

INTONATION PATTERNS IN GREEK DISCOURSE

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ABSTRACT

The object of this investigation is a classification of discourse intonation patterns in spontaneous Greek discourse. Our goal is to describe the distribution, manifestation and function of discourse triggered accents such as 'initiative', 'completive', and 'continuative'. Furthermore, pitch range as a discourse turn and topic regulator along with inter-speaker pitch adjustment is touched upon and the notion of 'pitch-concord' is introduced.

1. INTRODUCTION

This presentation is about intonation patterns in spontaneous Greek dialogues, originally outlined within the framework of the 'KIPROS' project, which is the Swedish acronym of a research program on contrastive and interactive prosody [5]. We started our investigations by first analysing a face-to-face spontaneous conversation between two speakers, with optimal communicative conditions in the laboratory. The next step was an investigation of regular Fo-contours which make up the skeleton of discourse prosody [2], by examining the intonation structure of two speakers involved in a telephone conversation where somatic communicative means are excluded in favor of prosodic ones. Our current research program is on the one hand the description of intonation patterns in a telephone context with more than two speakers at a time and, on the other hand, the global organization of intonation in spontaneous spoken discourse [4]. In the present paper, our main emphasis is on a selection of highly recurrent local patterns and their communicative function.

2. EXPERIMENTAL DESIGN

2.1. Speech Material

The present data consists of four short telephone conversations recorded from a

local Athenian radio station. They are conversation extracts from an entertainment program, in which listeners may phone in and participate in a contest with the chance of winning various small presents. The topics of the conversations are related to the degree of the program participants' successful answers and may be organized in subtopics; occasionally, topics outside the question ~ answer paradigm may appear in the course of a conversation. The speakers of our selection include two relatively young program leaders, a male and a female, and four program participants: two adults and two children, a male and a female respectively.

2.2. Speech Analysis

Our methodology includes four kinds of analysis: (1) analysis of the discourse structure in terms of topic development and turn-unit interplay; (2) auditory analysis and prosodic transcription (3) acoustic-prosodic analysis and (4) analysis-by-synthesis (see [2] and [6]). Here, we shall confine ourselves to the acoustic-prosodic analysis.

The acoustic-prosodic analysis consists of observations and classification of regular intonation patterns and, of specific interest, stereotyped intra and inter-speaker pitch sequences characteristic of spoken discourse. This has been done through an interactive examination and listening of the relevant pitch contours on a VAX/VMS 11/730 computer system with the API program of the ILS package.

3. DISCOURSE PITCH PATTERNS

3.1. Specific Pitch contours

For the descriptions of intonation patterns in spontaneous speech, we will introduce a methodological distinction between stress and accent, prosodic terms which

are often overlapping and/or interchanged in the current prosodic literature. By *stress* we mean prominent syllables with no reference to pitch whereas by *accent* we do mean pitch gestures whether they are co-ordinated with stress or not; in the former case, stress alternations make up the rhythm of the language whereas, in the latter, the interconnection of accents is within the realm of intonation. Laboratory speech has taught us that stressed syllables are not necessarily assigned pitch gestures. This has been observed in previous material as well as in the present material. On the other hand, discourse oriented pitch gestures may be carried by unstressed syllables in specific environments with high communicative value, such as the beginning and end of (sub)turn-units.

As a recurring structural example, the phrase, e.g. /se paraka'lo/ (Fig. 1a) appears with a pitch gesture on the initial (unstressed) syllable, in addition to the stressed one; the second phrase /ja na 'ðume 'tora/, apart from an initial pitch-gesture, has a widened pitch range, as a reinforcement of this (new) part of dialogue. The next figure (1b), also exhibits an initial pitch gesture which is completed within the phrase /li'pon/; should this pitch gesture carry a lexical distinction rather than a discourse cue, the result would be */lipon/, i.e. a non-existent word in standard Greek. For this initial pitch gesture which, regardless of the rhythmic status of the syllable, appears with a discourse function to attract the listener's attention toward a particular unit of speech, we propose the term *initiative accent*.

In contrast to initiative accent, pitch-gestures may appear at the end of a (sub)turn-unit with distinct discourse functions. The phrase /ena ðer'matino xarto'filaka/ (Fig. 2a) carries a final accent which is realized as a pitch-fall on the last stressed syllable. This accent signifies the end of a sub-turn-unit and the completion but not necessarily the end of the ongoing turn-unit, and we may refer to it in want of a better term, as *completive accent*. On the other hand, at the end of a sub-turn-unit (Fig. 2b), the final (unstressed) syllable of the word /ðiskolo/ carries a pitch gesture. This (upward) final accent is realized on the last syllable(s) of a (sub)turn-unit rather than the last stressed syllable. It has a

turn-keeping function, but it may also be used as an 'expectative' discourse cue (expecting some response from the hearer) when addressing the listener(s). As a cover term we may use the *continuative accent*.

A final accent may also appear at the end of a (sub)turn-unit associated with what has traditionally been called a question. Without going into an argument of what a 'question' is (see [3]), we present four wh-questions with two typical intonative patterns (Fig. 3). The first two (3a, 3b) have falling final intonation but different communicative functions: (3a) is a pseudo-question, where the speaker is trying to win time or, in other cases in our data, to start or keep a conversation going; (3b) is a 'neutral' question, i.e. the answer is of limited importance to the speaker and/or the development of discourse. On the other hand, the second two questions (3c, 3d) have a complex falling-rising intonative patterns, in which the final pitch gesture is co-ordinated with the final rather than the stressed syllable; these questions, the intonative pattern of which is very regular in our data, are 'emphatic' in the sense that the answer is of vital importance to the development of the discourse and, in this particular case, the outcome of the radio game.

The final pitch gestures, either for questions or continuations are quite similar in manifestation and partly share the same function, namely the emphasis put by the speaker in the development of the discourse. Of course, they are the speaker's conditions because, in real life communication, he may get no answer or may be interrupted. Thus, preliminarily, we may use the term *continuative accent* in a 'more to come' broad sense even for emphatic questions, with the assumption that earlier prosodic cues and the context may distinguish them from turn-keeping pitch gestures.

In an inter-speaker pitch contour adjustment, in certain environments, the turn-taking speaker's choice may be heavily dependent on the interlocutor's final pitch contour. Thus, an adult male finishes his phrase /ðila'ði 'nane kli'sto/ (4a) at a high pitch level and his interlocutor, an underaged male, responds with /ne/ at the same pitch level. Inter-speaker pitch adjustment, what we may refer to as *pitch-concord*, is evident also

at a low pitch level; an adult female finishes her phrase /pine'lopi ki o'bi'seas/ (Fig. 4b) at a low level and her interlocutor, an adult female also, responds /ve'veos/, with a pitch contour at the same level, in accordance with her communicative agreement. This by no means implies that the communicative distinction of agreement ~ disagreement is carried out solely by prosody; the lexical and grammatical components may be largely decisive. Nevertheless, our data have shown a pitch-concord in rather absolute terms than relative ones between different speakers. It seems that when a speaker chooses to indicate his agreement by prosodic means, he makes an extra effort to approach the actual pitch contour as close as possible.

3.2. Global Intonation

An interesting question is how speakers organize their overall intonation in terms of pitch range for discourse purposes and what the interference of external conditions like sex, age, etc. are.

Although in a more comfortable conversation [5] we have found pitch-range as a turn and topic regulating discourse correlate, in the present material this phenomenon is drastically reduced. In other words, in a vivid interaction, speakers seem to take advantage of e.g. the presence of the completive accent or even the absence of a turn-keeping accent to intervene rather than using the pitch-range turn-leaving cue. The same strategy is generally applied for topic management as well, in combination with the communicative context which appears as an everywhere factor for topic regulations. This reduces the potential of pitch range as a discourse mechanism for the government of turn/topic regulation, which is only occasionally realized in this kind of quick dialogues but is used at the end of the whole conversation.

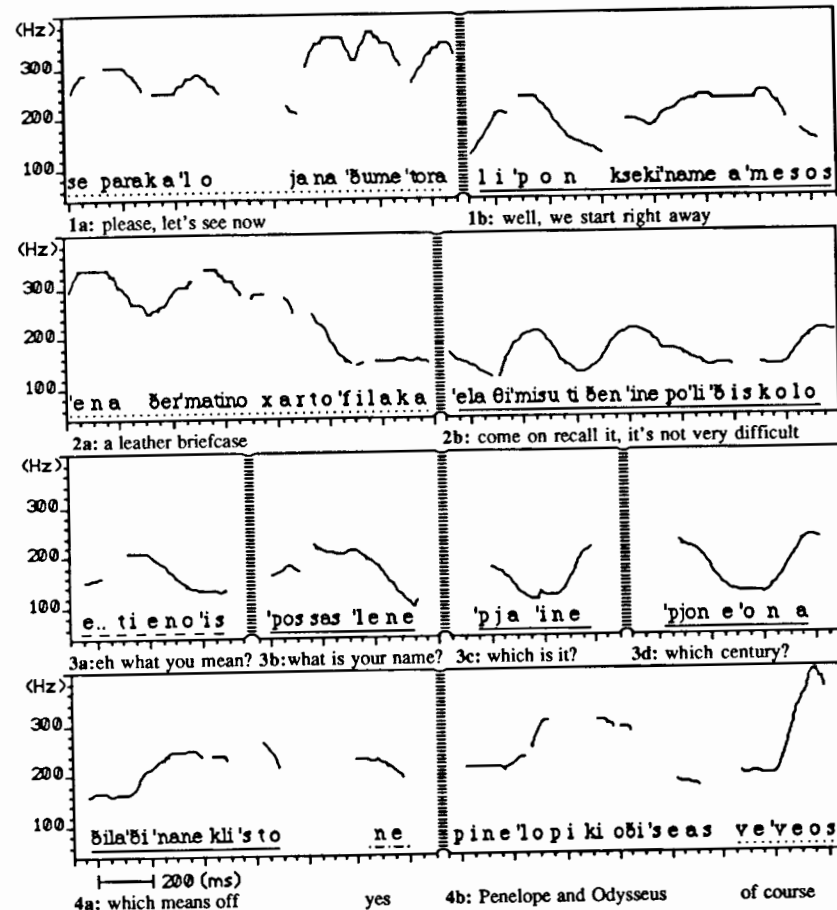
On the other hand, a pitch range expansion directly reflects the involvement of the speaker(s) towards what it is said. It may span a succession of sub-turn-units and even have an inter-speaker effect. Pitch range may also indicate focus, although a (major) pitch-fall in combination with a post-focal accentless rhythmic organization is the rule as widely attested in Greek prosody. However this regular manifestation does not leave the notion of focus unproblematic. As a matter of fact, in our

material, we have witnessed only a few occurrences of focus, even in an auditory analysis. This indicates that focus is optional even for larger discourse domains such as turn-unit and topic, and not a recurrent prosodic category at a certain linguistic or discourse level. Obviously, what speech analysts have described as 'focus' needs a re-evaluation in a discourse perspective.

As regards the overall inter-speaker pitch range adjustment, our data has hardly shown any interference of sex or age. A preliminary evaluation shows that speakers do not mutually modify their pitch range but rather retain their idiosyncratic intonation except in cases of pitch-concord (cf. Fig. 4) where speakers choose prosodic means to show their communicative agreement. In more private and/or intimate communicative environments, another picture may arise, but this is a subject outside our current research.

4. CONCLUSION

In prosodic research we have experienced in the laboratory of the question ~ answer paradigm, where the answer is a declarative utterance making up the test material, the distribution of pitch gestures is clear-cut: the stressed syllables may appear with an independent (upward) pitch gesture whereas the unstressed ones either they have no pitch inflection or they carry on a pitch gesture already started on the stressed syllable [1]. This neat picture is heavily disturbed in spontaneous speech where (upward) pitch gestures may appear on unstressed syllables and downward ones on stressed syllables. However, a closer examination reveals that this apparently contradictory prosodic manifestation has a meaningful structure. Unstressed syllables with an upward pitch gesture may appear at the beginning (initiative accent) or end (continuative accent) of prosodically coherent larger units regardless of the stressed ~ unstressed distribution. Moreover, stressed syllables with neutralized pitch have a high rate in these Greek dialogues, solid evidence that pitch is not used to realize stress distinctions in Greek. Thus, rhythm and intonation appear quite independently organized, with intonation as a *par excellence* TOP-DOWN prosodic parameter, specifically meaningful in interaction and discourse communication.



Figures: Pitch contours and pitch sequence extracts from different telephone conversations (see text). The full underlines represent a male program leader, the dots a female program leader, the dashed line an adult male program participant, the dots and dashes, a male child program participant, and no underlines, a female program participant.

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