

# THE INTONATION OF COLLOQUIAL DAMASCENE ARABIC: *a pilot study*<sup>1</sup>

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## Abstract

This paper is devoted to one of the, in my view (first author), most striking aspects of colloquial Damascene Arabic: its almost singing intonation. The aim of this study is to describe which parameters cause the perceptual difference in intonation between the Damascene dialect and other Arabic dialects that do not have this singing intonation. For the latter category the dialect of Cairo was chosen as reference for comparison. A survey is presented of what is known in the literature about the intonation of Arabic in general and about the dialects of Damascus and Cairo in particular. The analysis of the recorded speech of four male native speakers of Arabic is discussed, two in the Damascus and two in the Cairo dialect.

## 1 Literature

In 2002, after a five months period of study in Cairo, I travelled to Damascus and found that speakers of Damascene Arabic rather “sing” than speak as compared to Cairene Arabic. In order to find an answer to the question which parameters cause the perceptual difference between the intonation of the two dialects of Arabic, I studied the literature on this subject. However, studies on Arabic intonation are scarce. In this section I will present a summary of what is known in the literature on Arabic intonation in the colloquial speech of Damascus and Cairo at all. A more general overview of the literature on Arabic intonation is described in my MA thesis (Kulk, 2003).

The description of Arabic intonation in grammars and phonological studies is sketchy and sometimes contradictory, and the only comprehensive studies of intonation that do exist are generally outdated. In his PhD dissertation Abdalla thoroughly treats the subject of intonation in colloquial Egyptian Arabic, but in his analysis he described the intonation of speakers expressed in absolute values in Hertz (Abdalla, 1960). However, pitch intervals of different speakers cannot be compared on the basis of absolute values on a linear scale in Hertz, but must be expressed on a logarithmic scale with relative values in semitones. The same holds true for Norlin’s study of the intonation of statements and questions in Egyptian Arabic (Norlin, 1989). Finally, more than eighty years ago Bergsträsser made a study of colloquial Damascene Arabic (Bergsträsser, published in 1968). He based his analysis exclusively on his own hearing, since there was no way to do any frequency measurements in his days. His descriptions of intonation, although a valuable source

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<sup>1</sup> For more information we refer to the MA thesis in Dutch (Kulk, 2003).

of information, are somewhat subjective, which makes them hard to compare to other data.

The result of my study of the literature primarily served as a basis for the interpretation of intonation contours found in the analysis of my own recordings (see section 2). The literature mentioned above presents an overall picture of the intonation in colloquial Damascene and Cairene Arabic. Though not recognized by all authors, there appeared to be three basic types of question intonation and two types of statement intonation in the Damascene and Cairene dialects. My own research was based on these types, together with what Bergsträsser called “Kadenz” (pre-pausal vowel lengthening; Bergsträsser, 1968: 46-48).

In statements, both dialects show an opposition between utterances that form the final part of a statement and utterances that do not, i.e. that are followed by another utterance. For a detailed description of this opposition in the Damascene dialect see Bloch (1965). Questions are divided into three types: replacement questions (e.g. who has written this?), alternative questions (e.g. are we going to visit him today or tomorrow?), and yes/no questions (e.g. did the boy go to her family?). Replacement questions and yes/no questions have a more or less fixed intonation contour, that does not show much variation. Alternative questions have a more variable contour (see for instance Ferguson, 1961; Rice & Sa’id, 1960). These statement and question contours as well as pre-pausal vowel lengthening will be more extensively dealt with in section 3.

## **2 Speakers, recordings and analysis**

Four native speakers were recorded, two male speakers of Damascene, 63 and 37 years old, and two male speakers of Cairene Arabic, 39 and 36 years old, all living for some 10 years in the Netherlands. The method used for recording and analysing the speech of the four speakers was as follows. Speakers were interviewed for about thirty minutes. They answered to a fixed set of questions concerning subjects like education, childhood, cooking, hobbies, etc. From these recordings of spontaneous speech, all utterances with statement contours were selected. Then the speakers read aloud a set of written questions, each set six times. In order to make sure that all types of question intonation were present in the recording, this set consisted of two pairs of the three different types of question mentioned in section 1. A total selection of 25 statement contours and 96 question contours (i.e. four examples of each of the six questions read by all four speakers: 4x6x4) was made. The recordings were made in the sound studio of the Institute of Phonetic Sciences, University of Amsterdam.

The selected contours were then analysed and described mostly in a qualitative manner. All selected contours were segmented and stored in speech fragments of exactly two seconds. Then a qualitative description was made of the starting and end points of rises and falls, and the position of the accent was described, that is, a description is given of the position within the utterance of all significant pitch movements relative to the other pitch movements in that utterance. For example, in a replacement question, pitch starts relatively high in the speaker’s fundamental frequency range with an accent on the first stressed syllable, then falls continuously towards the end, and ends relatively low in the range (see section 3 for more details).

Apart from this qualitative analysis, a quantitative analysis of the fundamental frequency range of each speaker was made. Analyses and pictures were executed by means of Praat (Windows version 4.0.45, [www.fon.hum.uva.nl/praat](http://www.fon.hum.uva.nl/praat)). All speech samples of the selected contours were put on an audio CD accompanying the master thesis (Kulk, 2003).

### 3 Results and conclusions

The results of the research and some conclusions are the following. For both the Arabic dialects of Damascus and Cairo two basic intonation contours for statements and three for questions were found to exist.

There are two types of statements: statements consisting of one utterance and statements that consist of two or more adjacent utterances. The former type is characterized by a falling contour towards the end. The non-final utterances of the latter type are characterized by a contour that does not fall (i.e. a level or rising contour) towards the end of the utterance. Its final utterance is characterized by a falling contour towards the end (see Figure 1). The main difference between the intonations of statements of the two dialects is not the pitch parameter, but the duration of the vowel preceding the pause in between utterances. In the dialect of Damascus a lengthening of the last stressed or unstressed vowel can precede pauses. The so-called pre-pausal vowel lengthening (or “Kadenz” in Bergsträsser’s words) can be accompanied by a rising pitch. In the Cairene dialect this pre-pausal vowel lengthening is completely absent. Figure 1 gives an example of a statement in the Damascene dialect, consisting of two subsequent utterances separated by a pause. The two utterances of the statement *hay rahna sakanna... be-ha:ret el-yahu:d* ‘we went living... in the Jewish quarter’ are separated by a pause after the word *sakanna* ‘we lived’. This pause is preceded by a pre-pausal vowel lengthening of the final /a/ of that same word with a duration of 300 ms, which is about three or four times longer than it would normally be (for vowel length see Abdalla, 1960:20-25). The bottom diagram clearly shows the rising pitch in this vowel. After the pause, the second and final utterance of the statement shows a general fall of the fundamental frequency towards the end.

The intonation contours of the three types of question, viz. replacement questions, alternative questions and yes/no questions, can be described as follows. Replacement questions are characterized by a pitch accent on the first (sometimes second) stressed syllable, after which the contour falls steadily towards the end of the utterance. In the Damascene dialect, the question word is always in initial position. In the Cairene dialect it takes the position of the part of the utterance it replaces. However, the above-mentioned contour was without exception found in all selected samples, irrespective of the position of the question word in the utterance. In alternative questions the accent is always realized in the first part of the utterance, i.e. in the part before the word ‘or’: *wella* in the Damascene dialect, *walla* in the Cairene dialect. This first part always ends in a rising pitch movement. In the second part the pitch may rise, stay level or fall. Also, the initial syllable of the second part of the utterance may vary from speaker to speaker, even in realizations of different utterances by the same speaker. The second part can start just before or just after the word *wella/walla* ‘or’. Figure 2 shows the alternative question in the Damascene dialect *enzu:ro lyo:m wella bukra?* ‘are we going to visit him today or tomorrow?’. The accent is realized in the word *lyo:m* ‘today’. The second part of the utterance starts with *wella* ‘or’, and pitch gradually falls towards the end of the utterance.

Yes/no questions are both in Damascene and Cairene dialects distinguished from statements by means of intonation only. For example, depending on the pitch contour, the utterance in Damascene Arabic *er-reja:l ha:d dahan el-he:t* expresses either a question ‘did that man paint the wall?’ or a statement ‘that man painted the wall’. Yes/no questions are realized with a rising pitch towards the end of the contour, while statements are realized with a level or falling pitch.

The question of the present study was why Damascene Arabic intonation, in contrast to Cairene Arabic, is perceived as singing, and which parameters cause this

perception. The quantitative analysis of intonation in all statements and questions shows that speakers of Damascene Arabic with singing intonation have on average a larger pitch range than speakers of Cairene Arabic without singing intonation. Also, Damascene Arabic features pre-pausal vowel lengthening. The main conclusion of this study is then that the perceptual difference between Damascene and Cairene Arabic is caused by two prosodic phenomena: Damascene Arabic has a larger pitch range than Cairene Arabic, and has pre-pausal vowel lengthening that does not occur in the Cairene dialect.

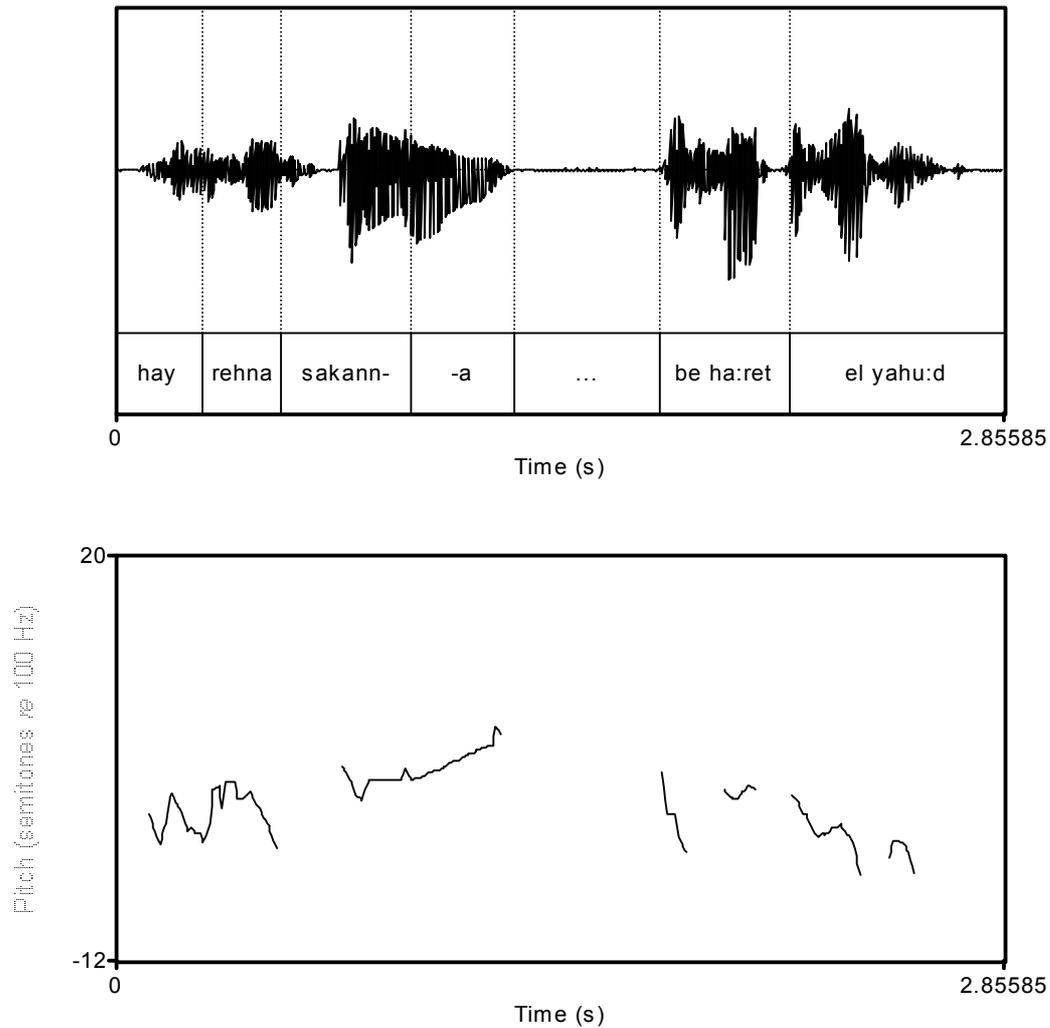


Figure 1. Statement in the Damascene dialect consisting of two subsequent utterances separated by a pause of 490 ms which is preceded by a pre-pausal vowel lengthening in final /a/ of *sakanna* 'we lived' of 300 ms.

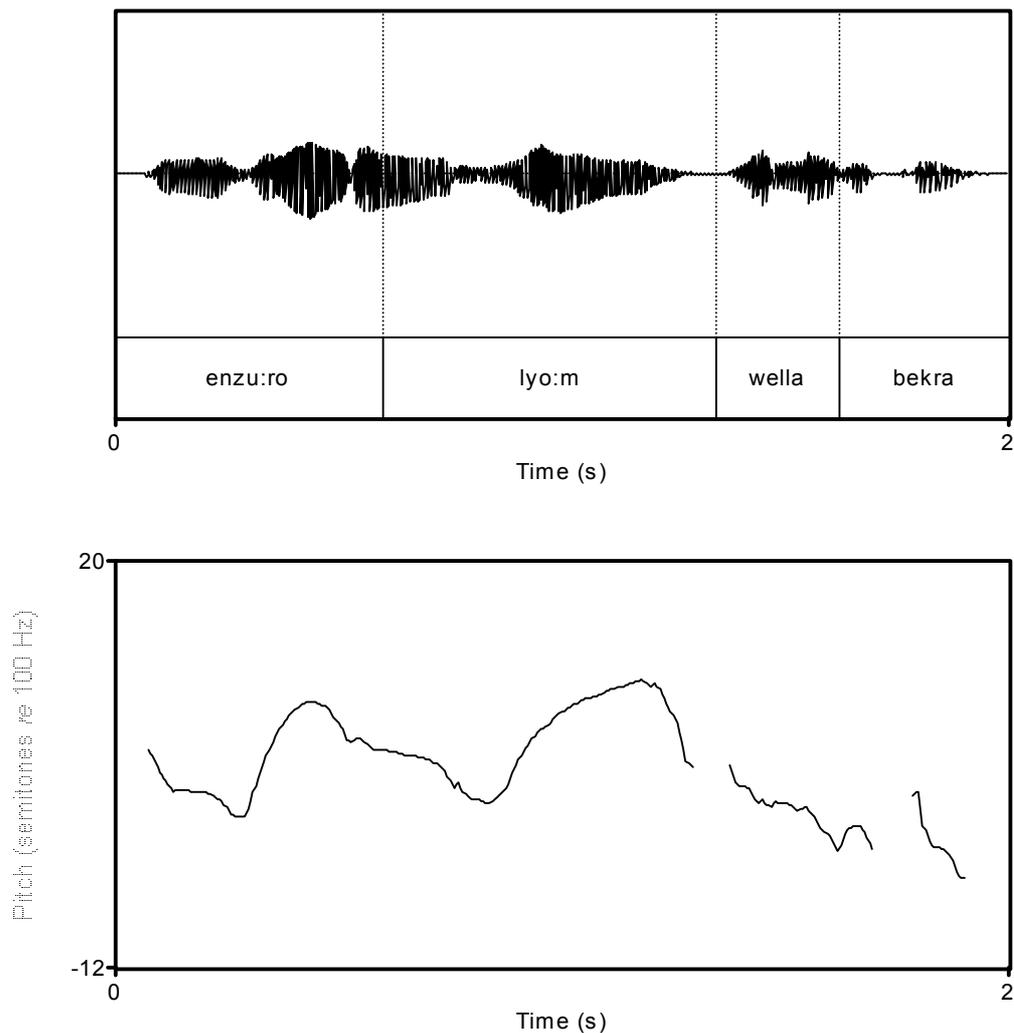


Figure 2. An alternative question in the Damascene dialect with a pitch accent on *lyo:om* 'today'.

- The present study was limited in its scope:
- only four speakers were recorded and a relatively small number of utterances was analysed;
  - the list of intonation contours found to exist might not be exhaustive;
  - the number of speakers with singing intonation was too small for a representative result of the analysis;
  - results are just a first interpretation.

Finally, some suggestions for further research are given. The present research must be repeated with more speakers. This is especially needed in order to be able to answer questions about the larger pitch range found in the Damascene dialect as compared to the Cairene dialect. Also, more possible types of statement and question intonation must be studied. Research can be done (and in fact is currently performed) for other dialects than the Damascene and Cairene. This is essential for understanding more about the intonation of colloquial Arabic in general. Also, more recordings and analyses are needed to answer the many remaining, sometimes basic questions about intonation in Arabic, like questions about the exact quantitative values of the pitch parameter in the movements mentioned above. For example, what is the exact

excursion size of a rising or falling pitch movement that is considered large or small, and how to define high, middle, and low levels in the fundamental frequency range? Important work has been done in the field by a small number of researchers. However, in recent years the intonation in only a few of the numerous dialects of Arabic has been studied, although not extensively (see Alharbi, 1991; Rammuny, 1989; and Rosenhouse, 1995).

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