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Prosodic encoding of the thetic/ categorical distinction in Egyptian Arabic: a preliminary investigation[1]

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Abstract. It has been assumed in the linguistic literature (most notably by Sasse 1987) that there is a dichotomy of *thetic* and *categorical* judgments (*einfaches und doppeltes Urteil*) and that these two judgment types correspond to linguistic categories. It has since been frequently noted that a certain type of thetic sentences is prosodically coded by an accented subject and an accentless predicate West-Germanic languages, thus exhibiting 'inverted' prosody. This paper presents a small study of potential thetic utterances in Egyptian Arabic that suggests that the prosodic inversion in German or English is only a special case of a more general prominence relation between subject and predicate and that the complete accentlessness of the predicate might have arisen via a contour of total *downstep* of the final (predicate) accent and subsequent integration of this accent into the scope of the first accent on the subject.

Keywords. Information structure, thetic/categorical distinction, prosody, subject accentuation, Egyptian Arabic

1. Introduction

This study is part of a research project aiming at the investigation of prosodic encoding of information structure in Egyptian Arabic (EA).

Prosody is a very powerful device for marking information structure in the world languages of the world, albeit not all of them use prosodic means to the same extent. Nevertheless, prosody is an omnipresent feature in spoken language. This paper investigates the role of prosody in a very limited area of information structure in Egyptian Arabic, namely the thetic/categorical distinction (Sasse 1987).

Before we can look at prosodic encoding of information structure, some terminological clarification is called for. After these introductory notes, section 1.1 gives some background information about EA intonation, section 1.2 is concerned with the prosodic expression of information structure and section 1.3 gives a short outline of the thetic/categorical distinction, as it was suggested by Sasse (1987) with special emphasis on Egyptian Arabic (1.3.1). Section 1.4. gives an overview about previous research on focus prosody in EA and section 2 presents the data of this

[1] This paper is based on a talk held at the Conference on Communication and Information Structure in Spoken Arabic, held at the University of Maryland, June 8-10, 2006.

study with the analysis presented in section 3 and a summary and concluding remarks in section 4.

Prosody is envisaged as a property of natural language involving essentially two different aspects, namely rhythm and melody, which also exist outside the linguistic domain. The descriptive framework for this study is basically the *autosegmental-metrical approach to intonation* (cf. Ladd 1996 for more details).

1.1. Some basic facts about the prosody of Egyptian Arabic (EA)[2]

One of the basic facts about Egyptian Arabic prosody is the rich distribution of pitch accents. Mitchell's sketchy, but insightful remarks already point to that fact, when he mentions the "'up-and-down', 'see-saw' effect" in Arabic intonation (Mitchell 1993: 222). This tendency to accent all words has also been recognized by Rifaat (1991) in his investigation of the neutral declarative sentence in Egyptian Classical Arabic and by Rastegar-El Zarka (1997) in her study of Egyptian Modern Standard Arabic (MSA).

The only linguistic study of the Egyptian Arabic dialect to date that is devoted to the question of pitch accent distribution is Hellmuth (2006) who found that "in EA, the overwhelming majority of content words bear a pitch accent" (p. 69). In her corpus of EA there were only 2-4% of unaccented content words (p. 66).

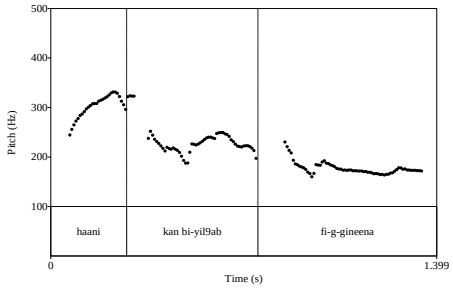
The successive accents mostly display a certain *downdrift* within the intonational domain, i.e. each accent peak is (often considerably) lowered relative to the preceding one. Another striking feature of EA intonational phrases is that they can be lowered with respect to each other. Frequently, whole units of intonation are realized within a compressed pitch range.

In EA intonation phrases, the peak of the last accent can be analyzed as either partially or totally *downstepped*, i.e. lowered to a level above the following low tone (*partial*) or to approximately the same level as the final low tone (*total*) (following the usage of Grabe 1998). *Downstep* has been attributed to the phonetic tendency of *final lowering*. I conceive downdrift across an entire intonational domain to actually indicate assertion and finality. Downstep of the final accent basically conveys the same meaning and adds a nuance of "matter of fact" and "neutral assertion". Final downstep is probably restricted to broad focus, subject focus and thetic utterances as

[2] By *Egyptian Arabic* I mean what has often been called *Cairene Arabic* in linguistic literature, i.e. the dialect of Cairo which has developed into a kind of regional standard that Egyptians from other parts of the country adapt to when coming to the capital or talking to non-Egyptians.

opposed to narrow focus on an argument in final position. But more research is needed to sustain this claim. Figure 1 shows a typical contour of a neutral declarative with *downdrift* throughout the whole contour and *downstep* of the last accent.

Fig. 1: f0 track of the utterance *haːni kan bi-jilʕab fi-g-gineːna* 'Hany was playing in the garden.'



The theoretical framework used here is a model that has been developed for the description of EA prosody (El Zarka 2011, in preparation). This model is a two-tone model that may be counted among the *autosegmental-metrical* (AM) approaches. It however differs from Standard AM-approaches by its basically syntagmatic approach in contrast to the paradigmatic analysis of intonation contours as a concatenation of intonational phonemes. My model identifies three tonal categories, *leading* (primarily rising), *linking* (flat or horizontal) and *closing* (primarily falling) contours, as intonational primes. The accent types, whose turning points (in the course of f0) are annotated using the two tones H (high) and L (low), are considered as manifestations of one of these major categories. The default accent being a rise-fall, or tri-tonal pitch accent LHL whose individual tones are typically aligned with specific landmarks in the segmental string. These accents are frequently linked up so that the final L of one accent and the initial L of the following accent coincide. I will not elaborate on the phonological details any further. It may suffice to say that these tonal categories correlate with information structural categories in a predictable way.

1.2. Information structure and prosody

It has been widely noticed that Germanic languages make extensive use of prosody to mark focus, be it contrastive focus or information focus. A great number of languages, however, do not employ prosodic means in the same way. Vallduví (1992) and Vallduví & Engdahl (1996) proposed a typological distinction between *plastic accent* and *non-plastic accent* languages, referring to languages like English and German as *plastic accent* languages, whereas many Romance languages fall into the category of *non-plastic accent* languages, where the most prominent accent, the so-called *nuclear* accent, tends to be at one of the edges of an intonation phrase. If a sentence is divided into two or several intonational phrases, then each of these will receive its own nuclear accent. The identification of a nuclear accent is relatively straightforward in languages like English, but has been doubted for languages with many identical pitch accents like Copenhagen Danish (Grønnum 1998). EA shares

with Danish the characteristics of pitch accent distribution and just as in Danish, neutral declaratives (i.e. broad focus utterances) typically do not exhibit one main 'nuclear' accent.

Contrary to languages such as English and German, in which the main accent may fall on almost every constituent of the sentence without changing the word order, *non-plastic accent* languages do not allow for this freedom in accent placement. These languages use other linguistic means, i.e. morphological devices or syntactic constructions, as in the following examples taken from Lambrecht (1994: 223) that show that English uses prosody alone, Japanese uses prosody and morphology, namely the topic marker *wa* as opposed to *ga* for non-topics, and Italian uses prosody and syntax to mark information structure.

(1) PREDICATE FOCUS (CATEGORICAL)

What happened to your car?

a. My car/It broke down.
b. (La mia macchina) si è rotta.
c. (Kuruma wa) koshoo-shi-ta.

(2) SENTENCE FOCUS (THETIC)

What happened?

a) My *car* broke down.
b) Mi si è rotta la *macchina.*
c) *Kuruma*-ga *koshoo*-shi-ta.

(3) SUBJECT FOCUS

I heard your motorcycle broke down?

a) My *car* broke down.
b) Si è rotta la mia *macchina.*/E la mia *macchina* che si è rotta.
c) *Kuruma*-ga koshoo-shi-ta.

The idea of *plastic accents* is based on the assumption that it is the distribution of accents, i.e. the presence or absence of an accent that is responsible for marking focus. Prosodists have mainly addressed this phenomenon under the heading of "deaccenting". It is assumed that given information is deaccented, when new information precedes it. That is, the item that provides new information receives an accent and the item that expresses already given information is left without.

But it has also been proposed that some languages do not "deaccent" given material, rather accents are realized in a narrower pitch span as an effect of compression of pitch range rather than deaccenting. Expansion and compression of pitch range as a correlate of narrow focus had already been posited by Gårding (1984) and has since been noticed especially in descriptions of non-stress accent or tone languages (Xu 1999).

Observing that Romance languages like Italian or Romanian do not deaccent given information in certain contexts where the known element would certainly be deaccented in English, Ladd (1996: 197) suggests that not accent, but prosodic

structure, i.e. phrasing, is probably the universal device of marking information structure. Phrasing effects of focus have also been recognized by Beckman and Pierrehumbert (1986) in their study on Japanese intonation, and figure prominently in recent research on Bantu languages (Kanerva 1990, Hyman 1999, Downing 2003) or Korean (Jun 2005) among others.

Another prosodic correlate of different focus types is the shape or type of pitch accent or the alignment of the individual tones. For example, European Portuguese is said to mark narrow focus by the alignment of the H-tone with the stressed syllable, which is analyzed by Frota (2000) as H*L as opposed to broad focus which is marked by the alignment of the L tone with the stressed syllable and which Frota interprets as HL*. This type of nuclear accent has also been attributed to the phenomenon of *downstep* by some prosodists (cf. Ladd 1996: 126f.) and will also be referred to as such below (cf. section 3). A difference in pitch accent type for contrastive versus neutral focus has also been reported for Bengali (Hayes & Lahiri 1991).

1.3. The thetic/categorical distinction (Sasse 1987)

This distinction and the terms "thetic" and "categorical" go back to the language philosophy debate at the end of the 19th century. There they referred to a fundamental dichotomy between two types of logical statements. Sasse's basic insight is that this dichotomy is also a valid grammatical concept in language. While a "categorical" statement exhibits the classical bi-partite structure of the Aristotelian concept of judgment, the "thetic" statement lacks this double structure. In linguistic terms, categorical utterances select a *topic* or a *predication base* about which a judgment is made by means of a *predicate*. Thetic utterances, on the other hand, are characterized by the fact that they do not select such an entity, but it is the utterance as a whole that expresses the statement. This is why thetic sentences have also been called "presentational sentences" (Bolinger), "news sentences" (Schmerling), "eventive" (Gussenhoven) or "event-reporting" (Lambrecht) sentences.

Thetic statements may serve various functions. They may, for instance, give background information as in weather expressions such as 'The sun is shining' or 'It's raining'. It has also been observed that thetic statements frequently contain 'empty' verbs, a fact that invited an explanation of the construction on semantic grounds. But, as Sasse convincingly argues, the superior explanation is one in terms of pragmatics or information 'packaging' (p. 558) and the actual articulation is dependent on the speaker's choice (p. 521).

While example (2) above will be uttered if the speaker chooses his car as a topic or base for the predication, namely to say that the car is not working any more, example (3) is used to report an event, which could be the response to a reproachful comment like "Couldn't you have made it earlier? We're already half an hour late!" Here the response could be something like "I'm awfully sorry, but my *car* broke down ..." In this case it is not the car that is the topic, but rather the whole situation of coming late.

Aspects like informational value (prior mention, situative presence), semantic weight or 'emptiness' of the predicate, or special semantic features of certain verbs (e.g. verbs of appearance and disappearance), as well as grammatical properties like intransitivity or unaccusativity, which have frequently been adduced as conditioning

factors for subject accentuation and 'deaccenting' of the predicate, can be understood as possible restrictions to the actual pragmatic choice. Thus, Sasse (1987: 566) lists seven typical domains for thetic expressions, some of which have been mentioned above.

In this paper, I investigate one type of thetic utterances in EA which Sasse terms "explanations." Such utterances may serve as a response to a prior question "What happened?" or "Why did it happen?"

1.3.1. The thetic/categorical distinction in Egyptian Arabic

It has been suggested that Arabic word order is largely determined by pragmatic considerations (e.g. Holes 1995: 203-4). Moutaouakil (1989) describes the different constructions used for pragmatic functions in a framework of *Functional Grammar*. Brustad (2000: 330) holds Spoken Arabic to be a *topic-prominent language* as opposed to *subject-prominent languages*, relying on the classification by Li and Thompson (1976).

Cross-linguistically, subject inversion is one common way to express theticity. Sasse (1987: 535) mentions Modern Arabic dialects among the languages that use this kind of construction. Citing examples from Abul-Fadl (1961), he points to the existential constructions with *fi:(h)* in EA that are frequently answers to questions such as "What happened?" or other questions that presuppose the whole answer to be propositionally informative.

(4)

bᵊtiʕmalu	*ʔēh*	*hina?*	*gālu:*	*fī*	*'arbᵊʕīn*	*ħarāmi*	*sarginna*
you(pl.)-do	what	here	they-said	EXIST	40	robber]s[	kidnapping-us

'What are you doing here? They said: 40 *rob*bers kidnapped us'

(Sasse 1987: 541, after Abul Fadl 1961: 97)

But as prosody is an inevitable companion of every utterance, it is to be expected that there is also some difference in the prosodic make-up of information structural categories, and probably also of the thetic and categorical statements in EA.

1.4. Focus prosody in Egyptian Arabic: a small-scale experiment with semi-spontaneous speech

In descriptions of EA, it has repeatedly been suggested that EA is like English as far as prosodic focus marking is concerned. Heliel (1976), Gary & Gamal Eldin (1982) and Mitchell (1993) all observe that it is possible to convey different information structures by placing the nucleus on different constituents. But none of these studies substantiates this claim with acoustic data. Even if this impressionistic observation is true, it is not at all clear which the phonetic correlates are that evoke the impression of a certain nucleus location.

In light of what has been said so far, we would not expect EA to be similar to English, we would not expect it to be a *plastic accent language* in Vallduví's sense. The reasons are, above all, to be found in the prosodic make-up of the language.

As outlined above, EA tends to accent every lexical word, which in turn means that there is less room to mark focus by accentuation. As far as deaccenting is concerned, it is evident that EA does not deaccent given material in the same way English does. Example (5) shows an utterance where the two occurrences of the word *bajzˤa* both receive a pitch accent.

(5)

[il]ʕarabiyya	***bayzˤa***	*ʕaʃān*	*il-farāmil*	***bayzˤa***
[DET-]car	broken	because	DET-brakes	broken

'The car is broken because the brakes are broken.'

It has been shown above that EA also resorts to syntactic strategies to convey pragmatic meaning. These facts about the language call for a more diligent investigation of the prosodic cues and their relation to syntactic constructions.

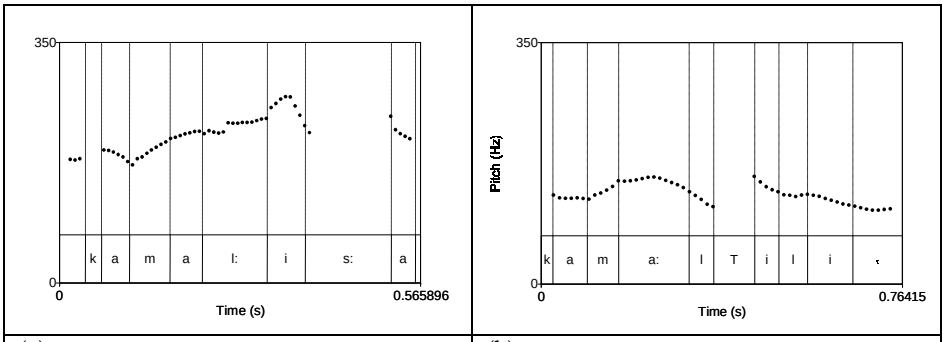
Hellmuth (2006, 2009) conducted an experiment to test a claim made in a small pilot study by Norlin (1989), which stated that focus in EA is marked by the expansion of pitch range and the compression of pitch range after the focused element. Under the assumption that there is a distinction to be made between information focus and contrastive/identificational focus, Hellmuth tested pitch range manipulation as well as tonal alignment. She interprets the results of her study as follows: information focus is not prosodically marked in EA and pitch range manipulation, which she does not consider to be phonologically relevant, only occurs in EA as a feature associated with contrastive focus.

From what has been said so far, it becomes clear that EA definitely does not exploit accent *distribution* for focus marking the same way English does. But how is it that connaisseurs of the language like Mitchell or Heliel have the auditory impression that the accentual system of EA works like that of English? The answer most probably lies in the wrong assumption underlying a study such as the one by Hellmuth, namely that accentuation is an all-or-none phenomenon. Under such an assumption, the only criterion for the prosodic marking of information structure is the question whether given material that is in the background is 'deaccented' or not. If we, however, follow Bolinger (1986, inter alia) and acknowledge that accentuation is gradual and not categorical, we will find that what produces the auditory impression of a focus accent is not the paradigmatic contrast of *accented* vs. *deaccented*, but rather a syntagmatic contrast of prominence relations. Thus it is **not** accent position as such, but rather relative prominence that makes a focus accent stand out against its background. As a result, I suggested in El Zarka (in preparation) that *deaccenting* should rather be viewed as a special instance of *downtoning* or *downgrading*. If this view is correct, the difference between so called *plastic accent* languages such as English or German on the one hand and *non-plastic accent* languages as diverse as Italian, Egyptian Arabic and Mandarin on the other is also not a categorical one, but one of degree.

The data also illustrate another important fact about the prosody of information structure in EA, namely the role of tonal shape or contour. As I have previously suggested, topics may either not be articulated at all (null subjects) or exhibit an accentless *linking* contour if they are taken for granted, the familiar case of many well-studied European languages. If a topic is however made the *theme* of the utterance, it is associated with a linking tone, i.e. it exhibits a rising contour

throughout the whole constituent (Figure 2a). This fact is also not alien to the European languages and has been noted by many scholars, Jackendoff (1972), Bolinger (1986 and prior work) and Brazil (1975), to start with. This type of topical constituent maximally differs in terms of prosody from a focal constituent that constitutes the rheme of a proposition. The semi-spontaneous data investigated in the present experiment - despite exhibiting a considerable freedom in selecting tonal configurations - show a number of topics that rise all the way to the peak of the following accent as in Fig. (2a). Figure (2b), in contrast, shows the same constituent, but in focus position, where a *closing* accent, in this case a full rising-falling default accent is associated with the focal constituent.

Fig. 2: Panel a) shows the f0–tracking of a topic in *kama:l lissa mixaɬɬaS sanawijja ʕamma* 'Kamal has just finished A-levels' in response to 'How is Kamal?'. Panel b) shows a focal subject in *kama:l tˤiliˤ mixaɬɬaS lissa s-sanawijja l-ʕamma* 'Kamal is the one who has just finished A-levels.'



(a) (b)

Three observations can be made in these examples: i) In addition to other phonetic cues, the focal accent exhibits a sharp fall after the first peak, while the topical accent is lacking that fall. ii) The topical H is lower than the following H on *lissa* 'still' on which the leading contour of the topical constituent is continued. iii) The alignment of the H-tone is later in the topical constituent and earlier – right in the middle of the stressed vowel – in the focal constituent. I will return to these issues again in the discussion of the data (section 3) and the concluding section 4.

Having established some basic treats of EA focus prosody, we will now proceed to the main issue of this study, the prosodic encoding of the thetic/categorical distinction in EA. So far we have seen that categorical and thetic utterances in English are differentiated by prosody. English categorical sentences may have only one nuclear accent on the predicate, whereas thetic sentences exhibit only one accent on the subject. Sasse (1987: 522) interprets subject accentuation as communicative fusion of subject and predicate and double accent as a sign of their communicative separation.

As is predicted by the nature of EA prosody, the deaccenting of given material that is typical for languages like English or German does not seem to hold for EA in cases where the sentence contains more than two potential prosodic words. But rather there is an accent on every word and such statements mostly involve the

above described downdrift, even if the sentence unambiguously has a topic-comment-structure as shown above in Figure 1. We may attribute this type of contour to the case of broad focus without the classical bi-partite division of rise + fall, the *arc accentuel* of the French prosodists (cf. Kubarth, this volume). This rising-falling gesture, if it appears in EA - and it does appear frequently - is often paired with a thematic-rhematic division of the whole utterance.

In this light, we will now take a closer look into at a number of (potentially) thetic utterances produced in the experiment to find out whether there is an equivalent to subject accentuation in EA. Prior consultation with some EA informants has suggested that there may be such an equivalent. I informally tested this hypothesis with a number of native speakers using among others the example given as in (6) below. It turned out that there may be a shift of the main prominence to the subject in the answer given in (B), but this is not obligatory. In the following two sections I will try to give an answer to three important questions: (1) Is the hypothesis supported at all by the semi-spontaneous experimental data at hand? (2) If so, do thetic utterances employ other prosodic features than accent shift that distinguish them from categorical statements? (3) What are the phonetic cues of an accent shift, when it occurs?

(6)

A: *ʔeːh raʔj-ik ni-ruːħ is-sinema?*
'What do you think about going to the movies?'

B: *miʃ ħa-jinfaˤ – MAːMA gajja. or maːma GAJJA (?).*
'That's not possible– MOM's coming.'

2. The Data

To test prosodic encoding of the thetic/categorical distinction, I collected data that were controlled for the occurrence of the explanative statements as one type of potential thetic utterances. Fourteen native speakers of EA (10 female and 4 male), all aged between 20 and 40, participated in a small experiment[3]. In a staged dialogue with the interviewer, they acted as visitors in a little scene staging a typical visit to an Egyptian home. Before the interview, they were given instructions about the contents of the dialogue. The setting was designed to be as natural as possible and at the same time I expected the dialogues to contain enough repetitions of certain structures to be able to identify relevant features. If not otherwise indicated, all examples come from this corpus of staged conversations.

Here, some remarks about prosodic analysis in general are called for. The analysis of prosodic features will always have to be a trade-off between the naturalness of the speech analyzed and the need for enough reliable and comparable data to be able to come up with valid claims about certain features. This is so because prosodic features are subject to high variability among speakers and contexts. Also, prosody is a relatively fuzzy domain and not as easily accessible to consciousness as other linguistic structures and analysts may be readily influenced by their own native

[3] I wish to thank all who participated in the experiment, especially Doulagy Hanna, Bassem Asker and Heidi Abdel Shahid.

languages. Even language documentation specialists who attach great importance to working on natural speech, concede that in investigating prosody it is necessary to "have several speakers 'do the same thing'" (Himmelmann 2006:167) which of course will always involve a degree of sacrifice of naturalness.

Clearly, the type of experiment conducted for the present study neither provides truly naturalistic language, nor does it furnish the experimenter with viable data for quantitative analysis. The results are therefore only of a preliminary nature and will have to be confirmed or falsified by further evidence from spontaneous speech and quantitative analyses of controlled experiments alike.

The dialogue was designed to contain three potential thetic statements:

(7)

a.

is-sillim ʕa:li	or	*is-sala:lim ʕalj-a*
DEF-stair high		DEF-stairs high-S.F

"There are so many stairs."

b.

il-ʕarabijja	*ʕatˤla:n-a*
DEF-car	out.of.order-S.F

"The car is not working."

c.

il-fara:mil	*bajzˤ-a*
DEF-brakes	broken-S.F

"The brakes are broken."

The statements in (7a) are the expected answers to the question 'Why are you out of breath?' after having come up the stairs in a high-rise building, (7b) is in response to 'Why can't you come to Alexandria with us next weekend?' and (7c) is an answer to the question 'What is wrong with your car?' As the interviewees were not told how to respond, but only what information their responses should contain, the answers differed substantially (see examples below). After the interview, subjects had to answer certain questions that would produce topic-comment answers, e.g. 'What is wrong with the brakes?' and narrow focus constructions such as "What was it that was broken?" It was hoped that the corpus would thus comprise minimal pairs to provide direct comparison with the thetic utterances. These answers were also included in the analysis. This type of thetic statements was chosen to test the hypothesis that in short verbless sentences we would perhaps encounter something like subject accentuation as in the English examples (2) and (3) above.

The total amount of answers from the interview was 54, 15 tokens for type 7a), 20 tokens for type 7b) and 29 tokens for type 7c).

Due to the heterogeneity of the answers, only some of them exhibited a structure that could give rise to accentuation of the subject and accentless

articulation of the predicate. Here are some transcriptions from the data for illustration:

(8)

A: *ʔaħħa* *maː-l-ik?* *bi-ti-nhagi* *kida* *leːh?*
INTERJ what-for-2S.F IND-2S.F.IPFV-gasp so why
'Hey, what's wrong with you? Why are you huffing and puffing so much?'

B: *ʔasˤl* *is-salālim* *bitaʕit-ku* *ʕalja* *ʔawi!*
origin DEF-stairs POSS-2P high very
'It's because there are so many stairs in your house!'

(9)

A: *iħna* *misafr-iːn* *iskind irijja* *l-usbuːʕ* *illi*
1P traveling-PL A. DEF-week REL

gajj *ʔeh* *raʔj-ik* *t-iːgi* *mʕaː-na ?*
coming what opinion-2S.F 2S.IPFV-come with-1P
'We are going to Alexandria next week? Would you like to join us?'

B: *yareːt* *ana* *b-a-ħibb* *iskindirijja* *ʔawi* *bass-ə*
INTERJ 1S IND-1S-like A. very but

li-l-ʔasaf *il-ʕarabijja* *btaʕt-i* *ʕatˤlaːn-a*
to-DEF-regret DEF-car POSS-1S out.of.order-FS
'That would be great, I like Alexandria a lot, but unfortunately my car is not working.'

(10)

a.
A: *leː?* *fiː-ha* *ʔeːh* *l-ʕarabijja* *btaʕt-ak?*
why in-3SF what DEF-car POSS-2SM
'Why? What's wrong with your car?'

B: *hija* *fiː-ha* *ħag-at* *kitiːr.* *il-faraːmil* *ʕatˤlān-a...,*
3SF in-3SF thing.PF many DEF-brakes out.of.order-SF

wa-l-mutˤuːr *yaʕni ...* *bi-j-fawwit...*
and-DEF-motor FILLER IND-3SM.IPFV-let.pass
'There are many things (that don't work properly). The brakes are not working ... and the engine ...there are problems with it.'

or

b.

B:	*il-fara:mil!...*	*il-fara:mil*	*bitaʕit-ha*	*bayzˤ-a.*
	DEF-brakes	DEF-brakes	POSS-3SF	broken-SF

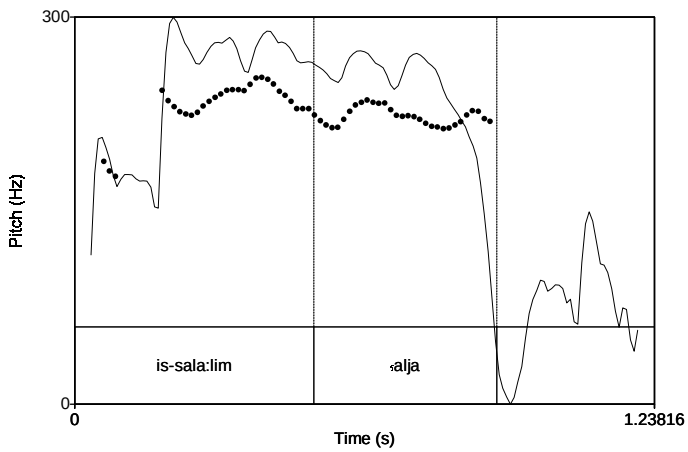
'The brakes! Its brakes are broken.'

As the examples above indicate, the answers did not always admit an interpretation in terms of thetic statements, either containing a heavy predicate as in (8) or a heavy subject as in (9) and (10b) or a nominal predicate expressed in a single word as in (10b). In example (10a) the target sentence is part of a list of topic-comment statements. In this case the referent of the 'brakes' *fara:mil* is conceptually given through the prior mention of the 'car.'

3. Results and discussion

The dialogues were tape-recorded and submitted to qualitative analysis with PRAAT 4.3.22 (Boersma & Weenink 2005). The results of the three statements were heterogeneous. The *sala:lim*-type did not show any effect of greater subject prominence at all, all utterances exhibited a strong accent on *ʕa:li* or *ʕalja* 'high'. This could be attributed to the fact that the stairs were situationally given in the conversational setting and that the predicate was semantically heavy. After all, it was the number of the stairs - in EA the 'highness' of the stairs - that had caused the speaker to be out of breath.

Fig. 3: f0 and intensity trackings of the thetic utterance *is-sala:lim ʕalja* (in response to 'Why are you huffing and puffing so much?' with the heavy line representing pitch, and the thin line, intensity.



Some of the *ʕarabijja*-statements showed the stronger prominence on the subject, but the predicate was also accented, albeit less than in a comparable categorical statement. The perceptual impression is supported by the intensity tracking that

show the drop in intensity from the first to the second accent (Figure 4). In the example illustrated in Figure 4, the pitch contour shows an excursion on ʕarabijja and a flat structure, i.e. downstep on the word ʕatˤlaːna.

One explanation for the noticeably audible prominence of the predicate might be the phonological weight of the three-syllable word *ʕatˤlaːna* with a stressed syllable containing a long /a/. This makes it rather hard to deaccent the word in EA, so there is still a fair amount of prominence perceivable. Figure 5 shows a typical categorical statement for comparison. The example contains three successive pitch accents with wide excursions, the last one of which is perceived as the main prominence in the utterance, thereby exemplifying typical default topic-comment prosody.

Fig. 4: f0 and intensity trackings of the potential thetic utterance *il-ʕarabijja ʕatˤlaːna* (in response to 'Why can't you come with us to Alexandria next weekend?' with the heavy line representing pitch, and the thin line, intensity.

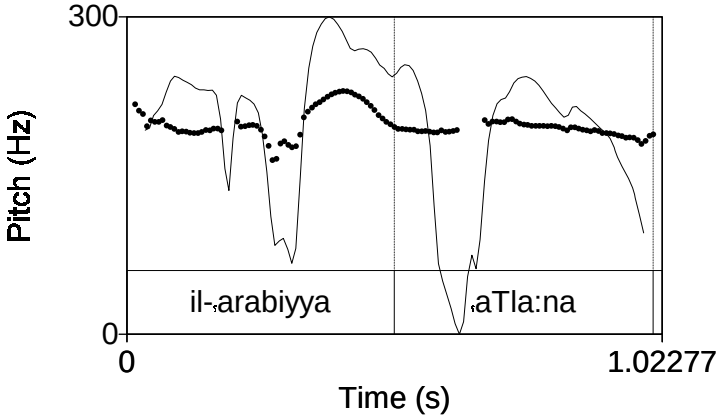
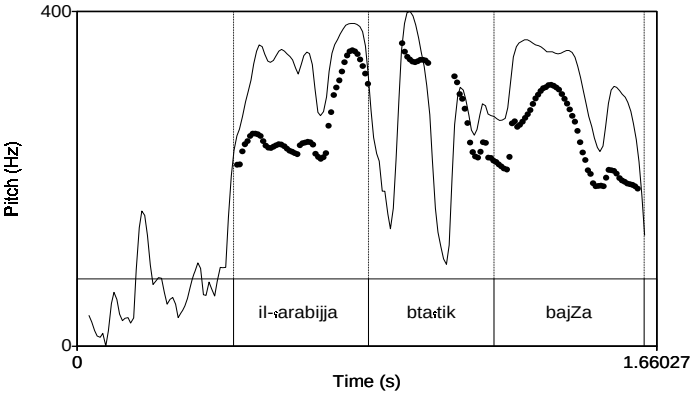


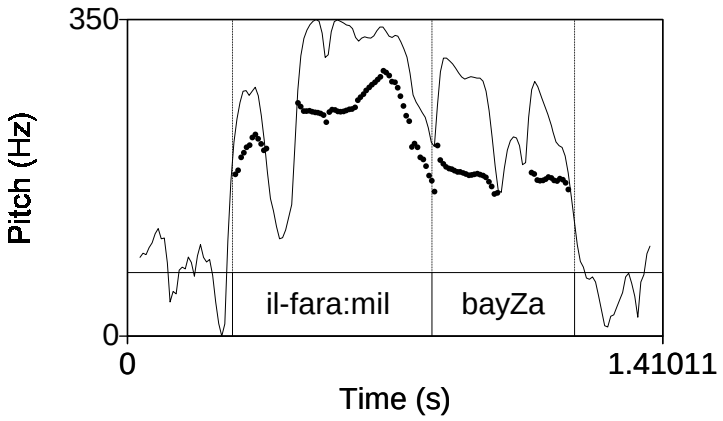
Fig. 5: f0 and intensity trackings of the categorical utterance *il-ʕarabijja btaʕtik bajzˤa*! (an echo-utterance upon the other interlocutor's 'My car is out of order' with the heavy line representing pitch, and the thin line, intensity).



The *fara:mil*-utterances are an interesting case in point. They show a clear decline in prominence from subject to predicate. Figure 6 and Figure 7 both show a marked accent on *fara:mil* and a downstepped predicate *bajzˤa*. Note that the presence of downstep alone cannot be held responsible for the difference in prominence, as downstep is also exhibited by 'neutral declaratives' as shown in Figure 1.

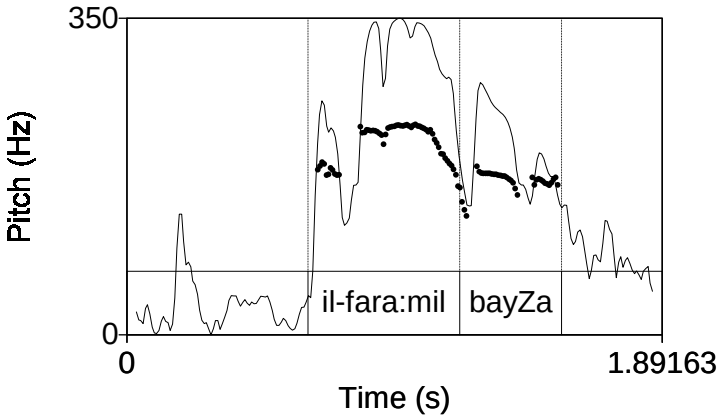
In Figure 6 a sharp rise to the peak of the first accent and a very steep fall to a fairly low level can be observed. The low level is then sustained throughout the predicate phrase. This type of contour is typically found with narrow focus in Egyptian MSA (Rastegar-El Zarka 1997). The fall in this specific case covers more than 7 semitones, but again, large excursions like this can also be observed in non-focal positions. The instances of the topic-comment sentence investigated, however, exhibited only a drop of 2-3 semitones. What is important here is not the excursion itself, but the steepness and abruptness of the fall after the peak.

Fig. 6: f0 and intensity tracks of the thetic utterance *il-fara:mil bajzˤa* in response to 'What is wrong with your car?' with the heavy line representing pitch, and the thin line, intensity.



Pitch, however, is not the only phonetic feature that serves as a cue to accentual prominence. Another cue is the difference in intensity which can be clearly seen in Figure 7. This example does not exhibit a salient difference in scaling, but it clearly shows a closing contour (the falling gesture of the accent) on the subject and total downstep on the predicate.

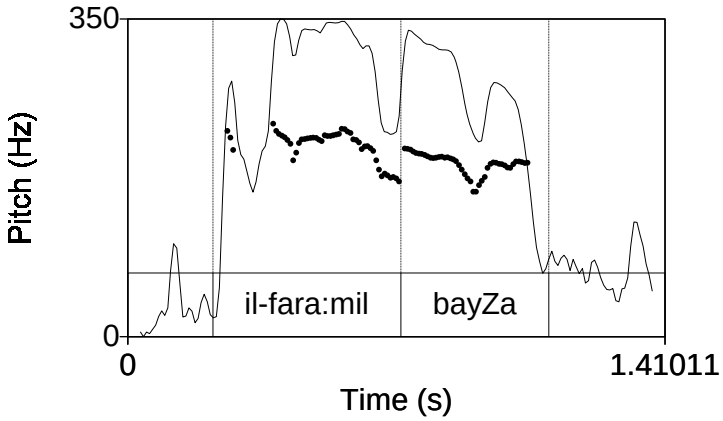
Fig. 7: f0 and intensity trackings of the thetic utterance *il-fara:mil bajzˤa* in response to 'What is wrong with your car?' with the heavy line representing pitch, and the thin line, intensity.



Let us now look at a third acoustic cue associated with prominence, let us see if we can trace differences between the two utterance types. If we compare the utterances in Figures 6 and 7 with that in Figure 8, we find that in the first two contours the subject constituent is comparatively longer and the predicate comparatively shorter than in the latter. In absolute values, the greatest difference in duration between subject and predicate in a thetic *fara:mil*-statement within the corpus was 622 ms (subject) vs. 276 ms (predicate), i.e. a ratio of approximately 2,25:1. Whereas a typical categorical statement showed a relation of 562 ms vs. 493 ms which constitutes a ratio of only 1,14:1. The duration of the stressed vowel presumably also plays a role in the perception of prominence. We have noted above that in topics, vowel quantity can be completely neutralized. Note that the phonologically long vowel /a:/ in the second syllable of *kama:l* in Figure (2a) is not longer than the one short /a/ of the first syllable. Compare this to the same token in Figure (2b) that shows *kama:l* in focus position. Here the /a:/ is approximately twice as long. To find out which of these features are actually significant, experiments with controlled data and especially perception experiments will have to be conducted.

In addition to the prosodic cues, there are also segmental cues involved. As has often been pointed out in phonetic studies, there is more accuracy in the realization of segmental material in focused constituents. When under focus, the determiner *l-* in initial position is articulated with vowel and glottal stop epenthesis as /ʔil/ whereas determiners in non-focal constituents are sometimes deleted completely or at least articulated in a reduced manner as [l] or as a slight lengthening of the initial consonant, depending on the morphonological environment.

Fig. 8: f_0 and intensity trackings of the categorical utterance *il-fara:mil bayzˤa* (in response to 'What is wrong with the brakes?').



The acoustic analysis shows different phonetic features that seem to conspire in producing what is perceived as greater prominence. Which of the features is significant has to be established by the quantitative analysis of a sufficiently large corpus and also by perceptual experiments, but I assume that it is not one feature alone that is responsible for the perceptual effect. My data suggest that there is a trade-off between the individual features. Wherever pitch differences are small, we the hearer will probably rely more on durational features (Figure 7), etc.

One issue remains to be addressed here: There is a possible alternative analysis of the *fara:mil*-sentences as subject-focus utterances. The predicate *bayzˤa* can be viewed as given information, as it has been noted that the car is 'broken' or 'out of order' before, which turns the denotation of *bajzˤa* into given information. In any case, it has been suggested, for example by Lambrecht (1994), that a focus domain may also contain given information. And thetic utterances always bear a strong similarity to subject focus utterances, as is also reflected in the fact that these two focus types frequently share the same constructions, e.g. the prosodic strategy of subject accentuation. Thus, the question *il-ʕarabijja fi:ha ʕe:h?* 'What is wrong with your car?' could also be understood as a query to identify the 'wrong' or broken part of the car. But the utterance is, at the very least, ambiguous between the two readings, and the possibility of a thetic interpretation is also logically supported by another possible answer that also occurred in the data twice: *fi:ha l-fara:mil bajzˤa* ('in it the brakes are broken') which could not be uttered as **fi:ha l-fara:mil* ('in it the brakes').

Future research will have to show if the observed prosody also holds true for thetic utterances in other contexts or if it should rather be attributed to the realization of subject focus. Whatever the results will be, the outcome of this small pilot study suggests that prosody alone can be used to signify information structure in Egyptian Arabic, albeit in a different manner than in English or German, i.e. not by accent placement, but by accent shape and accent scaling, which in turn shows a strong correlation with prominence values.

4. Summary of results and typological implications

The experiment reported in this paper was conducted in 2006 as a first step in the investigation of thetic utterances in EA, which is part of a larger project on the interaction of information structure and prosody in EA. It has to be noted this first experiment did not yield enough data so as to provide statistically firm evidence for the existence of an EA equivalent to the prosodic construction of subject accentuation in English or German. At present, I am involved in analyzing additional material that contains data elicited during my fieldwork in Egypt in 2010 and spontaneous speech data from a larger corpus of naturally occurring speech collected for the above mentioned project. A first tentative prediction is that the qualitative observations made in this study seem to hold when checked against this larger corpus.

The results of this study can be summarized as follows:

- there is a difference in the prosodic realization of thetic (and/or subject focus) vs. categorical statements.
- the realization of 'thetic' prosody is achieved by rendering the subject more prominent than the predicate.
- this is only possible in very short utterances, most probably only in two-word sentences like the ones examined.
- the realization of the desired prominence relation involves several interacting phonetic features which can also serve to compensate for one another:
    - wide pitch excursion in the first accent on the subject with a steep fall on the accented syllable
    - downstep of second accent
    - frequently early alignment of the H-tone within the accented syllable of the subject
    - longer duration (of the whole subject constituent in general and the accented syllable in particular)
    - drop in intensity from first to second accent
    - integrated contour with the 'head' of the contour to the left (left edge marking)

In this study it could also be shown that EA thetic utterances are sensitive to universally valid conditioning factors like semantic and phonological weight and also to the informational value of the constituents involved.

An important result of the study is that prosodic focus marking in EA seems to be a matter of *relative* prominence, as complete deaccenting of post-focal constituents is rarely encountered. At the same time, however, the prominence of such constituents *is* lower. This effect is achieved by an intricate interplay of different phonetic factors and sometimes the impression of accentlessness arises.

Regarding the issue of prosodic marking of theticity, it may thus be assumed that subject accentuation with accompanying weaker accentuation of the predicate also occurs in EA to enhance the monomial character of the thetic statement. The

resulting prosodic construction thus runs counter to bi-partite articulations with two strong accents that are prone to separation by a phrase boundary.

However, as predicted in prior studies, notably Hellmuth (2006, 2009), the results also show that deaccenting is less pervasive in EA than it is in the West Germanic languages. The unmarked or default main prominence of an EA intonation phrase has been suggested to be the last accent (Rastegar-El Zarka 1997, Hellmuth 2006). In my previous study of Egyptian spoken MSA I have also suggested the existence of strengthening the left edge of a prosodic domain as a marked option (Rastegar-El Zarka 1997). My further research has in the meantime shown that the assumption of an obligatory nucleus for every intonation unit cannot be maintained in the light of empirical data from spontaneous EA speech (El Zarka 2011). Nevertheless, the utilization of prosodic means as a demarcating device results in marking the edges of domains. In this sense, the demarcation of the left edge or the beginning of utterances may be seen in contradistinction to the more frequent, and therefore 'default' marking of the right edge. As a result, we may assume that EA employs the same strategy found in the Germanic languages, with the essential difference that the prosodic system of these languages allows accentuation to be used in an all-or-none manner, as given material is by definition deaccented. This possibility in turn facilitates the grammaticalization of a prosodic construction, which cannot readily be assumed for EA, where the construction seems to occur in more restricted contexts. It has yet to be investigated what the exact conditions are under which thetic utterances would be realized in the above described manner.

These facts group Egyptian Arabic together with other languages that reportedly do not readily allow deaccenting and show a rich pitch accent distribution, a fact that diminishes the pragmatic force of accent placement. Such languages, Vallduvi's so-called *non-plastic accent* languages often resort to morphosyntactic means for topic/focus marking. But, as the English, Italian and Japanese examples (cf. examples 1-3) show, prosody is also always involved. In the thetic sentences (2 a-c) the subject always receives an accent. The sole difference in prosodic terms between Italian and Japanese on the one hand and English on the other is where in the sentence the main accent is allowed to fall and whether post-focal material is 'deaccented' or not. It could be shown in this paper that EA, in addition to other strategies, also shows the equivalent to Germanic subject accentuation, albeit not as a grammaticalized construction, but rather as automatic prosodic accompaniment of the semantic contents and the communicative function.

If the results of this study are correct, the upshot from a typological perspective is the following: Contrary to the frequent claim in the literature on intonation that the scaling of tones conveys expressive meanings only (Pierrehumbert 1980; cf. Ladd 1996 for a discussion of that issue), it seems that languages with rich pitch accent distribution employ excursion and compression of tonal space on a par with accent placement in the West-Germanic languages. It comes as no surprise then that pitch range variation as a correlate of focus has been suggested for Swedish, a pitch accent language by Gårding (1984) and for Mandarin, a tone language, by Xu (1999) and his colleagues (Xu et al. 2004). More recently, more evidence also comes from other languages such as Estonian (Asu & Nolan 2007, Nolan, p.comm.) where a wider pitch excursion of an accent on a focused word relative to the accents on non-focused words was observed.

Symbols and Transcription

For most of the transcription, the IPA symbols are used, only emphatic consonants are represented by a capital letter. Accented syllables are italicized.

H	high tone
L	low tone
H*, L*	tone associated with the stressed syllable of a word

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