, the reference unit for speech is identified within the L-AcT framework (CRESTI, 2000) as the utterance, which shows pragmatic and prosodic autonomy. The utterance is the basic linguistic entity in speech that can be pragmatically interpreted, corresponding to a speech act (AUSTIN, 1962). The communicative capacity of a text, on the other hand, lies in the text as a whole, including its structure, author and addresses. For example, the word "stop" cannot be interpreted as "drivers should stop completely before proceeding" unless it is conventionally arranged as a stop-sign and put in an appropriate place. Since illocutionary force and information structure are necessarily realized by prosodic means, writing can not be said to convey illocution or to have information structure (RASO, 2013).

The theoretical constructs of the L-AcT result from careful observations of speech as a modality on its own terms. The linguistic categories of the framework emerged from speech observed as an event, focusing on the acoustic signal rather than on transcription, which is, in itself, a mere representation of speech — a written text created from speech. For a long time, writing was the only observable form of language for research purposes. Currently, equipment for audio recording and computational tools for speech analysis are easily available. Also, there are well-established methodologies for speech corpora compilation (MELLO, 2014). The L-AcT framework takes advantage of all those aspects, setting forth a methodology and and theoretical framework for well-informed studies on spontaneous speech.

2.8 Summary

In this chapter, the basic theoretical principles of the L-AcT framework were presented. The concept of utterance, based on the Illocutionary Principle (CRESTI, 2000), its features and validity were discussed. The relation between the prosodic and informational patterns and the units pertaining to each of the two levels were also introduced.

In Section 2.1, the three levels of speech acts — illocution, locution and perlocution — were presented. It was shown that the basic difference between Austin's (1962) and Cresti's (2000) approach is basically that the former considers the perlocutionary act as the results achieved

with a speech act upon the audience, while the latter identifies the perlocutionary act as the libido asset that drives the performance of the speech act. In Section 2.2, the concept of utterance as a pragmatically interpretable unit was presented. It was shown that pragmatic interpretability is necessarily conveyed by prosody, which is considered as the natural interface between illocutionary and locutionary acts. Additionally, it was shown why pauses, dialogic turns and the notion of sentence do not constitute reliable criteria for the identification the reference unit for speech.

In Section 2.3, the correspondence between the units of the prosodic and the information patterns was shown, focusing on the only obligatory prosodic/information unit, i.e. the root/ comment, whose function is to carry the illocutionary act. In section 2.4, each unit of the information pattern was presented, beginning with the textual units, which make up the semantic texts of utterances, passing through the dialogic units — or discourse markers in other approaches —, ending with the cases in which the isomorphism between information and tone unit and between utterance and illocution does not obtain.

In Section 2.5, the IPO model was presented. The L-AcT framework integrates the IPO model to its pragmatic approach to the study of spoken language. The model is based on perceptually relevant *f0* variations, assuming that perceptual relevance is a function of intentional production. Then, in section 2.6, the concept of prosodic form was presented. Focus was given to the prefix/topic unit, since this comprises the very object of this thesis.

Finally, Section 2.7 was dedicated to some considerations about the differences between speech and writing. The next chapter will present a literature review about the notion of topic in different functional approaches.

3 Literature Review: The notion of topic in other approaches

In the realm of modern linguistic studies, sentences and clauses are commonly conceived of as twofold structures in which elements are articulated at a level not necessarily confined to the syntactic domain. Despite terminological variation — theme/rheme, topic/comment, topic/ focus —, this way of viewing sentences can be traced back to ancient Greece thinkers (KRIFKA, 2012, SORNICOLA, 2006). Aristotle's notion of sentence, for example, was based on the relation between a subject and a predicate, in which the predicate "said" something about the subject.

Nevertheless, Aristotle, as the other thinkers of his time, did not distinguish between subject and topic/theme (KRIFKA, 2012). Different authors (LEONG, 2004, KRIFKA;, 2012, SORNICOLA, 2006, to cite but a few) seem to agree that it is only with Weil (1978[1844]) and his considerations about the notion of *givenness* — i.e. the status of given and new of linguistic expressions in discourse — that the pair topic/comment (or theme/rheme) begins to be outlined.

> There is then a point of departure, an initial [given] notion which is equally present to him who speaks and to him who hears, which forms, as it were, the ground upon which the two intelligences meet [the starting point], and another part of discourse which forms the statement (l'énonciation), properly so called. This division is found in almost all we say (WEIL, 1978: 29).

In this frequently cited passage, Weil introduces the idea of *point of departure*, a discourse entity the operates beyond the scope of purely syntactic-semantic relations. Linguists from the Prague School (see, for instance, MATHESIUS, 1928, FIRBAS, 1992), adopting the *theme*/*rheme* terminology, made important contributions to the development of Weil's idea (LEONG, 2004). Within the Praguean approach, the theme of a clause is commonly regarded as the element that has the lowest degree of *communicative dynamism*, i.e. "the element that contributes least to the development of discourse" (LEONG, 2004: 168).

Within the American structuralism, Hockett (1958) provided a highly influential contribution regarding the notions of *topic* and *comment*: "[t]he most general characterization of predicative constructions is suggested by the terms 'topic' and 'comment' for their ICs [immediate constituents]: the speaker announces a topic and then says something about it" (HOCKETT, 1958: 201).

In the following sections, some of the approaches within which these notions are explored will be reviewed. The discussion will focus on authors within the so-called functional

tradition, since they are more closely related to the L-AcT (CRESTI, 2000), the framework adopted in this thesis. The final section will provide a comparison between the different views presented and the one developed within the L-AcT approach. It will be argued that L-AcT seems to be the most coherent framework for the description of the phenomenon of topic in speech.

3.1 Halliday

Within the systemic functional approach (HALLIDAY; MATTHIESSEN, 2014[1985]), language is regarded as a basic resource for meaning production, and its basic realization, both in writing and speech, is the *text*, defined as "language functioning in context"[1] (HALLIDAY; MATTHIESSEN, 2014: 3). The basic functions of language are associated with the different *modes of meaning* that are constructed in and by language.

One of the things that language "does" is to construe human experience (HALLIDAY, 1970). To give an obvious example, language "names" things, thus creating categories and taxonomies. Language also enacts social relationships, as one is able not only to represent processes, participants and circumstances through language, but also to express his or her appraisal or consideration towards others. Finally, language has a function in the organization of the discourse flow, a mode of meaning related to the creation of cohesive sequences and a sense of continuity among stretches of discourse.

Those so-called modes of meaning are presented by Halliday as a set of metafunctions. Thus, there would be (i) the *ideational metafunction*, or the strand of meaning involved in making sense of human experience, (ii) the *interpersonal metafunction*, or that which enacts social relationships, and finally, (iii) the *textual metafunction*, responsible for the organization of speech into cohesive discursive units. In Halliday's framework, *functionality* is regarded as a constitutive feature of language, and not simply as the "purpose" or "way in which language is used". The term metafunction is used to emphasize this somewhat particular view of functionality.

Halliday (1967) points out that the notion of *subject*, as it is traditionally defined, encompasses different functions, which are not always realized by the same element in the

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[1] L-AcT considers that spoken and written language are governed by the different principles. See Sections 2.7 (previous Chapter) and 3.8 and Raso (2013) for details about this distinction.

clause. According to the author, the traditional concept of subject is characterized by the superposition of three different lines of meaning related to: (i) the element which comprises the concern of the message; (ii) the element of which something is predicated and on which rests the truth value of the statement; (iii) the entity which performs the action expressed by the process represented in the clause. The author argues that, although the three different functions may be fulfilled by the same element — which is actually considered to be the case with unmarked declarative sentences in English (see (3.1a) below) — those functions may also be realized by distinct elements (see (3.1b) below). Furthermore, Halliday argues that those lines of meaning pertain to different domains and, thus, should not be conflated into one single category.

(3.1)[2]

    (a) The duke gave my aunt this teapot.
    (b) This teapot my aunt was given by the duke.

In (3.1.1), the noun group "the duke" fulfills all the three functions mentioned above. "The duke" is at once the concern of the message, the element on which the validity of the predication is vested and the doer of the action. In (3.1b), however, each of those three functions are fulfilled by a different element in the clause: the concern of the message is "this pot", the element of which something is being predicated is "my aunt" and the doer of the action, as in (3.1a), is "the duke". Taking that into consideration, Halliday proposes different labels for these functions: the concern of the message is called *theme,* following the Prague School (see FIRBAS, 1992); the predicated element, *subject*; and the doer, *actor*.

Each of those functions, as already mentioned, are related to a specific line of meaning, referred to by means of different headings. The theme is, thus, related to what Halliday refers to as *the clause as a message*; the subject is related to the *clause as an exchange*; and the actor, to *the clause as a representation* (HALLIDAY; MATTHIESSEN, 2014). Those functions are further associated with a specific metafunctional domain: the theme, operating in the "clause as a message" stratum, is associated with the textual metafunction; the subject, in the "clause as an exchange" stratum, is associated with the interpersonal metafunction; and the actor, in the "clause as a representation", with the experiential metafunction.

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[2] The examples provided in this chapter are borrowed or adapted from the authors under discussion.

Within the systemic functional approach, the clause is regarded as an entity made up of different but interrelated domains, each of which construing a specific type of metafunction. The textual metafunction, related to the the realization of the clause as a message, is the operating system in which the theme-rheme relation is structured.

Thematization is regarded as an option — or a set thereof — in the grammar of discourse. As a domain of syntactic choices of different natures, the clause is also the final result of processes related to transitivity and mood. In general terms, *transitivity* — related to the ideational metafunction — is concerned with the linguistic representation of extra-linguistic experience, while *mood* — related to the interpersonal metafunction — is concerned with the representation of participants in speech situations. The theme of a clause is considered to be whatever constituent comes first in the clause, and it represents what the speaker is talking about, the point of departure of the clause as a message (HALLIDAY, 1967).

In the phonologic stratum, speech content is considered to be organized into *tone groups*, understood as prosodic lines built on a succession of feet comprising a systematic intonational variation (HALLIDAY, 1967). The information unit (HALLIDAY, 1967), defined as a "quantum of information" that the speaker selects as a unit of discourse, corresponds to a tone group. Therefore, each tone group is an information unit, or a message block, *usually* coextensive with a clause. Information structure specifies, to a certain extent, the limits of tone groups, segmenting the speech chain into quanta of information, but those limits are ultimately determined by considerations of phonological structure (HALLIDAY, 1967: 202).

A theme may be marked or unmarked, and that depends on the mood of the clause (declarative, imperative, polar and non-polar interrogatives etc.). In English, the unmarked theme of declarative clauses is the subject[3] (see (3.2a)); in polar interrogative clauses, the unmarked theme is the finite element of the predicator (see (3.2b)); in non-polar interrogative clauses, the unmarked theme is the wh- element (see (3.2c)).

(3.2)

    (a) **John** saw the play yesterday.

    (b) **Did** John see the play yesterday?

    (c) **What** did John do yesterday?

_____

[3] Defined as the element of which something is being predicated and on which the truth value is vested (HALLIDAY, 1967).

Halliday does not use the terms *topic* and *comment*, which are commonly employed by American linguists since Hockett (1958), for he seeks to make a clear distinction between the functions strictly related to thematic organization, on the one hand, and those of given and new on the other. Nevertheless, the author recognizes a relationship between these functions, as he considers that in unmarked clauses the focus of information — i.e. the prominence that indicates new information — will fall on something other than the theme, either on the entire rheme or some part thereof.

Although the given-new structure is not a function of sequentiality, given that the focus of information may in principle fall on any element of the information unit, Halliday (1967) argues for a certain degree of congruency between order and givenness, just as he sees a tendencial correspondence between the information unit and the clause. Therefore, whatever may be of given in the structure of an information unit, Halliday argues, *tends* to appear at initial position.

Halliday (1967) defines theme as a property of the sequential organization of clauses. Even though the theme, in Halliday's view, is not necessarily marked by any specific prosodic feature, it is often found occupying a dedicated tone unit (see also HALLIDAY; MATTHIESSEN, 2014), particularly in clauses with marked themes (see (3.3) below, where the slant lines indicate tone unit boudary). The author considers that there is no special reason for the theme to be realized in a separate tone group in clauses with unmarked themes.

(3.3)
      (a) These houses / my grandfather sold.
      (b) That / I don't know.
      (c) Tomorrow / John is taking me to the theater.

Besides intonation, Halliday and Matthiessen (2014) point out that languages like Japanese employ morphological strategies to signal the thematic element in a clause. The Japanese postposition "-wa", which, according to the authors, tend to appear somewhere in the beginning of clauses, indicates that what precedes it is the thematic element. Also, expressions like "with regard to…" or "as for X…" are commonly employed by speakers to introduce themes. These are called *thematic markers*, and are considered to be more frequent in written than spoken language, since in speech speakers may resort to prosodic strategies to signal theme.

Thematic elements can be of different kinds, such as complements, like "the play" in "The play John saw yesterday", predicators, as in imperatives and non-finite dependent clauses, and many adjuncts. In Halliday and Matthiessen (2014) it is stated that the theme is the first element that has a function in the experiential structure of the clause. In other words, the thematic element is either a participant, a process or a circumstance. Since the notion of theme in Halliday is defined in terms of speaker's choice[4], elements like conjunctions, especially coordinators, cannot be themes, since these expressions are necessarily placed at the beginning of clauses.

Modal adjuncts, such as "perhaps", "probably", "frankly", "apparently", etc., and discourse adjuncts, such as "however", "nevertheless", "in that case", "therefore", are considered themes of a different kind. According to Halliday (1967), those elements, on the one hand, resemble conjunctions, since they cannot be predicated, but they also show some degree of freedom within the clause. This suggests that their placement at the beginning of a clause is a result of thematic choice. Nevertheless, since their role in the clause is related to discourse function, thematic modals and discourse adjuncts do not preclude the selection of themes bearing cognitive content, like the sentences below (HALLIDAY, 1967) show.

(3.4)

> (a) Perhaps / after dinner / we'll go to the theater.
> (b) Although / yesterday / John saw the play.

In summary, Halliday's definition for theme is given in relation to the clause. It applies both to written and spoken language, whose internal organizations are somewhat indistinctly conceived of as clauses drawn up into texts. The theme is considered to be the element which comprises the concern of the message; it does not have to be the subject nor the actor, as these notions pertain to other linguistic levels. In speech, themes may be signaled by intonation, but this does not necessarily happen. Finally, Halliday admits the existence of cognitive themes and non-cognitive, discourse-oriented ones. In Chapter 5, Halliday's distinction between cognitive and non-cognitive themes will be taken up, where the notion of "modal topic" (MONEGLIA; RASO, 2014) will be presented.

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[4] Within the systemic functional framework, thematic structure is regarded as an aspect of textual construction whose output ultimately results from choices made by the speaker/writer based on what he or she wants to say (see WEBSTER, 2009).

3.2 Chafe

In Chafe (1970), the distinction between new and old information is dealt with in an attempt to include the semantic component in the analysis of the general structure of language. Considering language as a means for conveying information, Chafe (1970) proposes to look at sentences as the basic linguistic feature responsible for the organization of information. In that perspective, *new information* is regarded as the part of the sentence conveying what the speaker believes to be introducing into the mind of the addressee for the first time. Accordingly, sentences would be made up of new information added to information already shared by interlocutors (*old information*). The "shared information" would, therefore, constitute a starting point for the sentence, one that could be established either linguistically (on the basis of sentences previously set forth) or contextually (on the basis of the common extra-linguistic context).

According to Chafe (1970), the distinction between old and new information underlies most of what is commonly discussed under the guises of theme and rheme, topic and comment, and even subject and predicate, although the latter two concepts are considered more related to surface structure than to semantic structure itself. Chafe (1970) detects a general correlation between old information and some surface features of sentences, such as preverbal subjects realized with low pitch. New information, on the other hand, is considered to be correlated with higher pitch and intensity. None of those features — intonation and word order —, however, is considered predictive. Moreover, the features employed in the marking of old and new information, Chafe notes, varies from language to language.

In a later paper (CHAFE, 1975), the author sorts out the different notions outlined in Chafe (1970), providing further explanations not only about the old-new distinction (referred to as *givenness*) but also about the notions of subject, contrastiveness, definiteness, and topic. Those notions are treated in terms of distinct *packaging phenomena* involved in the realization of nouns in sentences, but they may be extended to other structural elements of sentences and clauses, the author suggests. The author's aim is to better define labels that are traditionally applied to what he regards as overlapping phenomena. His discussion is underlined by considerations of cognitive nature, as he assumes that a message will only be

readily assimilated by the addressee "when the speaker adjusts what he says to what he assumes the addressee is thinking of at the moment" (CHAFE, 1975: 28).

Given information is defined as what the speaker believes to be present in the mind of the addressee at the time of the utterance. By the same token, *new information* would be what the speaker considers *not* to be present in the mind of the addressee. Therefore, Chafe's definition for given and new is "speaker based", as it is not related to the listener's "having" or "not having" knowledge of something. For instance, when a speaker says "I saw your father yesterday", say, right upon meeting his addressee (CHAFE, 1975: 30), it would be unlikely that the addressee had no previous knowledge of the referent evoked by "your father" (in this context "new"). The author suggests, in view of the above considerations, that it would probably be more precise to think of given information as "already activated" and of new information as "newly activated".

Regarding the linguistic realization of givenness, Chafe states that, in English — and probably in the great majority of languages —, given information is conveyed in a weaker and more attenuated manner. More specifically, what is old tends to be realized with lower pitch, to be unstressed and subject to pronominalization. Additionally, the author mentions the case of the Japanese particles "-wa[5]" and "-ga", which are supposed to mark, respectively, given and new information.

Another notion discussed by the author is *contrastiveness,* which involves three factors, namely (i) awareness or background knowledge, (ii) a set of possible candidates and (iii) an assertion of which candidate is the correct one. The sentence "Rónald made the hamburgers", in which "Ronald" is stressed and bears the highest pitch — as the acute accent mark indicates —, is used by Chafe (1975) to illustrate the three factors involved in contrastiveness. The background knowledge in this sentence is the already activated (or at least recoverable) knowledge that hamburgers have been made, i.e. the speaker believes that the addressee knows that someone made the hamburgers and that this information is somehow active in his mind. Additionally, the speaker assumes that the addressee is not certain as to who made the hamburgers and that he or she has in mind a limited set of candidates for that role. Thus, the speaker asserts that the one who made the cake was Ronald (not Sally, John or any other

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[5] Note that Halliday and Matthiessen (2014) treat "-wa" as a theme marker (see Section 3.1).

possible person). Linguistically, the focus of contrast is marked by intonation and, less frequently, by word order. As the element focalized may have been present to the addressee, it does not have to be new. Contrastiveness should not, therefore, be confounded with givenness.

Regarding the concept *subject*, Chafe defines it as the element that the sentence is about[6], as a starting point that identifies an individual — a cognitive unit — about which information is then added. Among the different linguistic strategies that languages have to mark subjects, Chafe (1975) mentions word order, verb agreement and affixes. He identifies no necessary correlation between subject and given information and "non-subject" and new information, although he suggests that subjects *tend* to conflate with given information. Chafe (1975) exemplifies it saying that, if someone in a room, upon hearing a loud noise, shouted the sentence (3.5a) to someone else in a different room, and in turn this person answered uttering (3.5a'), then, "the dog" (the subject of this sentence) could be regarded as conveying new information (in the sense of being newly activated).

(3.5)

      (a) What happened?
      (a') The dog knocked over the lamp.
      (b) What happened to the lamp?
      (b') The dog knocked it over.

Likewise, "it" in the the reply in (3.5b') is given information, since the referent it evokes is the same as that evoked by "the lamp" in (3.5b). As it will soon become clearer, the notions of givenness, contrastiveness and subject are important for understanding Chafe's definition for topic. The only notion treaded in Chafe (1975) that will not be discussed here is that of definiteness, and this is due to the fact that it is not of primary importance for understanding Chafe's notion of topic.

Chafe chooses not to adopt the label "theme", for, in his perspective, this term is *at best* (CHAFE, 1975: 28) an alternative label to "topic". In line with the typology proposed by Li and Thompson (1975) (see Section 3.3), Chafe argues that the notion of topic is better captured in topic-prominent languages, like Mandarin.

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[6] Note that this definition is very similar to that proposed by Hockett (1958) for topic.

(3.6)

> *nèi-xie shùmu   shù-shēn   dà*
> *those   tree   tree-trunk   big*

According to Chafe (1975), this allegedly typical Mandarin sentence cannot be properly translated into English as, for example, "regarding those trees, the trunks are big". The translated version is considered inappropriate because it involves contrast, a feature that the Mandarin sentence lacks. The predication in this example — the assignment of the property of "being big" — applies not to "those tree" but rather to "[their] trunks". What the constituent that was glossed as "those tree" (*nèi-xie shùmu*) does in (3.6) is to "limit the applicability of the main predication to a certain restricted domain" (CHAFE, 1975: 50), this being the function of that which Chafe refers to as *real topics*.

Real topics "are not so much *what the sentence is about* as *the frame within which the sentence holds*" (CHAFE, 1975: 51, emphasis in the original). In fact, the author considers that *what the sentence is about* applies rather to subjects than to topics, as was shown above when Chafe's definition for subject was presented.

Typical English sentences like "the pláy, John saw [it] yésterday" or "as for the pláy, John saw it yésterday"[7] (CHAFE, 1975: 49) are considered by the author as being different from the Mandarin example above, precisely because these sentences involve contrast, i.e. the speaker *pairs* an event (the play) from a list of possible candidates ("the movie", "the opera", etc.) with the time the event was attended by "John", i.e. "yesterday" (not any other time). Therefore, Chafe suggests that the term topic should not be used to describe elements like "the pláy" and "as for the pláy" in these sentences, since these elements are more related to the expression of contrast than to restricting the frame within which the predication holds.

Turning back to the Mandarin case, Chafe proposes that, in English, some temporal adverbs and prepositional phrases fulfill the same function that "nèi-xie shùmu" ("those tree") does in (3.6) above. For example, "In Dwinelle Hall people are always getting lost", in which "in Dwinelle Hall" constitutes a frame on which the predication holds (CHAFE, 1975: 51). The difference between English and Mandarin is that in Mandarin the preposition would not be required, since the topical device is readily available in the language.

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[7] The acute accent mark indicates prosodic variation marking contrastive focus.

In summary, Chafe defines topic as the element in the sentence whose referent establishes a framework (spatial, temporal or individual) within which the main predication holds, thus distinguishing topics form subjects (i.e. what the sentence is about) and phenomena associated with contrastiveness. As a restricting element related to the predication, topics, in Chefe's view, are realized at clauses' initial position, but this is not openly treated as a constraint. Finally, his view on the notion of topic, defined in terms of a sentential relation, is clearly syntax based. Some of the issues that rise from such perspective will be addressed in Section 3.7.

3.3 Li and Thompson

Li and Thompson (1975) propose a typology in which languages are grouped into four distinct types, according with the most common sentential structure in the languages. The sentential structures referred to by the authors are the ones expressed by subject-predicate and topic-comment articulations, like the the sentences in (3.7) below illustrate (LI; THOMPSON, 1975: 459).

(3.7)

>(a) John hit Mary. (subject-predicate)

>(b) As for education, John prefers Bertrand Russell's ideas. (topic-comment)

The four types are as follows:

>(i) Subject-prominent (Sp) languages: the basic sentence in the language is structured around the subject-predicate relation.

>(ii) topic-prominent (Tp) languages: the basic sentence in the language is structured around the topic-comment relation.

>(iii) both subject-prominent and topic-prominent languages.

>(iv) no such prominencies apply.

Examples of Sp languages include languages from Indo-European, Niger-Congo, Finno-Uralic, Semitic and Indonesian families. Among Tp languages, the authors include Chinese (Sino-Tibetan), and Lahu and Lisu (Tibeto-Burman). Japanese and Korean are classified as (iii), i.e. languages that are equally topic and subject-prominent. Tagalog and Illocano are classified as (iv), i.e. topic and subject prominencies are not relevant features for describing the structure of sentences in those languages.

Li and Thompson (1975) report that topics are found in all the languages that they had examined, but the same is not true for subjects. They outline the differences between topic and subject in terms of discourse and sentence-internal parameters:

1) Definiteness: the topic must be definite[8], but the subject need not be;

2) Selectional relations: the topic does not have to be an argument of the predicative constituent in the sentence, while the subject does;

3) Predictability: as a corollary of (2) above, topics are unpredictable, but "it is possible to predict what the subject of a given verb will be" (LI; THOMPSON, 1975);

4) Functional role: the function of topics is to set the framework within which the predication holds[9], and this function is maintained constant across sentences. Subjects, however, show no constant functional role, as they can even lack a semantic function altogether (e.g. dummy subjects such as "it" in sentences like "it is raining" or "it is hot in here");

5) Agreement: topic-verb agreement is rare, while, in many languages, subject-verb agreement is mandatory;

6) Distribution in sentences: even languages that have morphological resources to mark topics, such as Lisu, Japanese and Korean, place topics at the beginning of sentences. Subjects, on the other hand, are much less constrained in that respect.

7) Grammatical processes: topics do not directly partake in grammatical processes such as reflexivization, passivization, imperativization etc., while subjects do. For example, the authors claim that the second person morpheme that is usually absent in imperative sentences is always the subject. The syntactic independence of a topic in relation to the remaining part of the sentence (the comment) is considered one reason that topics play no part in those grammatical processes.

As (1-7) above show, the topic is conceived of as a discourse notion (although closely tied to predication), while the subject is envisaged as being more strictly related to internal aspects of the sentence. Mittmann (2012) points out that (1-7) simply indicate some prototypical features of topics and subjects; in other words, (1-7) do not constitute necessary conditions. Accordingly, they do not serve as a heuristic for detecting topics or subjects. Li and Thompson (1975) themselves acknowledge that, as they explicitly propose (1-7) as a general guideline to help distinguish topics and subjects. The importance of their study is that it has influenced many other studies, like the one by Pontes (1987) on topic constructions in Brazilian Portuguese (see Section 3.6).

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[8] Definite in the sense that the speaker believes the addressee already know and can identify the element referred to by the topic expression (see CHAFE, 1975).

[9] The authors understand that "the functional role of the topic as setting the framework within which the predication holds precludes the possibility of an indefinite topic" (LI; THOMPSON, 1975: 464).

3.4 Lambrecht

Lambrecht (1994) deals with the principles and rules of grammar that are involved in the expression of information structure, which is regarded as the grammatical component of language that governs the relationship between sentence structures and communicative situations. In his framework, propositions, regarded as conceptual representations of states of affairs, are taken as the input of information structure. Those conceptual representations undergo pragmatic structuring inside the information structure component, and the pragmatic organization is carried by the speaker in terms of his or her assumptions as to the current state of mind of the addressee at the time of the utterance.

Lambrecht (1994) claims that the appropriateness of seeing information structure as a grammatical component is supported by the fact that a number of grammatical features, such as some of the ones involved in morphosyntactic, lexical and prosodic phenomena, serve the unique purpose of signaling information structure distinctions. The author separates the categories pertaining to information structure into two groups: categories related to the "mental representation of entities and propositions" on one side, and categories related to "pragmatically construed relations between denotata and propositions" on the other.

The first group of categories is concerned with cognitive and psychological assumptions by the speaker as to the state of mind of the addressee. In this context, an entity may be assumed by the speaker as known or unknown, depending on whether the speaker assumes that the hearer has a mental representation of it or not. The same applies to propositions. Therefore, an entity of which the speaker assumes that the addressee has a mental representation is called *identifiable*, while a proposition with an analogous status is called *presupposed*. Likewise, an entity or a proposition assumed by the speaker as being in the hearer's forefront consciousness is called *discourse-active*.

The second group of information structure categories, i.e. the ones involved in pragmatic relations between denotata and propositions, is where the notion of topic, as well as that of focus, is included. Lambrecht (1994: 335) defines *topic* as a pragmatic relation, more specifically, as a pragmatic relation of aboutness between a proposition and a discourse entity. Moreover, a proposition is said to be about a topic if this proposition *increases the knowledge of the hearer* about this topic. In this specific respect, Lambrecht's definition seems to echo

the notion of communicative dynamism of the Prague School (see VACHEK, 2003, FIRBAS, 1992).

Lambrecht (1994) claims that a topic entity must not only exist in the domain of the discourse independently of what is being predicated in the proposition, but also be identifiable and minimally active. In fact, the author claims that fully active referents, i.e. referents that are present in the forefront of the hearer's consciousness, are the preferred candidates to become topics.

Lambrecht (1994: 335) identifies two functions performed by topic expressions: (i) to evoke a topic referent in the discourse and (ii) to express a semantic relation between a topic referent and a predication. He argues that grammar tends to codify these two functions in specific ways: the first one by means of full noun phrases and the other by means of unaccented pronominals, and, less frequently, inflexional morphemes or even null arguments. Accordingly, unaccented pronominals, commonly evoking fully activated referents, would be the preferred type of topic expression.

The notion of *aboutness* present in Lambrecht's definition for topic is based on the *Principle of Relevance* set forth by Strawson (1964). This principle proposes that statements are normally intended to "give or add information about what is a matter of current interest or concern"[10], which explains the requirement above mentioned that, in order for a proposition to be regarded as relevant in relation to a topic entity, the proposition must increase the knowledge of the hearer about the topic.

From this principle, Lambrecht (1994: 119) argues, it follows that it is not always possible to univocally determine what the topic of a proposition is, for "as there are degrees of relevance, there are degrees to which elements of propositions qualify as topics". As a matter of fact, this indeterminacy is regarded by Lambrecht as possibly responsible for the lack of formal marking for topics in many languages.

Taking that into consideration, Lambrecht proposes that the topic of a sentence is *pragmatically* recoverable from the embedding discourse context; i.e. the topic is contextually bound and not necessarily realized in formal terms. In the sentence "the children went to school", Lambrecht (1994) explains, the entity identified by the constituent "the children"

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[10] Strawson (1964) apud Lambrecht (1994: 119).

may or may not be a topic. It will be a topic only if the proposition expressed by the sentence can be pragmatically construed as conveying relevant information about the referent evoked by "the children". In order to be able to determine if "the children" is a topic or not, one has to (i) know the context, (ii) the communicative intentions of the speaker, and (iii) the state of mind of the addressee regarding the referent evoked by "the children" (LAMBRECHT, 1994: 120).

The author resorts to allosentences, i.e. differently structured sentences conveying the same propositional content, as a procedure to retrieve the organization of sentences in terms of information structure. Accordingly, Lambrecht (1994: 121) embeds the sentence "the children went to school" in the following discourse contexts (capital letters indicate accent):

(3.8)

> (3.8.1)
>
> a. What did the children do next?
>
> b. The children went to SCHOOL.
>
> (3.8.2)
>
> a. Who went to school?
>
> b. The CHILDREN went to school.
>
> (3.8.3)
>
> a. What happened?
>
> b. The CHILDREN went to SCHOOL!
>
> (3.8.4)
>
> context: *John was very busy that morning.*
>
> After the children went to SCHOOL, he$_{John}$ had to clean the house and go shopping for the party.

In (3.8.1), the referent denoted by "the children" is pragmatically construed as a matter of current interest. Also, predicating of "the children" *that they went to school* increases the hearer's knowledge about "the children". Hence, "the children" is a topic constituent in (3.8.1), as it is what the propositional content of the sentence is about. The remainder of the sentence, "went to school", is the comment. In the other contexts (3.8.2-4) "the children" is not a topic constituent, since the referent evoked by this expression cannot be reconstructed in terms of an aboutness relation.

Lambrecht (1994) assumes that topic-comment sentences, particularly in languages like English, are minimally characterized by an accent on the verbal phrase, as indicated by the capital letters in (3.8.1) above. Nevertheless, the author does not propose any precise linguistic markings for topics. In fact, Lambrecht (1994: 21) claims that many languages lack unambiguous formal markings for topic relations. Since the topic is a notion defined in terms of propositional content, determining what the topic of a sentence is may be a rather tricky task, especially if contextual information is limited or absent. Crucially, Lambrecht's notion of topic is highly context bound.

3.5 Krifka

The approach outlined in Krifka (2012) takes up the notion of information structure from Chafe (1975), who coined the term *information packaging* to refer to the way that information is presented in discourse. Krifka regards information structure as related to the aspects of language that aid in the flow of communication by signaling to the speaker the addressee's current information state. The idea of communication as a "continuous change in the common ground" (KRIFKA, 2012) underlies this view of information structure, where c*ommon ground* refers to the information (both propositions and entities) mutually known to be shared by interlocutors (STALNAKER, 1974). The example below, adapted from Krifka (2012: 1), helps clarify these notions.

(3.9)

      (a) I have a cat.

      (b) I had to bring my cat to the vet.

In uttering (3.9a) before (3.9.b), the speaker assumes that "his having a cat" is not part of the knowledge of the addressee; in other words, the information that the speaker has a cat is not present in the common ground. Therefore, the sentence in (3.9a) is said to introduce a change in the common ground, bringing the referent evoked by "a cat" to the foreground. This referent is then picked up in the second sentence by the expression "my cat", to which is added the information that the speaker had to take it to the veterinarian. Additionally, the *packaging* of the referent "cat" in the second sentence as "my cat" would only be possible because the speaker assumes that his or her interlocutor knows by then that the speaker has a cat. This is also regarded as an information structure phenomenon.

However, changes in the common ground are not exclusively introduced by the asserted content of sentences. *Accommodation of presuppositions* by the addressee is another way in which changes in the common ground may be introduced. Therefore, the sentence in (3.9b), "I had to bring my cat to the vet", could be uttered without the aid of the first, since the propositional content of (3.9a), "I have a cat", is entailed by the noun phrase "my cat" in the second sentence. As Krifka (2012: 2) puts it, "[i]f a piece of information cannot be interpreted with respect to the current common ground, then the current common ground can be minimally changed in a way that it fits the requirement of the piece of information".

The common ground includes not only the set of propositions mutually known to be shared by interactants, but also the set of entities previously introduced in the discourse. These entities may be explicitly introduced, as "a cat" in (3.9a), or may be accommodated. The possible uptake of such entities by means of anaphoric or determinate expressions is also regarded as an information structure phenomenon.

Krifka (2012) subsumes notions like givenness, focus and topic under the general heading of information structure. In what follows, the notion of topic will be reviewed.

Drawing on Reinhart (1982) and Stalkner (1974), Krifka (2012: 28) defines *topic* as the constituent that identifies an entity (or set of entities) under which the information expressed in the comment should be stored in the common ground content. This definition is based on the assumption that, in communication as well as in memory, information is organized "in such a way that it can be said to be 'about' something" (KRIFKA, 2012: 27). The term *aboutness topic* stems from this assumption.

The integration of new information to the common ground, the author maintains, is done through the association of propositions with entities identified by *topical expressions*. This process would be analogous to storing information in a file-card system in which headings would correspond to topic expressions. Accordingly, sentences conveying the same propositional content, like the ones in (3.10) below, would differ from one another inasmuch as each of them conveys information about different entities.

(3.10)

     (a) Aristotle Onassis /**topic** married Jacqueline Kennedy //**comment**
     (b) Jacqueline Kennedy /**topic** married Aristotle Onassis //**comment**

The notion of topic and that of givenness are also distinguished in this approach. Krifka (2012) points out that, even if many topic constituents are indeed old, there are cases in which a topic expression introduces a new entity in the common ground, like the example below illustrates.

(3.11)

A good friend of mine /**topic** won the lottery last year //**comment**

According to the author, sentences usually contain one topic. Nevertheless, sentences with more than one topic may be found, though less frequently, e.g. "*as for Jack and Jill*, they married last year" (KRIFKA, 2012). Sentences like this, the author argues, express a relation between two "file cards"; in the case of this sentence, one file card for "Jack" and another for "Jill". Sentences without a topic convey information about an entity that is usually recoverable from the context and are called *thetic*, which implies that topics *must* be linguistically realized (see LAMBRECHT, 1994).

Krifka (2012) also distinguishes the so-called contrastive topics. *Contrastive topics* are focalized topic constituents realized with especial intonation and usually in pairs (see (3.12) below). Carrying a rising accent, contrastive topics indicate alternatives, as focalized constituents normally do (KRIFKA, 2012: 30). The author exemplifies this type of topic with the following set of sentences (capital letters indicate the syllables with rising accents).

(3.12)

(a) What do your siblings do?

(a') [my [SISter]$_{focus}$]$_{topic}$ [studies MEdicine]$_{focus}$, and [my [BROther]$_{focus}$]$_{topic}$ is [working on a FREIGHT ship]$_{focus}$.

Krifka (2012) also draws a distinction between topics and frame setters. While topics identify the entity under which the information expressed in the comment should be added to the common ground, *frame setters* indicate the general type of information that can be given about a certain topic[11]. The author assumes that frame setters are always focalized, and, as a consequence, they always suggest alternative options. *Frame setting*, as the phenomenon is referred to, is usually a function performed by adverbials and prepositional phrases, like the example below shows.

(3.13)

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[11] Kafka's frame setters resemble Chafe's topics (see Section 3.2 above)

As for his health situation |frame setter, he had a bypass operation recently.

Krifka (2012) explains that the frame setter in the above sentence restricts the type of information that can be given in the remainder of the sentence. It would fall out of the scope of this frame setter, say, "he was sent to Mars". Additionally, frame setters may help delimit unspecific evaluative predicates, like "he is fine" in (3.14a').

(3.14)

(a) How is John?

(a') Healthwise | As for his health /frame setter he is FINE.

The linguistic coding of information structure categories is not exhaustively explored in Krifka (2012). The author briefly discusses certain linguistic devices considered relevant for the phenomenon of information structure based on (assumptions about) their frequency in different languages. With regards to the marking of topics, Krifka (2012: 34) claims that topics are usually realized in separate intonation phrases and marked by a rising-falling pitch accent. As for syntactic markings, the author suggests that the left periphery of sentences is the preferred position for topics in languages like English and German. Cleft and pseudo-cleft constructions are pointed as other syntactic choices available as linguistic markings of topics.

3.6 Pontes

Pontes (1987), based on the typology proposed by Li and Thompson (1975)[12], seeks to determine whether Brazilian Portuguese is a Topic-prominent (Tp) or a Subject-prominent (Sp) language. The relation between topic and comment, in the view adopted by the author, is strictly semantic. Pontes (1987) regards topics as the focus of attention, as the element that announces the theme (i.e. subject-matter) of the discourse. Therefore, the author identifies no morphosyntactic restriction for elements fulfilling the function of topic.

Pontes (1987) also deals with topics in spoken and written Brazilian Portuguese, and she reports that constructions with topics are much less frequent in written language. Pontes suggests that this may be due to a stronger influence exerted by prescriptive grammar on written language, an influence which would cause writers to consciously avoid using topical constructions.

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[12] See Section 3.3 above.

Pontes distinguishes two different processes in constructions with topics: topicalization and left-dislocation. The difference between the two, as (3.15) illustrates, is that the left-dislocated construction (3.15a) has a resumptive pronoun in the comment, while the topicalized construction does not (3.15b).

(3.15)

      (a) The black car over there /**topic** Jane has just bought bought *it* /**comment**.

      (b) This purse /**topic** things get lost inside /**comment**.

Pontes considers it hard to determine whether a construction is topical or has undergone left-dislocation, since resumptive pronouns are not obligatory in Brazilian Portuguese. Nonetheless, the author notices that it is only when the noun phrase in the topic is definite that the resumptive pronoun appears in the comment. In that respect, Pontes (1987) departs from Li and Thompson (1975), who propose that topics must be definite (see Section 3.3 above).

As for the classification of Brazilian Portuguese as Tp or Sp, Pontes (1987) identifies a strong tendency towards topical prominency, even though the subject-predicate relation may be adequate to describe some of the constructions in Brazilian Portuguese.

It must be pointed out that Pontes (1987) present some methodological issues that make the outcomes of her study somewhat debatable. The data analyzed in her study consist of unrecorded utterances collected by the researcher in informal conversations. Consequently, it is impossible to evaluate the representativeness and the accuracy of Ponte's data. Additionally, given the complete lack of recordings, one cannot verify if the analyzed sentences constitute actual utterances, in the sense proposed in Cresti (2000). Nevertheless, as Mittmann (2012: 146) points out, the relevance of Pontes's study lies in that the author seems to have been able to sense, particularly with respect to left-dislocation constructions (i.e. those with a resumptive pronoun in the comment), that topics may constitute separate information units. Had the author had access to the technological resources now readily available to researchers, such as recorders and computer programs for prosodic analysis, she might have been able to propose a more accurate description of the aspects involved in the linguistic phenomenon of topicalization in Brazilian Portuguese.

3.7 Discussion

Raso and Mello (2014) point out that, despite the progress brought about by recent technological and methodological advances in empirical linguistic studies, some traditional assumptions regarding speech and writing still persist in the work of many linguists. For instance, approaching spoken language with a category apparatus developed based on the observation of written language is still a common practice in linguistic analises of various types. The approaches outlined in this chapter seem to reflect this trend. Even if criticizing those approaches for "disregarding" the fundamentally distinct features of speech and writing in their analysis is not not relevant — given that many of them were produced in the 1970's, a time in which much of the above-mentioned advancements were not actually available —, it would probably be a mistake not to look at their theoretical claims in light of the current state of the art.

In general, the approaches to the topic phenomenon outlined in this chapter define topic in relation to syntactic or semantic notions. Chafe (1975), for instance, proposes that the function of the topic is to restrict the applicability of the "predication" to a limited domain. Similarly, Halliday relates his notion of theme to the domain of the "clause", defining the theme as whatever element comes first in the clause. Lambrecht defines topic in terms of an aboutness relation between a discourse entity and a "proposition". Therefore, a general assumption regarding an equivalent status of clauses and propositions both in speech and writing seem to underlie the approaches reviewed in this chapter.

Nevertheless, empirical studies have shown that spoken and written language are structured in rather different ways[13]. Not delving into this discussion, for it would fall out of the scope of this thesis, it is interesting to mention that, according to Cresti (2001) and Biber *et al.* (1999), about 30% of speech utterances do not contain a verb. Therefore, defining a speech category in close association with the notion of predication is likely to leave a considerable amount of data unexplained. Let us consider the utterance in (3.13), extracted from the Italian component of the C-ORAL-ROM and cited in Cresti and Moneglia (2010).

(3.16)

       per ora /=TOP= no //=COM=

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[13] See Chapter 2, especially Section 2.7.

for now / no //

The utterance above expresses a topic-comment relation as it is understood in the Language into Act Theory (see CRESTI, 2000). As the English translation shows, there is no verb in this utterance. Within the L-AcT framework, the utterance, considered the reference unit for speech analysis, is defined as the minimal spoken sequence that shows prosodic autonomy and can, thus, receive pragmatic interpretation in terms of speech act realization (AUSTIN, 1962). Accordingly, the topic, conceived of as a unit of the information pattern (CRESTI; MONEGLIA, 2010), is defined as the unit that supplies a domain of relevance according to which the illocution, carried by the comment, must be interpreted. Additionally, topics are characterized by specific prosodic features that comprise well defined prosodic forms (FIRENZUOLI; SIGNORINI, 2003) that are restricted to specific positions in utterances (see Chapter 2). Considering that topics supply a domain of identification in relation to which the illocutionary force must be interpreted, utterances without topics are referred to some contextually given domain.

Cresti and Moneglia (2010) propose a pragmatic and a semantic paraphrase for the utterance in (3.13). Following the above-mentioned definition for topic, the authors pragmatically paraphrase the utterance in (3.13) as "the act of refusal 'no' [the illocution] is about the domain of relevance identified by 'for now' [the topic]" (CRESTI; MONEGLIA, 2010: 25). The semantic paraphrase proposed is "it is refused that the quality of negation is about the present moment" (CRESTI; MONEGLIA, 2010: 25). As the authors point out, the semantic restatement of (3.13) is a meaningless proposition, while the pragmatic one corresponds to an utterance but is not a proposition. The utterance in (3.13) is meant to illustrate that the notion of topic cannot be properly defined neither in terms of predicative relation or clausal constituency nor in terms of propositional content.

None of the definitions for topic reviewed in this chapter, unlike the one adopted within the L-AcT framework (Chapter 2), seem sufficient to explain an utterance like (3.13) above. If, for example, the definition proposed by Krifka (2012) was followed, the adverbial "for now" in (3.13) would be interpreted as identifying an entity under which the information expressed by the comment — i.e. "no" — should be stored in the common ground. This interpretation does not seem appropriate. Perhaps some effort could be made in order to reconstruct the utterance

as a proposition. However, such an *ad hoc* operation would end up generating a structure that would not be the same as the utterance naturally observed.

Another issue present in some of the approaches reviewed in this chapter is that of not establishing precise formal markings for topics. Lambrecht (1994), to mention one extreme example, proposes that some languages do not have any formal means to mark topics. Within the L-AcT framework, however, topics are defined not only in functional terms, as shown above, but also in terms of distribution and prosodic properties (see Chapter 2). Furthermore, the approaches reviewed vaguely associate topics in speech with lack of prosodic prominence (e.g. LAMBRECHT, 1994) and optional realization in a separate tone unit (e.g. HALLIDAY; MATTHIESSEN, 2014). Likewise, Pontes (1987) hypothesized about the relation between certain prosodic features and the realization of topics in speech. Nevertheless, Pontes could not verify her hypothesis due to methodological limitations. The lack of more precise prosodic specifications for the topic in those approaches seems to be a consequence of: (i) the lack of technological means for analyses and (ii) not considering speech as a diamesy on its own terms.

As Raso (2013) points out, speech is necessarily realized by prosodic means, which results from the specific diamesic variables — medium and channel — that constitute spoken language. In its prototypical form, speech is realized by acoustic waves (its medium) that are propagated through the air (its channel), till they reach the auditory system of the interlocutor, where the acoustic signal is decoded into electric pulses and then sent to the brain for processing. Taking that into account, L-AcT's definition for topic, as well as for all the units of the information pattern (see Chapter 2), is indissociable from prosody. Additionally, no syntactic or semantic constraint is placed on the element realizing the topic, nor is the topic considered to maintain syntactic relations with the comment — in accordance with the principle that states that the scope of syntactic and semantic relations is restricted to the boundaries of the textual information unit (CRESTI, 2014).

Regarding the morphosyntactic realization of topics, Lambrecht holds the assumption that topics must be realized by NPs (LAMBRECHT, 1994: 128). His assumption, however, is by no means supported by empirical evidence. Mittmann (2012), for example, found that in Brazilian Portuguese about 60% of topics are realized by VPs (37%), PPs (12.5%) AdvPs

(10.3%) and even AdjPs (0.5%). In American English, as will be shown in Chapter 5, the prevalence of verbal topics is even greater than in Brazilian Portuguese.

Some similarities — albeit partial ones — can be pointed out between the approaches outlined in this chapter and the L-AcT framework. For instance, the notion of "pragmatic aboutness", formulated by Lambrecht (1994) in terms of a relation between topics ("discourse entities") and propositions, is reformulated as a pragmatic relation between a topic ("information unit") and an illocution in the L-AcT framework. Likewise, the idea of topics as "cognitive domains of identification" in the L-AcT framework echoes Chafe's concept of topics as elements that restrict the applicability of the predication to a certain frame (temporal, spacial, individual, etc.). Additionally, Li and Thompson (1975) regard topics as syntactically independent elements that maintain no selectional relation with verbs, which parallels, to a certain extent, L-AcT's concept of topic as a syntactic/semantic island. Authors like Halliday, Chafe and Lambrecht propose that topics do not necessarily conflate with grammatical subjects. Within the L-AcT approach, however, topics can never be subjects, since the the topic-comment relation pertains to the informational level, while the subject-predicate relation pertains to the syntactical level. Furthermore, the domain of syntactic relations, as already mentioned, is the information unit, and since topics and comments comprise distinct units, there can be no syntactic relation between them.

4 Materials and Methods

This chapter (Sections 4.1-3) deals with the American English minicorpus (AE minicorpus) and the methods employed in its construction. In Section 4.4 the methodology and tools used for the analysis of the topic unit are presented.

The AE minicorpus comprises a carefully collected sample from the *Santa Barbara Corpus of Spoken American English* (SBC; DU BOIS *et al.*, 2000-2005). The sampling strategies adopted for its creation are the same as those adopted for the creation of the C-ORAL family minicorpora (CRESTI; RASO, 2012, PANUNZI; MITTMANN, 2014), which were obtained from the Italian component of the C-ORAL-ROM corpus (CRESTI; MONEGLIA, 2005) and from the C-ORAL-BRASIL corpus (RASO; MELLO, 2012). The IT and BP minicorpora, as the C-ORAL family minicorpora are referred to in this thesis, represent informal, spontaneous speech. The same sampling strategies were adopted in the making of the AE minicorpus in order to ensure comparability among the resources.

The following sections present (i) an outline of the SBC, (ii) the BP and IT minicorpora, (iii) a description of the AE minicorpus, including the criteria adopted for the selection of texts and the annotation of prosodic boundaries and information units (CRESTI, 2000, CRESTI; MONEGLIA, 2010), the text-to-speech alignment with the WinPitch tool (MARTIN, 2005), and the overall architecture of the minicorpus (sessions, word counts, etc.). Part 2 (Section 4.4 onwards) will be dedicated to the methodology used for the analysis of the topic unit.

4.1 The Santa Barbara Corpus of Spoken American English

The SBC was compiled by researchers from the Center for the Study of Discourse at the University of California, Santa Barbara (USCB), under the direction of John W. Du Bois. Forming part of the *International Corpus of English*[1] (ICE), the corpus was published by the *Linguistic Data Consortium*[2] (LDC). The SBC is also available for download at the *TalkBank*[3] website, in the *Conversation Analysis Database,* and at the website of the Department of

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[1] International Corpus of English: http://ice-corpora.net/ice/.

[2] Linguistic Data Consortium: https://www.ldc.upenn.edu/.

[3] TalkBank: http://talkbank.org/.

Linguistics of the UCSB[4], under a Creative Commons License, allowing free and easy access to the corpus.

The SBC documents spontaneous American English produced in formal and informal registers and in different sociological contexts — private/familiar and public —, comprising a wide variety of spontaneous speech interactions, with men and women of different social and ethnic backgrounds, occupations and geographic origins within the United States of America. The four parts of the SBC contain together 60 texts, for a total of about 249 thousand words in more than 20 hours of recordings.

A spontaneous speech corpus (MELLO, 2014), the SBC records speech events in which mental programming and vocal production occur in synchronicity, thus excluding pre-planned speech, like acted, semi-scripted, lab and other types of non-spontaneous speech. The SBC brings transcriptions aligned to sound sources, enabling concomitant examination of transcription, acoustic signal and spectrogram, among other possibilities. Transcriptions in the SBC are available in the CHAT format (MACWHINNEY, 2000), for use with the CLAN computer program[5]. The audio files as published by the LDC are in WAV format, 16-bit 20.50 kHz. Files at the TalkBank can be downloaded either in WAV or MP3 formats.

Metadata files in the corpus provide information about interactions (communicative situation, place, structure of the speech event, etc.) and participants (sex, age, schooling, place of origin, etc.). SBC transcripts feature prosodic annotation (tone units, pauses, hesitations, etc.) carried under criteria documented in Du Bois *et al.* (1993); they are provided in TRN and CHAT extensions, in Plain Text and CHAT formats.

The minicorpora to which the AE minicorpus was designed to be comparable, as mentioned above, were obtained from spontaneous speech matrix corpora, namely the C-ORAL-ROM (CRESTI; MONEGLIA, 2005) and the C-ORAL-BRASIL (RASO; MELLO, 2012) corpora. Those minicorpora are organized into balanced sessions containing monologues, dialogues and conversations produced both in private/familiar and public sociological contexts, thus reproducing the overall structure of the source corpora, albeit in a smaller scale. Moreover, as

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[4] The Santa Barbara Corpus: http://www.linguistics.ucsb.edu/research/santa-barbara-corpus.

[5] The CLAN package is available for download without charge at: http://childes.psy.cmu.edu/clan/.

they are intended to capture information and illocutionary variation, the minicorpora document the highest possible range of communicative situations, i.e. their design was conceived seeking to capture diaphasic variation.

One of the main attributes of the SBC is that of representing spontaneous speech. Additionally, the corpus records different communicative situations. Even though it does not present the same structure as the corpora of the C-ORAL-family, 20 texts showing good acoustic quality could be selected and sorted into the different interaction types and sociological contexts necessary to make a minicorpus structurally similar to those of the C-ORAL family. Furthermore, the SBC is licensed under a Creative Commons attribution, being readily available online for the scientific community. Those features made the SBC the ideal candidate for being used as the data source for the AE minicorpus.

A final observation must be made concerning the degree of actionality and interactivity that the texts from the SBC show. *Actionality* is a property of spoken texts that are strongly oriented to the immediate extralinguistic context (NENCIONI, 1983, MELLO, 2014, RASO, 2012). The extent to which a spoken interaction involves activities other than the production speech itself is an indication of its *degree of actionality*. The more actional is an interaction, the more varied it tends to be in terms of speech-act types and information structure. The degree of actionality of interactions from the SBC is not as high as to render the AE minicorpus perfectly comparable to the IT and BP minicorpora. While SBC texts show considerable *topic variation*, they tend to be more oriented to textual/semantic construction than to speech act performance. That results from the fact that many of the communicative situations recorded in the corpus are, in fact, chats in which speakers do nothing but talk, which presented a challenge for the selection of texts to compose the AE minicorpus. Nevertheless, comparability with the minicorpora of the C-ORAL family was managed to be achieved to satisfactory extent, as will be shown below.

4.2 The Italian and Brazilian Portuguese minicorpora

The BP and IT minicorpora constitute comparable samples from the informal sessions of the C-ORAL-ROM (its Italian component) and the C-ORAL-BRASIL spontaneous speech corpora. The creation of the BP minicorpus precedes that of the IT minicorpus.

The C-ORAL-ROM (CRESTI; MONEGLIA, 2005) corpus comprises a set of corpora of the main Romance languages — specifically French, Italian, European Portuguese and Spanish. It is the result of an international cooperation funded by the EU Information Society Technology (IST) Work Programme (IST2000-26228), coordinated by Emanuela Cresti and Massimo Moneglia at the University of Florence — Dipartimento di Italianistica, LABLITA laboratory.

Each component of the C-ORAL-ROM contains about 300 thousand words. Transcriptions are aligned to the acoustic sources at the level of utterances (see Chapter 2). The aim of the corpus is to enable pragmatic and prosodic studies of spontaneous speech and the retrieval of prosodic and syntactic structures on an inductive basis. Seeking to capture illocutionary and informational variation, the C-ORAL-ROM records a wide variety of communicative situations. The Italian component was mostly compiled in the metropolitan area of Florence, and, although it contains some interactions in which speakers from other areas participate, it represents a standard form of spoken Italian used in the area.

The C-ORAL-BRASIL corpus (RASO; MELLO, 2012) is the result of the project "C-ORAL-BRASIL: corpora compilation and spontaneous Brazilian Portuguese studies"[6], coordinated by Tommaso Raso and Heliana Mello at the Federal University of Minas Gerais (UFMG; LEEL lab[7]) and funded by FAPEMIG, CNPq, and UFMG. The C-ORAL-BRASIL corpus constitutes the fifth branch of the C-ORAL-ROM project (CRESTI; MONEGLIA, 2005) and follows the same overall architecture of the C-ORAL-ROM corpus, which ensures comparability between the two language resources. The C-ORAL-BRASIL represents spoken Brazilian Portuguese, mainly the variety spoken in the metropolitan area of Belo Horizonte, the capital of the state of Minas Gerais. The informal part of the corpus[8] contains 208,130 words in about 20 hours of recordings.

The corpora of the C-ORAL projects bring transcription files in CHAT format (MACWHINNEY, 2000), implemented for the annotation of prosodic breaks (MONEGLIA; CRESTI, 1997) and designed to represent the main characteristics of spoken interactions,

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[6] C-ORAL-BRASIL: compilação de corpora e estudos da fala espontânea do Português do Brasil.

[7] *Laboratório de Estudos Empíricos e Experimentais da Linguagem*: www.letras.ufmg.br/leel/.

[8] The formal part of the C-ORAL-ROM (RASO; MELLO; forthcoming) is at an advanced stage of compilation.

such as speakers, dialogic turns, disfluency phenomena, non-linguistic and paralinguistic events, etc. In harmony with the structural variations of naturally occurring speech events, the corpora are divided into balanced sessions of monologues (performed primarily by one speaker), dialogues (performed primarily by two speakers) and conversations (performed by more than two speakers). As "perfect" monologues are rare in informal, spontaneous speech, this interactional typology is defined in terms of prevalence of speech production by one speaker, even if other participantes may verbally contribute in the interaction. Thus, the development of semantic content in spontaneous speech monologues follows the intentionality of only one speaker, albeit occasional interferences by other interactants.

Additionally, the C-ORAL family corpora are divided into two sociologic contexts: 75% of texts belonging to private/familiar domains, and 25% of texts belonging to public domains. Nevertheless, the C-ORAL-ROM and the C-ORAL-BRASIL differ in how the sociological contexts are assessed (MELLO, 2014). While the Italian group takes into account both place of the interaction and the relation between participants to determine the sociologic type, the Brazilian group takes into account only the role — individual, institutional or professional — performed by speakers in the interaction[9]. Individual roles are performed in private contexts, while institutional/professional ones are performed in public contexts.

The C-ORAL-BRASIL corpus received Part of Speech (PoS) annotation through the PALAVRAS tagger-parser (BICK, 2000, 2012, 2014), which was especially adapted in order to fit the needs of Brazilian spontaneous speech annotation (BICK, 2012). The C-ORAL-ROM subcorpora also received PoS annotation (see MONEGLIA, 2005).

The C-ORAL family minicorpora (MITTMANN; RASO, 2011, CRESTI; RASO, 2012) reproduce, albeit in a smaller scale, the overall architecture of their matrix corpora. They were designed primarily to allow studies focused on the organization of information in spontaneous speech. Studies of this type require the manual annotation of the informational function of each tone/information unit, a task that demands specialized human resources and a considerable amount of time. Therefore, it was necessary to limit the number of texts in order to ensure the feasibility of the task.

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[9] For issues related to the differentiation between private and public contexts, see Mello (2014: 34-36).

Certain variations of the matrix corpora had to be favored in the sampling strategy adopted for the making of the minicorpora, since perfectly balance could hardly be achieved given the limited size of the samples (PANUNZI; MITTMANN, 2014). In order to achieve the best possible samples from the source corpora, the following parameters were adopted:

- Representativeness of typological branching: one-third of words in monologues and two-thirds of words distributed in dialogues and conversations;

- Diaphasic variation: highest possible range of communicative situations, thus ensuring illocutionary variation;

- Good acoustic quality, assessed according with the following criteria: absence of background noise and feedback signal, voice clarity, audio gain and amount of overlapping speech;

- Diversity of participants: balanced number of male and female voices and, as much possible, balance of other diastratic variables, especially age and schooling, avoiding prevalence of extremes;

- Search for content of interest so as to increase annotators' level of attention and the degree of informativeness in the samples.

Chart 1: The communicative situations in the C-ORAL family minicorpora

Brazilian minicorpus	**Italian minicorpus**
Monologues	*Monologues*
1. Man tells a story about a snake	1. Interview with an old partisan at his home
2. Grandmother tells family stories to grandson	2. Elderly woman tells life story to her relatives
3. Father tells family two entertaining stories	3. Narrative to a relative about the honeymoon
4. Woman tells about her experience in the hospital	4. An after-dinner travel tale to friends
5. Woman shares the story about her daughter's adoption	5. Interview with a retired traveling salesman
6. Man explains his professional trajectory	6. Political speech at a political-party meeting
7. Interview with public school teacher	7. Professional explanation to a colleague about office work
Dialogues	8. Interview with an employee of the Poggibonsi municipality
1. Two friends shop for groceries;	*Dialogues*
2. Two colleagues chat while packing recording equipment;	1. Interview of an artisan in his leather workshop
3. Couple takes a car trip;	2. Friends at home making a cake
4. Maids do the dishes;	3. Beautician and customer in the beauty-center
5. Broker shows apartment to his sister;	4. Two friends develop photos in a dark-room
6. Engineer and construction worker at construction site;	5. Father gives driving lesson to his daughter
7. Customer and salesman in a shoe store	6. Proposal of an insurance policy
Conversations	7. Teachers' meeting at the school office
1. Young friends evaluate a soccer championship	*Conversations*
2. Elderly ladies chat about an upcoming marriage	1. Relatives talk while browsing through family photos
3. Friends play snooker	2. Friends explain the game Mastermind
4. Friends play Pictionary	3. Family talks with child during lunch preparation
5. Employees at a blood bank explain their work	4. Meeting of a voluntary association
6. Political meeting	5. Chat in a ironmonger's while shopping

Chart 1 above shows a schematic description of the different communicative situations in each branch of the BP and IT minicorpora. The monological branch in the BP sample contains

six professional and personal narratives and one interview. The one in IT sample, on the other hand, contais three interviews, one political speech, one professional explanation and three narratives.

The dialogues in the minicorpora comprise a variety of communicative situations in which speakers are involved in activities not limited to spoken exchange. There are, for example, people shopping and selling, cooking, packing equipment, driving, etc. Dialogues are interactions in which speech production is performed primarily by two speakers. Typically, this interactional type is characterized by being highly interactive, actional and contextually bound, since speakers are usually engaged in other activities while they talk. Accordingly, dialogues tend to favor speech act variation. Likewise, conversations in the minicorpora show an interesting array of communicative situations, like chats, game playing, meetings, and explanations. The reason why conversations are put in a separate branch is that they are centered on more than two speakers, while dialogues are centered on only two.

Table 3 below presents the size of the IT and BP minicorpora: total number of words and in each branch, number of simple reference units ("RU", which encompasses both utterances and stanzas), number of compound RUs and total number of RUs. It must be said that the counts presented in the table below differ a little from those reported in Panunzi and Mittmann (2014), among other papers (MITTMANN; RASO, 2011; CRESTI; RASO, 2012). The reason for the differences is that the tool used for previous computations do not exclude from the counts interrupted words, time-taking tokens, indications of retracting and of paralinguistic noise, and compound back-channeling notations (e.g. "hum hum"). Therefore, for the present work, computations were redone using a scrip written in R (2013)[10].

The IT minicorpus is slightly larger than the BP minicorpus regarding the number of words (31,850 and 28,457 words respectively). About one-third of the words in each minicorpus are in monologues (37.1% in the IT and 32.1% in the BP), and the remaining words (62.9% in the IT and 67.9 in the BP) in dialogues and conversations (see Table 3).

Regarding the number of RUs, the two resources present very similar counts: 5,622 RUs in the IT minicorpus and 5,484 RUs in the BP minicorpus. As Panunzi and Mittmann (2014)

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[10] The scrip was written by Maryualê M. Mittmann, a former member of the LEEL team.

point out, the C-ORAL family minicorpora were designed to allow cross-linguistic studies focused on information structure, and those studies aim at describing the structuring of information in RUs. Therefore, similarity in the number of RUs is deemed more important than similarity in the number of words.

Table 3: Size of the IT and BP minicorpora

IT minicorpus	Monologues		Dialogues		Conversations		Total	
Words	**11818**	37,1%	**10409**	32,7%	**9623**	30,2%	**31850**	100,0%
Simple RU	405	30,1%	1352	58,7%	1122	56,9%	2879	51,2%
Compound RU	942	69,9%	951	41,3%	850	43,1%	2743	48,8%
Total RU	1347	100,0%	2303	100,0%	1972	100,0%	5622	100,0%
BP minicorpus	Monologues		Dialogues		Conversations		Total	
Words	**9135**	32,1%	**10660**	37,5%	**8662**	30,4%	**28457**	100,0%
Simple RU	377	37,9%	1555	63,4%	1218	59,7%	3150	57,4%
Compound RU	617	62,1%	896	36,6%	821	40,3%	2334	42,6%
Total RU	994	100,0%	2451	100,0%	2039	100,0%	5484	100,0%

The BP minicorpus contains 20 texts (see Chart 1) from the informal section of the C-ORAL-BRASIL corpus. Of its texts, 15 come from private/familiar, sociological domains and 5 from public domains. The BP minicorpus contains seven monologues, seven dialogues and six conversations. The minicorpus is entirely annotated both with respect to prosodic breaks and information structure (see Chapter 2). Likewise, the IT minicorpus contains 20 texts: 14 come from private/familiar domains and six from public ones. The IT minicorpus contains eight monologues, seven dialogues and five conversations. Prosodic and informational annotation is also a feature of the IT minicorpus. Since the public domain is underrepresented in both minicorpora, it is not possible to consider this sociologic context as a variable in studies based on those language resources.

The BP and IT minicorpora have been designed to ensure mutual comparability, allowing for cross-linguistic comparisons and research on linear relations among information units. The minicorpora form part of the DB-IPIC[11] (PANUNZI; MITTMANN, 2014), an online, multi-

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[11] DB IPIC: http://lablita.dit.unifi.it/ipic/.

level, XML-based language resource that, through a queryable interface, enables searches, extraction of informational patterns and comparisons between the minicorpora that it hosts. Besides the IT and BP minicorpus, the DB-IPIC hosts a C-ORAL-ROM subcorpus of spoken Italian with 124,735 transcribed words. In the future, the AE minicorpus will be integrated to the DB-IPIC.

4.3 The American English minicorpus

The AE minicorpus is a linguistic resource that is comparable to the C-ORAL minicorpora for IT and BP. It was formed out of carefully selected, cohesive extracts taken from texts that form part of the SBC (see Section 4.1). The same guidelines used in the making of the IT and BP minicorpora (cf. PANUNZI; MITTMANN, 2014; CRESTI; RASO, 2012; MITTMANN, 2012) were followed in the making of the AE minicorpus, so as to ensure mutual comparability among the three resources. The AE minicorpus contains 20 texts and features annotation of prosodic boundaries and information units. It was created by Frederico A. Cavalcante and Adriana C. Ramos, under the supervision of Tommaso Raso (UFMG), at the LEEL laboratory (see RAMOS, 2015).

The creation process of the AE minicorpus comprised the steps outlined below.

1. In harmony with that used in the creation of the C-ORAL minicorpora:

   - selection of 20 informal interactions from the SBC;

   - search for diaphasic variation: highest possible range of communicative situations;

   - search for balanced representativeness of the three typological branches: one-third of words in monologues, two-thirds in dialogues and conversations;

   - search for good acoustic quality;

   - search for diversity of speakers: balance of male and female voices and, to a feasible extent, balance of other diastratic variables, especially schooling and age;

   - content of interest, so as to ensure the highest possible degree of informativeness and the involvement of annotators with the task.

2. Implementation of C-ORAL transcription criteria (MELLO *et al.*, 2012) and prosodic annotation (MONEGLIA; CRESTI, 1997).

3. Creation of individual headers in plain text format, containing the metadata of each of the 20 texts, following the C-ROAL-BRASIL model:

   - sociolinguistic information about participants (sex, age, schooling);

   - information about the text (number of words and recording duration);

   - description of the communicative situation;

   - comments about particular transcription choices and potentially confusing passages in the audio;

   - identification of the transcriber and the reviser(s);

Information about interactions and participants were obtained from metadata files that come with the SBC.

4. Text-to-speech alignment (at the level of utterances) with the WinPitch software (MARTIN, 2005);

5. Informational tagging:

   - utterances (acoustic signal and transcript) were individually examined in order to identify (i) the illocutionary information unit(s) (COM, COBs or CMMs) and (ii) the nature of the other information units in the utterance, if there were any. Each information unit received a tag indicating its information function (see Chapter 2). Dialogic information units were frequently tagged as AUX, for the acoustic quality of SBC recordings was not always so good as to allow a reliable assessment of the prosodic features of those units. AUX units are realized in *auxiliar* prosodic profiles (RASO, 2014).

Annotation of information units is a requirement for the type of study to which the AE minicorpus is intended. Informational annotation, as previously mentioned, is a time-consuming, manual process that imposes restrictions on the size of the minicorpus. This is one

of the main motivations for the creation of the IT and BP minicorpora, for it would have hardly been possible to carry informational annotation on the entirety of each resource corpus. In the following subsections, steps 1-5 outlined above will be further discussed.

4.3.1 Words and Reference units

The AE minicorpus contains 20 extracts from SBC texts divided into monologues, dialogues, and conversations and into private/familiar and public sociologic contexts. The criteria adopted for the classification of texts as private/familiar or public were the same adopted in the C-ORAL-BRASIL (see MELLO, 2014). Therefore, regardless of the place where the interaction occurred, when speakers performed professional or institutional roles, the text was classified as public; when speakers performed "individual" roles, the text was classified as private/familiar. Table 4 below provides the size of the AE minicorpus. Like in Table 3, "RU" stands for reference units, which include both utterances and stanzas.

Table 4: Size of the AE minicorpus

AE minicorpus	Monologues		Dialogues		Conversations		Total	
Words	**9359**	35,4%	**10647**	40,2%	**6464**	24,4%	**26470**	100,0%
Simple RU	450	45,4%	774	56,0%	650	60,3%	1874	54,3%
Compound RU	542	54,6%	608	44,0%	428	39,7%	1578	45,7%
Total RU	992	100,0%	1382	100,0%	1078	100,0%	3452	100,0%

The texts selected to make up the AE minicorpus average about 1,300 words, for a total of 26,470 words and 3,425 RUs. The distribution of words in the three interaction types are as follows: 35.4% in monologues and 64.6% in dialogues and conversations. The desired proportion of words in the typological branches was thus successfully achieved. Note, for example, that the proportions of words in monologues in the IT and the BP minicorpora (37.1% and 32.1%, respectively) is very similar to the one in the AE minicorpus. The overall proportions of simple and compound RUs in the three resources are also very similar:

- simple RUs: 51.2% in IT, 57.4% in BP, and 54.3% in AE;

- compound RUs: 48.8% in IT, 42.6% in BP and 45.7% in AE.

Despite the slightly smaller sizer of the AE minicorpus in relation to the C-ORAL minicorpora, the proportion of words and RUs in the three resources are approximately the same. Therefore, comparability was proportionally obtained at those levels.

The AE minicorpus contains 7 monologues, 8 dialogues, and 5 conversations. It has 16 private/familiar texts (6 monologues, 5 dialogues, 5 conversations) and 4 public ones (1 monologue and 3 dialogues). Given the small number of public texts, this sociologic variable cannot be considered in studies based on the AE minicorpus[12].

4.3.2 Communicative Situations

As a linguistic resource designed for the study illocutions, the AE minicorpus was created seeking the highest possible range of communicative situations. This is due to the fact that "pragmatic [speech act] variation depends on the needs of the interactive context and on the speaker's personal attitude and habits in that context" (MONEGLIA, 2011: 492), as speech act types correlates with the type of activities in which speakers are engaged. The situations recorded in the AE minicorpus are provided in Chart 2.

Chart 2: Communicative situations in the AE minicorpus.

Monologues
1. A student explains her studies in equine science in the living room of a house trailer
2. Two friends/co-workers talk about their interests at work
3. Two cousins chat at home after a long time apart
4. A man talks about his experiences as a gay man at home
5. Two friends talk as they watch TV at home
6. Two male friends chat about science and human nature at home
7. A woman talks about penguins at a meeting at an aquarium

Dialogues
1. Two cousins chat at home
2. A couple lying in bed talk about a book
3. Mother and daughter at home talk after work
4. A man and a woman talk on a visit to her ranch
5. A couple plays Hearts in a summer house
6. A work conversation at an air traffic control tower between an experienced air traffic controller and an unexperienced one
7. A homeowner and an engineer talking at home about air-conditioning systems
8. A salesman and a female buyer at a store discuss different types of tape decks

Conversations
1. Three friends chat about traveling, health and vitamins in the living room.
2. Two sisters and their mother talk in a restaurant as they decide on what to eat
3. Friends talk at a block party
4. Family members chat at a birthday party
5. Friends talk at a dinner party

Reflecting a constitutive feature of the SBC (see Section 4.1), the texts in AE minicorpus are less interactive and less actional than those in the C-ORAL minicorpora. As Chat 4.2 shows,

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[12] The same applies to the IT and BP minicorpora (see Section 4.2 above).

most of the texts in the AE minicorpus comprise casual conversations (chats) in which speakers are not necessarily involved in the performance of any activities other than verbal interaction. Additionally, interactions of this kind, particularly in the case of dialogues and conversations, tend to present longer turns and a greater number of compound RUs (see MELLO, 2012).

The strategy adopted to cope with this issue was to select the most interactive extracts in each eligible interaction from the SBC. Also, whenever possible, prototypically interactional texts were picked out (e.g. dialogues 4, 5, 6, 7, 8 and conversation 2 in Chart 2). Based on the proportion of compound RUs in dialogues and conversations in the AE minicorpus (44.4% and 39.7%, respectively), it is possible to say that the strategy adopted turned out to be effective, given that in the IT and BP minicorpora those proportions are roughly equivalent: 41.3% in dialogues and 43.1% in conversations from the IT minicorpus and 36.6% in dialogues and 40.3% in conversations from the BP minicorpus (see Table 3 for IT and BP and Table 4 for AE).

4.3.3 Prosodic annotation

The texts selected from the SBC to compose the AE minicorpus received prosodic annotation in accordance with the methodology set forth in Moneglia and Cresti (1997) and Cresti (2000). The proposed scheme comprises the annotation of perceptually relevant prosodic boundaries that (i) signal the realization of a reference unit and (ii) segment utterances and stanzas into more than one tone units pertaining to the same prosodic/information pattern (CRESTI; MONEGLIA, 2010). The function in (i) is fulfilled by terminal prosodic breaks, while the one in (ii) is fulfilled by non-terminal breaks. Table 5[13] provides the symbols used for the prosodic annotation of C-ORAL project's corpora.

Examples (4.1-3) below illustrate the implementation of the prosodic annotation scheme shown in Table 5. The same scheme adopted in the C-ORAL-BRASIL resource was implemented in the AE minicorpus; therefore, prosodically autonomous sequences were always annotated with the double-slash symbol ("//"), regardless of their showing an interrogative or a suspensive prosodic profile.

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[13] Adapted from Panunzi and Mittmann (2014).

Table 5: Prosodic annotation scheme used in the C-ORAL corpora

Symbol	Value
?	It delimits a prosodically autonomous sequence with a clear interrogative prosodic profile.*
…	It delimits a prosodically autonomous sequence voluntarily interrupted by the speaker with a suspensive prosodic profile.*
+	It signals unintentionally interrupted sequences. In this case, the speaker's program is broken and the interpretability of the sequence can be compromised.
//	It indicates a terminal break, marking all prosodically autonomous sequences that do not belong to the previous classes.
/	It signals non-terminal prosodic breaks.
[/n]	It represents retracting phenomena (i.e. false starts), where "n' corresponds to the number of retracted words. Retracting marks can be considered a type of non-terminal break, but the words in false starts do not contribute to the informational patterning nor to the semantic content of the Utterance.

* Those symbols are only used in the C-ORA-ROM corpus. The double-slash symbol is used for those cases in the C-ORAL-BRASIL corpus.

(4.1) afamdl01[62]

- ⁻ but in a sense / I need / &he /some type of steady income // (Audio 4.1)

- ⁻ but in a sense /$_{(a)}$ I need / &he /$_{(b)}$ some type of steady income //$_{(c)}$ (4.1a, b and c)

The utterance in (4.1) above illustrates the annotation of terminal and non-terminal prosodic breaks. Audios (4.1a) and (4.1b) show that their corresponding sequence cannot receive pragmatic interpretation in isolation; therefore, the single-bar sign ("/") was used. Audio (4.1c), on the other hand,   show that its corresponding segment is fully pragmatically interpretable, hence the double-bar sign. Audio (4.1) shows the entire utterance, so that its internal breaks may be properly noted.

(4.2) afamdl02[15-16] (Audio 4.2)

  *FRE: and on my production card + (Audio 4.2a)
       see / the day before yesterday / I did ice cream / right // (Audio 4.2b)

The sequences above were produced one following the other by the same speaker. Listening to the audios in (4.2) it is possible to notice that the sequence marked with the plus sign ("+") is neither interpretable in isolation nor is it part of the program of the second sequence, which is an autonomously realized compound utterance. This is the reason that the first sequence was marked with the plus sign, for it is an "unaccomplished", interrupted sequence.

(4.3) afamcv01[4]

    *KEN: the central [/1] little central plaza area // (Audio 4.3)

The utterance above illustrates the retracting phenomenon. Retracting phenomena appear to be a case of some sort of temporal mismatch between programming of speech content and speech realization. In (4.3), the speaker "breaks" his initial program, reformulating it in the second tone unit. Since the determiner "the" is not repeated in the second tone unit, the assumption is that the retracting is restricted to "central", hence the digit "1" between the square brackets that mark the retracting. No more than six lexical items have been found in retracting phenomena (see RASO, 2012).

4.3.4 Acoustic quality

In order to become eligible for composing the AE minicorpus, texts from the SBC had to have their acoustic quality assessed. The guiding criteria used in the assessment of the SBC texts that make up the AE minicorpus are summarized in Table 6[14] below.

Table 6: Acoustic quality classification

Tag	Description
A	Very high quality. Almost no voice overlapping and/or background noise. Trustable F0 computation for (practically) the entire file.
AB	High quality. Low voice overlapping and/or background noise. Trustable $f0$ computation for (practically) the entire file.
B	Medium quality. Some voice overlapping and/or background noise. Trustable F0 computation for most part of the file.
BC	Mid low quality. Some voice overlapping and/or background noise. Trustable F0 computation for at least 60% of the file. Audio is clear for listening throughout the entire file.
C	Low quality. Some voice overlapping and/or background noise. Trustable F0 computation for at least 60% of the file. Some portions of the audio may not be clear for listening.

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[14] Adapted from Raso (2012).

It must be pointed out that, in comparison to the acoustic quality of the texts in the BP minicorpus, the texts in the AE minicorpus present an inferior acoustic quality. This is due to the fact that the recording equipment available at the time when the SBC was compiled — mostly in the late 1980's and early 1990's — did not present the same technological features as the recording equipment used for the compilation of the C-ORAL-BRASIL corpus. Therefore, an AE-minicorpus text classified as A presents a slightly lower acoustic quality than a BP-minicorpus text that received an equal classification. In the future, an adapted classification system will be especially created for the acoustic classification of texts in the AE minicorpus, a system for which the specificities of the SBC recordings will be taken into account.

Table 7 below presents the acoustic quality of each of the texts that make up the AE minicorpus.

Table 7: AE minicorpus acoustic quality

Acoustic quality	Number of texts	Proportion
A	1	5,00%
AB	3	15,00%
B	10	50,00%
BC	2	20,00%
C	4	20,00%
Total	20	100,00%

The average quality of texts in the AE minicorpus can be considered good, since 70% of its texts were classified as A (5%), AB (15%) and B (50%). BC-quality texts represent 10% of the texts, while C texts represent only 20%. The classification was performed using the WinPitch software (MARTIN, 2015), which enables reliable evaluation of acoustic parameters through spectrographic display and other tools.

4.3.5 Transcription criteria

The SBC texts selected to make up the AE minicorpus had its original transcripts adapted following the same criteria adopted in the the C-ORAL-BRASIL corpus (MELLO *et al.*, 2012). Those criteria are based on the C-ORAL-ROM basic guidelines (see CRESTI; MONEGLIA, 2005). Those guidelines were followed in the adaptation of transcripts of the AE minicorpus so as to achieve comparability with the IT and BP resources.

The transcription criteria of the C-ORAL resources were designed to ensure readability, on the one hand, and the representation of candidates for ongoing changes associated with lexicalization and grammaticalization processes. For the representation of those phenomena, some non-orthographic forms were incorporated in the transcription criteria. Other phenomena, such as assimilations, sandhis, epentheses, palatalizations and vowel lengthening were not represented in the transcriptions, since they are not directly involved in grammaticalization or lexicalization processes. Additionally, the representation of all those phenomena, without resulting in any significant advantages, would bring difficulties for the automatic grammatical annotation. Also, some of those phenomena are so generalized that their documentation is not necessary (MELLO *et al*., 2012).

Besides the adoption of non-orthographic forms for the representation of certain linguistic phenomena, a set of symbols were adopted in order to represent some non-linguistic aspects of spoken exchanges. In the remainder of this section, illustrations of the main orthographic and non-orthographic forms adopted for the adaptation of the SBC texts will be provided.

The symbols used for the representation of non-linguistic aspects are shown in Table 8 below. The utterances provided in (4.4) illustrate some of the conventions adopted.

Table 8: Representation of non-linguistic phenomena

Symbol	Value
hhh	Paralinguistic noise, e.g. laughs, coughs and throat clearings.
&he	Hesitation or time-taking vocalization
&	Interrupted word; the "&" sign is put immediately before the interrupted word
< >	Overlapped sequence
yyy	Anonymized person, institution, telephone numbers, etc.
xxx	One incomprehensible word
yyyy	More than one incomprehensible words

(4.4)

(a) Time taking: afamcv01[32] (Audio 4.4a)

*LEN: **&he** / did you ever find out what disease you had //

(b) Paralinguistic noise: afamcv01[221] (Audio 4.4b)

*LEN: and then these / these smell really [/3] this smells like Guayaquil / this smells like rotten garbage / it's [/1] isn't that great **hhh** //

(c) Overlapping speech: apubdl01[1-2] (Audio 4.4c)

*LAN: &he / I would [/2] I'm / just / working at [/2] doing as much of these other things as I possibly can / because they'll be times when I won't have a teecee / and just [/2] just / <challenging myself> //

*RAN: <and that's okay> //

Spoken alphabet letters in the AE minicorpus are transcribed as one syllable — e.g. letter "a" is transcribed as "ey", letter "b" as "bee", letter "c" as "cee", and so on and so forth. Non-orthographic forms used for initialisms and acronyms follows different conventions. Initialisms are shortened forms whose individual letters are pronounces as separate syllables, while acronyms, which are also shortened forms, are pronounced as if they were single words. Therefore, in the AE minicorpus initialisms are transcribed as a sequence of letters, following the convention for alphabet letters presented above. Acronyms, on the other hand, are transcribes as single words but with capital letters. Examples in (4.5), cited in Ramos (2015), illustrate the transcription of alphabet letters, initialisms and acronyms.

(4.5)

    (a) Alphabet letters: afamcv05[140-142] (Audio 4.5a)

      *BER: I think between first and second or //

      *FRA: hum hum //

      *BER: I wasn't down in **ey**'s / **bee**'s / and **cee**'s //

    (b) Initialism: apubdl01[33-35] (Audio 4.5b)

      *LAN: don't they // we are //

      *RAN: any **veeeffar** //

    (c) Acronym: afamcv05[16-18] (Audio 4.5c)

      *BER: the New York Opera //

      *ALI: the **MET** //

      *BER: hum hum //

Omissions of segments or syllables in consequence of aphaeresis were also represented in the AE minicorpus transcripts. Forms realized as "cause", for *because*, "course", for *of course*, "wanna" and "gonna", for *want to* and *going to*, "kinda", for *kind of*, were transcribed as they were pronounced. Likewise, pronouns potentially undergoing cliticization were transcribed as pronounced, e.g. "'u" and "'em" for *you* and *them*, respectively. Those phenomena were recorded in the transcription because they comprise possible cases of linguistic change.

4.3.6 Diastratic profile

The AE minicorpus contains a total of 54 participants, 44% of which are male and 56% female. Monologues contain 18 participants (6 male and 12 female), dialogues contain 16 participants (10 male and 6 female), and conversations, 20 participants (8 male and 12 female).

The number of participants in monologues does not indicate the number of speakers actually contributing to the textual construction of texts. Monologues in spontaneous speech comprise interactions in which the elaboration of textual content is *centered* in one participant only; other participants may occasionally intervene, albeit with minor contributions.

Even though diastratic variation was not "pursued at any cost", the architecture of AE minicorpus was designed to achieve a reasonably balanced proportion of male and female voices, primarily because prosodic variations correlate with speaker's sex. It is possible to state that the "indirect" goal concerning the sex of speakers in the AE minicorpus was achieved, as 44% of participants are male and 56% female. Moreover, as Chart 3 shows, 51.4% of the words in the AE minicorpus were produced by female speakers and 48.6% by male speakers. Balance in proportions of words produced by each sex group is more important than the mere number of male and female participants.

Chart 3: Proportion of words uttered per male and female speakers
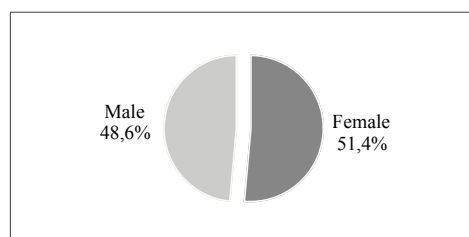
The classification of speakers into age groups and schooling levels was carried following the categories used in the C-ORAL-BRASIL, which are presented in Table 9 below.

Table 9: Age groups and schooling levels

	Age		Schooling
A	18 to 25 years old	1	Incomplete basic level or up to 7 years of schooling
B	26 to 40 years old	2	Up to undergraduate degree as long as not having a profession related to university degree
C	40 to 60 years old	3	Professions dependent on a university degree
D	over 60 years old	X	Unknown
X	Unknown		

The proportions of words uttered by speakers in each age group and schooling level in the AE minicorpus are presented in the following charts.

Chart 4: Proportion of words uttered per age group
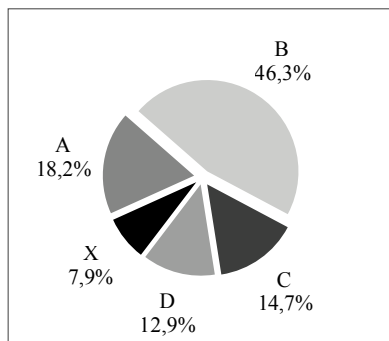
Chart 5: Proportion of words uttered per speakers' schooling level
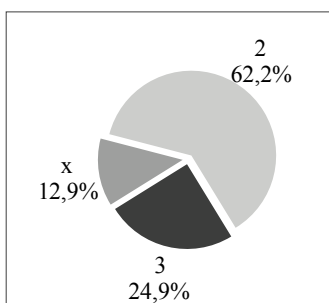
Approximately 46% of speakers in the AE minicorpus are 26-40 years of age (group B), 18.2% are 18-25 years of age (group A), 14.7% are 40-60 years of age (group C) and 12.9% are over 60 years of (group D). Information about the age of some speakers, who together uttered 7.9% of the words in the minicorpus, could not be obtained. Regarding schooling level, 62.2% of speakers have more than seven years of formal education or hold college degrees but do not work in their degree area (schooling level 2) and 24.9% hold college degrees and work in areas which require their degrees.

Taking those proportions into account, one can say that the diastratic profile of the AE minicorpus is not perfectly balanced. Nevertheless, it is possible to consider that the minicorpus satisfactorily represents schooling levels 2 and 3 (87.1%) and age groups A and B (64.5%). As mentioned above, diastratic balance was not a central goal in the design of the minicorpus.

4.3.7 Text-to-speech alignment

The phase of text-to-speech alignment followed the selection and preparation of texts from the SBC. The texts were selected based on criteria designed to enable comparisons between the AE minicorpus and the IT and BP minicorpora. Therefore, the focus was on diaphasic variation, acoustic quality and interactional typology balance. The final diastratic profile of the AE minicorpus (see Section 4.3.6) was a somewhat uncontrolled result of those criteria, particularly diaphasic variation.

The alignment of the texts of the AE minicorpus was carried on the basis of RUs — i.e. utterances and stanzas. For this task, the WinPitch alignment tool[15] (MARTIN, 2005) was used. Text-to-speech alignment is a process through which units of speech are univocally associated with units of text (MARTIN, 2005). As already mentioned, the unit of alignment of the C-ORAL (mini)corpora is the utterance/stanza. Therefore, transcribed utterances in the AE minicorpus received temporal indexes indicating to their time position in the respective sound file.

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[15] For an introduction to text-to-speech alignment with WinPitch, see: http://lablita.dit.unifi.it/app/coralrom/followup/pdf/WPuserman.pdf

The adoption of the WinPitch software ensures comparability with the other C-ORAL minicorpora. Moreover, the software allows for an array of measurements and functions in a fast and friendly manner (MELLO, 2014). Speech corpora alignment is of utmost importance, since, without it, the retrievability of the acoustic source of transcriptions becomes severely compromised, resulting in limited possibilities for studies. As discussed in Chapter 2, speech is a phenomenon that has the character of an event — i.e. it disappears as it occurs — and cannot be properly study based on a written product such as transcriptions (RASO, 2013), since it is impossible to reduce all that is transmitted through prosody — e.g. illocutionary values, informational relations between tone units, etc. — to a written representation.

The 20 aligned texts that make up the AE minicorpus were stored in separate folders, each containing the following files:

- Audio recording in WAV format;
- Alignment files in XML and WP2 formats;
- A document type definition (DTD) file, necessary for opening the alignment files in WinPitch;
- Transcript in RTF;
- A header file in TXT.

The chart below shows the overall appearance of header files.

Chart 6: Example of header file

@Title: Deadly diseases

@File: afamcv01

@Participants: LEN, Lenore, (woman, B, 2, student, participant, Los Angeles/CA), JOA, Joanne (woman, B, 3, teacher, participant, Los Angeles/CA), KEN, Ken, (man, B, 2, photographer/student, participant, Los Angeles/CA)

@Date: 06/02/1987

@Place: private home, residential neighborhood,living room, Los Angeles, California.

@Situation: A conversation among three friends. KEN and JOA are a couple, and LEN is a friend of theirs who is visiting.

@Topic: travel places, vitamins

@Source: Santa Barbara Corpus: SBC015

@Class: informal : particular : conversation

@Length: 5'36"

@Words: 1568

@Acoustic_quality: B

@Transcriber: Adriana Couto Ramos

@Revisor: Adriana Ramos and Frederico Amorim

@Comments: from 1'50'' to 2', speakers laugh. In 5'16'' LEN clears her throat. Apheretic forms:'till (until)

4.3.8 Informational annotation

All texts in the AE minicorpus received annotation of informational functions in accordance with the L-AcT principles (CRESTI, 2000) and the Informational Patterning Hypothesis (CRESTI; MONEGLIA, 2010), which were also followed for the annotation of the other C-ORAL minicorpora (CRESTI; RASO, 2012). The overall process of informational annotation comprises the assignment of tags to each tone unit in order to indicate the type of information function that the unit fulfills (see Chapter 2). In this process, access to both transcription and acoustic files is of the utmost importance, since it is only by listening to the sound source that the evaluation of informational values becomes possible. Therefore, this phase necessarily follows that of text-to-speech alignment. Table 10 at the end of the present section shows the tagset used for the informational annotation of the IT, BP and AE minicorpora[16].

As discussed in Chapter 2, each unit of the information pattern is identified on the basis of three criteria: (i) the function realized in the pattern, (i) the prosodic features of the tone unit, and (iii) the distribution of the tone/information unit within the utterance with respect to the illocutionary unit. The informational annotation is a process in which each utterance has to be individually examined. First, the unit that carries the illocutionary force (COM, COB or CMM) is identified and then the other possibly present tone units are evaluated and tagged. It is important to stress that, since informational units are syntactically undetermined, it is impossible to evaluate the informational function of a tone unit solely based on the analysis of it locutive content, given that the amount of information conveyed by prosody is not reducible to a written representation.

The informational annotation of the AE minicorpus was carried in two phases. The starting point was the full tagging of the texts by a trained member of the LEEL team. After being tagged, each text was immediately revised with the supervisor of the project, so that annotation errors could be kept to a minimum. Finally, the totality of texts underwent a second revision, thus ensuring the quality of the outcome.

The final result is the first minicorpus of spontaneous American English informationally annotated according with the theoretical principles and methodology established in the L-AcT

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[16] For more details about the units of the information pattern, see Chapter 2.

framework (CRESTI, 2000). More than merely serving the purposes of this thesis, the minicorpus is available for other researchers who are interested in the study of spontaneous American English, particularly — but not limited to — those that work in the framework within which the minicorpus was designed, the L-AcT.

Table 10: Tagset used in the informational annotation

Unit type	Name	Tag	Definition
Textual (illocutionary)	Comment	COM	Carries the illocutionary force of the utterance. It is necessary and sufficient for the performance of the utterance
	Multiple Comment	CMM	Constitutes a chain of Comments which form an illocutionary pattern, i.e. an action model which allows the linking of at least two illocutionary acts for the performance of one conventional rhetoric effect
	Bound Comment	COB	A sequence of Comments, which are produced by progressive adjunctions which follow the flow of thought. It forms a distinct speech unit, the so-called Stanza
Textual (non-illocutionary)	Topic	TOP	Supplies the domain of application for the illocutionary act, providing a cognitive reference to the speech act. It allows the utterance to be displaced from it immediate context (linguistic and non-linguistic)
	Topic List	TPL	A sequence of two or more (normally three) semantically and syntactically connected units that form just one prosodically marked major unit of a Topic
	Appendix of Comment	APC	Integrates the text of the Comment
	Appendix of Topic	APT	Integrates the text of the Topic
	Parenthetic	PAR	Inserts information into the utterance with a metalinguistic value; its scope can be backward, forward or both
	Parenthetic List	PRL	A sequence of two or more (normally three) semantically and syntactically connected units that form just one prosodically marked main unit of Parenthesis
	Locutive Introducer	INT	Expresses the evidence status of the subsequent locutive space (simple or patterned) marking a shift of the pragmatic coordinates for its interpretation
Dialogic	Incipit	INP	Opens the communicative channel, bearing a contrastive value. Starts dialogic turns or utterances
	Conative	CNT	Pushes the interlocutor to do or stop doing something
	Phatic	PHA	Controls the communicative channel, ensuring its maintenance
	Allocutive	ALL	Specifies to whom the message is directed and enacts social cohesion
	Expressive	EXP	Works as an emotional support, stressing the sharing of a social affiliation
	Discourse Connector	DCT	Connects different parts of the discourse, indicating its continuation
Non-informative units	Scanning Unit	SCA	Used when a Prosodic unit does not bear an information nucleus and does not signal any information function, but rather scan the locutive content
	Interrupted unit	i-[TAG]	For instance: i-COM means that a COM is interrupted by a parenthetic or a dialogic unit and its completion will follow afterwards for ex. John said /=i-COM or this is what I remember /=PAR= that he likes pasta //=COM=
	Empty unit	EMP	Used when one prosodic unit is filled with material whose informational content is not to be considered in the overall content of the utterance as happens when: (a) retracting; (b) the last unit of an utterance is interrupted. For ex. in John says [/2]=EMP= John said that he likes pasta //=COM=
	Time Taking	TMT	Tag used for the so called filled pauses
	Unclassified	UNC	Unclassifiable Unit. It is not possible to attribute another tag to the unit for some reason
Other	Reported unit	[TAG]_r	Indicates that the information is a reported speech

4.3.9 Summary

Section 4.3 was dedicated to the presentation of the AE minicorpus. The steps followed in its making as well as the criteria adopted for its design were presented. The final product is an AE minicorpus, comparable to the IT and BP minicorpora (CRESTI; RASO, 2012, PANUNZI, MITTMANN, 2014). Like the IT and BP resources, the AE minicorpus has 20 texts divided into monologues, dialogues and conversations. The totality of the AE minicorpus underwent text-to-speech alignment through the WinPitch software (MARTIN, 2005) and received prosodic and informational annotation. Table 11 below shows the size of the sound files of the texts in the AE minicorpus. In total, the AE resource has 26,470 words and approximately 2.5 hours of recordings. The files of the AE minicorpus were named following the C-ORAL model: the first letter stands for the language ("a", for *American English*), the following three letters stand for the communicative context ("fam", for *private/familiar*, "pub", for *public*), the remaining two letters stand for the interaction type ("cv", for *conversation*, "dl", for *dialogue*, and "mn" for *monologue*), the numbers identify the texts in each session.

Table 11: Size of sound files

Files	Length (h:m:s)	Files	Length (h:m:s)
Monologues	*0:54:35*	*Dialogues*	*0:59:11*
afammn01	00:07:33	afamdl01	00:06:18
afammn02	00:09:15	afamdl02	00:10:23
afammn03	00:06:59	afamdl03	00:05:56
afammn04	00:08:30	afamdl04	00:06:43
afammn05	00:03:41	afamdl05	00:06:55
afammn06	00:02:01	apubdl01	00:07:09
apubmn01	00:16:36	apubdl02	00:06:50
Conversations	*00:33:11*	apubdl03	00:08:57
afamcv01	00:05:36		
afamcv02	00:07:59		
afamcv03	00:10:12		
afamcv04	00:04:21		
afamcv05	00:05:03	**Total**	**02:26:57**

The AE minicorpus constitutes the data-source for the study of the information unit of topic that will be presented in the following chapters. The remaining part of this chapter will deal with the methodology used for the study of the topic unit.

4.4 Tools and Prosodic analysis

In what follows, the methods used for the analysis of the topic in the AE minicorpus are presented. In Section 4.4.1, the focus is on the softwares used, i.e. WinPitch (MARTIN, 2005) and Praat (BOERSMA; WEENINK, 2015). Additionally, the strategy for generating the scores provided at various parts of this work is touched on. Section 4.4.2 will deal with the methods utilized for the prosodic analysis of the topic units. Taking up what was presented in Chapter 2 regarding the prosodic forms of the topic unit, it will be shown, among other things, how the manipulation of *f0* movements was conducted and how the functional nuclei of topics were identified.

4.4.1 The analysis tools

As mentioned in the previous sections, the texts of the AE minicorpus were aligned using the software WinPitch (MARTIN, 2005). The alignment procedure comprises the bi-univocal association of each utterance[17] with its correspondent part in the acoustic signal. Utilizing the alignment tools provided by WinPitch, the utterances of each text in the AE minicorpus were assigned individual temporal indexes indicating their equivalents in the audio file. Text-to-speech alignment is of utmost importance for speech studies, since, without it, the recoverability of units of speech in the audio becomes severely compromised, yielding a methodology in which speech is studied through the transcriptions only (see MELLO, 2014).

The alignment process is a prerequisite for the phase of informational tagging. In this phase, utterances are individually analyzed through a manual process in which the informational function corresponding to each tone unit of an utterance is identified and indicated in the transcription file through the assignment of tags. The tagset used in the informational annotation is provided in Table 10 above. The tags consist of strings of three capital letters put in between equal signs right after the signs indicating prosodic breaks — e.g. "//=COM=". The annotation of informational functions is necessarily manual, and hence, rather slow. It

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[17] Naturally, other units of speech can be used in the alignment. The choice for the utterance as the unit for alignment reflects the theoretical orientation of the present work (see Chapter 2).

starts with the identification of the unit carrying the illocutionary force — COM, CMMs and COBs — after which, when the utterance is made up of more than one tone units, the other units are identified and tagged.

Informational tagging is mostly done in WinPitch (MARTIN, 2005). The software not only allows simultaneous access to transcription and acoustic signal, but also the visualization of prosodic parameters through the display of *f0* tracks, spectrogram, oscillogram, etc. (see Figure 19 below). Having an easy access to prosodic parameters is of great important for informational annotation, since, as was shown in Chapter 2, information units are defined not only in terms of function and distribution (i.e. position within the utterance in relation to the illocutionary unit), but also in terms of prosodic features. The WinPitch software has a toolbar which allows the user to easily switch back and forth between transcription and spectrographic display.

Figure 19: Screenshot of WinPitch window.
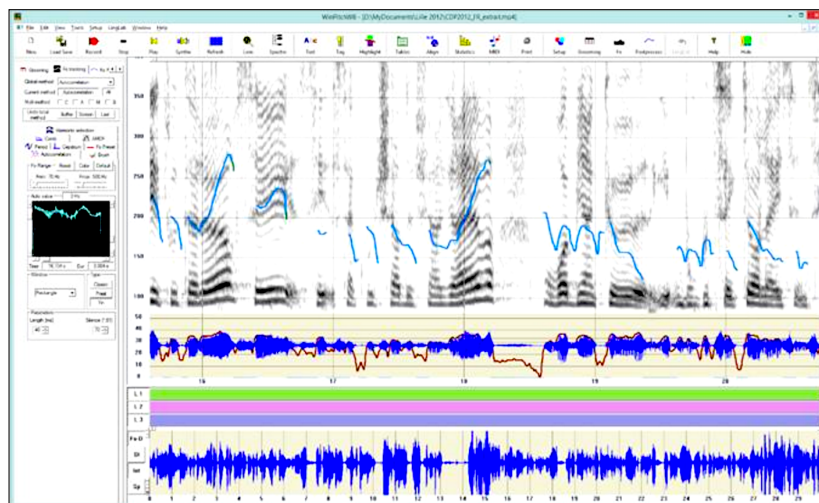
As Mello (2014) points out, WinPitch provides an excellent set of tools for the treatment of large speech corpora and for prosodic analysis, allowing, among other things, a number of sophisticated acoustic measurements in a fast and relatively simple manner. It was adopted within the C-ORAL projects (CRESTI; MONEGLIA, 2005, RASO; MELLO, 2012) for corpora alignment and also for the informational annotation of the IT and BP minicorpora. Since the AE minicorpus was designed to be comparable to the minicorpora of the C-ORAL

projects, the adoption of WinPitch for the alignment and informational annotation of the minicorpus was a natural consequence.

During the informational annotation phase, questions arose as to the exact information function fulfilled by certain tone units. In those cases, the prosodic analysis of the units in question had to be refined and the hosting utterances had to undergo editing and, sometimes, manipulation of *f0* curves in order for the information function of "challenging" tone unit to be properly assessed. The software Praat (BOERSMA; WEENINK, 2015) was used in such cases, for, while WinPitch is perfectly suitable for handling large files, Praat is more adequate for the analysis of detailed prosodic features in smaller files. Additionally, editing files in Praat is a much simpler task, especially in the case of stereophonic sounds, which, in order to be edited and manipulated in WinPitch, have to be converted to monophonic.

In summary, WinPitch was used for (i) text-to-speech alignment, (ii) simultaneous access to sound and transcription, (iii) informational annotation, and (iv) extraction of utterances and stanzas containing topics. Praat, on the other hand, was used for (i) more refined acoustic analysis in the informational annotation phase, (ii) obtaining acoustic measurements (duration, *f0*, and intensity) in the prosodic analysis of topic units, (iii) stylization of *f0* movements of topic units (see Section 4.5.1), (iv) drawing the figures shown at various parts of the present work.

Additionally, spreadsheets and a script written in R[18] were used for obtaining the counts presented in this work. Spreadsheets were used at various stages. For instance, in the morphosyntactic and semantic analysis of the topic, both for the classifications — morphosyntactic structure, semantic classes, etc. — and for the computation of frequencies. As for the script, it was used for counting the number of simple and complex utterances and the number of words in the AE minicorpus, as well as for redoing the same counts in the IT and BP minicorpora. As already mentioned in the first part of this chapter, the counts were redone because the counting method used with the IT and BP minicorpora considered certain elements in transcriptions — such as interrupted words and the indication of retracting phenomena, "[/n.]" — that should not be counted as words.

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[18] The script was kindly provided by Maryualê M. Mittmann, a former member of the LEEL team.

The next section will be dedicated to the methods employed in the prosodic analysis of the topic unit.

4.4.2 The prosodic analysis of the topic unit

Upon the completion of the informational annotation of the AE minicorpus, the sound corresponding to each utterance or stanza containing a topic unit was saved in a separate file so that detailed prosodic analysis in Praat could be properly conducted. The extraction of utterances with topic units was done in WinPitch, which provides a tool for easily saving selected portions of sound in separate files. Once all utterances had been separately saved and stored in folders named in accordance with the text from which the utterance had been extracted, the prosodic analysis of the topic units found began.

Figure 20 shows the representation of some acoustic parameters in a Praat window. The oscillogram is shown in the upper part of the window, against the white background right below the menu bar. The bottom, grayish part shows the spectrogram, or the "spectro-temporal" representation of the sound. The *f0* contour — the variation of *f0* values (Hz) in time — is represented by the blue line on the spectrogram. The intensity contour (dB) is represented by the line in yellow.

Figure 20: Screenshot of Praat's sound editor window
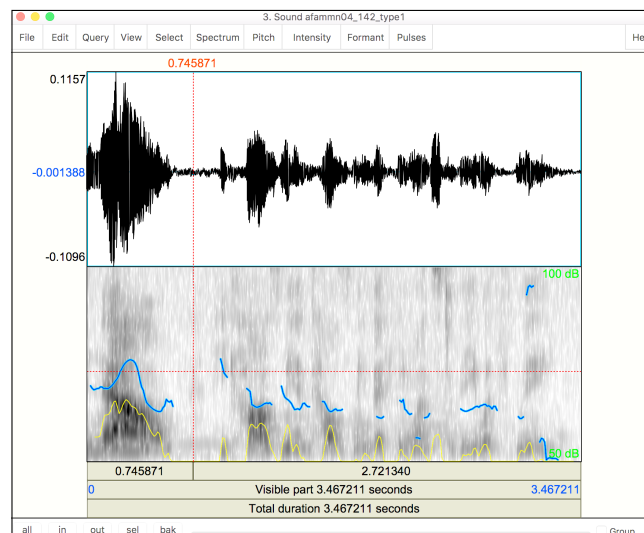
In the first phase of the analysis, the topic units were sorted with respect to the prosodic forms through which they were realized — types 1, 2, 3, and 4[19], as shown in Section 2.6. The sorting was conducted based on the acoustic signal and the visual cues represented on the sound editor window of Praat. The sound represented in Figure 20 was extracted from one of the monologues in the AE minicorpus (afammn04). Its corresponding transcription is shown below.

(4.6) afammn04[142]

    now /=TOP= he calls me and tells me that he wants to be with me //=COM= (Audio 4.6)

The first segment of the *f0* contour, the one the draws a rising-falling profile (Figure 20), corresponds to the topic unit, which is realized by the monosyllabic word "now". The topic not only shows a recognizable and acoustically clear *f0* profile — associated with the so-called type 1 prosodic form (see Section 2.6) — but also shows an intensity peak and a clearly lengthened duration. As a matter of fact, the duration of "now" is 62 ms, while the other 13 phonological syllables of the comment — pause discounted — are realized in 241 ms, an average of approximately 19 ms per syllable.

Cases like the one presented above, with few syllables as possible candidates for realizing the nucleus (or nuclei) of the topic, could be readily classified. Other longer, more complex topic units were submitted to other procedures before they could receive proper classification. These procedures encompassed tests in which potentially non-nuclear syllables were removed from the original audios and the resulting editions were assessed so as to verify if the remaining syllables maintained the functional capacity of topic. Furthermore, manipulation of *f0* curves was performed in order to establish what *f0* movements were actually necessary to convey the informational function of the unit. In this way, it was possible to achieve a reliable classification of the topic units from the AE minicorpus.

The ultimate goal of the prosodic analysis is precisely to identify the syllable(s) and *f0* movements that constitute the nuclei of the prefix prosodic form, and thus reach a reliable

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[19] In the next chapter, this classification will be taken up and an alternative account will be proposed regarding the type 3 prosodic form.

classification of the unit. The identification of a prosodic form involves determining what is necessary and what is optional from a functional standpoint. The strategies employed in this task included the assessment of the following prosodic features: perceptually relevant *f0* movements on the nucleus (i.e. pitch movements), syllabic alignment, duration and intensity values for the nuclear portions. The evaluation of *f0* movements was done based on stylized versions of the original contours.

The stylization of *f0* contours comprises the elimination of minute *f0* variations that do not show perceptual relevance. The process is based on the assumption that only those *f0* variations that result from voluntary production by the speaker show perceptual — and hence informational — relevance ('t HART *el al.* 1990, FIRENZUOLI, 2003). The resulting stylized forms, the so-called *close-copies*, must be perceptually equivalent to the original contour and contain the smallest number possible of straight-line *f0* segments. Figure 21 below shows the original (top) and manipulated (bottom) *f0* movements of the topic unit in the utterance provided in (4.6) above. Audios (4.6) and (4.6a) respectively correspond to the original and re-synthesized versions of the entire utterance, so that the acoustic/functional equivalence of the two versions can be verified. The original *f0* contour features a number of minor variations that are mostly due to physiological, involuntary factors, which are related to intrinsic properties of speech segments. In the manipulated version, those variations were excluded, resulting in a two straight-line segments that are perceptually equivalent to the original.

Figure 21: Manipulated and and original *f0* movements of the topic in afammn04[142]
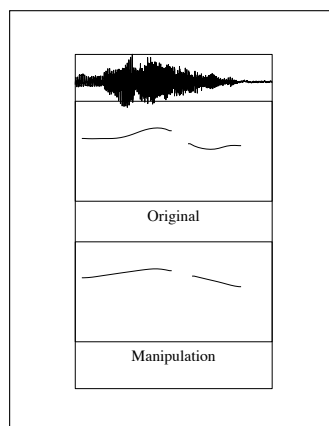
As Mittmann (2012) and Rocha (2012) point out, the manipulation of $f0$ values can yield the following perceptual outcomes:

i) The resulting version is a perfect equivalent of the original, and no acoustic difference can be noticed;

ii) The version is an equivalent of the original, and, while some minor acoustic difference may be noticed, the unit fully maintains its functional capacity;

iii) The version turns out perceptually anomalous but functionally effective, i.e. the acoustic properties are clearly altered, but the functional capacity of the unit still remains;

iv) The version turns out perceptually different and functionally ambiguous;

v) The version turns out different and functionally ineffective.

The classification of the topic units found in the AE minicorpus was based on manipulated versions presenting the characteristics in (i) and (ii) above. The manipulations that yielded versions like (iii), (iv) and (v) were disregarded.

In the next chapter, the syntactic and semantic properties of the topic unit in the AE minicorpus will be dealt with.

5 The topic unit in spontaneous American English

This chapter is dedicated to the analysis of the topic unit in spontaneous American English. In Section 5.1, the distribution of topics in the sample — i.e. the AE minicorpus (Chapter 4) — will be presented. In Section 5.2, the morphosyntactic make-up and the semantic properties of the topic units will be dealt with. Finally, Section 5.3 will be concerned with the compound topics identified in the sample. The prosodic analysis of the topic unit is the subject of Chapter 6.

5.1 The distribution of simple and compound topics in the AE minicorpus

The topic is an information unit concerned with the textual construction of utterances, as its locutive content — like those of the comment and other textual units (parenthetic, locutive introducer, and appendixes of comment and of topic) — makes up the syntactic and semantic levels of the utterance. The topic-comment articulation is one of great importance in spontaneous speech (CRESTI; MONEGLIA, 2010, MITTMANN, 2012), since the functional role of the topic is to supply a domain of identification for the application of the illocutionary force, thus allowing for the illocution to be referred to domains other than those available in the immediate communicative context.

The relevance of the topic in spontaneous speech has been shown, among others[1], by Firenzuoli and Signorini (2003) and Mittmann (2012), who report that 31.5% of compound utterances in Italian and 21.7% in Brazilian Portuguese contain at least one topic. Regarding American English, the analysis of the AE minicorpus revealed that 22.1% of compound utterances — or 10.1% of the total number of reference units (RUs)[2] (see Table 12 below) — have at least one topic unit. The frequency of the topic in the three languages is suggestive of the importance of the unit for the structuring of information in spontaneous speech.

Topics may be simple or compound. They are called *simple* when there is only one topic supplying a domain of identification for an illocutionary unit — which can be a COM, a COB or a CMM (see Chapter 2). Conversely, topics are called *compound* when they are either (i) iterated by one ore more topic units, (ii) integrated by one or more appendixes of topic (APT),

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[1] See Signorini (2005), Cresti and Moneglia (2010), and Rocha (2012).

[2] Recapitulating, the term *reference unit* (RU) designates both utterances and stanzas (see Chapter 2).

or (iii) realized as a List of Topics, which consists of a sequence of melodically patterned topics performing a unitary function. Compound topics will be dealt with in Section 5.3.

The distribution of RUs with simple and compound topics in each interactional type in the AE minicorpus is shown in Table 12 below.

Table 12: Simple and compound topics in the AE minicorpus

	Monologue		Dialogue		Conversation		Total	
RU with TOP	165	**16,6%**	126	**9,1%**	58	**5,4%**	349	**10,1%**
RU with simple TOP		*128 77,6%*		*107 84,9%*		*47 81,0%*		*282 80,8%*
RU with compound TOP		*37 22,4%*		*19 15,1%*		*11 19,0%*		*67 19,2%*
RU without TOP	827	**83,4%**	1256	**90,9%**	1020	**94,6%**	3103	**89,9%**
Total RU	992	28,7%	1382	40,0%	1078	31,2%	3452	100%

Considering the AE minicorpus as a whole, RUs with simple topics comprise the most frequent configuration: 80.8% of the 349 RUs with at least one topic unit in the AE minicorpus. Compound configurations, on the other hand, are much less frequent: 19.2% of RUs with topic in the minicorpus.

Monologues show the highest frequency of RUs with topic: 16.6% of the 992 RUs in monologues contain at least one topic unit. The proportion of RUs with topic in dialogues is 9.1%, and in conversations, 5.4% — proportions given in relation to the total number of RUs in each typology.

Considering the occurrences in relation to the total number of RUs with topic in each typology, dialogues and conversations show the highest proportion of RUs with simple topics: 84.9% of RUs with topic in dialogues and 81.0% in conversations. The frequency of RUs with simple topic in monologues is a little smaller: 77.6%. Conversely, monologues show the highest proportion of RUs with compound topic: 22.4% of RUs with topic in the typology. In dialogues, 15.1% of RUs with topic contain compound topics, and in conversations, 19.0%.

Since the complexity of information structure increases as interactivity decreases (MELLO, 2014), it is only natural that compound topics are more frequent in monological texts (55.2% of the 67 compound configurations found in the minicorpus).

Table 13: RUs with topic per Total RUs in each text of the AE minicorpus

Situation		a. RUs with TOP	b. Total RUs	c. (a)/(b)
Total		**349**	**3452**	**10,1%**
Monologues		**165**	**992**	**16,6%**
afammn01	A student explains her studies in equine science in the living room of a house trailer	24	95	25,3%
afammn02	Two friends/co-workers talk at work about their interests	28	129	21,7%
afammn03	Two cousins chat at home after a long time apart	15	150	10,0%
afammn04	A man talks about his experiences as a gay man at home	23	171	13,5%
afammn05	Two friends talk as they watch TV at home	10	69	14,5%
afammn06	Two male friends chat about science and human nature at home	5	32	15,6%
apubmn01	A woman talks about penguins at a meeting at an aquarium	60	346	17,3%
Dialogues		**126**	**1382**	**9,1%**
afamdl01	Two cousins chat at home	14	153	9,2%
afamdl02	A couple lying in bed talk about a book	6	183	3,3%
afamdl03	Mother and daughter at home talk after work	13	112	11,6%
afamdl04	A man and a woman talk on a visit to her ranch	6	201	3,0%
afamdl05	A couple plays Hearts in a summer house	17	185	9,2%
apubdl01	A work conversation at an air traffic control tower between an experienced air traffic controller and an unexperienced one	19	129	14,7%
apubdl02	A homeowner and an engineer talking at home about air-conditioning systems	20	140	14,3%
apubdl03	A salesman and a female buyer at a store discuss different types of tape decks	31	279	11,1%
Conversations		**58**	**1078**	**5,4%**
afamcv01	three friends chat about traveling, health and vitamins in the living room.	7	190	3,7%
afamcv02	Two sisters and their mother talk in a restaurant as they decide on what to eat	7	273	2,6%
afamcv03	friends talk at a block party	32	264	12,1%
afamcv04	Family members chat at a birthday party	5	179	2,8%
afamcv05	Friends talk at a dinner party	7	172	4,1%

It must be pointed out that the dialogues in the AE minicorpus contain narrative stretches rendering the texts less interactive and more monological — in the sense that text construction tends to be more centered on one speaker for a longer period of time. This feature probably accounts for the high proportion of topics in some of the dialogues in the AE minicorpus (cf. Table 13 above). By the same token, the low proportion of topics in the conversations is

probably a result of the higher degree of interactivity and actionality that conversations in the AE minicorpus show.

Table 13 above shows the proportion of RUs with topic in relation to the total number of utterances in the AE minicorpus as a whole, and also in each text of the minicorpus. As already shown, monologues concentrate the highest ratio of RUs with topic per total number of RUs (16.6%). In dialogues, 9.1% of RUs contain at least one topic, while in conversations 5.4 % of RUs do.

The conversation labeled afamcv03 show a proportion of RUs with topic (12.1%) somewhat similar to the proportions in monologues. This conversation comprises an interaction in which friends talk to each other at a block party, mostly about past time events. The interaction is filled with narrative episodes and, as consequence, it is much less interactive and actional than prototypical conversations, which are highly anchored to the immediate communicative context. Therefore, the illocutions in afamcv03 are frequently supplied with domains of relevance (especially those relative to time and place), a function that is realized by topic units. Example (5.1) shows an episode in the conversation in which topics are all pervasive. Note that there are six topic units distributed in only two RUs.

(5.1) afamcv03[117-120]

> TOC: anyway /=AUX= **when I was a young fellow /=TOP= living in New Jersey /
> =TOP= in nineteen /=SCA= forty-one /=TOP=** &he /=TMT= I graduated in high
> school in nineteen forty-one /=CMM= I went to work in a /=SCA= steel mill //
> =CMM=
> TOC: and /=AUX= &he /=TMT= lo and behold /=PAR= &th [/1]=SCA= the big war
> came along //=COM=
> TOA: hum hum //=COM=
> TOC: **and I went /=SCA= to my father /=TOP= and in [/1]=SCA= in these days /
> =TOP=** you know /=AUX= **kids /=SCA= always [/1]=EMP=** &he /=TMT= **as
> opposed to <today /=TOP=** you always went to your parents and said I wanna do
> this> //=COM= (Audio 5.1)

Similarly, some of the dialogues in the AE minicorpus — e.g. apubdl01, apubdl02 and apubdl03 — show an "unexpectedly" high proportion of RUs with topic. The reason for that is that those dialogues are not so much centered on the immediate communicative context. For instance, in apubdl01, RAN, an experienced air traffic controller, explains to LAN, a less experienced controller, some of the work in the tower where they work. RAN provides

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instructions, gives advices, talks about situations likely to occur in their work environment, etc. Therefore, RAN "resorts" to topic units in order to linguistically situate his RUs, as they are often referred to domains outside the immediate context. Example (5.2) below exemplifies that.

(5.2) apubdl01[44-46]

> *RAN: [44] <but> /=AUX= &he /=TMT= when the [/2]=EMP= **when the /=SCA= order came across /=TOP=** or whatever or this /=SCA= memorandum that said to write down all veeeffar arrivals //=COM=
> *LAN: [45] okay //=COM=
> *RAN: [46] so /=AUX= **if they're a veeeffar arrival /=TOP=** you're supposed to write it down //=COM= (Audio 5.2)

The functional role of the topic unit is to supply a domain of identification for the application of the illocutionary force (CRESTI, 2000). As Mittmann (2012: 178) puts it, the topic expresses in linguistic terms an adequate domain in relation to which the speech act must be interpreted; therefore, the topic allows the illocution to be "distanced" from the immediate communicative context. Whenever the extralinguistic context is not able to supply an appropriate domain of relevance for the illocution, some type of topic-comment pattern is likely to occur. This is the reason why topics are much more common in texts that are *not* centered on the immediate extralinguistic context, like the case of monologues. Topics may also be used when there are competing, contextually given domains to which the utterance may be referred. In such cases, the topic can be conceived of as a sort of "disambiguating device".

(5.3) afamcv01[221]

> LEN: **and then these /=TOP=** these smell really [/3]=EMP= this smells like Guayaquil /=COB= this smells like rotten garbage /=COB= it's [/1]=EMP= isn't that great hhh //=COM= (Audio 5.3)

In (5.3), the topic unit realizes a deictic function, as it singles out which of the vitamine pills that LEN is showing to her interlocutors should be interpreted as the domain of reference for the illocutions carried by the bound comments in the stanza. Therefore, although LEN is talking about things that are contextually available, a topic unit is used so as to identify what constitutes the exact domain for the illocutionary forces.

5.2 Morphosyntactic and semantic features of the topic unit in American English

The definition for topic adopted in this work (CRESTI, 2000) involves a straight-forward identification of prosodic features for the unit. The procedure for retrieving topics in speech corpora starts with the identification of the prosodic features that signal the informational function of the unit. That step necessarily precedes the examination of the locutive component of the topic, since there is no way to determine whether or not certain locutive content is actually a topic on the basis of its morphosyntactic and semantic properties. An empirical method like the one utilized within the L-AcT framework for the identification of information units has the advantage of allowing the identification of unpredicted forms, as Mittmann (2012) points out, which is highly desirable if one seeks to achieve a sounder description of the phenomenon under study. The following section will be dedicated to a discussion of the morphosyntactic make-up of topics.

5.2.1 Morphosyntactic make-up of topics in the AE minicorpus

The topic can be realized by different types of morphosyntactic categories. According to previous studies (FIRENZUOLI; SIGNORINI, 2003, SIGNORINI, 2005, MITTMANN, 2012, ROCHA, 2012), the topic unit can be realized by noun phrases (NP), prepositional phrases (PP), adverbial phrases (AdvP), adjectival phrases (AdjP), clauses and even sentences. The only morphosyntactic restriction for the topic is that it cannot be realized by an element that does not evoke a domain of identification. Therefore, functional words and "negations of domain" are not found in topic units (see (5.4.1) below). Nevertheless, when such elements are used in citation form, their realization in topic is conceivable, like (5.4.2) and (5.4.3) illustrate.

(5.4)

    (5.4.1) * nobody /=TOP= did it //

    (5.4.2) ☞ "nobody" /=TOP= is just your opinion //

    (5.4.3) ☞ "therefore" /=TOP= is a wonderful word //

The results of the analysis of the morphosyntactic correlates of the topic unit in the AE minicorpus are shown in Table 14 below. For the analysis, topic units in compound configurations were considered individually. The total number of topic units found in the

minicorpus (429 units) is, therefore, larger than the total number of RUs with topic (349 RUs) (see Tables 5.1 and 5.3).

Table 14: Morphosyntactic make-up of topic units in the AE minicorpus

		Frequency	%
Total		**429**	**100,0%**
VP		**165**	**38,5%**
	Clausal VP (finite head)	*140*	*84,8%*
	Clausal VP (non-finite head)	*10*	*6,1%*
	Sentential VP	*15*	*9,1%*
NP		**152**	**35,4%**
	Nouns (with/out determiners and modifiers)	*107*	*70,4%*
	Proper Nouns	*26*	*17,1%*
	Personal pronouns	*12*	*7,9%*
	Demonstrative pronouns	*5*	*3,3%*
	Indefinite pronouns	*1*	*0,7%*
	Numerals	*1*	*0,7%*
AdvP		**60**	**14,0%**
PP		**52**	**12,1%**

The most frequent type of morphosyntactic filling in the sample is the VP, with 38.5% of occurrences. Following Signorini (2003), topics realized by VPs (henceforth, verbal topics) were grouped into (i) *clausal topics* — realized by dependent clauses, either with finite or non-finite head — and (ii) *sentential topics* — realized by independent clauses with saturated verbal heads. Clausal topics (with finite and non-finite heads) are the most frequent type: 90.9% of verbal topics. Interestingly, sentential topics are very rare in the sample analyzed (9.1% of verbal topics). In the BP minicorpus (MITTMANN, 2012), 28.8% of verbal topics are of the sentential type.

Mittmann (2012) observes that sentential topics tend to be more frequent in monologues, which the author relates to the higher complexity shown by sentential topics. In the AE minicorpus, out of the 15 sentential topics identified, 7 occur in monologues, 6 in dialogues and only 2 in a conversation. Considering that the dialogues in the AE minicorpus tend to be less actional and less interactive — thus resembling monologues — and the similar proportion of sentential topics in monologues and dialogues in the AE minicorpus, the trend observed by Mittmannn (2012) may be said to apply to the AE data too. Nevertheless, it is not possible to give a decisive answer as to whether sentential topics are, in fact, more frequent in monological interactions in American English, for the number of occurrences of sentential topics in the AE minicorpus is very low. The utterances in (5.5) illustrates sentential topics.

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(5.5)

    (5.5.1) afamcv03[317]

    so /=AUX= **I went to this guy /=TOP=** and [/1]=SCA= &he /=TMT= and [/1]=EMP=
    and I was a /=SCA= reasonably hotshot officer in the /=SCA= Pentagon at the time /
    =PAR= and [/1]=EMP= and I went to him and said /=INT= hey /=ALL_r= how come this
    is happening /=COB_r= he said /=INT= well /=AUX_r= there's happens to five guys like
    you //=COM_r= (Audio 5.5.1)

    (5.5.2) apubdl02[181]

    cause I mean /=AUX= &y /1 =EMP= **you got a stove going /=TOP=** and /=APT= ah /
    =AUX= we're in good shape that way //=COM= (Audio 5.5.2)

Topics realized by NPs (henceforth, nominal topics) comprise the second most frequent type,
occurring in 35.4% of cases. Regarding topics realized by AdvPs and PPs, they occur in
14.0% and 12.1% of cases, respectively. No topic realized by AdjP was found in the AE
minicorpus. In the following sections, each type of morphosyntactic realization of topic units
found in the AE minicorpus will be presented in more detail.

5.2.1.1 The verbal topics

Topic units realized by VPs are the most frequent type in the AE minicorpus — 38.4% of
topics units. Verbal topics show a considerable variation in their structure, as they can be
clausal (with finite or non-finite heads) or sentential. Finite clausal topics, like the one in (5.6)
below, comprise the most frequent type of verbal topics, with 84.8% of all topics realized by a
VP.

(5.6) apubmn01[222]

    so /=AUX= **as they lost their downy feathers /=TOP=** they became eligible to go out /
    =SCA= onto exhibit //=COM= (Audio 5.6)

Only ten occurrences of non-finite clausal topics (6.1% of verbal topics) were found in the
sample: 4 infinitives, 3 gerunds and 3 participles. Example (5.7) provides examples of each
type of non-finite clausal topic.

(5.7)

(5.7.1**)** Infinitive: afammn01[4]

that's another thing too /=COB= is I kinda had a general idea of [/1]=SCA= of kinda how
to do it just watching him /=COB= or [/1]=EMP= and watching /=SCA= people come to
our place and doing it and stuff /=COB= you know /=AUX= and /=AUX= I don't know
then /=COB= down there /=TOP= &he /=EMP= it's mandatory /=COB= you have to [/
3]=EMP= &he /=EMP= **to graduate /=TOP=** you know /=AUX= or well /=AUX= **to /
=SCA= get the degree /=TOP=** you know /=AUX= you have to take this class //=COM=
(Audio 5.7.1)

(5.7.2**)** Gerund: apubdl02[100]

so /=AUX= I mean /=AUX= &he /=TMT= in some ways /=TOP= **having windows /
=TOP=** is it a bad idea /=COB= because you get a lot of natural heat from the &s /
3=EMP= from sun //=COM= (Audio 5.7.2)

(5.7.3) Participle: afamcv03[117]

anyway /=AUX= when I was a young fellow /=TOP= **living in New Jersey /=TOP=** in
nineteen /=SCA= forty-one /=TOP= &he /=TMT= I graduated in high school in nineteen
forty-one /=CMM= I went to work in a /=SCA= steel mill //=COM= (Audio 5.7.3)

Verbal topics in the AE minicorpus are mostly found in dialogues and monologues. Out of the
165 verbal topics found, 43.6% are in dialogues and 37.6% in monologues; the remaining
ones (18.8%) are in conversations. Chart 7 illustrates this distribution.

Chart 7: Distribution of verbal topics in the AE minicorpus
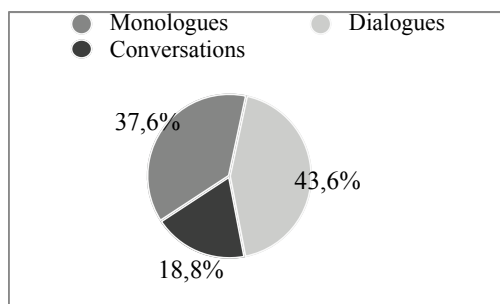
Finally, it is interesting to note that, among the languages in which the topic unit was studied up till now[3], only AE shows more topics realized by VPs than topics realized by other morphosyntactic structures. In BP (MITTMANN, 2012) and IT (SIGNORINI, 2005), the most frequent type of morphosyntactic filling in topics is the NP, which occurs in 39.7% of cases in BP and 58.65% in IT[4]; verbal topics, on the other hand, occur in 37.0% of cases in BP and only 15% of cases in IT.

5.2.1.2 The nominal topics

Topics realized by NPs are the second most frequent type in the AE minicorpus, with 35.4% of cases. The internal structure of the NPs in those topics can be "heavy" or "light", depending on whether the NP is expanded by relative clause or not, like the utterances in (5.8) below exemplify.

(5.8)

    (5.8.1) Heavy NP: afammn02[90]

    &he /=TMT= **the first painting I ever bought /=TOP=** my father-in-law bought it from Geri [/1]=SCA= Geri Rae //=COM= (Audio 5.8.1)

    (5.8.2) Light NP: afamn04[137]

    and then /=AUX= **the second experience /=TOP=** he didn't speak to me for three months /=COB= &he /=TMT= because he blamed me for that //=COM= (Audio 5.8.2)

Heavy NPs were found in 13.2% of topics with a nominal head (20 occurrences; 8 in monologues and 12 in dialogues). Additionally, topics with a noun as head — i.e. excluding those with proper nouns, pronouns and numerals functioning as head of the NP — comprise the majority of nominal topics, occurring in 70.4% of cases (see Table 14 above). Proper nouns as heads, like the one in example (5.9) below, comprise 17.1% of nominal topics.

(5.9) afammn02[51]

    Marcia /=TOP= had a relative in Mexico /=COB= or something /=COB= but they'd been down there /=COB= many times //=COM= (Audio 5.9)

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[3] Within the L-AcT approach (CRESTI, 2000).

[4] Signorini (2005) analyzed the morphosyntactic structure of simple topics only.

Pronouns as heads (see (5.10.1) below) are found in 11.9% of nominal topics. Only one occurrence of topic realized by a numeral (see (5.10.2) below) was found.

(5.10)

(5.10.1) afammn04[179]

    he /=TOP= like /=AUX= he used to travel /=COB= around the country /=COB= they live /2 =EMP= they used to live in yyy /=CMM= California /=CMM= now they live somewhere //=COM= (Audio 5.10.1)

(5.10.2) apubmn01[234]

    so /=AUX= **twenty-five <plus /=TOP=** are out on> exhibit //=COM= (Audio 5.10.2)

Interestingly, many of the nominal topics in the AE minicorpus — 19.1% of them — are introduced by connectors, such as *and (so)*, *but*, *so*, and *because*. Most of such topics — 65.5% of topics realized by NPs introduced by a connector — occupy initial position in the hosting RU. Therefore, initial position of utterances and stanzas seems to favor the occurrence of NPs introduced by connectors. This trend is also observed with topics filled with AdvPs and PPs introduced by connectors: 62.5% of AdvPs introduced by connectors and 60.0% of similar PPs are found at initial position. Example (5.11) below shows a topic unit at the beginning of an utterance whose morphosyntactic filling consist of a NP introduced by a connector.

(5.11) afammn01[84]

    and your horse's foot /=TOP= is just really wide or something //=COM= (Audio 5.11)

Cresti (2005) and Raso and Mittmann (2012) show that, in speech, connectors serve functions that are usually different from those that they serve in written language. According to the authors, the function of connectors in speech is conditioned by their distribution within the RU. The distributional possibilities are as follows:

    i) Initial position: the connective element occurs immediately after a terminal break, i.e. at the beginning of the reference unit, a position which may or may not coincide with the beginning of a dialogic turn. When it does coincide, the connective element performs the function of opening the turn; when it does not, the connective element functions as a link

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between reference units. Either way, the function performed by the connector at initial position must not be confounded with that of coordination or subordination. Opening the turn and linking reference units are eminently pragmatic functions, whereas coordination and subordination comprise logical operations.

ii) Articulated position: the connective element occurs immediately after a non-terminal break, i.e. at the beginning of a tone unit inside the reference unit. When in articulated position, coordinate conjunctions perform a function similar to that performed in written texts, with the difference that the elements in coordination are not phrases but rather information units. Regarding subordinate conjunctions, they usually perform the function of connecting auxiliar information units, like parenthetics and appendixes.

iii) Linearized position: the connective element occurs between other lexical items inside the tone unit. Linearized coordinate conjunctions usually appear in formulaic expressions, while subordinate conjunctions perform the regular function of syntactic subordination.

iv) Dedicated tone unit: the connector is realized in an exclusive and dependent tone unit, thus corresponding to a dialogic unit.

In the AE minicorpus, 24.0% of topic units are introduced by a connector — "connector+XP". Topic units realized by "connector+NP" are fount at initial position in 65.0% of cases. Similarly, topic units realized as "connector+AdvP" and "connector+PP" occur at initial position in 62.0% of cases with AdvPs and 60.0% of cases with PPs. Those frequencies are suggestive of the pragmatic importance of connectors for the organization of spoken AE — as opposed to their importance as logical operators.

Regarding the distribution of nominal topics in the interactional typologies of the AE minicorpus, 56.6% of the total (152 nominal topics) are in monologues, 30.9% are in dialogues and the remaining 12.5% are in conversations, which is shown in Chart 8.

Chart 8: Distribution of nominal topics in the AE minicorpus
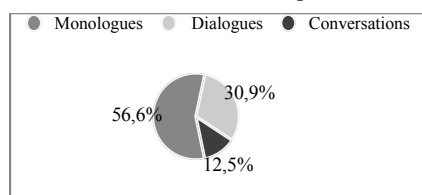
5.2.1.3 Topics realized by AdvPs and PPs

As shown in Table 14 above, 14.0% of topic units in the AE minicorpus are realized by AdvPs and 12.1% of them are realized by PPs. Topics realized by AdjPs were not found in the AE minicorpus. Examples in (5.12) provide utterances with topics realized by AdvPs.

(5.12)

(5.12.1) afammn01[110]

and /=AUX= **right now** /=TOP= I've probably /=SCA= only shod about /=SCA= five horses //=COM= (Audio 5.12.1)

(5.12.2) apubdl01[102]

but you can wrap 'em around to one-thirty or one-sixty to avoid the embeeei /=COB= and that works great /=COB= because /=AUX= **otherwise** /=TOP= you got two-sixty // =COM= (Audio 5.12.2)

The distribution of topics realized by AdvPs in the interactional types is as follows. Out of the total (60 topics), 53.3% are in monologues, 25.0% in dialogues and 21.7% in conversations.

Example (5.13) below illustrate topic units realized by PPs.

(5.13)

(5.13.1) afammn01[10]

in the beginning of the year /=TOP= there was a lot of classroom work //=COM= (Audio 5.13.1)

(5.13.2) apubmn01[130]

from /=SCA= **our staff** /=TOP= it was Mark Ryan from marine mammals /=COB= and Mike Mulligan from fishes //=COM= (Audio 5.13.2)

Out of the 52 topics realized by PPs in the minicorpus, 44.2% are in monologues, 38.5% are in dialogues, and 17.3% in conversations.

In this section, the morphosyntactic structures realizing the topic units found in the AE minicorpus were presented. It was shown that the topic can be realized by VPs, NPs, AdvPs and PPs. The most frequent morphosyntactic structures realizing the topics in the minicorpus are VPs (38.5%) and NPs (35.4%). Additionally, it was shown that 14.0% of topics in the minicorpus are realized by AdvPs and 12.1% by PPs. Chart 9 below provides an overview of the distribution of each type of morphosyntactic structure realizing topics in the interactional types of the AE minicorpus.

Chart 9: Distribution of morphosyntactic structure of topics in the AE minicorpus
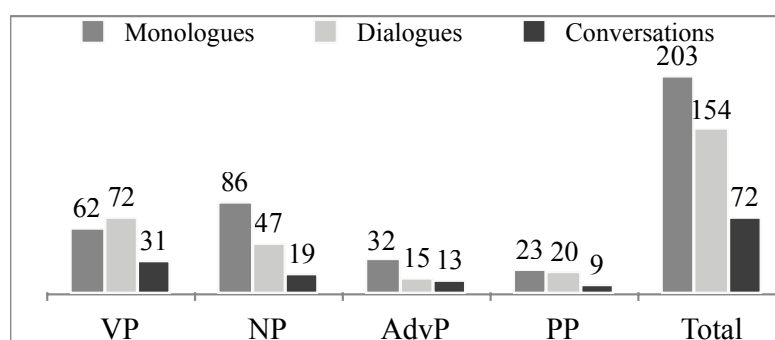
An information unit can be conceived of as comprising two distinct levels: one associated with its informational function and the other associated with the morphosyntactic properties of its locutive content. Mittmann (2012: 189) points out that informational function and morphosyntactic choice lie at different levels of cognitive processing: while information structure is a function of communicative effectiveness, the choices related to "morphosyntactic filling" unfolds as the speaker elaborates the textual component of the information unit. In that perspective, the relation between information units and morphosyntactic properties is not based on constraints, although correlations may be found between certain types of morphosyntactic structure and specific information units. The following section will be dedicated to the semantic properties of the expressions in the topic units found in the AE minicorpus.

5.2.2 Semantic properties of the topic unit

The approach adopted for this thesis defines topic as a unit that supplies a domain of identification in relation to which the illocution must be interpreted (CRESTI, 2000). The

domains supplied by topic can designate persons, places, time and other circumstances, as well as hypothetical situations. Additionally, the topic unit can supply the speaker's personal judgement regarding the illocutionary value of the utterance (CRESTI; MONEGLIA, 2010, MITTMANN, 2012, MONEGLIA; RASO, 2014). Therefore, topics can be classified as referential or modal, depending on whether they supply a domain of identification or the speakers personal judgment. As a matter of fact, authors working within other approaches (CHAFE, 1994; MITHUN, forthcoming) have noted the existence of modal topics. Additionally, Halliday's non-cognitive themes, which are realized by adjuncts like "perhaps", "certainly", "probably", etc. (see HALLIDAY; MATTHIESSEN, 2014 and the discussion of Halliday's approach in Chapter 3), may be conceived of as potential modal topics.

In the AE minicorpus, 21% of the topic units are of the modal type, a frequency that is more than twice as high as that of modal topics in the BP minicorpus (9.0%, MITTMANN, 2012). In the AE minicorpus, modal topics are realized by VPs (66.7%), AdvPs (30.0%) and, less frequently, by PPs (3.3%). Example (5.14) provides instances of modal topics realized by different syntactic structures.

(5.14)

(5.14.1) VP: afammn01[6]

and /=DCT= **if you wanna go on in it /=TOP=** you [/1]=EMP= then /=AUX= you can go on /=COM= you know //=AUX= (Audio 5.14.1)

(5.14.2) VP: afamdl01[119]

but /=AUX= &he /=TMT= **like I say /=TOP=** things will work out &f /1 =SCA= for the best //=COM= (Audio 5.14.2)
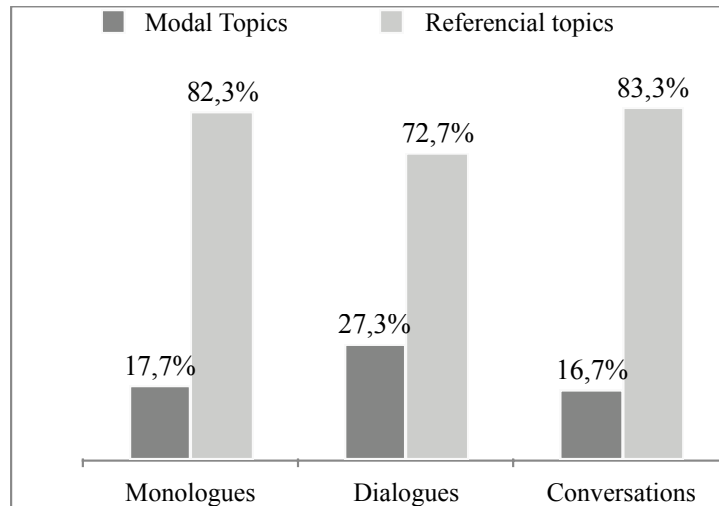
(5.14.3) AdvP: afamcv02[175]

actually /=TOP= can I have some tea //=COM= (Audio 5.14.3)

(5.14.4) PP: apubdl03[23]

in fact /=TOP= I wouldn't know what other purpose it &e [/1]=SCA= would <have> // =COM= (Audio 5.14.4)

The distribution of modal topics in the AE minicorpus is shown in Chart 10.

Chart 10: Distribution of modal topics in the AE minicorpus

In absolute numbers, the distribution of modal topics in the minicorpus is as follows. A total of 90 modal topics were found, 36 of which in monologues, 42 in dialogues and 12 in conversations.

As pointed out in Chapter 2, modal topics do not seem to fit the definition for topic as an information unit that, from a functional perspective, supplies the field of application for the illocutionary force and, from a syntactic and semantic perspective, is non-compositional with the locutive content of other information units[5]. Regarding this issue, Moneglia and Raso (2014) raise the question as to how modal topics can be conceived of as elements supplying a domain of reference for an illocution. Additionally, modal topics infringe the syntactic-semantic requirement of non-compositionality of L-AcT's definition.

Interestingly, the modal topic, from a functional standpoint, resembles a parenthetic unit, whose function — frequently associated with modal values — is to supply instructions as to how to interpret the utterance of some part of it (see Chapter 2). From a distributional perspective, the modal topic often occupies the only "slot" that the parenthetic cannot occupy, i.e. the beginning of RUs. Considering the three criteria used within the L-AcT approach to characterize an information unit — i.e. function, distribution and prosodic features —, the

_____

[5] The issue of "non-compositionality" does not apply to the relation between topics and appendixes of topic, since the function of appendixes is precisely to integrate the text of the the topic. The same holds for comments and appendixes of comments (see Chapter 2).

modal topic satisfactorily "complies" only with distribution and prosodic features (it is realized by a prefix prosodic form). Nevertheless, resolving this theoretical problem is beyond the scope of the present work, and research remains open in this regard.

Referencial topics are much more frequent (79.0% of topics) than modal topics in the AE minicorpus (see Chart 10 above). They can be realized by VPs (sentential and nominal clauses), NPs, AdvPs and PPs. The semantic content evoked by referential topics were grouped into six classes: animate beings, concepts/discourse entities, objects/things, place, processes/events, and circumstances. The distribution of each class in monologues, dialogues and conversations is shown in Chart 11.

Chart 11: Distribution of semantic classes of referential topics in the AE minicorpus
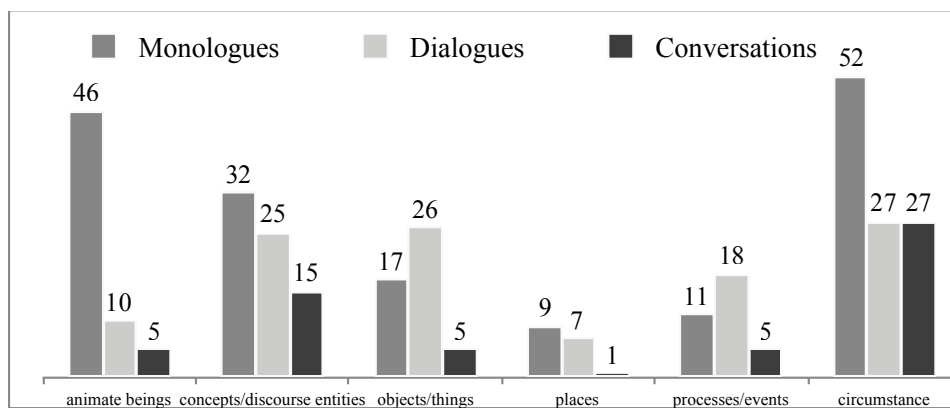

Chart 11 above shows that circumstances (mostly temporal), animate beings (mostly persons), and concepts/discourse entities comprise, in this order, the most frequent semantic classes instantiated by referential topics in monologues. The class labeled "concepts/discourse entities" includes abstract notions of cognitive nature as well as expressions that evoke discourse elements. Example (5.15) provides utterances illustrating those semantic classes.

(5.15)

(5.15.1) Circumstance: apubmn01[230]

two days ago /=TOP= there was twenty-five out on exhibit //=COM= (Audio 5.15.1)

(5.15.2) Animate beings (person): afammn05[20]

it was like /=INT= **this one guy /=TOP=** he gets this master //=COM= (Audio 5.15.2)

(5.15.3) Animate beings (animal): apubmn01[365]

the [/1]=EMP= **the penguins /=TOP=** are numbered //=COM= (Audio 5.15.3)

(5.15.4) Concepts/discourse entities: apubmn01[236]

hhh &he /=TMT= **thing of it is /=TOP=** is let's think a little bit about /=INT= penguin natural history //=COM= (Audio 5.15.4)

In dialogues, circumstances, objects/things, and concepts/discourse entities comprise the most frequent semantic classes, with similar frequencies (see Chart 11 above).

(5.16)

(5.16.1) Circumstance: afamdl03[117]

I mean /=AUX= **when you're used to doing that all the time /=TOP=** you /=SCA= get up a system //=COM= (Audio 5.16.1)

(5.16.2) Object/things: afamdl05[32]

so /=AUX= &h [/1]=EMP= **hearts /=TOP= and the queen of spades /=TOP=** <are the> only thing /=SCA= that [/1]=EMP= <that have points> //=COM= (Audio 5.16.2)

(5.16.3) Concepts/discourse entities: afamdl02[53]

&th [/1]=EMP= &th [/1]=EMP= **the things I know most /=TOP=** about life and death / =APT= come from [/1]=SCA= from /=SCA= my grandmother //=COM= (Audio 5.16.3)

Regarding conversations, the most frequent semantic classes are circumstances (27 occurrences), followed by concepts/discourse entities (15 occurrences). Animate beings, object/things and processes/events are equally frequent in conversations (5 occurrences each). The RUs in (5.17) below illustrate the two most frequent semantic classes in conversations in the AE minicorpus.

(5.17)

(5.17.1) Circumstances: afamcv03[70]

but /=AUX= **the other day /=TOP=** he had this great quote //=COM= (Audio 5.17.1)

(5.17.2) Concepts/discourse entities: afamcv04[134]

simple &e [/2]=EMP= **simple explanation /=TOP=** is we're all exhausted> //=COM= (Audio 5.17.2)

(5.17.3) Object/things: afamcv01[221]

and then these /=TOP= these smell really [/3]=EMP= this smells like Guayaquil / =COB= this smells like rotten garbage /=COB= it's [/1]=EMP= isn't that great hhh // =COM= (Audio 5.17.3)

Regarding the correlation between semantic classes and morphosyntactic categories, VPs and PPs are more frequently circumstantial (50.0% of VPs and 43.9% of PPs), while AdvPs are in 51.2% of cases constituted by expressions like "first of all", "also", "and then", "otherwise", "finally", etc., which were included in the "concept/discourse entity" class, for the function these expressions is associated with discourse organization. As for NPs, 37.% of them designate animate beings, 23.7% objects/things, 13.2% processes/events, 12.5% circumstances, 10.5% concepts/discourse entities.

A word is due about VPs realized as what is traditionally referred to as adjuncts, which could not fit in the semantic classes into which nominal and sentential VPs were included — e.g. process/events and circumstances. The VPs in question comprise a very limited group of 9 cases, which were labeled in accordance with the type of meaning that they establish: causal (2), concessive (1), conformative (2), consecutive (1), and final (3). Example (5.18) shows an utterance with two topics conveying the meaning of finality.

(5.18) afammn01[4]

that's another thing too /=COB= is I kinda had a general idea of [/1]=SCA= of kinda how to do it just watching him /=COB= or [/1]=EMP= and watching /=SCA= people come to our place and doing it and stuff /=COB= you know /=AUX= and /=AUX= I don't know then /=COB= down there /=TOP= &he /=EMP= it's mandatory /=COB= you have to [/3]=EMP= &he /=EMP= **to graduate /=TOP=** you know /=AUX= or well /=AUX= **to /** **=SCA= get the degree /=TOP=** you know /=AUX= you have to take this class //=COM= (Audio 5.18)

Since Weil (1978[1844]), who proposed the concept of "point of departure" associating it with the notion of givenness, scholars often relate the concept of topic to the property of being given or activated. While some authors (e.g. MATHESIUS, 1928) conceive of topics as

necessarily old elements, others, like Halliday, Lambrecht and Krifka (see Chapter 3), admit that topics may be realized by expressions evoking new elements.

The definition for topic adopted in this thesis (CRESTI, 2000) does not encompass any restriction regarding the status of the element in the unit, which can be either new or given/ old. As Mittmann (2012) points out, the prosodic prominence (nucleus) of the topic should not be taken as a sign of new information, since its role is to signal the informational function of topic, not the activation status of the element in the unit. The topics in the AE minicorpus, like in the BP minicorpus (MITTMANN, 2012), are mostly given. In fact, only one topic conveying new information was found in the AE minicorpus (Example 5.22 below).

Example (5.19) was extracted from a conversation between a mother and her daughters at a restaurant. The referent evoked by the expression in the topic (last utterance) is both linguistically and contextually activated, since it was first introduced by ROS in utterance 44 and is written down on the menu that each speaker has in front of her.

(5.19) afamcv02[44-51]

    *ROS: oh //=COM= I'm having <u>a bee-el-tee croissant</u> //=COM= and ice tea //=COM= with no lemon //=COM=

    *SHR: tastes very special //=COM=

    *ROS: what it says //=COM=

    *BET: what hhh //=COM=

    *SHR: hhh **the bee-el-tee /=TOP=** tastes <very special> //=COM= (Audio 5.19)

Example (5.20) below shows a topic filled by an element previously introduced by the speaker. TOC introduces his father in the first utterance and then, shortly after, picks it up with the pronoun "he", which constituted the locutive content of the topic. Likewise, in (5.21) the speaker introduces a referent in the discourse and immediately after picks up the same referent by means of a pronoun.

(5.20) afamcv03[124-128]

    *TOC: <I said> to <u>my father</u> /=COB= I said /=INT= hey look /=COB=

    *TOA: hum //=COM=

    *TOC: / I wanna go in the army /=CMM= and <be> /=SCA= an army pilot //=CMM=

    *TOA: <hum> //=COM=

*TOC: **he /=TOP=** absolutely /=APT= was /=INT= so incredibly upset /=CMM= I couldn't believe this //=CMM= (Audio 5.20)

(5.21) apubdl03[130-131]

*BRA: the decks /=TOP= <come with> /=INT= what's called <u>a DIN cable</u> //=COM=

*BRA: and **that /=TOP=** <plugs into> /=SCA= the unit you have now //=COM= (Audio 5.21)

Finally, (5.22) shows the only example of new information conveyed by a topic in the AE minicorpus. The extract comprises an anecdote about President Nixon.

(5.22) afamcv03[67-74]

*TOC: you know /=AUX= I <have never /=SCA= &he> /=TMT= <particularly> admired /=SCA= &he /=TMT= President Nixon //=COM=

*TOB: <yeah> //=COM=

*TOA: <they don't> +=UNC=

*TOC: but /=AUX= the other day /=TOP= he had this great quote //=COM= he turned eighty //=COM= **and someone came /=TOP=** to him and said /=INT= what do you think about that /=COB_r= and he said /=INT= I hate /=SCA_r= being eighty /=SCA_r= until I thought of the alternative //=COM_r= and I said /=INT= <I'm really beginning to like old Tricky hhh //=COM_r=

*TOA: <now /=AUX= the alternatives aren't [/1]=SCA= aren't really worth much // =COM= (Audio 5.22)

In this section, a description of the semantic properties of the topics found in the AE minicorpus was provided. Firstly, the distinction between referential and modal was presented, as well as their frequencies. Then, the theoretical problem posed by modal topics within the L-AcT approach was briefly discussed. Secondly, the semantic classes into which the topics were grouped were shown. Their distribution in the interactional typologies of the minicorpus and their preferred type of morphosyntactic realization was also presented. Finally, the notion of givenness (given and new) and the way it is regarded within the L-AcT approach with respect to the unit of topic was briefly discussed. Some examples of topics conveying given information were provided, as well as the only one topic unit found in the AE minicorpus conveying a new referent. In the next section, the compound topics in the AE minicorpus will be dealt with.

5.3 The compound topics in the AE minicorpus

The topic unit can be simple or compound, as already shown in Chapter 2. It is simple when it constitutes one single information unit supplying a domain of application for the illocutionary force. The compound topic, on the other hand, can be realized in three different manners. First of all, a compound topic may be formed by iteration, in which case more than one topic units supply different identification domains necessarily to the same illocution. Example (5.23) provides an utterance with a compound topic realized by iteration.

(5.23) apubdl01[4]

> **<depending> on who your   /2 =SCA= who your teecee is /=TOP= if &c   /1 =SCA= certain people sit down there /=TOP=** they &d   /2 =EMP= they have a tendency to do everything for you //=COM= (Audio 5.23)

It must be stressed that the mere occurrence of two (or more) topics in a reference unit does not entail that the topics are compound. In order for a sequence of topics in an utterance or stanza to be compound, each topic in the sequence must be related to the *same* illocution. Therefore, the topics in the utterance below do not comprise a compound topic, but rather two simple topics — relating to different illocutionary units — realized in the same stanza.

 (5.24) apubcv01[135]

> &he /=TMT= **when you were reading the review /=TOP=** <u>you talked about the affair between Helen and Paul</u> /=COB= did I get the right names /=PAR= and I thought /=INT= **all that happened was /=TOP=** <he [/1]=EMP= <u>he kissed her /</u> =COB= and> [/1]=EMP= <and they had> [/3]=EMP= <and they had this> [/ 4]=SCA= and they had this understanding of the <souls /=SCA= that they were in love> //=COM= (Audio 2.24)

Another type of compound topic occurs when the unit is realized as a sequence containing a topic and an appendix of topic (TOP-APT). The appendix of topic supplies a textual integration for the locutive content of the topic, and is used to semantically expand, specify, or restructure the content expressed in the topic. Example (5.25) shows a compound topic integrated by an appendix.

(5.25) apubmn01[209]

> but /=AUX= **when you see /=TOP= them /=APT=** you'll see that they're /=SCA= just about as big as number ten //=COM= (Audio 5.25)

In the example above, the appendix supplies additional information that aid the addressees in identifying more precisely the reference raised in the topic. The pronoun "them" in the appendix refers to a certain group of penguins which are younger than the one referred to in the comment as "number ten". As will be shown in the next chapter, in which the prosodic features of the topic will be examined and discussed, eliminating the appendix from the audio does not disturb the functional capacity of the topic.

Finally, a compound topic may comprise what is referred to as a list of topics (TPL), which constitute a chain of melodically patterned topics (usually two or three units) that together comprise one single field of application for the illocutionary force. Besides being melodically patterned, another characteristic of prosodic nature shown by the list of topics is that, usually, only one of the units in the list carries the functional prosodic prominence — the so-called nucleus — associated with the information unit of topic[6]. Example (5.26) shows an utterance containing a list of topics whose nucleus is carried by TPL(1).

(5.26) afamdl03[122]

> and /=AUX= &he /=TMT= one of the docs came in /=TPL(1)= and saw all of his kids /=TPL(2)= and wrote orders on every kid //=COM= (Audio 5.26)

Table 15 below shows the frequencies of patterns of compound topics found in the AE minicorpus. For the sake of clarity, only the tags strictly pertaining to the compound patterns — i.e. TOP, ATP and TPL — were kept. Each pattern in Table 15 must be regarded as referring to one illocutionary unit (COM, CMM or COB). Naturally, the instantiation of the patterns may encompass information units other than the compound topics themselves and the illocutionary units.

A total of 76 compound topics were found in the AE minicorpus, 51.3% of which in monologues. Dialogues contain 32.9% of the compound topics, and conversations contain 15.8%. The most frequent pattern is the iteration of two topics (TOP TOP), both in the minicorpus as a whole (53.9% of cases) and in the interactional types: 53.8% of cases in

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[6] The prosodic features of the topic unit will be exemplified and further discussed in Chapter 5.

monologues, 48.0% in dialogues, and 66.7% in conversations. In fact, iterated topics without appendixes —i.e. (TOP TOP), (TOP TOP TOP), and (TOP TOP TOP TOP) — comprise the most frequent realization of compound topics in the minicorpus, occurring in 60.5% of all cases. The iteration of four topics occurs only in monologues, a typology that is prototypically more complex than dialogues and conversations.

Table 15: Distribution of the patterns of compound topics in the AE minicorpus

Compound topic Patterns	Total		Monologues		Dialogues		Conversations	
	Abs. Freq.	%	Abs. Freq.	%	Abs. Freq	%	Abs. Freq.	%
Total	76	100,0%	39	51,3%	25	32,9%	12	15,8%
TOP TOP	41	53,9%	21	53,8%	12	48,0%	8	66,7%
TOP TOP TOP	4	5,3%	1	2,6%	1	4,0%	2	16,7%
TOP TOP TOP TOP	1	1,3%	1	2,6%	0	0,0%	0	0,0%
TOP APT	16	21,1%	8	20,5%	7	28,0%	1	8,3%
TOP APT APT	1	1,3%	1	2,6%	0	0,0%	0	0,0%
TOP APT TOP	1	1,3%	1	2,6%	0	0,0%	0	0,0%
TOP TOP APT	4	5,3%	1	2,6%	2	8,0%	1	8,3%
TOP TOP APT TOP APT	1	1,3%	0	0,0%	1	4,0%	0	0,0%
TOP TOP TOP APT	1	1,3%	1	2,6%	0	0,0%	0	0,0%
TPL TPL	4	5,3%	3	7,7%	1	4,0%	0	0,0%
TPL TPL TOP	2	2,6%	1	2,6%	1	4,0%	0	0,0%

Analyzing compound topics in the BP minicorpus, Mittmann (2012) noted that the degree of complexity of a pattern and its frequency are inversely related, i.e. the more complex the pattern, the less frequent it is. The author reports that the "TOP TOP" pattern occurs in 58.1% of compound topics in the BP sample. In light of the data presented above, the very same trend is observed in the AE minicorpus.

In the following sections, compound topics integrated by one or more units of appendix and lists of topics will be dealt with separately.

5.3.1 The appendix of topic in the AE minicorpus

As previously mentioned, the appendix of topic is an information unit that integrates the text of the topic. Therefore, the appendix may be used to correct, add or expand the information provided in the topic. In the AE minicorpus, 27 appendixes of topic were found in 25 utterances, for two utterances contain two appendixes each. In one of those utterances, the two appendixes integrate the text of one single topic unit, while in the other utterance, each

appendix is associated with a different topic (see lines 2 and 16 in Table 16 below). The first case shows that the appendix, similarly to what happens with the topic, can be iterated. Nevertheless, while the topic has a functional prosodic nucleus, the appendix does not, and as a consequence, it cannot serve the same function of the topic. Table 16 at the end of the section provides all the compound topics that are integrated by appendixes in the AE minicorpus.

The 27 appendixes found in the minicorpus are distributed as follows: 13 in monologues, 11 in dialogues and only 3 in conversations. The pattern containing two contiguous appendixes was found in a monologue (apubmn01), while the utterance with two appendixes integrating different topics was found in a dialogue (afamdl04). Utterances in (5.27) show how the functions that topics and appendixes fulfill are different.

(5.27)

(5.27.1) apubdl03[261]

&he /=TMT= the other thing that sets this apart /=TOP= from a lot of other dual decks /=APT= is it has a separate Dolby button /=COB= for each cassette deck // =COM= (Audio 5.27.1)

(5.27.2) apubdl03[261] *edited*

&he /=TMT= the other thing that sets this apart /=TOP= (*APT*) is it has a separate Dolby button /=COB= for each cassette deck //=COM= (Audio 5.27.2)

(5.27.3) apubdl03[261] *edited*

(*TOP*) from a lot of other dual decks /=APT= is it has a separate Dolby button / =COB= for each cassette deck //=COM= (Audio 5.27.3)

Example (5.27.1) shows an utterance with a topic unit integrated by an appendix. In (5.27.2) the appendix was cut out in order to show that the absence of the appendix does not compromise the realization of the topic, which remains perfectly interpretable and maintains its informational relation with the illocutionary unit. As a matter of fact, the edition of the

utterance causes no peculiar acoustic effects. The case is totally different with (5.27.3), from which the topic unit was removed. It shows that the appendix neither maintains a patterned relation with the illocutionary unit nor is it fully interpretable without recourse to the topic.

In the next chapter the prosodic features of the appendix of topic will be further discussed. For now, it should suffice to mention that the appendix is realized by a prosodic unit of the suffix type ('t HART *et al.* 1990), which is typically characterized by a flat or falling *f0* movement (MONEGLIA; RASO, 2014). The following section will be dedicated to the list of topics.

5.3.2 The list of topics in the AE minicorpus

A list of topics, as already mentioned, is a sequence of topics realized in a melodically patterned manner. The topics in a list, identified by the tag "TPL", comprise together one single field of application for one illocution. The prosodic nucleus, however, is usually realized by only one of the topics in the list (see, however, Chapter 6). In the AE minicorpus, 7 lists of topics were found, 5 in monologues and 2 in dialogues.

Example (5.28) below shows a list of topics that establishes a sequence of events — i.e. the doctor going inside and his seeing the kids — to which the illocution is referred.

(5.28) afamdl03[122]

> and /=AUX= &he /=TMT= **one of the docs came in /=TPL(1)= and saw all of his kids /=TPL(2)=** and wrote orders on every kid //=COM= (Audio 5.28)

In (5.29) below, the speaker uses the list of topics to say that he was aware of the information conveyed by the CMMs about "those guys" — realized in a "regular" topic unit that does not form part of the pattern — both previously and at the time of the enunciation. This is an interesting example, inasmuch as it shows a rather complex pattern of topics, i.e. a list containing two topics followed by another topic unit (TPL-TPL-TOP). Not surprisingly, this pattern was found in a monologue.

(5.29) afammn02[65]

&he /=TMT= you know /=PHA= I /1 =EMP= **and I /2 =SCA= I knew /=SCA= then /=TPL(1)= and I know now /=TPL(2)=** that those guys /=TOP= take you to a particular place /=CMM= they get a commission //=CMM= (Audio 5.29)

The topics in the list in (5.30) below jointly identify that "what takes a couple of months" is the period of time comprising the time that penguin chicks hatch out (see TPL(1)) and the time they are ready to go out to sea (see TPL(2)).

(5.30) apubmn01[254]

so /=AUX= they &nee need to be big /=COB= they need to be hefty /=COB= they need to have their adult feathers /=COB= so /=AUX= **between the time that they actually hatch out /=TPL(1)= and the time that they're ready to go out to sea / =TPL(2)=** is just a couple of months //=COM= (Audio 4.30)

Table 16: Appendixes of topic found in the AE minicorpus

	File	TOP	APT
1	afammn01	aught /=TOP=	and double-aught /=APT=
2	apubmn01	the chicks /=TOP=	in order to be ready /=APT= to go out there for six months out at sea /=APT(1)=
3	afammn02	Rae and I /=TOP=	and Sue and Buddy /=APT=
4	afammn03	one of the guys /=TOP= his entrance /=TOP= on [/ 1]=SCA= on the stage /=TOP=	is he /=APT=
5	afammn03	so it turns out /=TOP=	that /=APT=
6	afammn04	and I know my brother /=TOP=	who lives in Dallas /=APT=
7	afammn04	he was the one that I told /=TOP= that if he'd had told me /TOP=	he loved me /=APT=
8	afammn06	and down at the bottom /=TOP=	of this [/1]=SCA= this rubble /=APT=
9	apubmn01	he reason I mentioned that /=TOP= **(APT)** if one was smaller /=TOP=	was /=APT=
10	apubmn01	when you see /=TOP=	them /=APT=
11	apubmn01	the sequence of events /=TOP=	is /=APT=
12	apubmn01	now the funny thing is /=TOP= is that /=APT=	is that /=APT=
13	afamdl02	the things I know most /=TOP=	about life and death /=APT=
14	afamdl02	people who had /=SCA= technically died /=TOP=	and then have been revived /=APT=
15	afamdl02	one thing my mother always used to say /=TOP=	when I wouldn't go bicycling with my <father /=APT=
16	afamdl04	the thing is /=TOP= what makes it good /=TOP= **(APT)** if you don't have a legal /=SCA= brand inspection /=TOP= **(APT)**	is /=APT= on a horse when you take him to the auction / =APT=
17	apubdl02	typically /=TOP=	and if anything /=APT=
18	apubdl02	you got a stove going /=TOP=	and /=APT=
19	apubdl03	with the unit you already have /=TOP= the receiver that has the full remote control /=PAR= all the units /=TOP= &he /=TMT=	you're looking at here /=APT=
20	apubdl03	from there /=TOP= the next step /=TOP=	for what you're looking at /=APT=
21	apubdl03	the other thing that sets this apart /=TOP=	from a lot of other dual decks /=APT=
22	apubdl03	<but there> may be a situation where a friend of yours /=TOP=	<who's> a real audiophile /=APT=
23	afamcv03	make a long story short /=TOP= when they posted the grades /=TOP=	in forty-nine /=APT=
24	afamcv03	when I came back /=TOP=	from one of those /=SCA= &he /=TMT= trips /=SCA= from down to /=SCA= Cartagena/=APT=
25	afamcv04	every time I've looked at the &bot [/2]=SCA= that bottled water /=TOP=	or the sparkling water /=APT=

5.4 Summary

This chapter was dedicated to aspects related to the distribution of topics in the AE minicorpus, their morphosyntactic make-up and semantic properties and also the case of compound topics. In Section 5.1 it was shown that 16.6% of reference units in monologues, 9.1% in dialogues and 5.4% in conversations contain at least one topic. Additionally, the proportion of reference units in each text of the minicorpus was provided.

Regarding morphosyntactic structure (Section 5.2.1), it was shown that VPs comprise the most frequent type of structure realizing topic units in the AE minicorpus — 38.4% of topic units, 43.6% of which in conversations. It was pointed out that such a high frequency of VPs in topics seems to be characteristic of AE, given that in the other languages (IT and BP), topics realized by NPs are more numerous than those by VPs. It was suggested that verbal topics — as topics realized by VPs are called — challenge Lambrecht's (1994) definition for topic, since the author claims that topic are always realized by NPs.

Topics realized by NPs were found in 35.4% of cases, mostly in monologues (56.6%). Topics realized by AdvPs constitute 14.0% of cases (53.0% of which in monologues) and those realized by PPs constitute 12.1% of cases, which are more or less evenly distributed in monologues (42.2%) and conversations (38.5%).

In Section 5.2.2 the semantic properties of the topics in the AE minicorpus were dealt with. Firstly, the distinction between referencial and modal topics was drawn, and their distribution in the three interactional types was shown. Then, the theoretical problem posed by modal topics within the L-AcT approach was touched on. The section was concluded with the semantic classes evoked by the elements in topic, as well as the association among these classes and morphosyntactic structures.

Finally, compound topics were treated in Section 5.3. Firstly, each type of compound unit was introduced, then they were taken up separately. It was shown that the most frequent type of compound topic in the AE minicorpus is realized by iteration, specifically in the TOP-TOP pattern. Monologues and conversation were reported as the interactional typologies in which compound topics occur most frequently — 51.3% and 32.9%, respectively. Finally, appendixes of topic and lists of topics were discussed. Regarding compound topics in general,

it is important to note that they establish a considerable informational and textual complexity. This may account for the relatively low frequency of compound topics as compared to simple ones (MITTMANN, 2012: 208).

In the following chapter, the prosodic features of topic units in AE will be dealt with.

6 The topic unit in the AE minicorpus — prosodic analysis

In this chapter, the results of the prosodic analysis of the topic unit found in the AE minicorpus will be presented. The concept of prosodic form[1], as developed by Firenzuoli (2003) based on the IPO approach ('t HART *et at.* 1990), serves as the guiding thread through what follows. The idea underlying the concept of prosodic form is that only those *f0* variations that are voluntarily produced by the speaker are actually relevant from a perceptual standpoint ('t HART *et al*. 1990). This assumption is widely supported by experimental studies. Fundamental frequency variations resulting from involuntary production, on the other hand, comprise what 't Hart and colleagues refer to as micro-melodic phenomena, which result form intrinsic features of speech segments springing from physiological factors.

The process of identification of prosodic forms involves the stylization of *f0* contours to generate what is called a close copie. A *close copy* is a synthesized version of an *f0* contour. It contains the smallest number possible of straight segments and is perceptually equivalent to the original contour. Thus, the stylization process comprises the deletion of micro-melodic variations, so that only those macro-melodic — i.e. perceptual relevant — variations are kept.

Within the L-AcT approach, it is maintained that certain prosodic configurations, however different they may be from an acoustic standpoint, are associated to the fulfillment of the same information function. This idea is supported by a number of experimental studies conducted both at the LABLITA lab (CRESTI; FIRENZUOLI, 2002, FIRENZUOLI, 2003, FIRENZUOLI; SIGNORINI, 2003, CRESTI; GRAMIGNI, 2004, FROSALI, 2008) and at the LEEL lab (MITTMANN, 2012, ROCHA, 2012). As shown in Chapter 2, topics — at the tonal level — are associated with four different types of prosodic configurations, each of which showing a characteristic acoustic effect resulting from its specific melodic shapes. The concept of prosodic form was elaborated so as to account for the fact that one and the same informational function may be realized through different prosodic shapes (FIRENZUOLI; SIGNORINI, 2003, MITTMANN, 2012, ROCHA, 2002).

As already shown (see Chapter 2), the topic information unit — and the same applies to the comment unit— is realized by a prefix prosodic unit that carries a functional acoustic salience

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[1]For an outline of the IPO approach and the concept of prosodic form, see Chapter 2.

called nucleus. The nucleus is the portion of the prefix unit[2] that conveys its function. Since the locutive content of a topic is usually larger than its nuclear portion, the prosodic profile of the topic frequently exceeds the size of the nucleus. Those exceeding, optional portions — called preparation or coda[3], depending on whether they precede of follow the nucleus — do not play a role in the realization of the informational function of the unit but rather serve a semantic-syntactic function. That means that if, say, a coda is eliminated through edition from the topic, provided its nucleus is preserved, the informational function of the unit will be preserved, despite the unavoidable semantic alteration. Therefore, the concept of prosodic form applies to the nuclear portion of the information unit, either of topic or of comment.

Besides $f0$ movements (rising, falling or a combination thereof), the concept of prosodic form encompasses the following prosodic parameters: $f0$ value at the onset of the unit as well as the mean and minimum $f0$ values, syllable duration, intensity and the alignment between syllables and $f0$ movements. In Italian, the prefix prosodic form is realized through three forms — referred to as type 1, 2, and 3, respectively (FIRENZUOLI; SIGNORINI, 2003). In Brazilian and European Portuguese, on the other hand, the prefix is realized through four forms, the first three of them like in Italian, and a fourth one (type 4) originally found only in Brazilian and European Portuguese (MITTMANN, 2012, ROCHA, 2012).

In the following sections, the prosodic forms of the prefix units found in the AE minicorpus will be presented. It will be shown that AE presents some peculiarities regarding some prosodic features of the topic unit, which are related to the presence of codas and the realization of lists of topics. Also, the prevalence of each type in the languages studied up till now will be briefly discussed in light of the rhythmic tendencies of each language. Finally, it will be hypothesized that type 3 and type 4 prefix forms actually comprise one single form. Empirical evidence will be provided to support the hypothesis, and it will be shown that type 3 can be perfectly described as the type 4 prosodic form.

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[2] Recapitulating, the prefix is an optional prosodic unit that precedes — although not necessarily contiguously — the obligatory, root prosodic unit ('t HART *et al.* 1990). At the informational level, the prefix corresponds to the topic, whereas the root corresponds to the illocutionary unit (CRESTI; MONEGLIA, 2010).

[3] Topics with discontinuous semi-nuclei contain an optional part referred to as *linking portion*. This will be shown in the following sections.

6.1 The prosodic forms of topics in the AE minicorpus

The topics found in the AE minicorpus are realized through three of the four prosodic types reported in the literature (FIRENZUOLI; SIGNORINI, 2003, MITTMANN, 2012, ROCHA, 2012):

- Type 1: rising-falling nucleus, aligned with the final stressed syllable and, if there are any, with the post-stressed one(s). The syllables of the nucleus are lengthened. If there happens to be a post-stressed syllable, the rising movement coincides with the stressed syllable and the falling movement with the post-stressed one. When the nucleus comprises only one syllable, the nuclear syllable holds both the upward and downward movements. In Italian, it is considered the most frequent form, occurring in 55% of cases (FIRENZUOLI; SIGNORINI, 2003), while in BP it occurs in 35% of cases (MITTMANN, 2012). In those languages, type 1 commonly shows a preparation but never a coda.

- Type 2: rising nucleus, aligned with the last stressed syllable and possible post-stressed ones. It shows longer syllable duration in the nucleus. In Italian, 24% of topics are prosodically realized as type 2 (FIRENZUOLI; SIGNORINI, 2003); in BP, 47% of topics are of this type (MITTMANN, 2012). As a matter of fact, type 2 seems to be the most frequent form in BP. Type 2 topics usually present preparations, but never present codas either in Italian or BP.

- Type 3: made up of two semi-nuclei — first and last syllables of the unit —, which can be separated one from the other by an optional linking portion. The nuclear syllables show longer duration. The first semi-nucleus is realized in a falling prosodic movement and the second in a (steeply) rising one. Type 3 occurs in Italian with a frequency of 21% (FIRENZUOLI; SIGNORINI, 2003) and in BP with a frequency of 5% (MITTMANN, 2012). Neither preparations nor codas have been found in type 3 topics. As above mentioned, an alternative account will be given in this thesis for this form. It will be propose that the type 3 form can be adequately described as the type 4.

- Type 4: made up of two semi-nuclei corresponding to the first and the last syllables of the unit. The characteristic features of this form are: (i) high (and sometimes extra-high) $f0$ values in the first semi-nucleus and lower $f0$ values in the second. The syllable of the

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second semi-nucleus shows longer duration and may present different movements. Both semi-nuclei show peaks of intensity. Type 4 had only been identified in BP (12%) and EP[4]. In EP, type 4 seems to be, by far, the most frequent form.

In the following sections, each type through which the prefix form is realized will be discussed in further detail and examples extracted from the AE minicorpus will be provided.

6.1.1 Type 1 prosodic form in the AE minicorpus

The type 1 prosodic form has its nucleus at the right of the unit. Its nucleus can be preceded by an optional portion, the so-called preparation. The prosodic movement of the nucleus is rising-falling and the nuclear syllables show longer duration. The rising segment of the movement is aligned with the last stressed syllable of the unit, and the falling segment is also aligned with the the stressed and the possible post-stressed syllable(s). When there is no post-stressed syllable(s), both movements occur on the last stressed one, whose duration becomes even longer. In the AE minicorpus, 64 occurrences of the type one form were found, which represent 16% of the topic units in the minicorpus. Example (6.1) and Figure 22 below shows a type 1 topic found in the AE minicorpus.

(6.1) afamdl01[75]

>   **once I get my experience** /=TOP= I'll be up there too /=COB= in the top four salesman //=COM= (Audio 6.1)

Figure 22: Type 1 prosodic form in AE — afamdl01[75]

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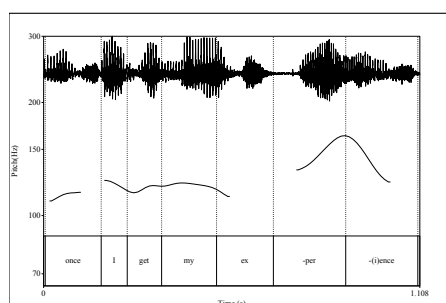
[4] The study of prefix forms in European Portuguese (ROCHA, 2012) comprises a qualitative analysis dealing with a sample of only 73 topics. The frequency of forms in EP is as follows: 67 occurrences of type 4, four of type 3, three of type 2 and one of type 1. Although this distribution is not statistically reliable, EP appear to show a penchant for type 4.

As Figure 22 shows, the overall shape of the prosodic contour is a relatively flat movement on the first five syllables, which are then followed by a clear rising-falling movement on the the final syllables. The rising part of the movement starts at the last stressed syllable and the falling one takes place on the post-stressed (phonological) syllables[5].

In order to show that the minor movements preceding the nucleus are not relevant from a functional standpoint, one can simply flatten them altogether using the manipulation function in Praat, like Figure 23 illustrates. The synthesized audio can be listened to in Audio 6.1a.

Figure 23: Type 1 — screenshot of manipulation— afamdl01[75]
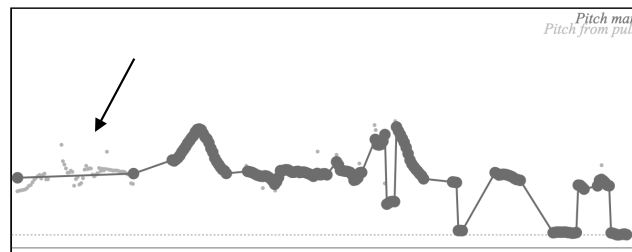
The manipulated version of the topic unit fully maintains the unit's functional capacity, suggesting that the relevant *f0* variations for the form are not to be found in the portion that was manipulated. In fact, as aforementioned, the relevant *f0* variations of a prosodic form are to be found only in a nuclear portion, which, in the case of the type 1, consists of the rising-falling movement at the right of the unit. That becomes clear if the optional portion to the left of the nucleus — i.e. the preparation —is cut out from the audio, like Figure 24 below shows.

Figure 24: Type 1 — nucleus only — afamdl01[75]

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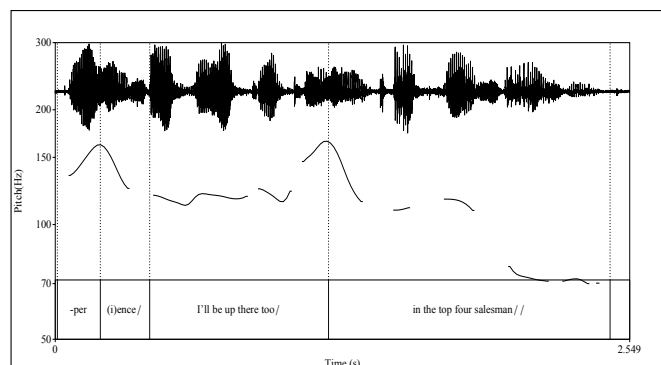
[5] The post-stressed syllables in the nucleus are realized as just one phonetic syllable.

The elimination of the preparation from the the type 1 form does not result in any loss at the informational-function level, even if the resulting sequence of segments turned out semantically meaningless[6]. This can be verified by listening to the synthesized version in Audio (6.1b), from which the preparation was extracted. The *f0* movements on the nucleus of the topic, as well as the remaining part of the utterance, are shown in Figure 24 above. At this point, it should be clear that the nucleus of the type 1 form coincides with the rising-falling prosodic moment at the right of the unit, and that, as a consequence, what precedes this movement actually comprises a preparation.

Finally, the entire topic unit provided in Example (6.1) was flattened, in order to leave no doubt as to the necessary status of the rising-falling movement. The re-synthesized version can be listened to in Audio (6.1c)

Figure 25: Type 1 — entirely flattened — afamdl01[75]
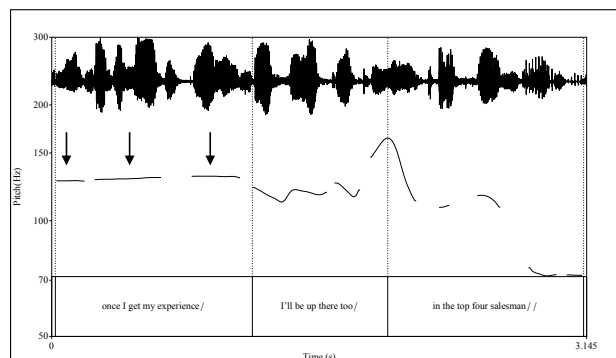
The type 1 forms identified in Italian and Portuguese do not show codas. However, some 17% of the prosodic forms of the first type found in the AE minicorpus do show codas. Figure 26 below and Audio (6.2) illustrate that.

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[6] A useful strategy for overcoming the semantic anomaly caused by syntheses like that is to imagine that the segments that were kept make up a (contrived) word referring to a domain of relevance coherently related to the content of the illocution. In the case presented above, it might be useful to think of "-per(i)ence" as a word that is coreferential with "there" in "I'll be up there too".
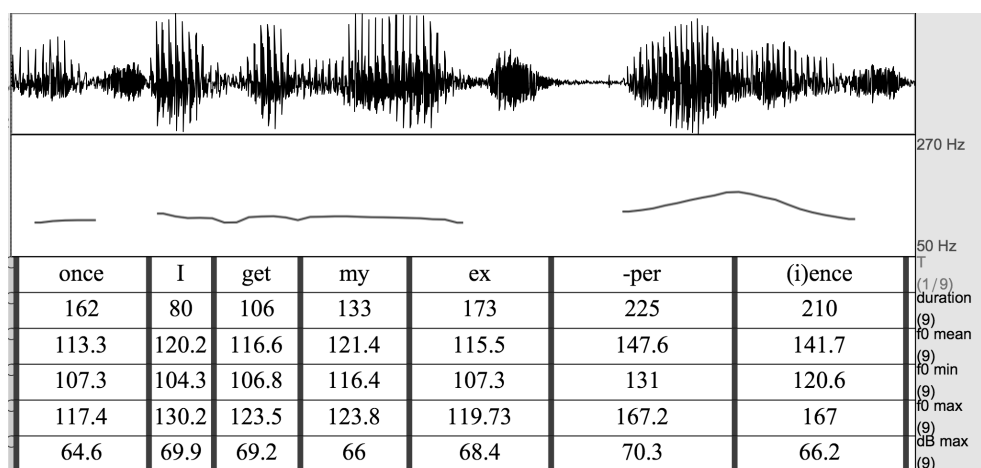
Figure 26: Type 1 with coda — apubdl03[92]
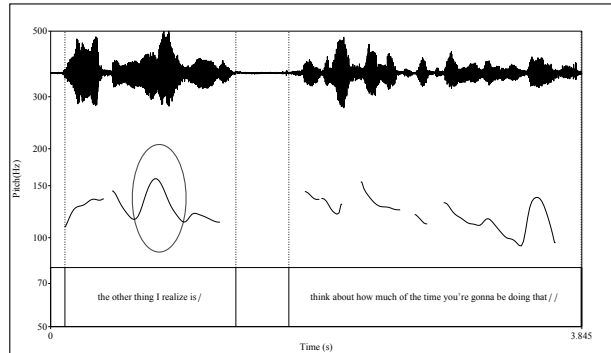
In Figure 26 above, the nucleus of the type 1 topic is circled. For the sake of clarity, the utterance was edited so that only the topic and the comment could be shown. In order to show that the portion that follows the nucleus is actually optional, the portion was cut out from the audio. This is shown in Figure 27 below, and can be listened to in Audio (6.2a). Additionally, the *f0* movements of the preparation were flattened. The rising-falling movement occurs on the word "realize".

Figure 27: Type 1 with coda edited and manipulated — apubdl03[92]
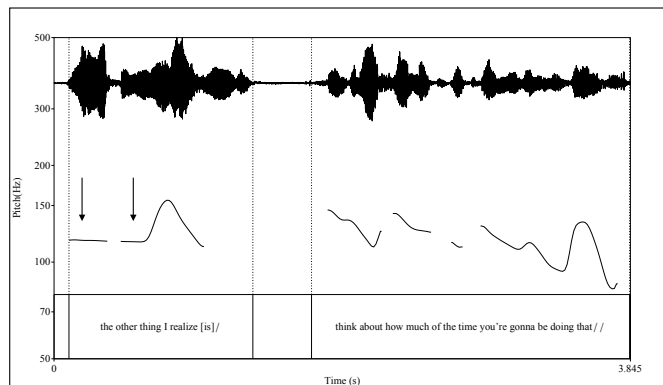
Regarding the other prosodic parameters that are relevant for the description of a prosodic form (FIRENZUOLI, 2003), they do not constitute a focus of the present work. Nevertheless the relevant measurements relative to the topic unit in Example (6.1) above are given in Figure 28 below.

Figure 28: Acoustic measurements for the topic in Example (6.1)

once	I	get	my	ex	-per	(i)ence
162	80	106	133	173	225	210
113.3	120.2	116.6	121.4	115.5	147.6	141.7
107.3	104.3	106.8	116.4	107.3	131	120.6
117.4	130.2	123.5	123.8	119.73	167.2	167
64.6	69.9	69.2	66	68.4	70.3	66.2

In Figure 28, the first layer of the grid shows the syllabic parsing of the topic unit. The other five layers show measurements obtained for each of the syllables of the unit. The captions at the right end of each layer indicate the type of information provided. Duration is given in milliseconds. Fundamental frequency (*f0*) values are given in Hertz, intensity ones (bottom layer) in decibel.

The nuclear syllables of the topic shown above — "-per" and "-(i)ence" — are clearly longer than the other syllables of the unit. The mean duration of the unit is 127 ms per syllable, while the mean duration of the nucleus is 218 ms per syllable. As for the *f0* values, the nucleus presents minimum and maximum values that are characteristic of the prosodic movement of the type 1 form; additionally, mean values in the nucleus are higher than those observed in the preparation. Finally, the intensity peak of the unit coincides with the first syllable of the nucleus (70.3 dB), which is a common feature of the type 1 form.

In the next section the type 2 form will be discussed in further detail.

6.1.2 Type 2 prosodic form in the AE minicorpus

The type 2 form features a nucleus with a rising prosodic moment, which can preceded by a preparation but, in languages other than AE, cannot be followed by a coda. The rising movement starts on the final stressed syllable of the unit, extending over the possible post-stressed ones. The nuclear, stressed syllable shows longer duration. As for the possible post-stressed syllables, they are usually longer in Italian, but not so much in Portuguese and in AE.

A possible explanation for that may be found in the general rhythmic pattern of the language in question. While Italian is a mostly syllable-timed language, with both stressed and unstressed syllables being fully realized, EP and AE — in that order — tend to be more stressed-timed, a rhythmic feature that causes unstressed syllables to be reduced or even dropped altogether. As for BP, which in rhythmical terms falls somewhere in between Italian and EP, nuclear post-stressed syllables in type 2 forms tend to be realized, but with regular durations. At other environments, post-stressed syllables in Brazilian Portuguese are frequently dropped.

In the AE minicorpus, a little over 12% of topic units are realized as the prosodic form of the second type. Figure 29 shows a type 2 topic taken from the AE minicorpus.

Figure 29: Type 2 prosodic form in AE — afamdl01[95]
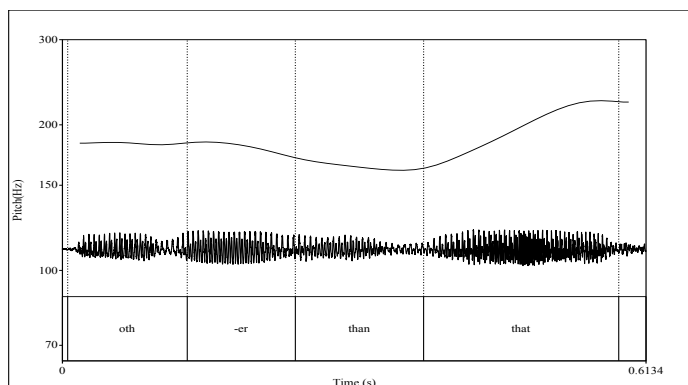
Utterance afamdl01[95], from which the topic shown above was extracted, is provided in the example below. Audio (6.3a) contains the entire utterance; (6.3b) only the topic and the remaining part of the utterance.

(6.2) afamdll01[95]

he sent postcards to everybody and a letter /=COB= but hhh /=AUX= **other than that /=TOP=** he hasn't called or told us what's up /=COB= and he'll be in here no time // =COM= (Audio 6.3a)

An audio synthesis is presented below showing that the syllables preceding the rising movement can be realized in a completely flattened prosodic profile without affecting the

functional capacity of the topic. The synthesis can be listened to in Audio (6.3c), in which only the topic and its succeeding units were left.

Figure 30: Type 2 prosodic form — flattened preparation — afamdl01[95]
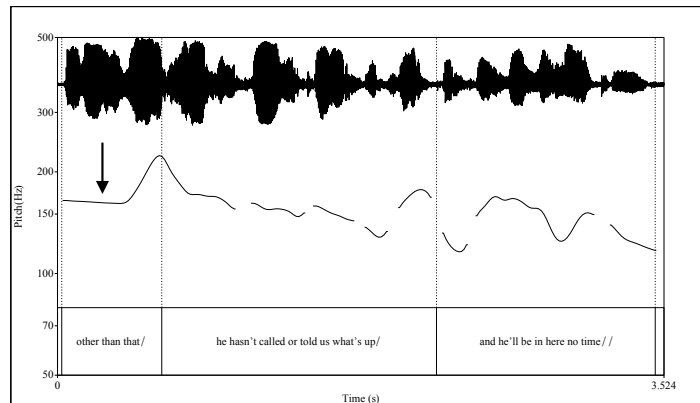
By listening to the Audio (6.3c), it is possible to verify that the manipulation of the *f0* track corresponding to the portion preceding the rising (nuclear) movement of the type 2 form does not affect the pragmatic function of the unit. Naturally, the manipulation produces a change in the acoustic effect of the unit. Nevertheless, the pragmatic function is strictly conveyed by the nucleus, which in the case above coincides with the final word of the unit.

In order to show the necessary status of the rising movement for the type 2 form, the topic unit presented above was submitted to a manipulation through which the rising movement was completely flattened. The resulting version can be listened to in Audio (6.3d); the flattened movement is shown in Figure 31 below.

Figure 31: Type 2 prosodic form — flattened — afamdl01[95]
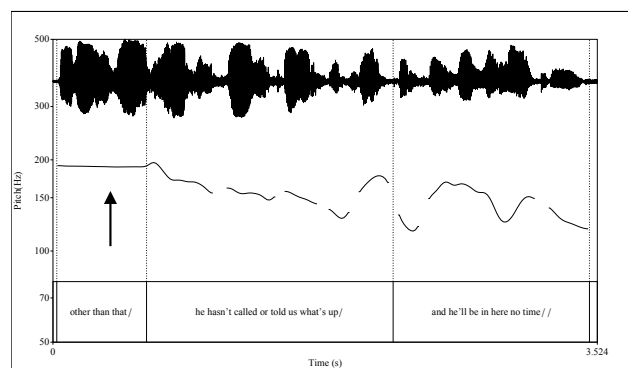
Finally, in order to show that nucleus on itself satisfies the requirements for conveying the pragmatic function of the type 2 form, Audio (6.3e) and Figure 32 provide only the nuclear portion of the topic in afamdl01[95][7].

Figure 32: Type 2 prosodic form — nucleus only — afamdl01[95]
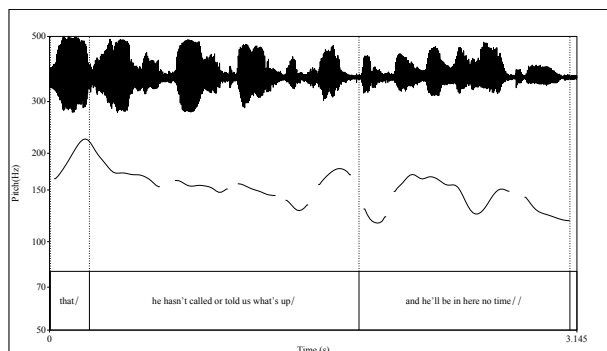
In Italian and Brazilian Portuguese, the type 2 form does not present coda. In English, however, codas were identified in four type 2 forms. Figure 33 shows the *f0* tracks of one of such forms.

Figure 33: Type 2 with coda — afamcv04[16]
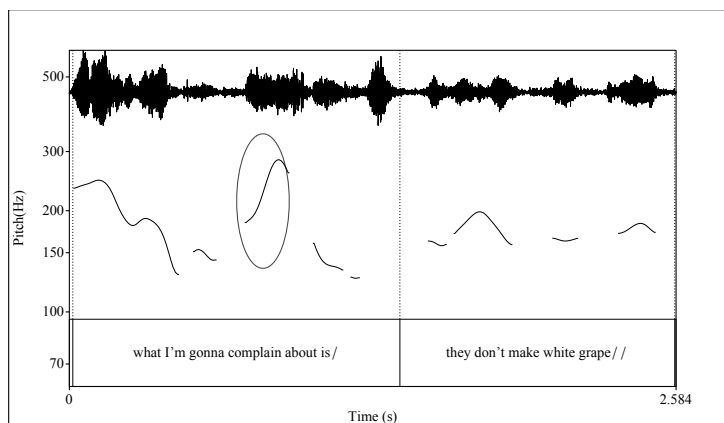
In the Figure 33 above, the ellipsis signals the nucleus of the topic. Its hosting utterance, afamcv04[16], is presented in (6.3) below and can be listened to in Audio (6.4a).

(6.3) afamcv04[16]

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[7] In order for the functional capacity of the nucleus to be properly appreciated, it might be useful to think of "that", the item in the nucleus of the topic, as the name of a person.

what I'm gonna complain about is /=TOP= they don't make white grape //=COM=
(Audio 6.4a)

In order to show that this topic is indeed realized as a type 2 form, the preparation of the unit was submitted to a manipulation that rendered it flat. The resulting *f0* track can be seen in Figure 34 and listened to in Audio (6.4b).

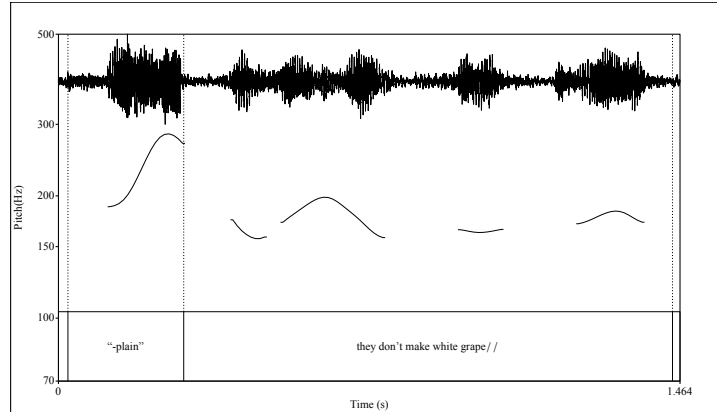Figure 34: Type 2 form — flattened preparation — afamcv04[16]
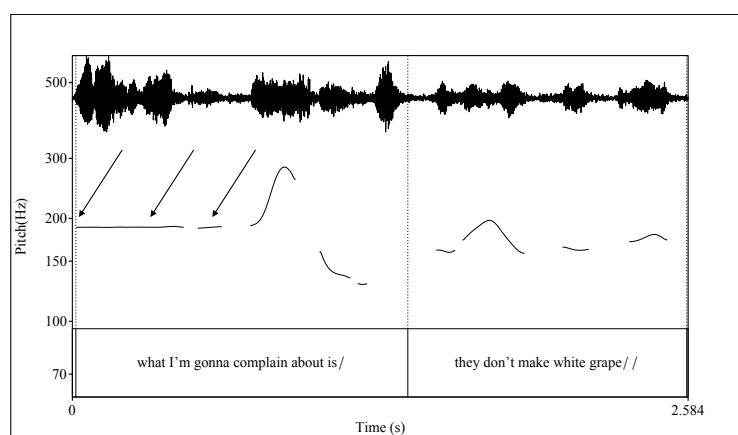
The preparation of the topic unit in question starts with the first syllable of the unit and extends itself until the first syllable of the word "complain". By listening to Audio (6.3b), it is possible to verify that the flattening of the preparation does not disturb the capacity of the form to convey the pragmatic function of topic, despite the acoustic alteration caused by the manipulation.

Finally, both the preparation and the portion succeeding the nucleus — i.e. the coda — were extracted from the topic in afamcv04[16]. The resulting edition leaves no doubt as to the full functional capacity of the nucleus — realized in the second syllable of the word "complain". Furthermore, the optional character of both the preparation and the coda is also shown. Figure 35 shows the visual aspect of the edition, which can be listened to in Audio (6.4c).

Figure 35: Type 2 form — only the nucleus — afamcv04[16]

500

300

Pitch(Hz)

200

150

100

70

0   1.464

Time (s)

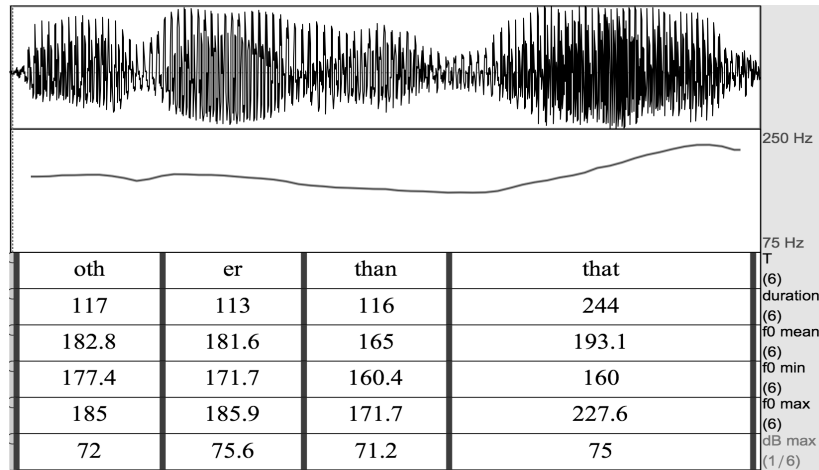"-plain"   they don't make white grape/ /

Regarding other prosodic parameters, the relevant measurements for the type 2 form presented in Example (6.2) are as follows. The nuclear syllable is more than twice as long as the syllables in the preparation: the duration of the non-nuclear syllables is, on average, 115.3 ms, while the nuclear syllable shows a duration of 244 ms. The mean $f0$ value for the nucleus is 193.1 Hz, with a peak of 227.6 Hz at the end of the unit, which comprises the final portion of the rising, nuclear movement. The first and second syllables of the unit show relatively high $f0$ values. Nevertheless, as illustrated in Figure 34 and shown in Audio (6.2b), the $f0$ movement of the preparation can be flattened without affecting the functional capacity of the unit. Finally, intensity values do not seem to be constitutive of the type 2 form in English, considering that the nuclear portion of the unit in question shows a maximum intensity value (75 dB) that is very similar to the values presented by the optional parts of the unit. Figure 36 at the end of this section provides the prosodic measurements for the type 2 form that have been discussed in this paragraph.

The type 3 form was not found in the AE minicorpus; nevertheless, the third form will be picked up later in the chapter. Based on empirical evidence from Italian and Brazilian Portuguese, it will be argued that type 3 and type 4 actually comprise one single prosodic form. Nonetheless, the type 4 prosodic form must be first introduced, and that constitutes the focus of the next section.

Figure 36: Acoustic measurements for the topic in Example (6.2)

oth	er	than	that	
				T (6)
117	113	116	244	duration (6)
182.8	181.6	165	193.1	f0 mean (6)
177.4	171.7	160.4	160	f0 min (6)
185	185.9	171.7	227.6	f0 max (6)
72	75.6	71.2	75	dB max (1 / 6)

6.1.3 Type 4 prosodic form in the AE minicorpus

The so-called type 4 prosodic form features two usually discontinuous semi-nuclei. The first one, realized by the first stressed syllable of the topic — which may or may not be the very first syllable of the unit —, shows (extra)high *f0* values, high intensity and, frequently, increased syllable duration. The second semi-nucleus shows lower *f0* values, causing the unit to present an overall descending melodic curve. Additionally, the second semi-nucleus, realized at the last stressed syllable of the unit, shows relatively higher intensity values and increased syllable duration. The semi-nuclei of the fourth prosodic form may encompass adjacent unstressed syllables.

The *f0* curve of the second semi-nucleus may be rising, falling, or flat. When the curve of the second semi-nucleus draws a rising slope, the peak of the curve never surpasses the *f0* level of the first semi-nucleus. Considered in isolation, neither the first nor the second semi-nucleus is functionally autonomous, and the functional capacity of the type 4 prosodic form results from the holistic combination of two semi-nuclei.

In the AE minicorpus, the great majority of topics (72%) are realized as the prefix form of the fourth type. Figure 37 shows one of them.

Figure 37: Type 4 prosodic form in AE — afammn01[54]
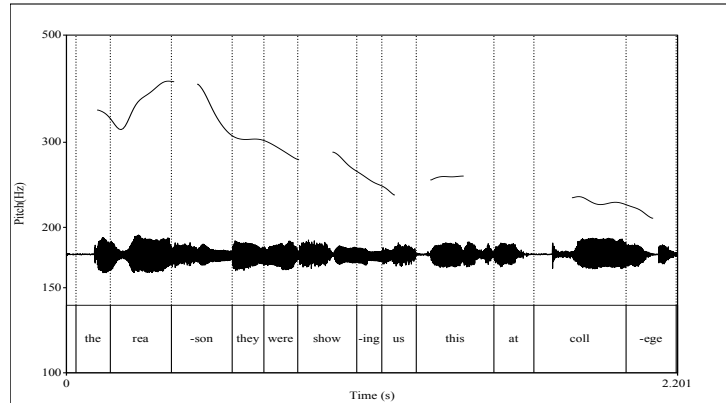
The utterance from which the topic shown in Figure 37 was extracted is provided below; it can be listened to in Audio 6.5a.

(6.4) afammn01[54]

and the &m [/1]=SCA= the reason they were showing us this at college /=TOP= was just /=SCA= to get us /=SCA= to know if our trimmer /=SCA= and shoer was / =SCA= doing it right /=COB= and +=UNC= (Audio 6.5a)

As the plus sign ("+") at the end of the utterance indicates, the utterance above is interrupted. Nevertheless, the interpretation of the topic is not disturbed, since the illocutionary unit to which the unit is related is present in the sequence. For the sake of clarity, the scanned portion of the topic will not be considered, as it does not contribute to the informational function of the topic. As can be seen in Figure 37 above, the first semi-nucleus of this topic is located at a frequency region above 300 Hz. The second semi-nuclei, on the other hand, is found at a much lower frequency region, between 200 and 250 Hz.

The identification of the semi-nuclei of the type 4 form is less straightforward than the identification of the nuclei of the type 1 and 2 topics. Before proceeding to the precise delimitation of the semi-nuclei of the topic in (6.4) above, it must be shown that the lowering of the *f0* values of the initial syllables of this unit yields a prosodic shape that is unable to convey the pragmatic function of topic. Figure 38 below shows the visual result of a manipulated version of the topic unit in question. The acoustic effect of the manipulation can

be listened to in Audio (6.5b). The manipulation shows that the *f0* values of the initial portion of this topic must be at a higher frequency region.

Figure 38: Type 4 form — flattened and lowered initial *f0* values — afammn01[54]
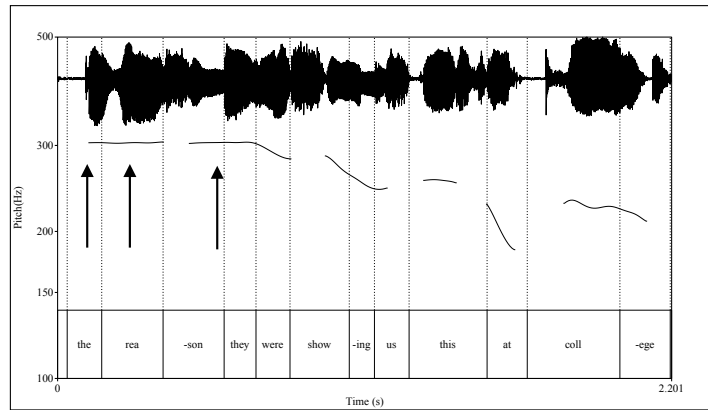
As already mentioned, the first semi-nucleus of the type 4 prosodic form — which coincides with the first stressed syllable of the unit, sometimes also including the following post-stressed syllable — is characterized by extra-high *f0* values. Therefore, the first syllable of the word "reason", and possibly the post-stressed one, is a predictable first semi-nucleus candidate, given that it presents the highest *f0* values of the unit (see Figure 37 above). As for the second semi-nucleus, it includes (or coincides with) the last stressed syllable of the unit, the one presenting the longest syllable duration. Thus, the second semi-nucleus of the topic unit in question should at least include the first syllable of the word "college". Figure 39 below shows an edited version of this topic (see Example 6.4) containing only the words "reason" and "college".

Figure 39: Type 4 form — "reason" […] "college" — afammn01[54]
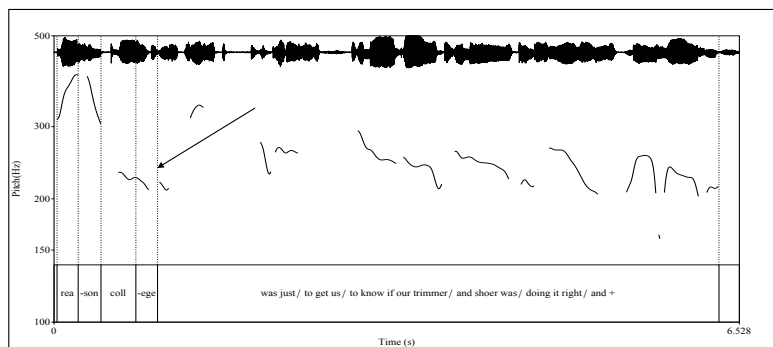
As can be verified by listening to Audio (6.5c), the resulting synthesis is fully capable of conveying the pragmatic function of topic. It remains to be confirmed if the form can be further reduced or if its semi-nuclei actually consist of the four syllables kept in Audio (6.5c).

The audio files containing the edited versions in (6.5) below shows the tests performed in order to determine the syllabic extension of the semi-nuclei of the the topic in afammn01[54]. The entire topic and the remaining tone units of the hosting interrupted sequence are repeated in (6.5.1).

(6.5) afammn01[54]

    (6.5.1) TOP + COB

    the reason they were showing us this at college /=TOP= was just / to get us / to know if our trimmer / and shoer was / doing it right /=COB= and + (Audio 6.6a)

    (6.5.2) "rea-" + "college" + COB (Audio 6.6b)

    (6.5.3) "rea-" + "coll-" + COB (Audio 6.6c)

   (6.5.4) "reason" + "coll-" + COB (Audio 6.6d)

The versions provided in Audios (6.5b), (6.5c) and (6.5d) show that, while the sequence "rea +college" is perfectly acceptable, the sequences "rea-coll-" and "reason coll-" do not preserve the functional capacity of the topic unit. The visual representation of the two semi-nuclei of the unit is shown below.

Figure 40: *F0* tracks of isolated semi-nuclei — topic in 6.5
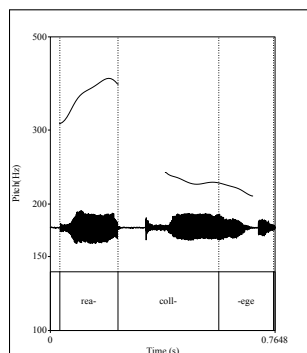
Finally, the slightly falling slope of the second semi-nucleus was manipulated in order to render it flat. The manipulated curve is shown in Figure 41 below, and its acoustic effect is shown in Audio (6.6e). The flattening causes no loss of functional capacity.

Figure 41: *F0* tracks of flattened second semi-nuclei — topic in 6.5
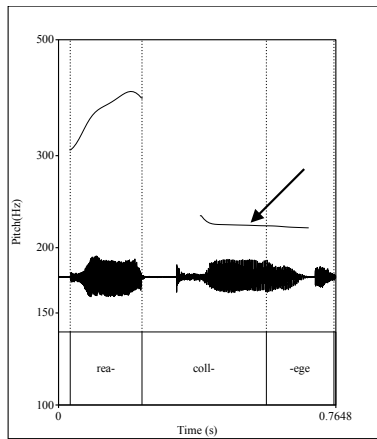
In American English, the type 4 prosodic form, as types 1 and 2, may present a coda. That happens with 8.8% of type 4 topics found in the AE minicorpus (17 in monologues, 5 in dialogues, and 3 in conversations). Figure 42 below shows a type 4 topic with a rather long coda (five syllables). The coda is circled and the utterance can be listened to in (6.7a).

Figure 42: Type 4 topic with coda — afamcv04[135]
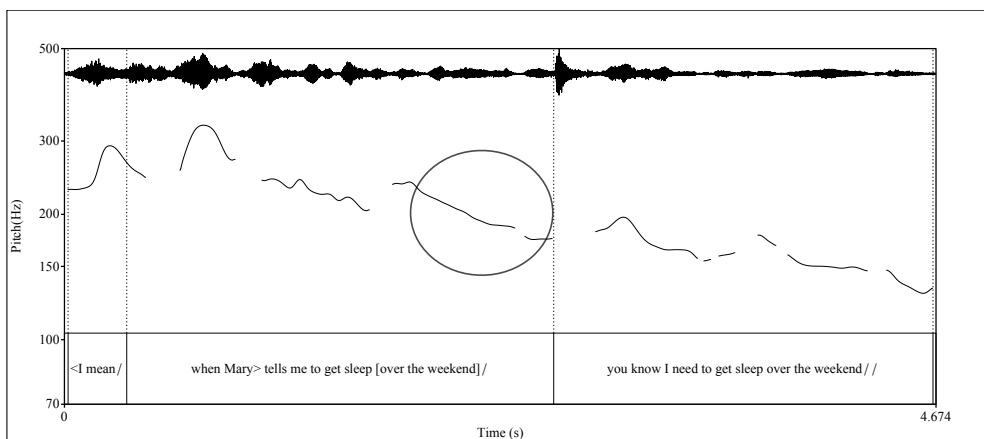
The utterance afamcv04[135] is reproduced below in (6.6.1). Example (6.6.2) shows an edited version of the utterance, from which the post-nuclear syllables making up the coda and the dialogic unit preceding the topic (tagged as "AUX") were cut out.
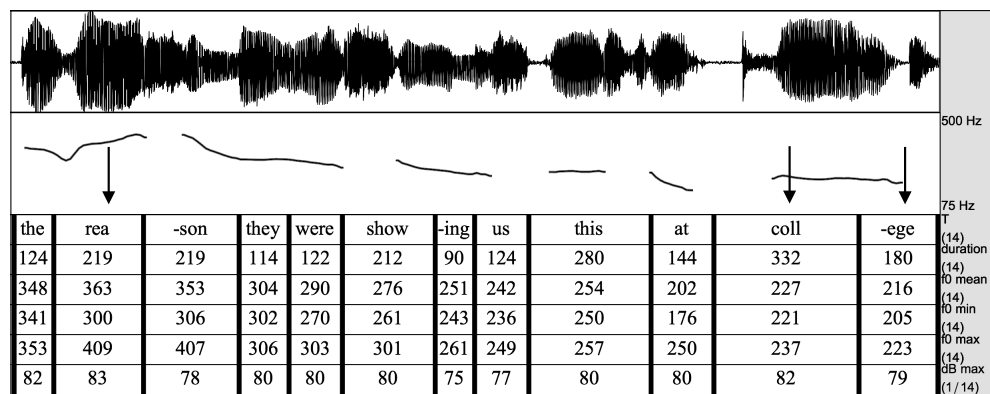
(6.6) afamcv04[135]

(6.6.1) <I mean /=AUX= **when Mary> tells me to get sleep <u>over the weekend</u>**coda / **=TOP=** you know I need to get sleep over the weekend //=COM= (Audio 6.7a)

(6.6.2) **when Mary> tells me to get sleep** ~~over the weekend~~ **/=TOP=** you know I need to get sleep over the weekend //=COM= (Audio 6.7b)

As can be verified in Audio (6.7b), the elimination of "over the weekend" from the type 4 topic in (6.6) yields no functional capacity loss. This shows that those syllables are non-nuclear and that they do not play a role in the realization of the informational function of the unit.

The relevant prosodic parameters for the type 4 topic unit in utterance afammn01[54] are shown in Figure 43 below.

Figure 43: Acoustic measurements for the topic in Example (6.4)

the	rea	-son	they	were	show	-ing	us	this	at	coll	-ege	
124	219	219	114	122	212	90	124	280	144	332	180	T (14) duration (14)
348	363	353	304	290	276	251	242	254	202	227	216	f0 mean (14)
341	300	306	302	270	261	243	236	250	176	221	205	f0 min (14)
353	409	407	306	303	301	261	249	257	250	237	223	f0 max (14)
82	83	78	80	80	80	75	77	80	80	82	79	dB max (1 / 14)

As can be seen in the figure above, the first semi-nucleus of the unit (indicated by the arrow on the left of the figure) shows the highest *f0* and intensity peaks of the unit (409 Hz and 83 dB). Its syllable duration, however, is not particularly longer, but longer duration is not a requirement in this case. Regarding the second semi-nuclei, both its syllables present rather

low *f0* values — in relation to the first semi-nucleus —, and its first syllable is clearly longer, considering that the mean syllable duration in the unit is 181 milliseconds. Those measurements show that this topic unit present the prosodic features compatible with the type 4 prosodic form.

The type 4 topics analyzed in this thesis showed great variability in terms of number of syllables in the whole unit and in the semi-nuclei, and also in terms of *f0* variation. Regarding the syllabic extension of the unit, topics were found in the AE minicorpus containing as little as two and as many as 17 phonetic syllables. The examples below illustrate those two extremes.

(6.7) afamdl04[72]

> so /=AUX= **<if somebody goes and forges> /=SCA= a little bill of sale that looks like this /=TOP=** and steals a horse out of my pasture /=PAR= and takes it to the auction /=PAR= they're gonna impound the horse and check it out //=COM= (Audio 6.8a)

Figure 44: Type 4 topic unit in Example 6.7
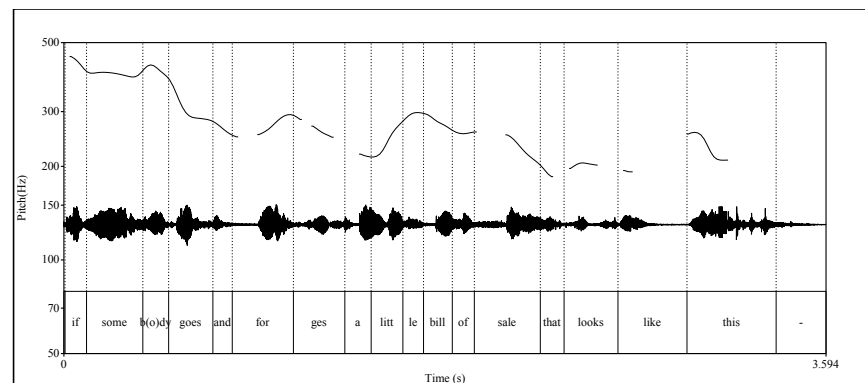
Audio (6.8b) provides an edited version of the utterance in (6.7) that keeps only the topic and the illocutionary unit. Example (6.8) below shows a disyllabic type 4 topic.

(6.8) afamcv03[289]

my friend /=TOP= stood up /=SCA= behind his desk /=COB= in his full &f =SCA= four stripes /=COB= and said /=INT= Lieutenant //=COM_r= (Audio 6.9a)

Figure 45: Disyllabic type 4 topic
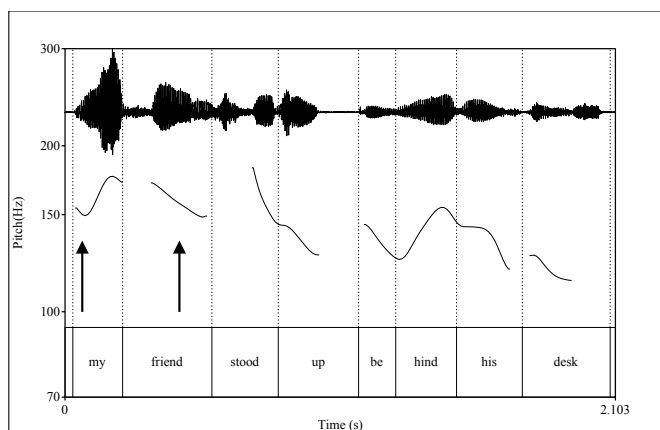
The topic unit in (6.8) is a disyllabic type 4 topic. Nevertheless, the *f0* curve drawn by its semi-nuclei may make one think that it is actually a topic of the fist type, i.e. the mononuclear prosodic form whose prosodic movement draws a rising-falling curve. In order to show that the topic unit in question is indeed of the forth type, its two semi-nuclei were flattened and the *f0* gap was kept. The synthesized version maintains the functional capacity of the unit, showing that the rising movement of the first semi-nucleus and the falling movement of the second one are not constitutive features of the form. Figure 46 shows the *f0* tracks of the synthesis, which can be listened to in Audio (6.9b).

Figure 46: Synthesized type 4 topic — flattened contiguous semi-nuclei — afamcv03[289]
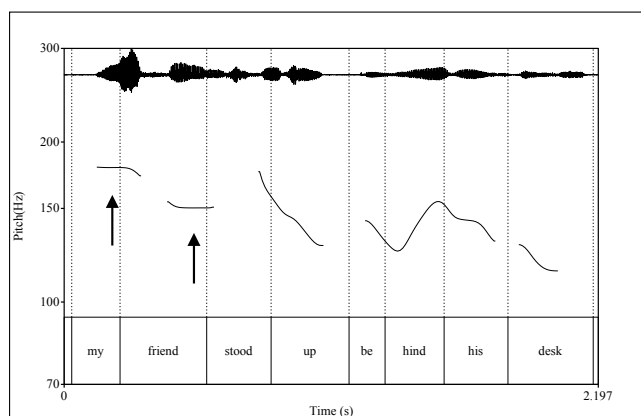
Regarding the aforementioned variability with respect to *f0* variation in the type 4 topics found in the AE minicorpus, the phenomenon of "flat", type 4 topics is a case in point. Some 20% of type 4 topics in the AE minicorpus (56 units) do not present the characteristic downward slope between the first and second semi-nuclei of type 4 topics. In general, those topics present a globally flat *f0* curve that, nonetheless, yields the impression of pitch change. This acoustic effect may be due to the interplay between different prosodic parameters, given that the *f0* variation observed in those topics seem insufficient to cause such effect. Interestingly, the complete flattening of the *f0* curves of these topics do not lead to functional capacity loss. Example (6.9) below provides one of the flat topics found in the AE minicorpus.

(6.9) afammn05[20]

it was like /=INT= **this one guy /=TOP=** he gets this master //=COM=

Figure 47: Flat topic in Example (6.8)
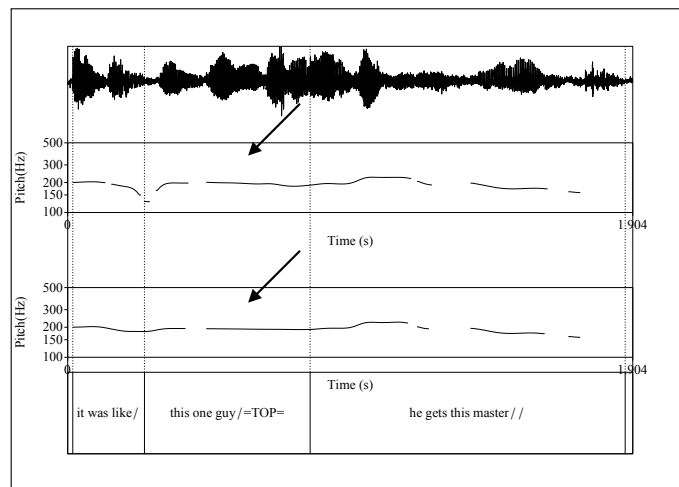
In Figure 47 the original and manipulated versions of the topic in Example (6.9) are shown. The *f0* curves in the box right below the oscillogram correspond to the original acoustic signal; the curves in the box below it correspond to the synthesized audio. Audios (6.10a) and (6.10b) contain, respectively, the original and the manipulated versions. Interestingly, the manipulated version preserves the very same acoustic effect of the original; therefore, the functional capacity of the unit remains unaltered.

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Flat topics were included in the type 4 group because they may present discontinuous semi-nuclei, but it may be the case that those units constitute a separate prosodic form. In the present work, however, it was not possible to tackle this problem.

The following section will be dedicated to the prosodic analysis of compound topics.

6.2 Compound topics in the AE minicorpus

In Chapter 5, the morphosyntactic features and semantic properties of compound topics were dealt with. It was shown that there are three ways in which a topic unit can be compound. The first — and simplest — one is a chain of more than one topic units informationally related to the same illocutionary unit; let us here use the term *iteration* to refer to this type of compound topic. Another type of compound topic is characterized by the integration of the unit by an appendix. The so-called appendix of topic is realized in a separate tone unit and performs the function of integrating the text of the topic. Finally, compound topics can be realized in chains of melodically patterned units that together supply a domain of identification to the same illocution, those are called *list of topics*. What sets lists of topics apart from iterated topics is that: (i) iterated topics are not melodically patterned and (ii) each topic unit in a sequence of iteration has its own nucleus, thus being functionally independent from one another. The units in a list of topics, on the other hand, are not only melodically patterned, but also functionally interdependent.

In this section, only appendixes and lists of topic will be dealt with, since iterated topics show the same features that simple topics do.

**6.2.1 The appendix of topic in the AE minicorpus**

The appendix of topic is the information unit that has the function of integrating the text of the topic. The distribution of the appendix within the utterance is conditioned by its function; therefore, the unit necessarily follows the topic whose text it integrates. The appendix is realized by a suffix prosodic unit, which entails (i) optionality ('t HART *et al.,* 1990) and (ii) lack of functional nucleus. The *f0* contour of the unit can be flat or falling. The aim of this section is to show that appendixes are not pragmatically interpretable in isolation.

(6.10) afamdl02[53]

&th [/1]=EMP= &th [/1]=EMP= the things I know most /=TOP= **about life and death /=APT=** come from [/1]=SCA= from /=SCA= my grandmother //=COM= (Audio 6.11a)

In (6.10) above, the appendix of topic is highlighted in bold. As can be seen in Figure 48, the appendix shows a flat *f0* contour. The entire utterance can be listened to in Audio 6.11a.

Figure 48: Topic-appendix pattern — afamdl02[53]
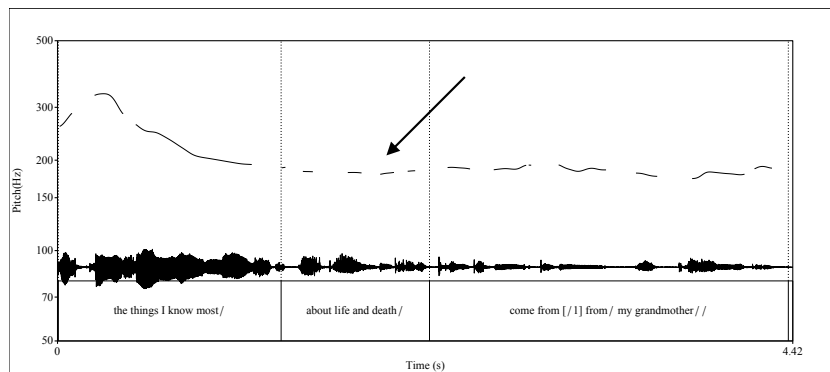
If the appendix of topic is eliminated from the audio, the functional capacity of the topic remains unaltered. This can be verified in Audio 6.11b. Nevertheless, if the topic is eliminated (6.11c), the appendix cannot receive pragmatic interpretation. In other words, while the topic is a functionally autonomous unit — in the sense that it does not depend on the appendix —, the appendix is a unit whose function is only performed in the presence of the topic. Figure 49 shows an edition of the utterance in (6.10), from which the appendix was eliminated.

Figure 49: afamdl02[53] — appendix removed
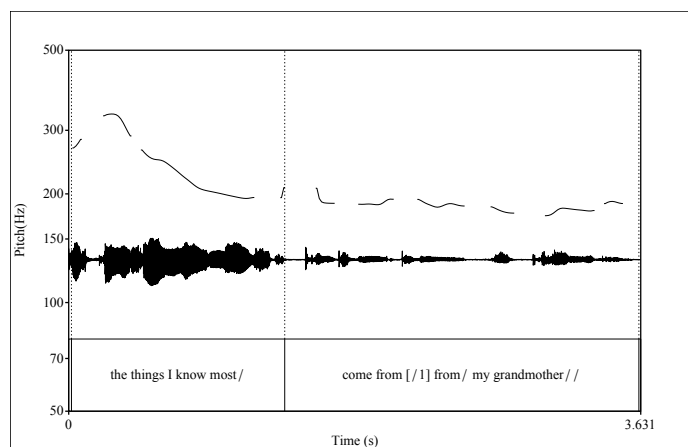
A total of 27 appendixes of topic were found in the AE minicorpus. The utterances in which they were found as well as their texts are provided in Chapter 5. Lists of topics are dealt with in the next section.

6.2.2 The list of topics in the AE minicorpus

As already mentioned, a list of topic consists of a melodically patterned sequence of topics that together supply the identification domain in relation to which one and the same illocutionary force must be interpreted. Mittmann (2012) reports that, in a list of topics, the functional capacity of the sequence — i.e. the functional nucleus — may be carried by only one of the units in the sequence or by two of them.

In the AE minicorpus, only seven lists of topic were found, five of them in monologues and two in conversations. Six of those lists show type 4 nuclear portions, the other one being of the second type. Interestingly, the lists of topic of the fourth type — except for one of them — present each of their semi-nuclei in a different unit of the list. In other words, their semi-nuclei are not only discontinuous but also realized in separate tone units. Example (6.10) illustrates this phenomenon, which is also attested in Brazilian Portuguese.

(6.11) afammn04[60]

cause I [/1]=SCA= if I was ten /=TPL(1)= and he was nineteen /=TPL(2)= so he's nine years older than me //=COM= (Audio 6.12a)
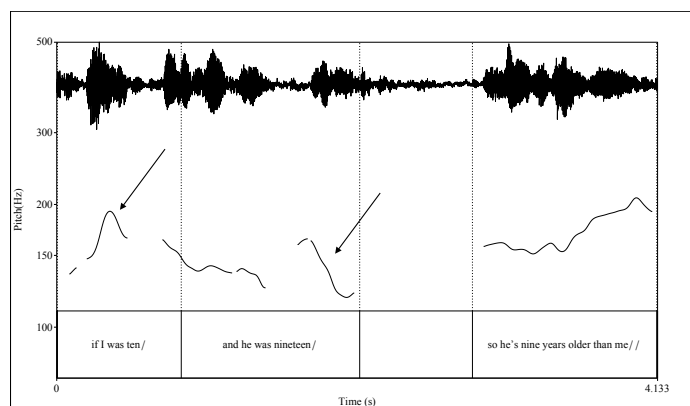
Figure 50: List of topic — afammn04[60]

Figure 50 above shows the *f0* curves of the list of topics in (6.11); the arrows on the figure indicate the location of the two semi-nuclei of the list. For the sake of clarity, the scanned tone unit of the first topic in the list was left out, which by no means affect its functional capacity. The entire utterance can be listened to in Audio (6.12a). The fact that none of the two units in isolation are able to perform the function of topic can be verified in Audios (6.12b) and (6.12c), whose contents are provided below.

(6.11b) **if I was ten /=TPL(1)=** so he's nine years older than me //=COM=

(6.11c) **and he was nineteen /=TPL(2)=** so he's nine years older than me //=COM=

Nevertheless, if only the portions signaled by the arrows in Figure 50 above are combined, the acoustic effect is perfectly that of a topic. Figure 51 shows the visual result of the combination.

Figure 51: List of topic — only the semi-nuclei — afammn04[60]
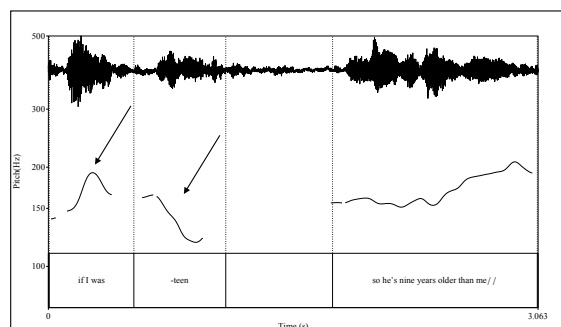

As can be listened to in Audio (6.12d), the edition performed on the list maintains the functional capacity of the unit — a capacity that the individual units of the list do not show. The utterance provided below shows the only list of topics of the fourth type found; its semi-nuclei are fully realized in only one of the units of the pattern.

(6.12) apubmn01[254]

o /=AUX= they &nee [/1] need to be big /=COB= they need to be hefty /=COB= they need to have their adult feathers /=COB= so /=AUX= **between the time that they actually hatch out /=TPL= and the time that they're ready to go out to sea / =TPL=** is just a couple of months //=COM= (Audio 6.13a)

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Figure 52: List of topic — apubmn01[254]
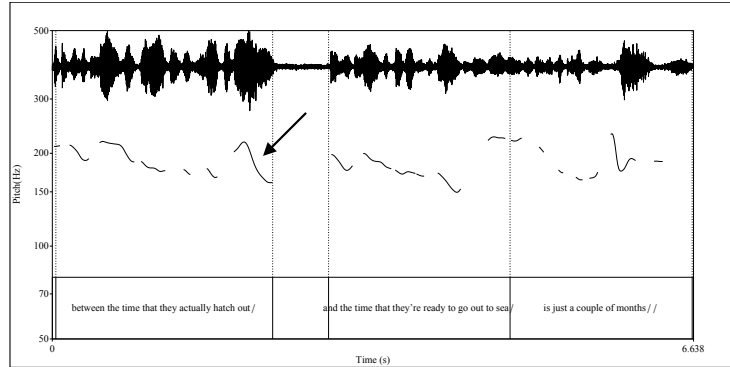
Audio (6.13a) contains the entire utterance provided in Example (6.12), but the figure above shows only the list of topics and the comment. As can be verified in Audio (6.13b), from which the second unit of the list was extracted, the nuclear portion of this compound topic is entirely realized in the first unit.

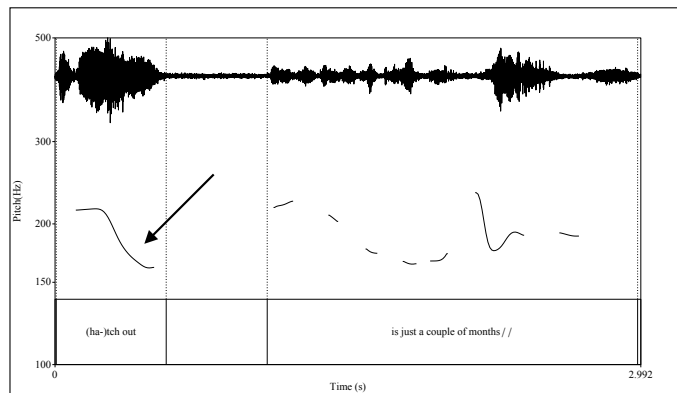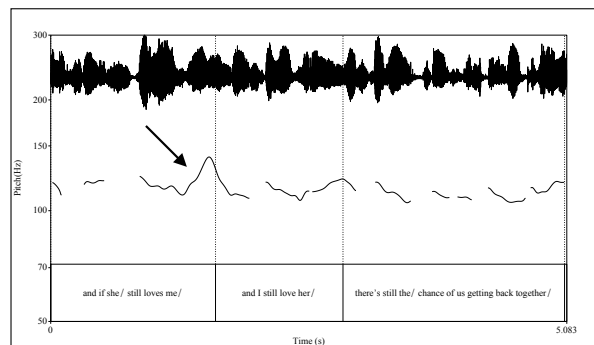Figure 53: List of topic — only the nucleus — apubmn01[254]

Figure 53 above shows only the nucleus of the list of topics provided in (6.12). The version represented in the figure can be listened to in Audio 6.13c. Furthermore, Audio 6.13d, containing only the second unit of the compound topic — i.e. the unit that has no nucleus — and the comment, shows that the nucleus is indeed realized in the first unit.

Finally, the only topic list realized as a type 2 prosodic form is shown below.

(6.13) afamdl01[141]

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so /=AUX= &w /1 =EMP= what they /2 =EMP= what they probably /=SCA= think / =TOP= is /=i-COB= you know /=AUX= that we still have a lot of love for each other /=COB= that /=SCA= <moving> out was the best thing /=COB= until we both are ready /=SCA= for marriage /=COB= **and if she /=SCA= still loves me /** **=TPL(1)= and I still love her /=TPL(2)=** and /=AUX= we wanna get married / =TOP= there's still the /=SCA= chance of us getting back together /=COB= and getting married this time //=COM= (Audio 6.14a)

Figure 54: List of topic —afamdl01[141]

The arrow on Figure 54 above points to the nucleus of the list of topic. The entire utterance can be listened to in Audio 6.14a. Audio 6.14b contains only the fist unit of the list and the comment, and Audio 6.14c contains only the second unit of the list and the comment. By listening to those audios it is possible to verify that the nucleus is carried by the first topic of the list. The *f0* contour of the first topic was manipulated in order to show that only the final rising movement is necessary to convey its function. The synthesized audio can be listened to in Audio 6.14d. Its visual representation is show in Figure 55 below.

Figure 55: List of topics — manipulation of the first unit — afamdl01[141]

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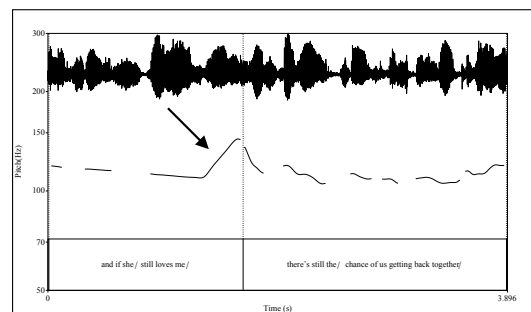
The rising movement, indicated by the arrow on the figure above, coincides with the final syllable of the first unit in the list. In fact, this syllable by itself constitutes the nucleus of the list. This can be verified in Audio (6.14e), in which only the nucleus of the list and the comment were left.

In the next section, an alternative account for the type 3 prosodic form will be offered.

6.3 The type 3 prosodic form — an alternative account

The prosodic form of the third type is described in the literature (FIRENZUOLI; SIGNORINI, 2003) as a form that contains two holistically interpretable and interdependent semi-nuclei. The first semi-nucleus of the form coincides with the first syllable of the unit, and it draws a falling $f0$ slope. The second semi-nucleus coincides with the last syllable of the unit — whether it is stressed or not — and shows a steeply rising $f0$ slope. The syllable of the second semi-nucleus has longer duration. The two semi-nuclei are joined by a linking portion showing no relevant prosodic movement. The overall contour of the type 3 form is illustrated in the diagram below.

Figure 56: Schematic representation of the prosodic contour of the type 3 prosodic form

According to previous studies, the type 3 topic was found in Italian, BP and EP (FIRENZUOLI; SIGNORINI, 2003, MITTMANN, 2012, ROCHA, 2012). The prototypical example of this form comes from Italian, and is provided below.

(6.14) ifamdl16[220] (6.15a)

   come lei va via la sera /=TOP= nell'ascensore 'un c'è più luce //=COM= (Audio 6.15a)

   English translation: **since she goes away at night /** there is no more light in the elevator //
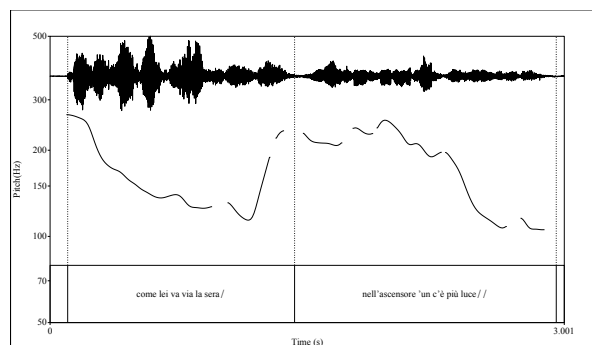
Figure 57: Topic unit in ifamdl16[220]

Figure 57 shows the *f0* curves of the utterance in (6.14). Since no type 3 form was found in AE, the decision was made to examine more closely the type 3 form in the other languages. A series of editions and manipulations were then performed on type 3 topics in order to assess their nuclear syllables. Figure 58 below shows one of those editions, in which only the first syllable and the final two were left.

Figure 58: Topic unit in ifamdl16[220] — edited
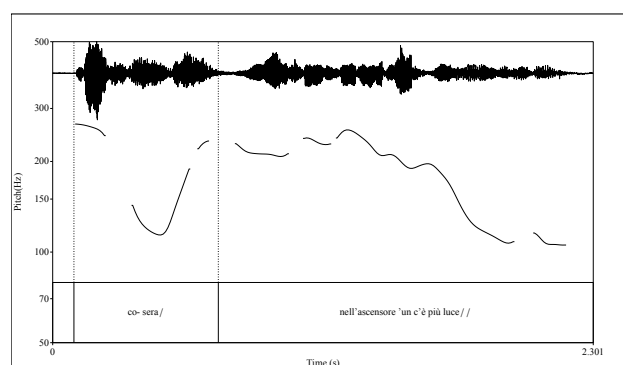
As can be verified in Audio 6.15b, the resulting form fully maintains the functional capacity of the topic. Furthermore, its *f0* movements resemble those of type 4 topics, except for the fact that the final rising movement almost reaches the frequency region of the first syllable, a feature that type 4 topics do not usually present. In light of that, and after analyzing all the type 3 forms found in Italian, BP and EP, the hypothesis was raised that the type 3 form could actually comprise a variation of the type 4. That hypothesis was tested through a series of manipulations done on the final movement of topics of the third type. Figure 59 below shows the *f0* tracks of the manipulation performed on the Italian example in (6.14) above.

Figure 59: Topic unit in ifamdl16[220] — manipulated
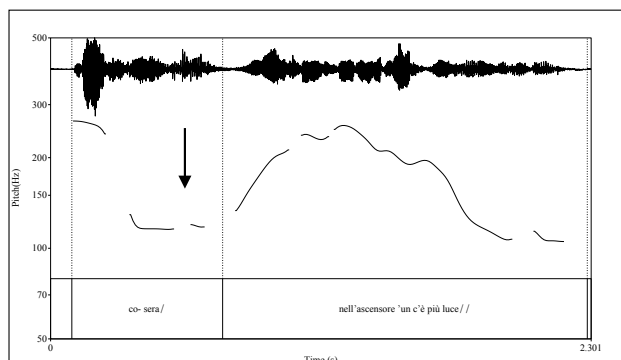
The manipulation shown in the figure above comprises the flattening of the formerly rising *f0* movement at the end of the topic presented in (6.14) above. The acoustic effect of the manipulation can be listened to in Audio 6.15c, which shows that, despite being acoustically different from the original — see Audio (6.15b) —, the pragmatic function of the unit is fully preserved. That outcome strongly supports the hypothesis that type 3 should be regarded as the type 4 prosodic form.

The other type 3 topics that were reanalyzed behaved just like the example provided above, except for one of them, which proved to be a type 2 topic. This topic, reported in Mittmann (2012) as a type 3 one, is discussed below.

(6.15) bfammn06[11]

um belo dia durante o almoço /=TOP= **o gerente de recursos humanos de uma multinacional /=TOP=** me informou que havia uma vaga na área comercial da empresa /=COB= e /=DCT= se eu tinha interesse //=COM= (Audio 6.16a)

English translation: one day during lunch / **the human resources manager of a multinacional /=TOP=** informed me that there was a position in the commercial area of the company / and / if I was interested //

Figure 60: Topic unit in bfammn06[11]
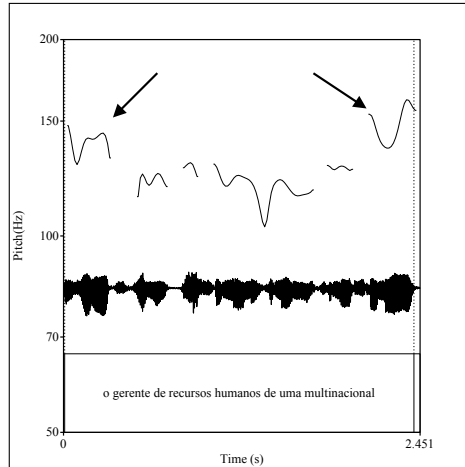
For the sake of clarity, only the topic unit is shown in the figure above. The *f0* movements analyzed in Mittmann (2012) as constituting the semi-nuclei of the topic are indicated by the arrows. The entire unit can be listened to in Audio (6.16a). Like was done with the Italian, type 3 topic above, the the BP example was edited, so that only the syllables considered to benuclear — i.e. "ge" and "cional" — were kept. This is shown in the figure below.

Figure 61: Topic unit in bfammn06[11] — edited
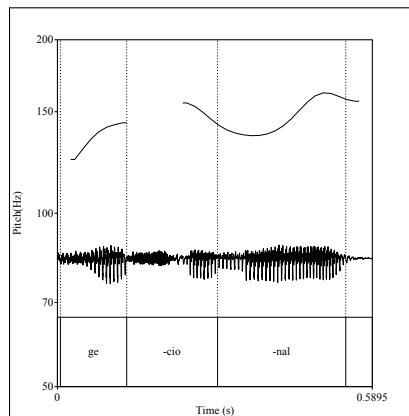

In can be verified in Audio 6.16b that the three syllables shown in Figure 61 above do suffice to convey the pragmatic function of the topic. Nevertheless, the resulting prosodic form does not resemble that of a type 4 topic, which prototypically shows high *f0* values in its first semi-nucleus. Furthermore, when the *f0* values of the final two syllables are lowered through

manipulation, the acoustic effect is completely anomalous, and the functional capacity of the unit is lost. This can be verified in Audio (6.16c).

Nevertheless, if the rising movement of the last two syllables is maintained — Audio 6.16d —, the functional capacity of the unit is not lost, even if the first syllable — analyzed as a semi-nucleus in Mittmann (2012) — is left out. Figure 62 presents the edited and manipulated version of the topic. Only the final two syllables were maintained and their prosodic movements were altered, showing that the initial falling portion plays no functional role. The resulting version can be listened to in Audio (6.16e).

Figure 62: Topic unit in bfammn06[11] — edited and manipulated
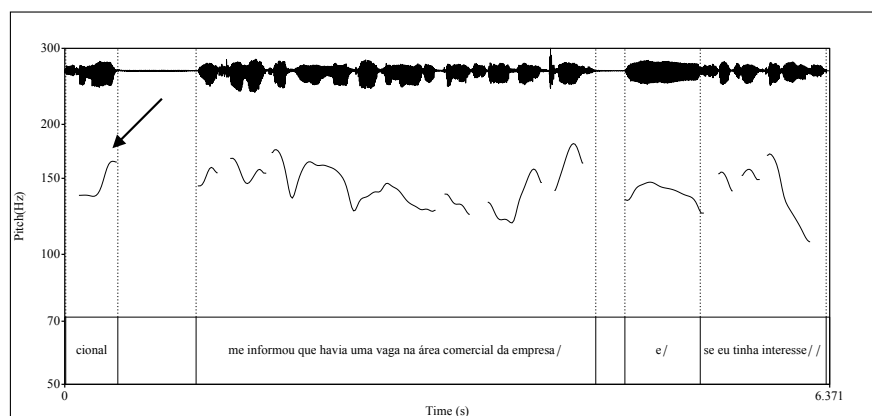
In light of the what has been shown, the so-called type 3 topic, rather than a prosodic form on its own, can actually be considered a variation of the type 4 prosodic form. If this is correct, then the absence of the "type 3" form in the AE minicorpus is explained. The fact that this prosodic form is so infrequent in the other languages only reinforces the interpretation here proposed of the third form as a variation of the fourth one.

6.4 Conclusion

In this chapter the prosodic features of the topic units found in the AE minicorpus were discussed. In Section 6.1 the prefix prosodic forms found in the minicorpus — types 1, 2 and 4 — were presented. The defining features of each of the prosodic forms were discussed and illustrated. Additionally the frequency of the forms in the minicorpus was reported: type 1 (16%), type 2 (12%), type 4 (72%).

It was shown that the type 4 prosodic form is highly variable. The variability of the form reveals itself in many ways, like in its possibly discontinuous semi-nuclei and in the different prosodic movements — or lack thereof — through which type 4 can be realized. As a matter of fact, flat type 4 topics have not been found in other languages.

In section 6.2, the prosodic features of compound topics in the AE minicorpus were discussed. It was shown that the appendix of topic in isolation cannot receive pragmatic interpretation. Regarding the list of topics, it was shown that in the AE minicorpus they often present the peculiar feature of having their semi-nuclei realized in different units of the list.

In section 6.3 an alternative account for the type 3 prosodic form was proposed. Providing examples in Italian and in BP, it was shown that the type 3 topic can be conceived of as a variation of the type 4 topic.

The prevalence of the prosodic forms in each of the languages in which topics have been studied suggests that the frequency of forms correlates with the rhythmic structure of the language. In Italian (FIRENZUOLI; SIGNORINI, 2003), the most frequent form is type 1 (55% of topics). In BP (MITTMANN, 2012), the type 2 is the most frequent form (47% of topics). In EP, 67 out of the 73 topics analyzed in Rocha (2012) are of the fourth type; and, in AE 72%, of topics are of the fourth type. On a rhythmic scale representing the syllable-timed and stressed timed continuum, the four languages in which the topic unit has been studied can be arranged as follows: Italian on the "syllable-timed" extreme, EP and AE on the "stress-timed" extreme, and Brazilian somewhere in between (BARBOSA, 2010, ROACH, 1992). In light of that, the correlation between rhythmic structure and the frequency in which a prosodic form occurs in a language is perfectly conceivable. The investigation of this hypothesis seems to constitute one of the most interesting ways to continue the study of the phenomenon of topic in spontaneous speech.

7. Conclusion

In this thesis, the information unit of topic, as defined within the Language into Act Theory (L-AcT) approach (CRESTI, 2000), was studied on the basis of data collected in a minicorpus of spontaneous American English. The so-called AE minicorpus was created out of texts from the Santa Barbara Corpus of Spoken American English (SBC — DU BOIS *et al.,* 2000-2005). The AE minicorpus was created following the same design adopted for creation of the minicorpora of the C-ORAL projects for Italian and Brazilian Portuguese (RASO; CRESTI, 2012). This was done in order to ensure comparability. The creation of the minicorpus can be regarded as an important contribution to the scientific community working within the L-AcT framework, as researchers will be able to profit from the availability of the AE resource.

The analysis of the information unit of topic was carried in two phases. Firstly, the morphosyntactic features and semantic properties of the units found in the AE minicorpus were dealt with. It was shown that most of the topics found are realized by verb phrases, contrary to what happens to Italian and Brazilian Portuguese, in which nominal phrases are the most frequent morphosyntactic structures realizing topics (SIGNORINI, 2005, MITTMANN, 2012). Additionally, it was suggested that such a high proportion of verbal topics challenges the approaches that propose that topics can only be realized by nominal elements; Lambrecht (1994) is a case in point (see Chapter 3). Regarding the semantic properties of the topics found, the distinction between referential and modal topics was shown. The data analyzed revealed that AE shows a higher proportion of modal topics than Brazilian Portuguese (MITTMANN, 2012). Additionally, the locutive content of topics were classified into semantic groups, and then the association between semantic classes and morphosyntactic make-up was verified. The phenomenon of compound topics was also dealt with. It was shown that the most frequent type of compound topic is the one realized by the iteration of two units. Appendixes and of lists of topics were also examined; their distributions in the minicorpus were shown and their locutive content briefly examined.

The second phase of the analysis was concerned with the prosodic features of the topic units found in the AE minicorpus. The analysis was carried based on the concept of prosodic form (FIRENZUOLI, 2003), which was developed as an integration of the IPO approach ('t HART

et al. 1990) to the pragmatic orientation of the L-AcT framework. It was shown that, in the specialized literature, the topic unit is said to be realized in four different forms. Nevertheless, the absolute absence of one of those forms in the AE minicorpus, the so-called type 3 prosodic form, lead the research to a reassessment of type 3 topics identified in the other languages (FIRENZUOLI; SIGNORINI, 2003, MITTMANN, 2012, ROCHA 2012). Interestingly, in the reassessment of the type 3 form in Italian, Brazilian and European Portuguese, the form proved to be, rather than a prosodic form on its own right, a variation of the type 4 prosodic form. Therefore, it was proposed that the type 3 topic should be actually regarded as the form that has been up till now referred to as type 4.

Another interesting finding with respect to the prosodic features of the topic regards the presence of codas — i.e. non-functional tonal portions succeeding the nucleus of a prosodic form — in the topics found in the AE minicorpus. Neither Italian nor Portuguese topics have been found containing codas (FIRENZUOLI; SIGNORINI, 2003, MITTMANN, 2012, ROCHA 2012).

This thesis provides the first description — within the L-AcT approach — of the topic unit in American English. The analysis performed on English data lead to an alternative account regarding the prosodic forms in which the unit is realized, thus offering a contribution that goes beyond the descriptive scope of this thesis. The creation of the AE minicorpus constitutes another major contribution offered in this work. The minicorpus is available for the study of other aspects related to information structure in spontaneous American English speech. Naturally, it may be used to replicate the study carried in this thesis.

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