



INTONATIONAL VARIATION ACROSS DIALECTS: AN INTONATIONAL PHONOLOGY APPROACH

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ABSTRACT

Working on the intonation of Maltese within the framework of intonational phonology ([12], [10]), Vella [13] notes an asymmetry in the timing implementation of the nuclear statement tune as compared with that of the nuclear question tune. Vella's preliminary conclusion regarding the former is that there is a tendency for early alignment of H* with the stressed syllable; in the latter case, the tendency is rather for late alignment of L* with the stressed syllable. This paper uses interview data to corroborate preliminary evidence relating to the timing of the peak in the nuclear statement tune in Standard Maltese. At the same time, it investigates the timing of pitch accent alignment in the nuclear statement tune in one particular dialect of Maltese. The difference in the timing implementation of the peak across the two varieties is accounted for by means of a phonological feature [early peak].

1. INTRODUCTION

While a substantial body of work on the phonetics and phonology of Maltese is now available, this work is in the main restricted to Standard Maltese (e.g. [1], [8], [3]). This notwithstanding, the fact is that the literature is replete with reports of the existence of dialects of Maltese [2]. Moreover, work directed specifically at outlining the intonational characteristics of Standard Maltese is as yet in its early stages. It should therefore come as no surprise to discover that work on the intonational and other prosodic aspects of dialects of Maltese is practically non-existent.

This paper attempts to set the stage for work in the area of the intonation of Maltese and its dialects. Cruttenden's [5] survey of comparative intonation suggests that differences between dialects may arise, among other things, from differences in intonation-groupings, in nucleus placement, in the nuclear tones used and in typology. In this paper I concentrate on examining cross-dialectal differences arising from the nature of the phonetic implementation of one specific pitch accent rather than from phonological choice of tune. By so doing, I hope to provide a formal description of a source of intonational variation across dialects worth further investigation.

While outlining some basic descriptive facts, this paper is also intended as a test ground for analyses of intonational variation across dialects within the intonational phonology framework. In particular an

attempt is made to establish the merits of an explanation of the timing implementation of peaks and valleys in terms of phonetic alignment of phonological features such as [\pm early peak] or [\pm delayed peak] [9].

1.1 General overview of intonational phonology

One of the advantages of the study of intonation using the intonational phonology approach emerges from the combination of the notion of the autosegmental association of phonological events and the possibility of making accurate statements regarding their phonetic alignment. This combination allows for more accurate examination of the timing implementation of pitch accents with respect to the stressed syllable.

1.1.1 Overview of work to date on the intonational phonology of Maltese

Research on the intonation of Maltese has only recently started to attract interest. Vella [13] identifies a number of tunes which are described using the intonational phonological framework introduced by Pierrehumbert [12]. A characterisation of aspects of the intonation of Maltese can also be found in Borg and Azzopardi-Alexander [3].

1.1.2 Intonational phonology and the study of intonational variation across dialects

A number of attempts at using the framework of intonational phonology for analysing intonational variation across dialects have been made (e.g. [4], [7]). In general, the advantage of the framework is that it allows statements about phonetic difference to be made without any loss to phonological generalisations. In other words, it is possible, using this framework, to account for the possibility of mutual intelligibility across dialects in spite of apparent differences in form.

2. METHODOLOGY

The material for the analysis reported here is taken from a video recording of a documentary programme entitled "Ix-Xoghol tal-Melħ", televised on a local TV station, TVM. The programme consists of an interview with an inhabitant of Gozo, the second largest of the three main Maltese islands. Three speakers are involved: a female speaker of Standard Maltese (henceforward SMf), a male speaker of Standard Maltese (henceforward SMm) and a male Dialect speaker (henceforward DMm). DMm, who comes from the village of Żebbuġ, Gozo, is being

interviewed about his work in salt production. In view of this, the text contains various instances of lexical items and idiomatic use of vocabulary specific to the trade being described (e.g. *menža* ('a yoke for carrying pails of water'), *shajjen* ('hottish'), *iċċekken* ('reduce volume of')). The formality of the recording situation results in an almost complete suppression of dialectal features at the levels of morphology, syntax and semantics. The speaker's accent, on the other hand, is pronounced enough to warrant SMf's introduction of him as having a "highly idiosyncratic manner of speaking, involving, among other things, vocalisation of the consonant *h* as well as, at times, the consonant *gh*":

jitkellem bil-kisra tipika tieghu, bit-tlehhin tal-konsonanti akka, u kultant tal-konsonanti ghajn.

DMm's accent is representative of that prevalent in the village of Zebbuġ, Gozo. There is no doubt that the most obvious cues to different accents of Maltese are segmental ones, not merely consonantal, as suggested by SMf's introduction of DMm, but more particularly vocalic ones.¹ While there is no doubt that DMm's accent differs significantly from other accents of Maltese at the segmental level, differences in the use of non-segmental features such as duration, especially at phrase boundaries, tempo, and possibly also key and register [5], can also be intuited.

The female speaker will not be considered in the analysis reported here. Instead, the analysis focuses on excerpts taken from turns of the two male speakers. Apart from this however, there is also a highly idiosyncratic mode of narration which is an important factor to consider when one takes prosodic structure into consideration. In order to eliminate variability involved in the handling of discourse material, I have looked at turn-final events in the case of the two speakers only when these involve a nuclear falling pitch movement.

On the basis of an informal auditory analysis 10 nuclear statement tunes were identified for each speaker, all of which occur intonational phrase finally. A detailed analysis of the realisation of these tunes was then carried out using the Mactinosh-based software SoundScope/16. A breakdown of the segmental and metrical structure of the material analysed for each of the two speakers is given below.

Structure of stressed syllable	SMm		DMm	
	Stress penul	Stress final	Stress penul	Stress final
[-son] V (C)	5	-	2	3
[+son] V (C)	5	-	3	2
	Number of examples analysed			

¹ In view of the fact that there has to date been little systematic research in this field, I have avoided giving phonemic or phonetic transcriptions. I have however sometimes deviated from standard orthographic forms to encode some of the more obvious segmental features of DMm's pronunciation. Non-standard forms appear in bold in the text.

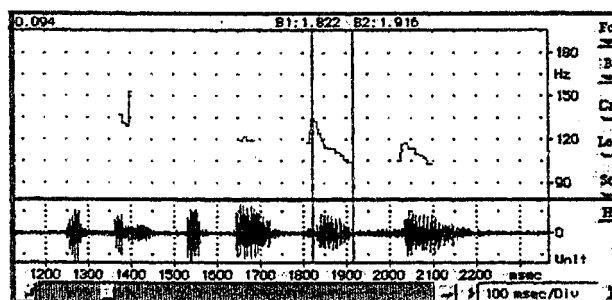


Figure 1 ...u tahseb ghal biex tbieghu.
*]p]t

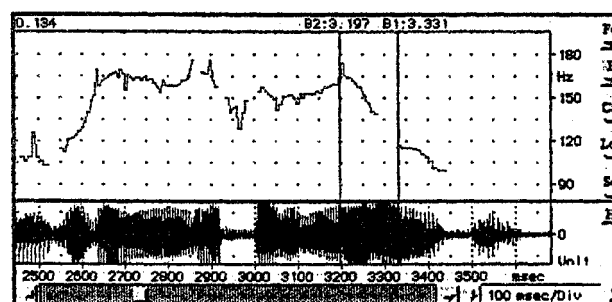


Figure 2 ...eh l-ilma bil-menža.
*]p]t

3. RESULTS AND DISCUSSION

Analysis of SMm's turn-final nuclear statement tunes suggests that alignment of the H tone in this pitch accent in Standard Maltese is with the vocalic element in the stressed syllable. It is to be expected that the H tone is aligned with the vocalic element of the stressed syllable in examples of the nuclear statement tune linked to stressed syllables having the structure [-son] V (C). An example of the nuclear statement tune linked to such a structure occurs in *Tahżnu, u tahseb ghal biex tbieghu*. 'You store it, and start thinking of selling it.', the F0 contour for which example is shown in Figure 1. Vertical markers are used to indicate the portion in the waveform and F0 contour which corresponds to the vowel of the penultimate stressed syllable in *tbieghu*. The peak in F0 in this example is aligned at the beginning of the vowel of the stressed syllable. Similar patterns of realisation were observed for all examples of the nuclear statement tune in this analysis which are linked to structures of the type [-son] V (C). It is therefore safe to conclude that there is nothing significant about the alignment of the H tone with the stressed syllable in such cases.

Examples such as *Kienu jgħorru, eh l-ilma bil-menža*. 'They used to carry water using a yoke.' in which the stressed syllable has the structure [+son] V (C), on the other hand, are interesting. The F0 contour for this example is shown in Figure 2. As in the previous example, vertical markers are used to indicate the portion in the waveform and F0 contour which corresponds to the vowel of the penultimate stressed syllable in *menža*. The highest point in the F0 contour in this case is also aligned at the beginning of the vowel of the stressed

syllable in spite of the fact that in this case, early alignment is a distinct possibility in view of the fact that the vowel is preceded by the sonorant /m/.

Before proceeding to an analysis of the examples of turn-final nuclear statement tunes analysed for DMm, two points need to be made. First of all, it is important to note that DMm's default pitch range is comparatively high as compared with the average pitch range for males in general. F0 measurements of H tone targets in the data analysed, however, generally fall somewhere between 185 and 220Hz.² Secondly, although it seems to me that durational factors especially, but possibly other prosodic effects need to be taken into consideration, this analysis focuses on the analysis of tonal effects.

Of the 10 nuclear statement tunes analysed for DMm the target for the H tone occurs early in all cases except three of those in which the stressed syllable to which the tune is linked has the structure [-son] V (C). An auditory effect of an early, or possibly a higher, peak is however perceptible in all cases including those instances of a nuclear statement tune linked to examples whose stressed syllable has the structure [-son] V (C). The occurrence of a [-son] segment preceding V makes it next to impossible to provide evidence in support of the auditory perception of an early peak in these examples. When examined in detail, however, two of the examples whose stressed syllable has the structure [-son] V (C) prove interesting. The F0 contour for one of these examples, *Ma_nufhiex*. 'I don't know it [the reason]' is shown in Figure 3. The vertical markers indicate the portion of the waveform and F0 contour which corresponds to the vowel of the stressed syllable, which, in this case is the final syllable of *nufhiex*. What is interesting is the fact that the penultimate (unstressed) syllable is characterised by high F0 throughout its duration. Is it possible that the H* component of the nuclear statement tune in this case is aligned as early as with the penultimate, unstressed syllable?

I will now illustrate the realisation of the nuclear statement tune involving stressed syllables having the structure [+son] V (C). A clear pattern emerges from the examples analysed. Thus, for example, Figure 4 represents the F0 contour for *Hağa_tigi_ib_ıbbalinsjata*. 'Something can be balanced'. The vertical markers indicate, once again, the portion of the waveform and F0 contour which correspond to the vowel of the stressed syllable, in this case the penultimate syllable of *ıbbalinsjata*. The highest point in the F0 contour in this case occurs approximately 64 msec prior to the onset of the vowel of the stressed syllable. In other words, the peak is aligned with the start of the /j/ which precedes the stressed vowel.

² There is one exception in which the H tone in the nuclear statement tune is realised at an exceptionally high pitch of 310Hz. It may be possible to account for this as a difference in register [5].

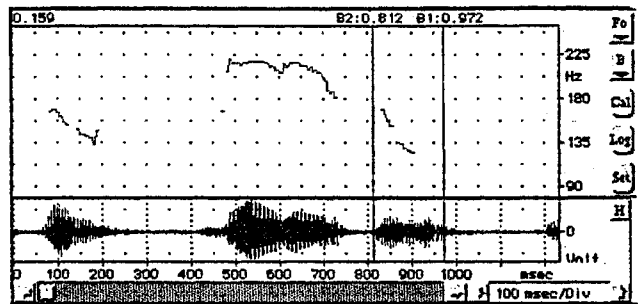


Figure 3 ...ma_nufhiex.
*]P]i

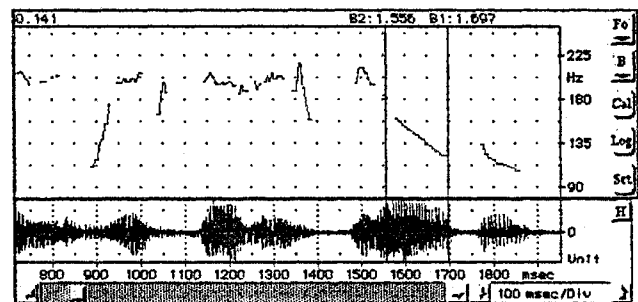


Figure 4 ...tigi_ib_ıbbalinsjata.
*]P]i

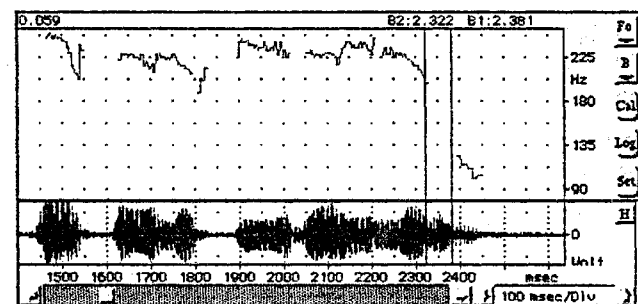


Figure 5 ...fejñ_ısir_il-melh.
*]P]i

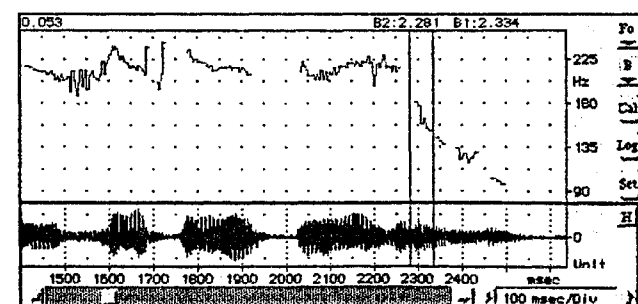


Figure 6 ...nergghu_ntuha_l-ilma.
*]P]i

Fejñ_ısir_il-melh. 'It is the place] where the salt is produced.' is another example having a stressed syllable with the structure [+son] V (C) in which the H tone is aligned earlier than with stressed syllable. Figure 5 represents the F0 contour for this example. In this case it

is the final syllable of *il-melh* which is stressed. The highest point in the F0 contour in this case occurs approximately 91 msec prior to the onset of the vowel of the stressed syllable. The F0 contour for *Nerġghu ntuha l-ilma*. 'We water it again.' is shown in Figure 6. The vertical markers indicate, once again, the portion of the waveform and F0 contour which correspond to the vowel of the stressed syllable, in this case the penultimate syllable of *l-ilma*. As in the examples illustrated earlier, the highest point in the F0 contour occurs earlier than with the stressed syllable in this case possibly as much as 97 msec prior to the onset of the stressed syllable.

Of the 10 statement tunes analysed the target for the H tone in the nuclear statement tune occurs early in 7 cases. These include all instance of tunes linked to stressed syllables having a [+son] segment preceding the vowel as well as two of the instances in which a [-son] segment precedes the vowel.

In view of the above, it seems necessary to be more specific about exactly what is meant by the tendency of early alignment of H* with the stressed syllable. The data suggest that there is a difference in the alignment of the H tone in the nuclear statement tune in Żebbuġ, Gozo Maltese as compared with Standard Maltese. This would be best explained by means of a monovalent feature [early peak] applicable only in cases in which the H tone is aligned earlier than with the vocalic element of the stressed syllable. The feature [early peak] therefore does not apply to the realisation of the nuclear statement tune in Standard Maltese.

3. CONCLUSION

In conclusion, I have provided preliminary evidence of an empirical nature regarding early alignment of the peak in the nuclear statement tune in the Żebbuġ, Gozo accent of Maltese. The impressionistic facts about one source of intonational difference between the dialect examined and Standard Maltese are readily accounted for by means of a feature of [early peak]. Earlier work, Vella [13], suggested a tendency for late alignment of L* with the stressed syllable in the nuclear question tune in Standard Maltese. It would be useful and interesting to extend the present work to examine whether a difference parallel to that in the timing realisation of the nuclear statement tune in Żebbuġ, Gozo Maltese as compared with Standard Maltese, exists also with regards to the nuclear question tune.

4. REFERENCES

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