

# **Functional complementarity is only skin deep: evidence from Egyptian Arabic for the autonomy of syntax and phonology in the expression of focus.**

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## **1 Introduction**

Some degree of functional complementarity between syntax and phonology in the expression of information structure categories is often assumed. For example, Gundel (1988) suggests that “one would expect that in languages which [...] do not use sentence stress to code the topic-comment relation [...], syntactic structure would be used for coding topic-comment structure more frequently than in languages where sentence stress is relatively free”. The expectation seems to be that correlation between the use of phonological and syntactic strategies is such that we can predict availability of a strategy in one component of the grammar on the basis of the properties of the other component. This paper argues that the availability of a particular strategy for the expression of information structure (or not) can in fact be explained in terms of properties internal to that same component of the grammar, by testing for cases of apparent complementarity in the use of prosodic and syntactic strategies in a corpus of Egyptian Arabic (EA) speech data. EA is an interesting test case because it shares with Romance languages both the property of resisting deaccentuation of given items and plentiful availability of syntactic strategies for the expression of information structure, yet has been shown to display accentuation patterns, in all contexts, which are argued here to provide an independent explanation for patterns of accentuation in information structure contexts.

The outline of the paper is as follows. Section 2 sets out some of the empirical evidence that might tempt one to assume complementarity between syntax and phonology in the expression of information structure, presenting data from Germanic and Romance languages. Section 3 introduces the facts of EA and demonstrates that it shares with Italian the key properties relevant to our discussion, namely availability of certain syntactic strategies (word order shifts, argument elision and clefting) and a lack of certain prosodic strategies (no de-accentuation of given items, no preference for accenting arguments over predicates). Section 4 takes two IS categories (focus and thetics) and explores whether there is any overlap in the use of prosodic vs. syntactic strategies to express them in EA, on the basis of empirical evidence from a corpus of speech

data. The key finding is that whilst there is overlap in the expression of focus, there appears to be no prosodic, but only syntactic, expression in thetics in EA. Section 5 argues that this apparent lack of overlap between syntax and phonology should not be taken as evidence of functional complementarity between the two, since in EA the lack of prosodic strategies in thetics correlates with the lack of deaccentuation of given items, and both can be explained from an independent property of the phonological grammar of the language (as evidenced by accent distribution in all contexts, Hellmuth 2007). The paper concludes with a suggestion for the way ahead in the search for explanations in the investigation of the interaction of syntax and phonology in the expression of IS.

EA is defined here as the dialect of Arabic spoken in Cairo, Egypt, and by educated middle class Egyptians throughout Egypt (often known as Cairene Arabic). The segmental and metrical phonology of EA are extremely well-described, and have been much discussed in the phonological literature (see Watson 2002 for a comprehensive summary). Syntactically, EA has predominantly SVO word order (Benmamoun 2000).

## **2 The apparent division of labour in the expression of information structure.**

The notion information structure, or ‘information packaging’ (Vallduví 1992), denotes the way in which a particular proposition is conveyed, rather than its actual propositional or lexical content (Lambrecht 1994). Languages display a rich array of strategies for the expression of information structure, with elements of all and any area of the grammar - syntax, phonology, morphology - pressed into service. Examination of the interaction of different components of the grammar in the realisation of IS contexts has been the subject of much research (see Féry *et al.* 2006 for a useful overview). The present paper treats only the interaction of syntax and phonology in the expression of IS.

Krifka (2006) suggests that there are three basic IS categories: focus, givenness and topic. Only focus and givenness are relevant to our current purposes, and we adopt Krifka’s definitions as below (paraphrased):

- (1) Focus indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions.

- (2) Givenness indicates whether the denotation of an expression is present in the common ground or not, and/or the degree to which it is present in the immediate common ground.

The third IS category relevant to the present paper is thetics, described also as instances of ‘sentence focus’ (Lambrecht 1994), occurring in all-new contexts:

- (3) A thetic statement is one in which "the domain of new information extends over the entire proposition, including the subject" (Lambrecht 1994:14)

Importantly, adoption of these particular definitions of these IS categories, or indeed acceptance of their existence as distinct categories, is not crucial to the claim set out in this paper. The case regarding interaction in the expression of IS is made here on the basis of these categories and definitions, but could in principle be made on the basis of alternative definitions and/or alternative categories.

The focus of our attention here is the interesting fact that there appear to be clear groupings among languages according to which area of the grammar is engaged in the expression of a particular IS category. A classic example is use vs. non-use of prosodic strategies in Germanic and Romance languages, treated in depth in Ladd (1996). As Ladd points out, in most Romance languages given items are not de-accented, as they would be in a Germanic language; the example here is from Italian (capitals denote primary accent) (Ladd 1996:176):

- (4) [le inchieste] servono a mettere a POSTO cose andate fuori POSTO  
[the investigations] serve to put to place things done out-of place  
“The investigations are helping to put back in ORDER things that have got out of ORDER”

De-accenting of only part of a phrase is ungrammatical in Italian (Ladd 1996:177):

- (5) \*Correre è come amminare in FRETTE, soltanto si deve andare molto PIU in fretta.  
“Running is like walking in HASTE, only you have to got much MORE in haste”

These facts have been confirmed by Swerts *et al.* (2002) who show from semi-spontaneous experimental speech data that there is no de-accenting within complex noun phrases (NPs) in Italian. Indeed Italian listeners are unable to reconstruct the context in which a complex NP occurred from prosody alone. In contrast, in Dutch, a given item within a complex NP will be de-



word order are instead used to shift constituents into sentence locations where they will appear with or without accent as needed.

In an example of this line of argument, Ladd (1996) suggests that a language like Italian, which resists de-accenting, may have other strategies for achieving similar effects, such as right-dislocation which results in a ‘tag’ pronunciation in a low pitch range, as illustrated below. The utterance in (8) below is felicitous in a context in which ‘your bath’ is contrasted with someone else’s bath which has already been run; in the same context a Germanic style accentuation pattern, as in the Italian equivalent in (9), is unacceptable (Ladd 1996:179):

(8) Adesso faccio scorrere il TUO, di bagnetto.  
now I make run the yours, of bath.dim  
‘Now I’ll run YOUR bath’

(9) ??Adesso faccio scorrere il TUO bagnetto

Note that this is an instance of de-accenting of a given item ([bagnetto] ‘bath’) in a post-focus position. It could therefore in principle be the need to assign main prominence in non-phrase-final position to the focussed item ([tuo] ‘your’) which conditions right-dislocation, rather than the need to express the given status of the item. I take Vallduví’s concept of accent to indicate the position of main prominence in the sentence in a particular language (rather than the distribution of individual accents), thus Ladd’s Italian example would be analysed as an attempt to move [tuo] to phrase-final position where it can receive main prominence (cf. Zubizarreta 1998, Frascarelli 2000). Notwithstanding this reinterpretation, the example in (8) does appear to be an instance of use of a syntactic strategy in the absence of a suitable prosodic strategy.

One might thus be tempted to treat the case of prosodic vs. syntactic inversion in thetics in a similar way, that is, to say that Italian doesn’t use prosodic inversion because it has a syntactic strategy available (the shift to non-canonical word order). In this case however, Ladd himself points out that there is a basic prosodic difference between Germanic and Romance which arguably underlies the pattern of accentuation in thetics in Germanic but which is masked by the use of syntactic inversion in Italian. In fact, English displays a general preference for accenting arguments over predicates, observable independently in small clauses, and in short relative



elision), but lacks certain key prosodic strategies (no de-accentuation of given items, no preference for accenting arguments over predicates).

### 3.1 Syntactic strategies for the expression of IS in EA

Starting with the IS category focus, this is reported by Gary & Gamal-Eldin (1981:51) to be expressible in EA by means of syntactic clefts; both full clefts as in (12) and pseudo-clefts as in (13). According to Gary & Gamal-Eldin, these syntactic strategies are accompanied by prosodic effects; “stronger stress” on the clefted item and “reduced stress” on other items.

(12) [da muhammad illi gi:h] full cleft  
 that Mohammad that came  
 ‘It was Mohammad that came’

(13) a) [muhammad huwwa illi gi:h] pseudo-cleft  
 Mohammed he that came  
 “Mohammed’s the one who came.”  
 b) [illi bi-jhibbi-ha huwwa muni:b]  
 that ASP-likes-her he Muneeb  
 “The one who likes her is Muneeb”

Jelinek (2002:94) points out that whenever a subject pronoun is realised overtly in EA this is to introduce a discourse element which is “new or contrastive in the context”, and is accompanied by prosodic effects in the form of “added stress or a higher intonation peak”. According to Jelinek’s data, reproduced in (14), in a sentence like (a) the pronoun [hijja] ‘she’ is optional, but for most EA speakers an overt pronoun here is infelicitous other than in a focus context (p.c. Ihab Shabana); in a focus sentence like (b), the pronoun is unambiguously obligatory (Jelinek 2002:94) (bold type denotes added stress/higher intonation).

(14) a) [(hijja) was<sup>ʕ</sup>alit]  
 (she) arrive-perf.3fs  
 ‘She arrived.’  
 b) [**hijja** was<sup>ʕ</sup>alit muʃ huwwa]  
 she arrive-perf.3fs not he  
 ‘It was SHE who arrived, not he.’<sup>1</sup>

The example in (14) illustrates that givenness may be expressed syntactically in EA, in that a given subject argument is most felicitously expressed as null (it is dropped); likewise, a given

object argument is most felicitously realised by incorporation of an object pronoun onto the verb ('object cliticisation'<sup>2</sup>).

Inthetic contexts two (purely) syntactic strategies are observed (without accompanying prosodic effects), namely changes in word order and use of an existential construction. Although EA, along with other spoken Arabic dialects, is usually characterized as having SVO word order, a correlation has been observed between VS vs. SV order and event-oriented vs. action-oriented contexts respectively. This is noted for all modern Arabic dialects by Sasse (1987) and has been reported specifically for EA in a corpus study of spoken narratives (Brustad 2004: 342-4). The example in (15) shows a sentence from a spoken narrative in which a verb-initial word order is used to ensure that the indefinite (new) subject of the sentence appears in sentence-final position (example cited from Brustad 2004: 4):

- (15) [ga:li            s-sa:ʕa            tala:ta wagaʕ fi            widni fazi:ʕ]  
came-it-to-me the-hour            three pain in            ear-my horrible  
'At three o'clock I got this horrible pain in my ear.'

Secondly, EA is also cited by Sasse (1987) as a language which makes extensive use of an existential construction [fi:h] in entity-orientedthetic sentences. All of his examples are from the rural Sharqiyya dialect (cited from Abu-Fadl 1961) but the use of [fi:h] in the Cairene dialect is also well documented, as in the example in (16) from Mughazy (2009)<sup>3</sup>:

- (16) [fi:h      ra:gil (#ir-ra:gil) mistanni:-k            barra]  
there-is man (#the-man) waiting(m.s.)-for-you outside  
'There is a man (#the man) waiting for you outside.'

In sum then, the syntactic strategies available for the expression of IS in EA are clefts of various kinds (with accompanying prosodic effects), elision of arguments, word order changes and existential constructions.

### 3.2 Phonological strategies for the expression of IS in EA

The global prosodic contour of an EA declarative utterance containing no IS categories displays continuous declination throughout the sentence (Norlin 1989, Rifaat 1991, Ibrahim *et al.* 2001), with a series of rising pitch movements (pitch accents), associated with the stressed syllable of

each content word (Chahal & Hellmuth 2009in press). The start of the rising pitch gesture is stably aligned with the start of the stressed syllable and the end of the rise, the pitch peak, is aligned within the latter half of the stress foot, all else being equal (Hellmuth 2007a); after the peak the pitch contour falls across intervening unstressed syllables up until the beginning of the next rising pitch movement. There is no particular marking of the final (nuclear) accent in a broad focus declarative utterance, indeed the final pitch movement on the last lexical item is often realised within a compressed range (due to an effect of final lowering). These properties are illustrated in Fig. 1 below (reproduced from Hellmuth 2006b: 71) which shows a broad focus realisation of the SVO sentence in (17).

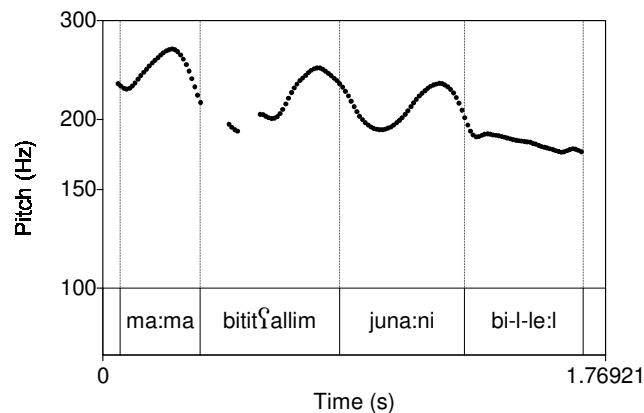


Fig. 1 Sample pitch track of an EA neutral declarative utterance (read speech), showing declination and final lowering.

- (17) [ma:ma        bititʃallim        juna:ni        bi-l-le:l]  
 mum        she-learns        Greek        at-the-night  
 'Mum is learning Greek in the evenings.'

In focus contexts Gary & Gamal-Eldin (1981) report that in principle any syntactic constituent in an EA utterance can be highlighted by means of “a combination of stronger stress and higher intonation”. Similarly, Mitchell (1993) notes that in EA the main prominence of the utterance (that is, the nucleus, as defined in the British school of intonation, e.g. O'Connor & Arnold 1961), can be located in different places in the sentence to indicate the position of focus, without making changes in word order. Thus the example in (18) can be realised with main prominence on ‘two’ or on ‘pounds’ to create a contrast in amount or currency respectively (Mitchell 1993:230):

- (18) [ʔitni:n gini:h mas<sup>ʕ</sup>ri]  
 two pounds Egyptian  
 ‘Two Egyptian pounds.’

Instrumental studies have shown however that words appearing after a focus in EA are not de-accented (Norlin 1989, Hellmuth 2006a). A shift in the position of main prosodic prominence to a non-phrase-final position is thus possible in EA, as Mitchell and Gary & Gamal-Eldin describe, but does not condition full deaccentuation of post-focal arguments as it arguably does in Germanic. In EA main prominence shift is effected by means of realisation of the focussed item in an expanded pitch range together with realisation of non-focussed items in a compressed pitch range, a combination of effects also observed in Lebanese Arabic (Chahal 2003). The example in Fig. 2 below illustrates a token of the SVO sentence in (17), but this time elicited in a frame paragraph such that the subject [ma:ma] ‘Mum’ was focussed (contrasted with ‘Dad’) and the object [juna:ni] ‘Greek’ was given (repeated from earlier in the discourse), as shown in (19). As can be seen, there is an accentual peak on the post-focal given object argument [juna:ni], but it is realised in a compressed pitch range (bold type denotes main prominence in the utterance); the alignment of the start and end of the pitch rise is unaffected by focus context (Hellmuth 2006a).<sup>4</sup>

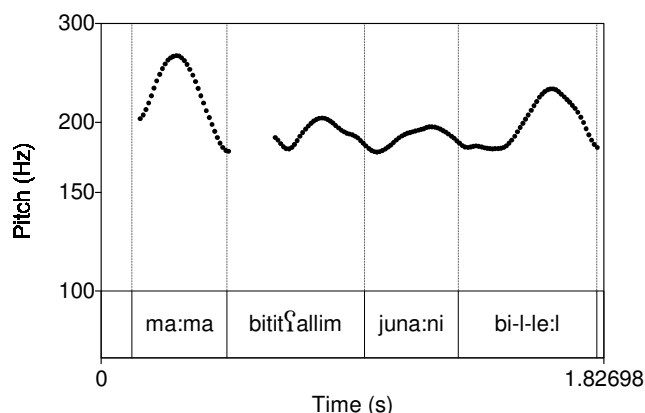


Fig. 2 Sample pitch track of SVO-Adverbial sentence with contrastive focus on the subject and in which the object has given status (reproduced from Hellmuth 2006b: 279).

- (19) [**ma:ma** bititʕallim juna:ni bi-l-le:l]  
 mum she-learns Greek at-the-night  
 ‘**Mum** is learning Greek in the evenings.’

Norlin (1989) investigated declaratives with focus in different positions in the utterance, including on a sentence-medial lexical item, and found that focus-induced pitch range

compression was limited to post-focal contexts; pitch peaks on an initial lexical item in such sentences were realised within a similar pitch range to those in all new sentences.

The tokens illustrated in Figs. 1 and 2 come from a corpus of 144 SVO sentences, elicited in four different contexts such that the focus status of the subject and the givenness status of the object were systematically varied (Hellmuth 2006a, 2006b). Close examination of the object nouns showed no cases of deaccenting anywhere in the corpus, even when the object was given and followed a focused subject. This matches the lack of deaccenting in EA observed in a study of accentuation within complex NPs in EA (Hellmuth 2005) which reproduced the methodology of Swerts et al's (2002) study of complex NPs in Italian, and obtained directly parallel results for EA as were observed in Italian.

As well as displaying a lack of deaccenting, EA also shares with Italian the property pointed out by Ladd (1996) of displaying no preference for accentuation of arguments over predicates. Evidence for this comes from accentuation patterns in small clauses and short utterance-final relative clauses (cf. (10) in English and (11) in Italian above). Recall that in these predicate-final cases, there is a difference in accentuation between English and Italian, with English displaying a preference for accentuation of arguments over predicates, not observed in Italian. In directly parallel examples to the English and Italian examples, a clause-final verb in EA is accented as it is in Italian. (The examples in (20) are realised with main prominence on the final lexical item).

- (20) a) [hati:luh      mang:ya ʃasha:n jiduʔha]                      small clause  
bring-to-him mango    in-order he-taste-it  
'Get him a mango to taste' (a special kind of mango).
- b) [mabaʔibbiʃ      il-ʔomsʔaan illi bijilbisha]                      short relative clause  
NEG-I-like-NEG the-shirts REL he-wears-them  
'I don't like the shirts he wears'.

However, the clause-final verb bears an obligatory resumptive pronoun in EA in these constructions, and it could be argued that the lexical argument is here embedded in the verb, thus attracting an accent. To obtain a strictly predicate-final utterance we need to look at sentences with a final intransitive verb, as in (21) below<sup>5</sup>. In such cases in EA main prominence is most naturally realised on the final lexical item and the phrase-final predicate (a finite verb) is thus

accented; note however that even in a focus context, invoking, say, alternatives to ‘Munir’, and causing the main prominence of the utterance to be realised in non-final position, the final verb would still be accented (possibly within a compressed pitch range).

- (21) [imbareh w-ana mrawwah        ʃufti    mnir    bijitmaʃʃa]  
yesterday and-I going-home(m.s.) I-saw Munir he-walks  
'Yesterday while going home I saw Munir out walking '.

EA appears then to share with Italian the property of showing no preference for accentuation of arguments over predicates. Whilst other prosodic strategies for the expression of IS may be available in EA, such as variation in intensity (amplitude), these await formal investigation. In sum then, at present, we might expect to find use of gradient pitch range manipulation to realise focus via main prominence shift in EA, but we would not expect to find instances of deaccenting to realise givenness. Given that there is no preference for accentuation of arguments over predicates in EA we do not expect to find prosodic inversion in thetics.

### **3.3 Summary: EA is like Italian**

In this section we have shown that, like Italian, EA displays a wide range of different syntactic strategies for the expression of IS: clefts of various kinds, elision of arguments, word order changes and existential constructions. Also like Italian, EA lacks deaccentuation as a phonological strategy for the realisation of givenness. Note however that EA differs from Italian in that EA allows shift of main prominence to non-phrase-initial positions whereas Italian does not. In the next section, the complementarity hypothesis is tested by reviewing whether syntactic or prosodic strategies or both are used in the expression of IS in EA, in two IS contexts: focus and thetics.

## **4 Testing the functional complementarity hypothesis in EA.**

In this section we explore new empirical evidence regarding the actual range of strategies observed in IS contexts in EA, in order to observe to what extent the use of syntactic and prosodic strategies does or does not overlap. Most of the data analysed here are taken from a corpus of semi-spontaneous speech data, elicited in response to visual stimuli presented on a computer screen, collected by the author using a subset of the elicitation tasks provided in the

*Questionnaire on Information Structure* (QUIS) (Skopeteas *et al.* 2006). Digital recordings were made in Cairo on a Marantz PMD660 with a Shure headset condenser microphone at 44.1KHz 16bit, resampled to 22.05kHz; a broad phonetic and full prosodic transcription was made by the author with reference to spectrogram and F0 contour extracted using Praat 4.5 (Boersma & Weenink 2006). Additional examples are also cited from the full QUIS corpus<sup>6</sup>.

#### 4.1 Focus

The dataset described here comprises utterances elicited using a picture-based memory game from QUIS (Skopeteas *et al.* 2006). After seeing a picture of a transitive action, such as a man cutting a melon, the participant is asked a question of the type ‘Is it a woman cutting the melon?’ or ‘Who is cutting the melon?’<sup>7</sup>. These questions subdivide the IS concept of focus into two categories, eliciting either contrastive focus or information focus on the subject of the sentence, respectively<sup>8</sup>. Parallel sets of questions elicited contrastive/information focus on the object of the sentence. There were 8 picture stimuli in total, with responses elicited in 2 focus conditions (corrective/completion) from 5 speakers, yielding 80 tokens in total for analysis. Four tokens (two in each focus condition) were excluded because the speaker gave an infelicitous answer, leaving 38 tokens in each focus condition for analysis. The range of realisations observed in the two types of focus context are summarized in Table 1.

	ellipsis	full cleft	pseudo-cleft	prosody only	neutral syntax, neutral prosody	TOTAL
information focus	22	1	0	12	3	38
contrastive focus	7	2	5	24	0	38
TOTAL	29	3	5	36	3	76

Table 1 Summary of strategies observed in focus contexts in the elicited dataset.

The most common ‘syntactic’ strategy employed was ellipsis, whereby the speaker produced only the single wh-elicited argument in response to the question (e.g. ‘The man’); ellipsis was especially common in response to a plain wh-question, that is, in information focus contexts. Where the speaker produced a full sentence, a cleft construction was used in 8 cases. More clefts were produced in contrastive focus contexts (N=7) than in information focus contexts (N=1). There were 3 full clefts, as in (22), and 5 pseudo-clefts, introduced with [da] ‘that’, as in (23).

(22) [la la ar-**ra:gil** howa illi bijzu?? is-sitt ... ?aw bijʃiddah] full cleft  
 no no the-man he REL he-pushes the-woman.. or he-pulls-her  
 ‘No, it’s the man who is pushing the woman.. or pulling her.’

(23) [laʔ da **ra:gil** bijiʔtil ir-ra:gil] pseudo-cleft  
 no that man he-kills the-man  
 ‘No, it’s a man killing the man.’

In all but one of the cases in which a cleft was produced in a contrastive focus context, the syntactic strategy was accompanied by prosodic effects. Most often, the clefted item was realised in an expanded pitch range, and following items in a compressed pitch range, as in the example in (23), illustrated in Fig. 3 below. Other prosodic effects included insertion of a prosodic boundary after the clefted item, or compression of items in the subordinate clause only (without expansion of pitch range on the cleft itself). In the one instance of a cleft produced in an information focus context (the token in (22), part of which is illustrated in Fig. 4 below), the syntactic strategy did not appear to be accompanied by any prosodic effects (note that the final word was fully devoiced and thus no pitch trace is visible).

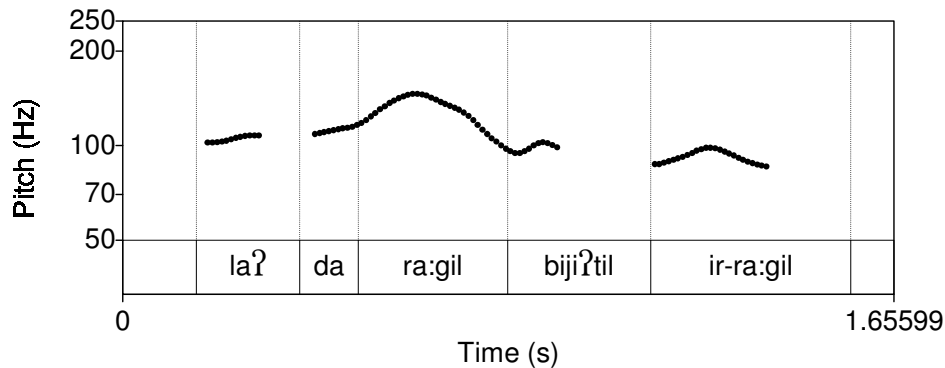


Fig. 3 Sample pseudo-cleft [41ARZ-I04T-03M]

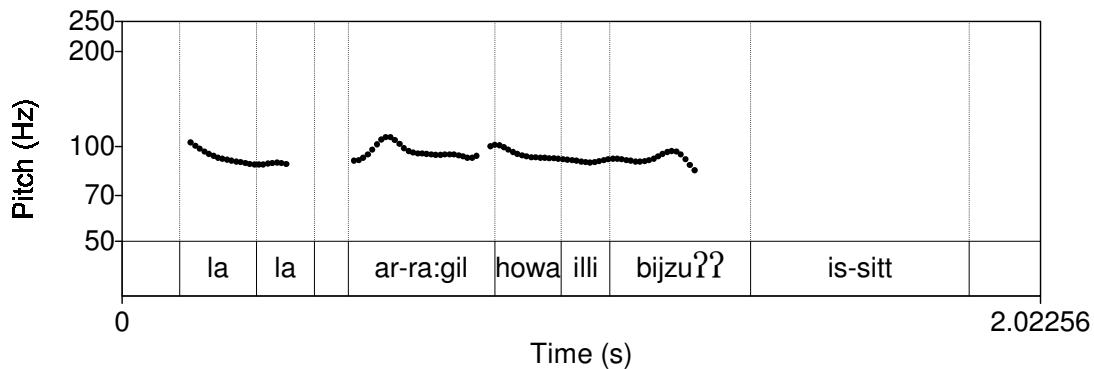


Fig. 4 Sample full cleft [41ARZ-I02T-08M]

Among the 39 tokens in the remainder of the dataset, in which no syntactic strategy was used, all but three show some kind of prosodic effect. As expected these effects include gradient pitch range manipulation, but there were also an equal number of instances of insertion of a phrase boundary after the focussed item. A prosodic effect was more likely to be used in a contrastive focus context than in an information focus context. The realisations are summarised in Table 2.

	pitch range manipulation	inserted phrase boundary	TOTAL
info	4	8	12
contr	14	10	24
<b>TOTAL</b>	<b>18</b>	<b>18</b>	<b>36</b>

Table 2 Summary of prosodic strategies observed in the elicited dataset.

Pitch range manipulation was often accompanied by a parallel increase/reduction in intensity, as in the token in (24) which is illustrated in Fig. 5 below.

- (24) [la fi:h **ra:gil** bjaʔtaʔ batʰi:xa]  
 no there-is man he-cuts melon  
 “No, there’s a man cutting a melon.”

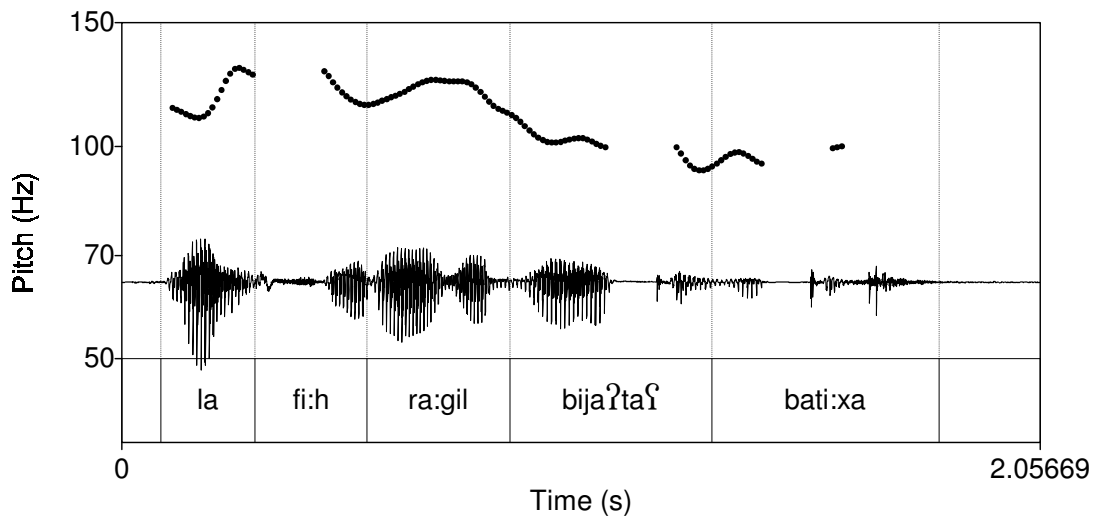


Fig 5 Sample pitch range compression and reduced intensity [41ARZ-K03-01M]

The count of inserted phrase boundaries included both major and minor prosodic junctures. A sample of a minor prosodic juncture, indicated by continued raised pitch after the end of the accented syllable (in the word ['ra:gil] 'man'), is given in Fig. 6 below which illustrates the token

in (25) (recall that, after the pitch peak of each pitch accent, in phrase-medial position the f0 contour falls steadily after the peak; in Fig. 6 we see sustained high pitch into the postaccentual syllable of the word [ˈra:gil], indicating a high phrase tone marking a minor prosodic juncture<sup>9</sup>).

- (25) [ar-**ra:gil** biʝbus˦˥ ʔala lampa]  
 the-man he-looks at lamp  
 “The man is looking at a lamp.”

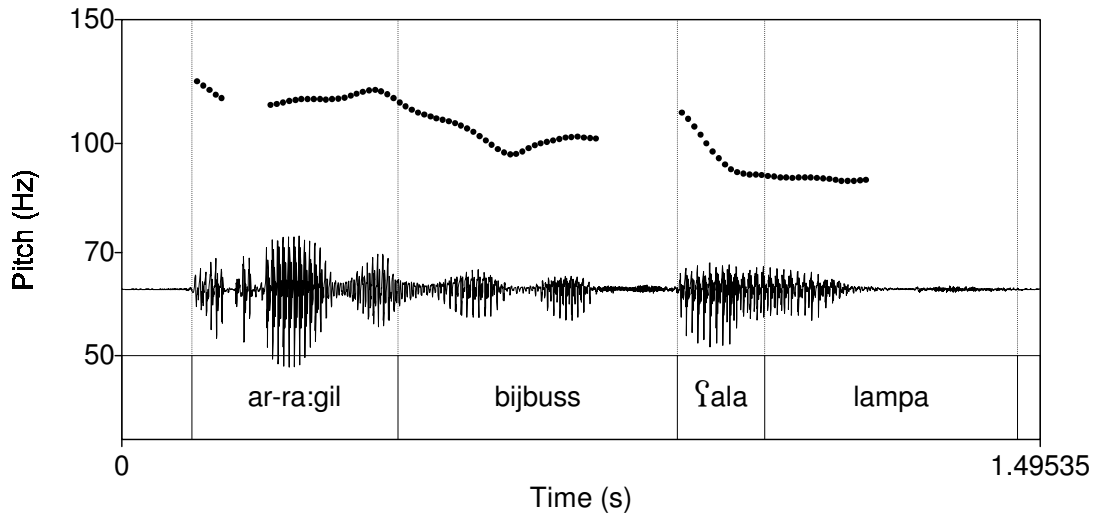


Fig.6 Sample minor juncture phrase boundary [41ARZ-O04-01M]

In summary then, and contrary to the complementarity hypothesis, both syntactic and prosodic strategies are used in EA in the realisation of focus. In some instances the strategies work in tandem, as in the instances of clefts accompanied by prosodic effects, but the strategies are also observed independently.

## 4.2 Thetics

The thetics dataset is made up of utterances elicited in ‘all new’ contexts. These include 128 descriptions elicited from 8 speakers using single pictures each denoting a transitive or intransitive action (in response to the question ‘What’s happening?’) (64 transitive + 64 intransitive utterances)<sup>10</sup>. A further 64 tokens were extracted from the main QUIS corpus, being the opening utterance in other tasks such as descriptions of short animated films or picture sequences. The total corpus of potential thetics comprises 192 tokens. Among these 192 tokens, 161 (84%) are produced with an indefinite subject. In the other 31 tokens (16%), 28 are produced

with a definite subject and 3 with a null subject; in these cases the speaker is deemed not to have interpreted the context as 'all new', thus they are excluded from analysis.

In the 161 tokens produced with an indefinite subject the following syntactic strategies are used:

(26)	10	existential construction	[fi:h] 'there is'
	65	deictic presentational	[da]/[di]/[dul] 'this/those'
	86	monoclausal	indefinite subject is clause-initial

The expected construction in an eventive context, according to Sasse (1987), is the existential [fi:h]. In the current data set however it is used in only 10 tokens (6% of felicitous tokens), and mostly only by one speaker, 04M, who produced 5 of the 10 existential constructions observed. This speaker was incidentally the least computer-literate of the speakers, and the one who most readily engaged with the event world of the pictures he saw (token [27ARZ-A11-04M]):

- (27) [illi bijahs<sup>ʕ</sup>ul innu fi:h ra:gil ... bijʕazzif ʕala ʔala nuha:sijja]  
 REL it-happens that there-is man <uh> he-plays on instrument brass  
 “What’s happening is that there is a man playing a brass instrument.”

Although the number of existential [fi:h] constructions is relatively low, there are also a large number of what may be termed deictic presentationals (40% of felicitous tokens), whereby the subject is introduced with a deictic, arguably to avoid an utterance-initial indefinite subject (token [27ARZ-Y05T-03M]):

- (28) [da ʕa:mil bijʕiddi ha:ga bi silsila]  
 this(m.) worker he-pulls something with chain  
 “This is a worker pulling something with a chain.”

All of the remaining tokens are mono-clausal utterances with a clause-initial indefinite subject (53% of felicitous tokens), and these include sentences with an overt verb (SV and SVO) as well as sentences containing no verb but only a subject and predicate (termed ‘nominal sentences’ in traditional Arabic grammar). There are no instances whatsoever of the use of syntactic inversion in EA in the current dataset; that is, utterances along the lines of \*[bityanni sitt] (she-sings a-woman ‘A woman sings’) were not produced by any of the participants.

In order to look for potential instances of prosodic inversion, we need to find tokens in which the speaker chose to realise a picture description with an intransitive verb in a short utterance.

Among the full dataset of 192 tokens, speakers used intransitive verbs in 68 tokens, including:

- |      |            |                       |                          |                        |
|------|------------|-----------------------|--------------------------|------------------------|
| (29) | [jiʕazzif] | ‘he plays’ (of music) | [jurʕus <sup>ʕ</sup> ]   | ‘he dances’            |
|      | [jiʕanni]  | ‘he sings’            | [jiʕajjat <sup>ʕ</sup> ] | ‘he cries’ (of a baby) |
|      | [jiʕu:m]   | ‘he swims’            | [jid <sup>ʕ</sup> hak]   | ‘he laughs/smiles’     |
|      | [jigri]    | ‘he runs’             | [jis <sup>ʕ</sup> ruʕ]   | ‘he screams’           |

In 34 of these 68 tokens the speaker nonetheless assigned an object to the verb ('He is playing the trombone./'He is running a marathon.'). The remaining 34 tokens -thetic sentences introducing a single agent argument to the discourse in an all-new context - were all produced with an accent on both agent and verb. Of these 34 tokens, just 17 were produced as plain SV (with no other additional material in the utterance), and all of these plain argument+predicate utterances were realised with an accent on both subject and verb. An example of athetic SV token is provided in (30) and illustrated in Fig. 7 below, though the accent on the phrase-final verb is not readily visible due to the following rising phrase-boundary. In a parallel example, athetic SV in which the speaker produced the subject with an adjectival modifier ('a small boy') as in (31), the accent on the phrase-final verb is somewhat clearer as illustrated in Fig. 8. A deictic example, as in (32), is illustrated in Fig. 9.

- (30) [sitti bitʕanni]  
 woman she-sings  
 “A woman is singing”

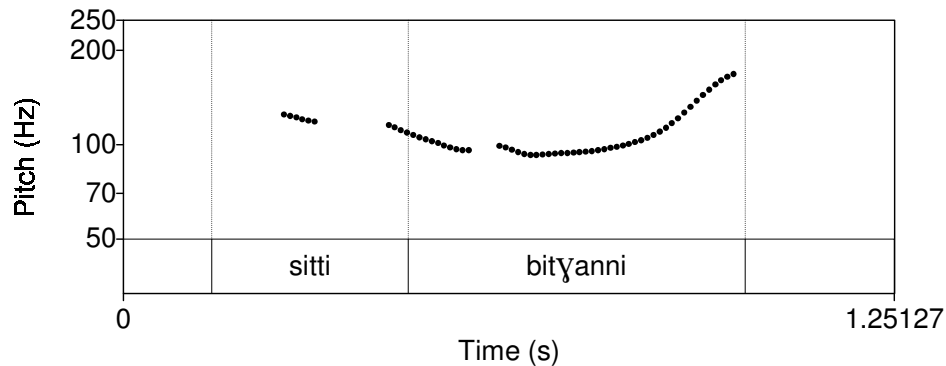


Fig. 7 Sample intransitivethetic sentence with both words accented [27ARZ-Y09T-01M].

- (31) [walad sʕayjar biʔayyatʕ]  
 boy small he-cries  
 'A small boy is crying.'

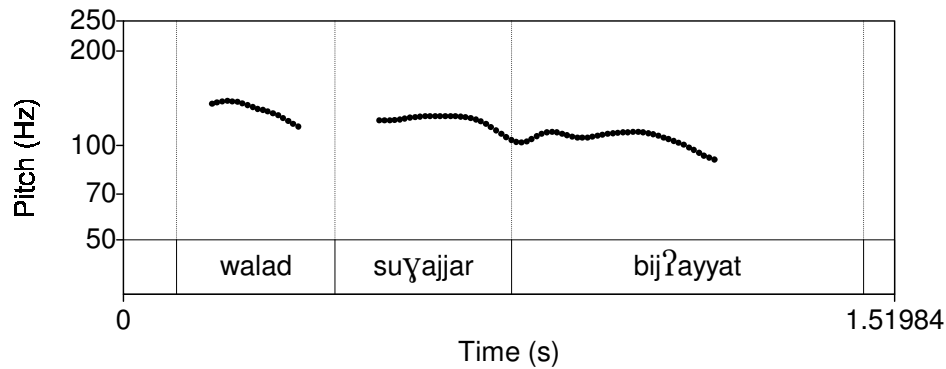


Fig. 8 Sample intransitivethetic sentence with all words accented [27ARZ-Y15T-03M].

- (32) [di waḥda bityanni]  
 this(f.) one she-sings  
 'This is someone singing.'

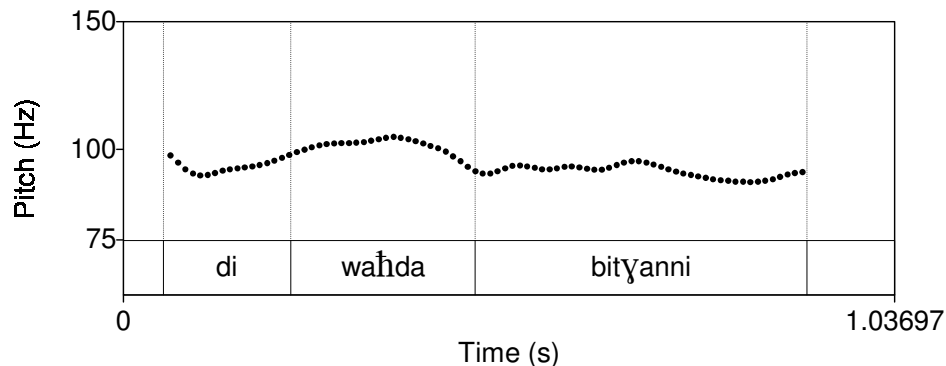


Fig. 9 Deictic intransitivethetic sentence, with both arguments accented [27ARZ-Y09T-08M].

In the corpus of potential thetics examined here then, EA speakers employ a biclausal syntactic strategy (an existential construction or a deictic presentational) in just under half of felicitous tokens (46%). In the subset of the remaining cases in which we can readily test for instances of prosodic inversion (short sentences realised without an object argument) both argument and predicate are accented, suggesting that prosodic inversion is not employed in thetics in EA. Given the ban on deaccentuation of arguments in EA, and the availability of shifts of main prominence, it could be argued that we should instead be looking for instances of shift of main prominence to the initial argument in these cases. Nonetheless careful listening to the tokens in

which a prosodic shift might be expected (the 34 short thetics realised without an object argument) reveals no cases in which main prominence is shifted away from the clause-final verb onto the clause-initial subject argument.

German and English are reported by Lambrecht (2001) to use prosodic shift in both focus andthetic contexts (to express both argument focus and sentence focus, in Lambrecht's terms), but it appears that prosodic shift (of main prominence) is used in EA only in the expression of focus (argument focus). This suggestion is supported by the observation in section 4.1 above that a shift of main prominence (realised by means of pitch range manipulation) is much more commonly observed in contrastive focus contexts, than in information contexts. Although information focus contexts arguably involve a choice among alternatives (among the set of entities about which the predication could hold), it appears that in EA shift of main prominence is restricted to contexts in which a choice is made among overt alternatives which are already present in the common ground. This matches a comment made by Gary & Gamal-Eldin (1981:126) to the effect that use of contrastive stress in EA is “limited to sequences where the contrasted elements are explicit”.

In summary then, and consistently with the complementarity hypothesis, syntactic strategies are observed in EA in the realisation of thetics but no prosodic strategies (no deaccentuation of clause-final verbs and no main prominence shift onto clause-initial subjects).

### **4.3 Summary**

The empirical survey reveals an overlap in the use of syntactic and prosodic strategies in EA in the expression of focus (section 4.1) but no such overlap in the expression of thetics (section 4.2). The former finding conflicts with the notion of functional complementarity between syntax and phonology in the expression of information structure, but the latter facts are just the type of scenario in which it might be tempting to make appeal to some form of functional complementarity between syntax and phonology in the expression of IS. One might for example wish to suggest that EA has syntactic strategies available for the expression of thetic status (biclausal existential and presentational constructions) and thus does not need to make use of prosodic shifts; or in the reverse logic, one might suggest that restriction of prosodic shifts to

contexts involving overt alternatives is sustainable in EA because of the availability of alternative (syntactic) means of expression in thetic or information focus contexts. The next section argues that this apparent lack of overlap in the division of labour between syntax and phonology should not be taken as evidence of functional complementarity, because the patterns of accentuation in thetics can be explained from independent properties of the phonological grammar of the language

## **5 Discussion**

The results of the empirical survey set out in section 4 are argued here to speak against functional complementarity between syntax and phonology in the expression of IS, for two reasons. The first and most obvious reason is that we see in EA an overlap in the use of syntactic and prosodic structures, within a single IS context (the focus context, described in section 4.1). This matches Lambrecht's careful comment that "different focus-marking devices may to some extent coexist in the same language" Lambrecht (2001:488). It may be that there are nuances of pragmatic function which distinguish the contexts in which a particular strategy (syntactic or prosodic) is employed but this is an empirical question which requires further investigation.

Perhaps the key problem with the notion of functional complementarity is not then the notion of mutual exclusivity (strictly either syntax or prosody) but rather the notion of a correlation between availability of strategies in one component and their necessary non-availability in the other. An example of this kind of notion is a suggestion by Engdahl & Vallduví (1994) that "the ability to exploit intonational structure for informational purposes makes syntactic marking less crucial".

I propose that we should look for explanations for the non-availability of a particular strategy within its own component of the grammar in that language, rather than in some other component of the grammar. Thus the lack of a phonological strategy in language X will be due to some property of the phonology of language X, rather than due to a property of the syntax of language X. Any correlations among properties will be found within an individual component of the grammar, not across components of the grammar. In EA then, an explanation for the lack of prosodic shift in thetics must be found in the phonological, and not syntactic, grammar of EA.

The relevant correlating properties in EA are: i) lack of de-accenting and ii) equal accentuation of predicates and arguments (see section 3.2). I suggest that both can be explained by appeal to an independent phonological property of the language, namely that in EA every content word is routinely accented, as has been shown in a range of contexts and speech styles (Hellmuth 2006b). A formal phonological analysis of this phenomenon appeals to accent distribution at the level of the prosodic word in EA, instead of at some higher level of prosodic constituency such as the phonological phrase (Hellmuth 2007b). A typical EA utterance will be accented on every word, as already noted above. This is true even in naturally occurring spontaneous speech, as in the example from a corpus of spontaneous telephone conversations (Karins *et al.* 2002) shown in (33) and illustrated in Fig. 10.

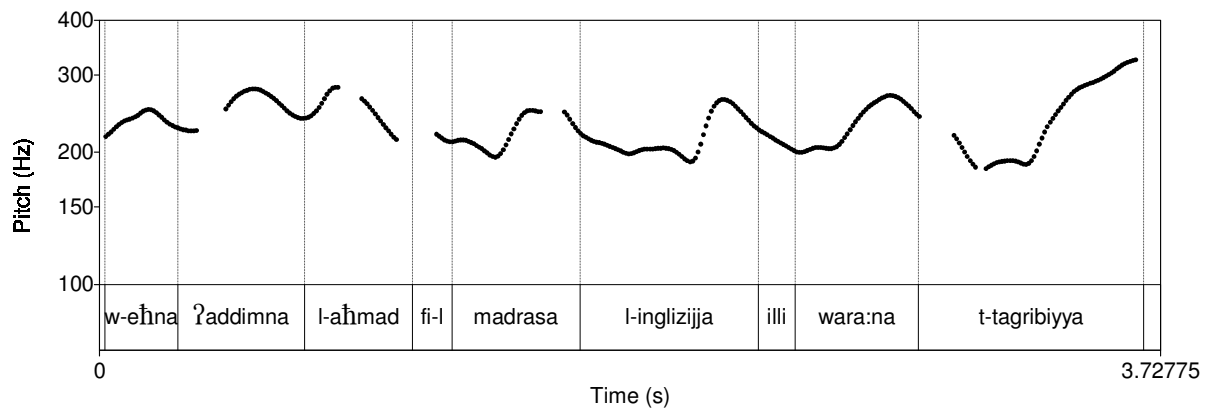


Fig. 10 Pitch accent distribution in spontaneous speech in EA [4862B:330.53-334.27].

- (33) [w-ehna ʔaddimna l-aħmad fi-l-madrasa l-inglizijja illi wara:na it-tagribiyya]  
 and-we applied for-Ahmed in-the-school the-English that behind-us the-experimental  
 ‘We have applied for (a place for) Ahmed at the (experimental) English school behind us.’

How does a phonological requirement that every prosodic word bear an accent explain the examples of the prosodic reflexes of IS (focus and givenness) that we have seen thus far? The argument goes like this: if every lexical word (whether argument or predicate) is routinely mapped to a prosodic word, and if in turn every prosodic word is routinely accented, then we have an explanation for the observed equal accentuation of predicates and arguments in EA. In a similar way, if a well-formed prosodic word in EA must obligatorily bear an accent then we have an explanation for the lack of de-accenting in EA, regardless of IS context (givenness or position relative to a focus). Interestingly, a similar pattern of rich accent distribution has been noted as a

property of other languages including Spanish and Greek (Jun 2005), and most notably also of Italian (Grice *et al.* 2005). Thus rich accent distribution may also explain the lack of de-accenting and equal accentuation of predicates and arguments in Italian also.

By way of analogy, I would like to suggest that attempts to classify languages as using mostly prosodic or mostly syntactic strategies for expression of IS are problematic in the same way that attempts to classify languages as being ‘stress-timed’ or ‘syllable-timed’ are. Whilst these rhythmic classifications are very useful, and indeed have some psychological reality<sup>11</sup>, it has been shown that they do not represent a genuine phonological distinction: when measured there is no actual isochrony of syllables or of stress groups (Roach 1982). Instead, the overall impression of being syllable-timed or stress-timed is now thought to be an epiphenomenon of other genuinely primitive properties of the segmental phonology of a particular language, such as the degree of complexity of consonant clusters or the degree of vowel reduction in unstressed syllables (Ramus 2002).

In a parallel way then, I suggest that an apparent classification of a language as using mostly syntactic strategies or mostly prosodic strategies in the expression of IS should not be seen as a property of the language per se, but rather as the combined result of the independent properties of individual components of the grammar of that language (cf. Féry 2006). In essence, this equates to a claim that there is no IS module of grammar, but rather that surface IS expressions are due to the interaction of the other components of the grammar (including but not limited to syntax and phonology). The claim is testable in that it will stand or fail depending on whether explanations for observed tendencies in the expression of IS can (or cannot) always be found within the relevant component of the grammar. As investigation of the expression of IS in more and more languages continues, I expect that a continuum of variation in the division of labour between syntax and phonology will increasingly be revealed. There will likely be languages at either end of the continuum which display a strong preference for employing elements of the phonological grammar over elements of the syntactic grammar, or vice versa, but there will just as likely be languages in which the distinction is simply not clear-cut. The real determinant of what strategy is used in any IS context will be found within the individual components of the grammar.

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<sup>1</sup> Jelinek translates this with a cleft in English, but there is no cleft or pseudocleft construction in the EA rendition.

<sup>2</sup> Jelinek uses this description, but other authors argue that object pronouns in Arabic are not in fact clitics but are fully incorporated into the verbal complex (Shlonsky 1997).

<sup>3</sup> Mughazy's example here illustrates the general infelicity of definite subjects with [fi:h], but his paper also accounts for the non-trivial range of contexts in which [fi:h] occurs felicitously in EA with a definite subject.

<sup>4</sup> The final adverbial is realised with a pitch boost due to influence from following material in the frame paragraph.

<sup>5</sup> I am indebted to Mustafa Mughazy and Ihab Shabana for judgements on these sentences and to Mustafa Mughazy for suggesting the alternative predicate-final case explored here.

<sup>6</sup>For these additional examples, data collection/prosodic transcription was carried out by the author, and broad phonetic transcription by Dina El Zarka for SFB632.

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<sup>7</sup> For the full task methodology and visual stimuli see task ‘Anima’ in QUIIS (Skopeteas *et al.* 2006).

<sup>8</sup> These correspond to corrective focus and completion focus, respectively, in the typology of Dik *et al.* (1981); cf. Kiss (1998).

<sup>9</sup> See El Zarka (2008) for an alternative analysis of sustained post-accentual pitch in EA.

<sup>10</sup> For sample methodology and visual stimuli see task ‘Event Cards’ in QUIIS (Skopeteas *et al.* 2006).

<sup>11</sup> Listeners are able to classify languages at extreme ends of the stress-timed vs. syllable-timed continuum, but are not able to distinguish between languages which are close neighbours at some mid-point along the continuum.