The Pragmatics of Prosodic Features in the Political Debate

Daniela Braga & Maria Aldina Marques

Experimental Phonetics Laboratory (www.ilch.uminho.pt/lfe)
University of Minho, Portugal
dbraga@netcabo.pt; mamarques@ilch.uminho.pt

Abstract

In this paper, a study on the prosodic features and the pragmatic meanings associated is presented. We propose that there is a prosodic code, in which a set of suprassegmental elements are consciously and intencionally manipulated and therefore put in correlation with syntactic structures, lexical choices and pragmatic meanings. It is our belief that there is a prosodic grammar that works together with the linguistic and rethorical devices in order to build an argumentative discourse. The prosodic features will be described and justified as well as the possible communicative meanings associated. A typology of pragmatic effects is also proposed.

This work was the result of the analysis of spontaneous utterances extracted from a political debate corpus in European Portuguese. We think that the conclusions achieved can be easily extended to other languages.

Methodological issues and some observed prosodic and pragmatic phenomena are also presented. General regularities and correlations as well as the resulting rules, that may be a starting point for practical implementation of an intonation module, are demonstrated and discussed.

This study is mainly oriented to pragmatic studies and speech synthesis improvements and applications.

Further perspectives of the on-going work are also previewed.

1. Introduction

Assertiveness and determination in speech are fundamental qualities required to argumentation and persuasion in the political debate. Lexical and propositional choices, rethorical contributes, such as metaphors, irony, and so on, are obviously very important to present, defend or refute an opinion.

However, the speaker also uses prosodic strategies in natural speech by manipulating tone, rhythm, duration, accent and energy in a way that can be decisive in conveying an opinion in a political debate. These prosodic strategies are intentionally chosen by the speaker in order to reinforce their discourse construction. A set of prosodic features are selected and grammaticalized, conveying pragmatic meanings. A prosodic code is built, whose knowledge is absolutely necessary to make the difference in a dialogue interaction where there are opposite points of view and where there is an audience to convince.

To perform this study, we analysed utterances extracted from a spontaneous speech corpus recorded from a public Portuguese television programme broadcasted on the 6th January 2003. It is a three hours political debate where six participants (people engaged with a certain opposite political party or political ideology) discuss a certain nacional subject that was popular at that time. The programme is conducted by a journalist who asks questions to the participants and manages the turns in the debate. The interest of choosing this particular program derives from the professional backgrounds of the participants, used to speaking in public circumstances, each of them performing different linguistic and prosodic styles. Moreover, the political debate gender is probably the best discoursive framework where we can observe how prosody is used as a tool to enhance argumentation movements and to build a certain image of politicians.

The prosody/ pragmatics correlation is a subject where there is still a lack of research, and as far as the authors know, there are scarce and light previous published studies for European Portuguese (hereafter EP). Taking in consideration the theoretical developments of prosody research and discourse analysis, a more practical study was started a while ago with the purposes of, firstly, to find the appropriate rules and methodologies for implementation of prosody in sythesized speech and secondly, to enlighten the full process of discourse argumentation construction.

2. Prosodic features

The prosodic features considered in our study are based on Carlos Gussenhoven's biological codes approach [1] and Julia Hirschberg's [2] extension to the Gussenhoven's proposal.

According to Gussenhoven, the intonational interpretation of speech derives from what the author calls "*biological codes*" and mean "dimensions based on aspects of the production process of pitch variation" [1]. These codes are universal for all languages and carry out paralinguistic meanings. Hirschberg [2] adds some intonation information rules to Gussenhoven's proposal regarding the Gricean Cooperative Conversation pragmatic framework [3]. In this work we extended these proposals and we adapted them in order to define the prosodic elements that should better characterize the argumentative strategies used in a political debate context.

2.1. Prosodic categories considered

According to the analysis of the given utterances using PRAAT speech analysis software [4], six prosodic features were considered to have more perceptual impact in argumentative movements and types.

2.1.1. Pitch/ F0 tone

This parameter is a different designation of the Gussenhoven's *Frequency Code*. It relates the size of the larynx and the consequent high/low pitch produced with its social impact and psychological interpretation in terms of power in discourse. As stated in Gussenhoven, high pitch is socially associated with submissiveness, politeness, vulnerability, femininity while low pitched voices suggest

authority, assertiveness, masculinity. A perceptual test was performed to a group of 10 people (of different ages) asking them to classify in a gradual scale the levels of assertiveness of the six participants' voices in the political debate. Most (a number of eight) of them considered the participants with lower pitch voices to be more determined and convincing than the others. This fact seems to have a certain importance in argumentative discourse in the way that works as a natural power that contributes to the argumentation and to the personal image construction.

2.1.2. "Maxim of Pich"

This feature is the Hirschberg's pragmatic extension of the Gussenhoven's biological code for Frequency. The pitch rising or falling is associated with the degree of confidence the speaker wishes to convey to his utterances. In other words, rising pitch means uncertainty while falling pitch conveys certainty and assertiveness. This features must be considered always regarding the context dependency of the utterance, since high pitch can be a strategy of conveying emotion and hyperbole, as we will see in 3.4. and become a mean in the global plan of argumentative discourse.

2.1.3. "Maxim of Emphasis" and Focus

The strategy of increasing f0, energy and duration of a certain segment of the utterance, either a syllable, a word or a larger unit, is already a well known phenomena and communicative strategy with the aim of underlining a certain content of the discourse. This procedure is commonly refered as *emphasis* or *focus* and its prosodic behaviour was deeply developed for EP by Sónia Frota [5]. Nevertheless, making "*informationally important portions*" of the speech "*intonationally proeminent*", as recommended by Hirschberg [2], is an objective that may be obtained both with an f0 increasing or with an f0 decreasing. As noticed in Braga et all [6] the strategy of making a portion proeminent in EP can result from the contrastive effect of an f0 dramatic lowering in a certain tonic syllable that was expected to have the highest f0 peak of the word where it occurs.

2.1.4 "Maxim of (Pitch) Range"

Hirschberg states that the pitch range width shall reflect the location of the utterance in the topic structure of the discourse. In other words, the increase of the pitch range shall happen when new information portions of the speech begin, whereas the decrease of the pitch range shall occur in the end of the known contents of the discourse. This is actually a very common performance in argumentation in order to convey assertiveness. However, this feature is often used in the political debate independently from the newness of the topic, imposing rhythm to the speech flow and working as a clear attempt to keep the audience's attention, as shown below in 3.1.

2.1.5 "Maxim of Phrasing"

This parameter is related to the speaker's hability to manage syntactic structures semantically organized and the exhalation phase of the breathing process aiming to divide the portions of their speech into meaningful units, known as *breathing groups* [1], or *prosodic groups*, in the authors terminology. This feature is directly associated with the speaker's management of silence or voice breaks that map the prosodic meaning groups. In the political debate, there is a more frequent division of the speech in prosodic groups, again with the purpose of keeping the audience's attention stuck to the rhythmic and lively effect conveyed by this strategy. In Fig.1, an example of this procedure is shown, where the speaker delays the topic of his discourse by phrasing his speech into three prosodic groups. The silence is also contributing to this delay. Moreover, the Maxim of Pitch Range is also present every time a prosodic phrase starts.

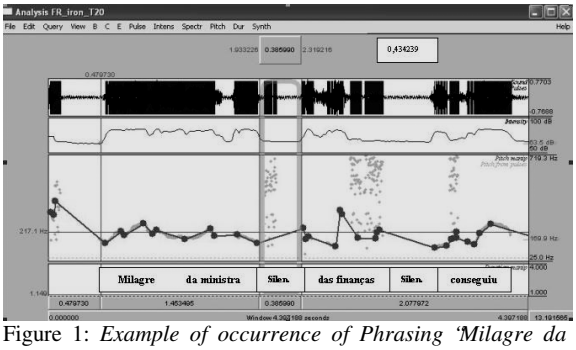

Figure 1: *Example of occurrence of Phrasing 'Milagre da ministra/ [silence]/ das finanças [silence]/ conseguiu [silence]…"(translation: Miracle of the Minister of Finance: she managed to…).*

2.1.6 Maxim of Silence

The silence in speech can be basically caused by two reasons: physiological limits and communicative purposes. The first case derives from the breathing performance and psychological constraints. The second case has to do with pragmatic objectives often in conection with the implicit or the non-said in discourse. Kurzon [7] proposes an interesting typology for silence from a pragmatic point of view, that was token in our consideration. There are basically two sorts of silence: unintencional and intencional. The unintencional is psychological in nature and reflects inhibitions, ignorance or a lack of hability to speak (hesitations). The intencional silence is the power of non-speaking and in the political debate has three basic functions: firstly, delaying the important topic, provoking suspense to what is about to be said; secondly, conveying rhythm to speech and thirdly, suggesting implicit ideas that are not pronounced. The silence must be carefully and wisely used in turn interaction management, since when there is place for silence, there is the risk of loosing the turn, which can seriously compromise the argumentative plot.
The proportion of silent segments vary from speaker to speaker. As an example, on Fig 1 the speaker's usage of silence ranges from 22-28% in his utterances, with an average time of 0,4 seconds of silent moments.

3. Argumentive strategies and the prosodic code

The following categories are the result of the authors' selection of argumentative strategies found amongst the typological proposals of three discourse analysis researchers: Amossy [8], Perelman and Olbrechts-Tyteca [9] and Plantin [10]. We chose these categories because they seemed to have

significant prosodic expression, whereas other argumentation strategies proposed in litterature did't reveal any special prosodic behaviour considering the available corpus. Nevertheless, we have observed that some discoursive connectors such as *mas* (but) and *porque* (because) have prosodic expression as well as a pragmatic meaning. Future work on these and other argumentative methods and their prosodic behaviour is foreseen.

3.1. Assertive modality

The assertive modality is the most important argumentative strategy in a political debate, where there is a conflict of ideas and where there is an audience to convince and a personal image to create. From the analysis of the given data, we noticed that all the prosodic features presented in 2. are used to enhance the pragmatic purpose of conveying assertiveness, conviction and determination to the discourse. In Fig. 2 above, we can have an overview of a typical prosodic behaviour associated with this modality. We can clearly see two prosodic groups divided by boundaries of silence. In this example, we can see that silent moments are longer than in Fig. 1, since the amount of relevant information included in the prosodic groups is bigger and the public needs more time to fully understand it. It is clear that the silence is intencional and the rhythm of the two prosodic groups is well balanced in what the number of syllables is concerned (26 syllables, for the first one; 27 for the second one). The extracted utterance is the following : "[silence, 0,814s] *Os salários vão subir menos que a inflação e vão desvalorizar-se em termos reais.* [silence, 1,483s] *As reformas e as pensões vão baixar* [silence, 0,428s] *e vai-se ter que trabalhar mais tempo para as obter*. [silence 1,637s]" (translation: *Salaries will increase less than inflation and will devalue in real terms. Retirement pensions and allowences will decrease and we will have to work more to obtain them*).

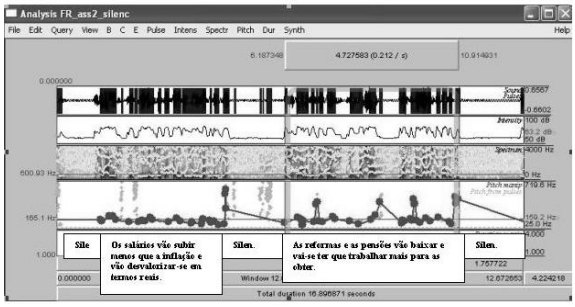

Figure 2: *Example of occurence the Maxim of Phrasing and the Maxim of Silence in assertive modality.*

In Fig. 3 we have a close-up of the first prosodic group present in Fig. 2. We can see inside the selection, that corresponds to the topic "salaries", evidence of a dramatic f0 increasing (about 68% above the speaker's f0 average). The word "salaries " is then turned into the most important part of the utterance. The highest f0 peak is located over the tonic syllable "sa**lá**rios", as normally happens in emphasis of a word. The emphasis of a segment is often followed by a lengthning of the tonic syllable and of the whole word. The energy remains stable and high, producing a well articulated voice. Evidence of Maxim of Pitch Range is also seen in the beginning of the the utterance where there is the new information (salaries). Then a typical descendant declarative utterance f0 contour ends the utterance. In other cases, when the topic is not ending, we can find a rising f0 contour in the final part of the prosodic phrase.

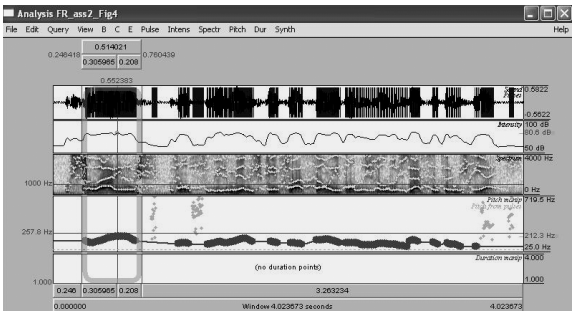

Figure 3: *Zoom–in of the first prosodic group of Fig.2. Evidence of Maxims of Emphasis and Pitch Range.*

3.2. Irony and Ridicularization

Irony is an argumentative resource that is identified with the Implicit in discourse. The purpose of its usage is meaning exactly the opposite of the spoken propositional content. Ironic utterances are not expected to be understood by the whole audience. Only the most clever can understand them and it works as a kind of pact between the speaker and the audience.

Ridiculous is linked to irony but is more explicit and aims to be punished by audience's laughing. It is mainly obtained by semantics and doesn't show evidence of serious pitch range increase or any other prosodic feature. As shown in Fig. 4, the f0 range is very neutral, very sober and discreet.

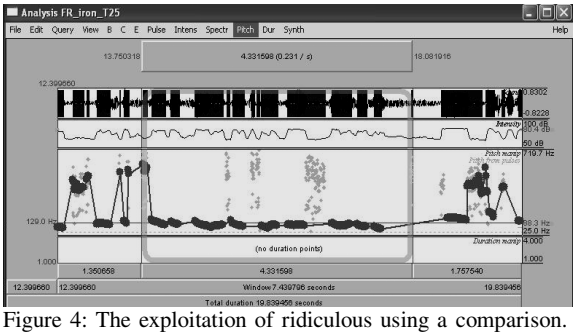

Figure 4: The exploitation of ridiculous using a comparison. Inside the selection: *"(…) por uma espécie de Salazar de saias adpatado ao século XX que é a, que é a ministra das finananças."* (translation: *...by a sort of Salazar with skirts adapted to the XXth Century, that is, the Minister of Finance)*

Both irony and ridiculous exploitations have little prosodic expression in political debate, probably because it has to be a civilized conversation and any prosodic enhancement could sound unpolite. Besides, politeness is one of the most relevant social conversation rule.

3.3. Refutation and Negation

Refutation is a semantic/pragmatic designation that can be included in a type of assertive modality, since the final aim is also conveying certainty and accuracy to what is being denyed. The refutation is mainly obtained by using negative adverbs or expressions. Prosodically, it is often intensified

through a pitch range increase, generating a certain broad focus voice segment. In Fig. 5, a long final high f0 range can be noticed. Most of the times there is a significant emphasis in the negative adverb.

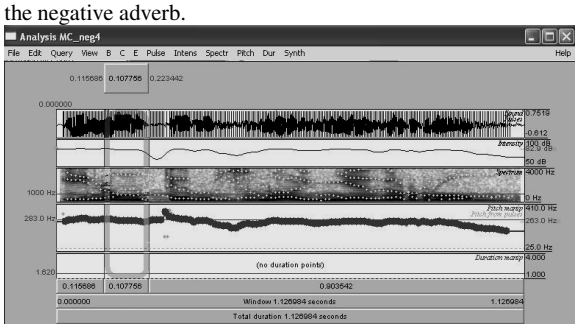

Figure 5: *Example of broad focus in negation. "E não temos uma linha de rumo." (translation: And we don't have a path line.)*

3.4. Emotion and Hyperbole

There are basically two ways of exagerating what is being said in order to produce adhesion from the public: in one hand, by choosing strong, aggressive and ideologically engaged words which expose politically responsible people; in the other hand, by using the Maxims of Pitch and of Pitch Range underneath intencional portions of speech. In Fig. 6, we can see that the topic "*mais pobres*"(poorer) has moved to the end, followed by an f0 increasing of pitch in the intensification adverb "*mais*" (more). The role of silence is again quite clear in producing a suspense effect before the topic. Morfeover, high pitch is continued until the end of the utterance.

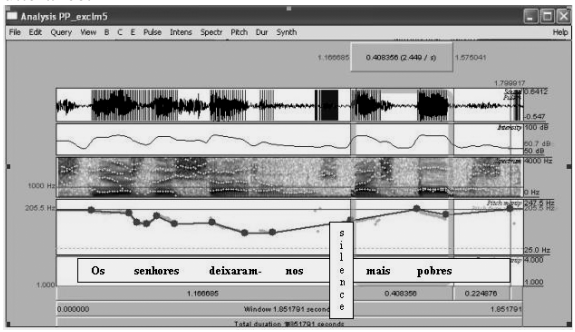

Figure 6: *Evidence of Maxims of Pitch and of Pitch Range in exclamative utterance."Os senhores deixaram -nos mais pobres."(translation: You left us poorer).*

3.5. Rethorical Questioning

Rethorical questions are argumentative strategies in which the speaker is not expecting to be answered. The purpose is to bring a problem to people's minds and make them think of it. They use common syntactic structures of asking a question. However, the f0 contour is quite opposite from the expected. In Fig. 7 above, we can see a rethorical question formulated with a Yes/ No question. It is already well-known in litterature (Cruz-Ferreira [11]) that Yes/ No questions have a gradual increasing f0 contour. On the contrary, evidence in Fig 7 show a descendant f0 contour. As published elsewhere [6], WH- questions have also an opposite f0 contour when they are meant to be rethorical questions.

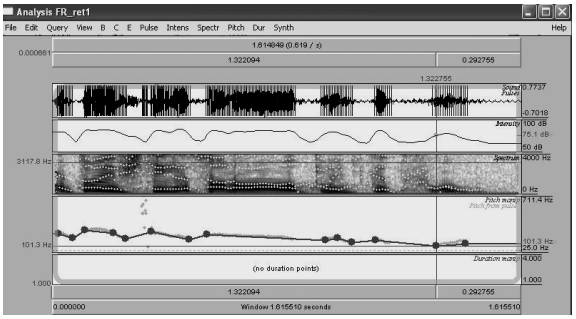

Figure 7: *Example of Yes/No question with a rethorical intention."Então a investigação não é uma política de fundo?" (translation: So research is not a fundamental policy?)*

4. Conclusions and Future Perspectives

Every human been has a set of choices that he may or may not select to build his argumentative discourse. In this paper, we focused on the pragmatic tools that can be enhanced through six types of prosodic features. In this study, we tried to match prosody with pragmatics and describe regularities that can provide rules to improve synthetic speech naturalness. We also hope to contribute for a better understanding of argumentative discourse functionning under a discourse analysis theoretical framework.

In future research the implementation in Speech Synthesis of the presented correlations between prosodic features and pragmatic purposes is foreseen.

5. References

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