

Decomposing the Non-Manual Tier: Cross-Modality Generalisations*

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0. Introduction

In this paper we investigate the role of the features of the non-manual tier in interrogatives in Turkish Sign Language (TİD). We propose that the non-manual tier is in fact decomposable, and its individual features have distinct grammatical functions. We also draw attention to a parallelism we have observed in a spoken language, Turkish, where the intonational contours of interrogatives are not monolithic prosodic entities, but are rather composed of distinct prosodic contours designated for grammatical functions, similar to TİD.

1. The Non-Manual Tier in Sign Languages

It has been proposed that the non-manual tier in sign languages has similar functions to intonation in spoken languages (Sandler 1999). Similar to intonation, the non-manual signs may mark different utterance types such as questions, negative statements, topic/focus constructions and commands. Specifically in interrogatives, Zeshan (2004) observes that what is referred to as the “non-manual tier” may consist of a number of distinct non-manual signs such as raised eyebrows, wide open eyes, eye contact with the addressee, forward body posture, mouthing and the forward or backward tilt of the head. She also observes that the presence and absence of these non-manual signs vary from language to language, and between polar and content questions.

* This project was funded by Boğaziçi University Research Fund (Project #07B401). We would like to express our gratitude to Şule Kibar, Gökhan Turgut, Gülfer Göze, Burcu Kayışçı, Akif Çal and Yasemin Kesen for taking part in the recordings and to Nezihe Seyhan for her help in interpreting. We would also like to thank the audiences at the Workshop on Morphology/Phonology-Syntax Interface in Signed and Spoken Languages, Boğaziçi University, May 2007 and BLS-35 for their invaluable feedback.

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(3) *Content Questions*

- a. hs
_____ hb
HEY LAW LAW WHAT/HOW THERE.IS WHAT/HOW
‘What (kind of) legislation is there?’
- b. hs
_____ hb
PERSON WORK WHAT DO WHAT
‘What (kind of) work does the person do?’

Notice that in both kinds of interrogatives the head is not in its neutral position; namely, it is tilted on the forward-backward axis. Since the tilted position of the head is retained from the beginning until the end of the utterance, the muscles of the neck seem stiffened as well. This is in contrast with declaratives. In declaratives, the head is not tilted, it moves in various directions, and the neck is relaxed. Based on the contrast between interrogatives and declaratives, we would like to propose that the head tilt is a phonologically distinctive feature that distinguishes interrogatives from declaratives; that is, it clause-types interrogatives as such.

3. The Semantic/Pragmatic Functions of Phonological Features

In Göksel, Keleşir and Üntak-Tarhan (2008, 2009) we propose that interrogatives consist of (at least) two pragmatic components: the first component is a *prompt* for a response, which is an overarching property present in response seeking utterances in general, distinguishing them from other types of utterances such as declaratives, wishes etc. We show that in Turkish the prompt-for-a-response function is expressed by a designated prosodic contour, and is present not only in interrogatives, but also in other response seeking constructions.

The second component is related to the *type* of response demanded from the hearer: the confirmation or denial of a statement (as in yes/no questions) or the content of a constituent (as in content questions). In the same work, we also identified designated prosodic contours in Turkish which express these different kinds of responses sought. We will present these prosodic contours in Turkish in Section 4 below.

Returning to TĪD, we would like to propose that the head tilt signals the first pragmatic component of interrogatives discussed above, namely, the prompt for a response. The type of response sought, on the other hand, is expressed by the position of the tilted head: if it is tilted forwards, the response sought is the confirmation or denial of a statement (as in yes/no questions), and if it is tilted backwards, it is the content of a constituent in a proposition that is sought (as in content questions).

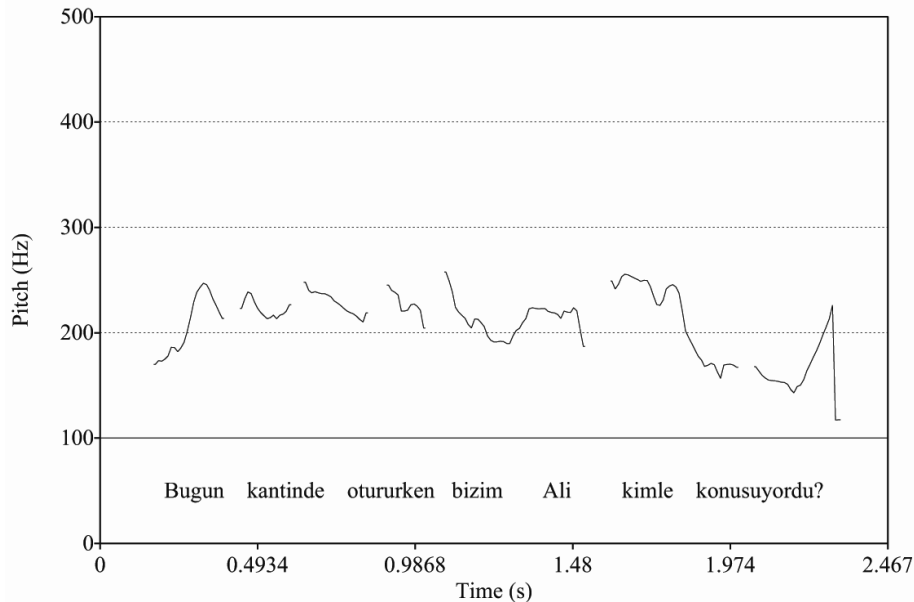
4. Cross-Modality Implications

In Section 3 we proposed that the prompt for a response is expressed by a distinct non-manual sign in TİD, namely, the head tilt. In this section we would like to discuss the distinct pitch contours observed in Turkish that express the same pragmatic function.

In Göksel, Keleşir and Üntak-Tarhan (2008, 2009), we argue that the intonational contours of a number of response seeking constructions - including the two types of questions - contain a prosodic component which involves compressed pitch observed as a high plateau, and which starts at the onset of the utterance. The two types of interrogatives differ, on the other hand, in the second prosodic component that follows: whereas polar questions end with a sequence of H*L%, content questions end with H*LH%. Since the first component is present in a number of response seeking construction types and is not present in, say, declaratives, we propose that this prosodic component expresses the pragmatic function “prompt for a response”. The examples (4) and (5) below show the contrast between the intonational contours of a response seeking utterance and a declarative. Notice that these examples have identical lexical items up to the object of the main verb *konusuyordu* ‘was talking’.

(4) is an example of a content question, and (5) is an example of a declarative. Concentrating on the initial part of the intonational contours of these examples, notice that whereas the intonational contour of the content question in (4) displays compressed pitch at a higher level of the speaker’s pitch range, the intonational contour of the declarative in (5) has a sequence of high and low tones; that is, the pitch is not compressed.

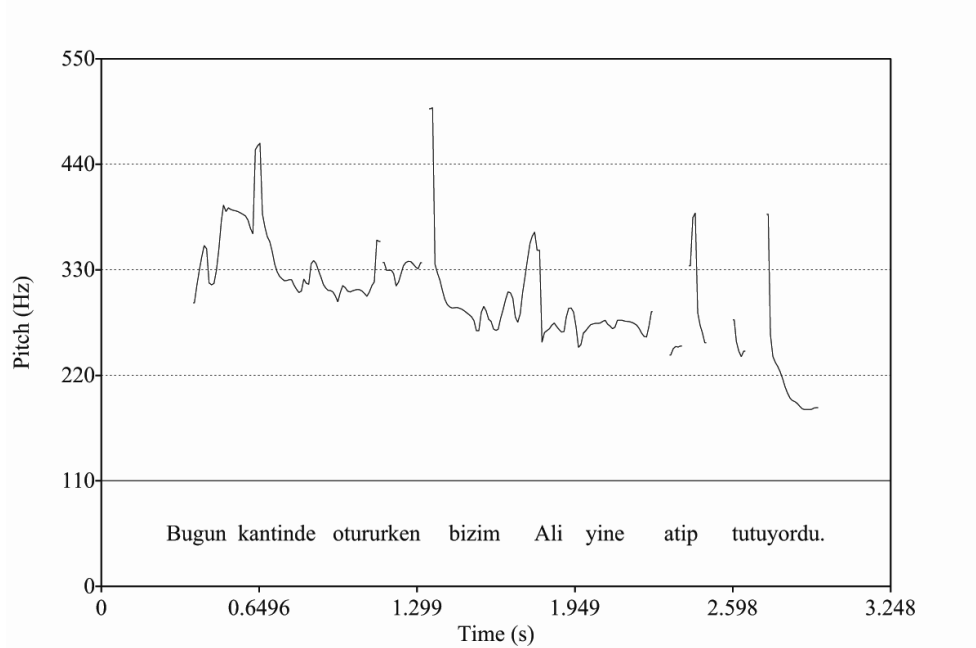
(4) Content Question



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Bugün kantin-de otur-ur-ken bizim Ali **kim-le** konuş-uyor-du?
today canteen-LOC sit-AOR-ADV our Ali **who-COM** talk-IMPF-P.COP
'When we were sitting at the canteen today, who was Ali talking to?'¹

(5) Declarative Clause

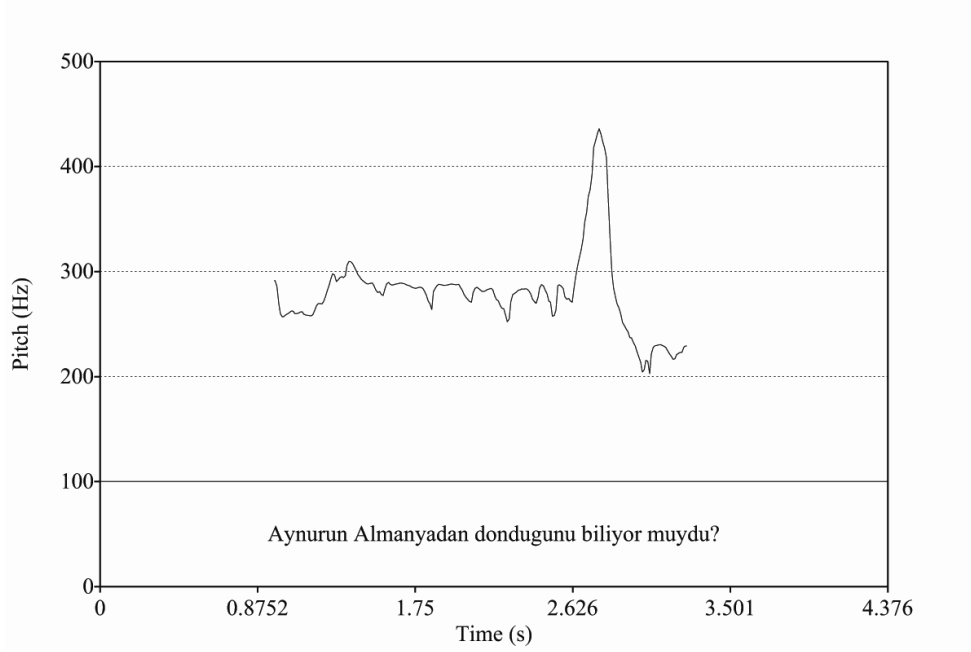


Bugün kantin-de otur-ur-ken bizim Ali yine atıp tut-uyor-du.
today canteen-LOC sit-AOR-ADV our Ali again tell.tall.tales-IMPF-P.COP
'When we were sitting at the canteen today, Ali was again telling tall tales.'

To illustrate how polar questions and content questions are differentiated prosodically, the intonational contours of these two types of interrogatives are provided below. Notice that both start with a compressed pitch/high plateau, but the polar question ends with a high pitch accent followed by a low boundary tone (H*L%), as shown in (6), whereas the content question ends with a high pitch accent followed by a combination of a low tone and high boundary tone (H*LH%), as shown in (7).

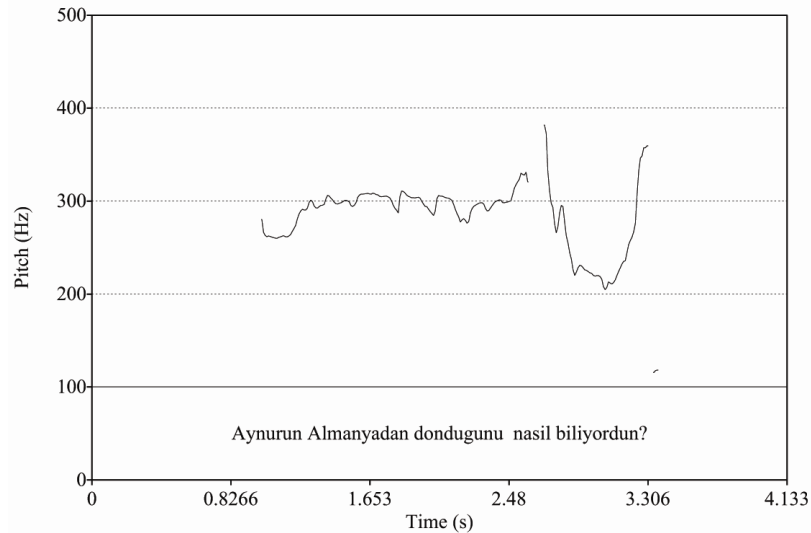
¹ The glosses used in the examples in this article are as follows: ABL: ablative; ACC: accusative; ADV: adverbial suffix; AOR: aorist; COM: commitative; COMP: complementizer; GEN: genitive; IMPF: imperfective; LOC: locative; P.COP: past copula; POSS: possessive; PRES: present; Q.PART: question particle.

(6) *Yes/No Question*



Aynur-un Almanyadan dön-düğ-ün-ü bil-iyor
Aynur-GEN Germany-ABL return-COMP-3SG.POSS-ACC know-IMPF
mu-ydu?
Q.PART-P.COP
'Did s/he know that Aynur had returned from Germany?'

(7) *Content Question*



- (9) Hindi
- a. *Yes/No Question*
bacca bemar hai
child ill be.3SG.PRES
'Is the child ill?'
- b. *Declarative Clause*
bacca bemar hai
child ill be.3S.PRES
'The child is ill.'
- (Zeshan 2004)

The majority of sign languages has been observed to be of the French/Hindi-type; that is, marking utterances as interrogatives through only suprasegmental features. Zeshan (2004) observes that polar questions are invariably marked with non-manual signs, and question particles are optional where present. Aboh & Pfau (forthcoming), Pfau (2006), Lillo-Martin & Sandler (2006), among others, report that even some content questions may lack question words, and are marked as such through non-manual signs. Consider (10) and (11) below. The examples from Israeli Sign Language in (10) are examples of content questions but they do not contain any wh-phrase.

- (10) Israeli Sign Language (Meir 2004)
- a. cont.q
TIME
'What time is it?'
- b. _____ cont.q
HEALTH INDEX2
'How are you?'

In (11a) below there is no manual sign (i.e. lexical item) that indicates that the utterance is a question. (11a) and (11b) differ only in non-manual signs.

- (11) Indo-Pakistani Sign Language (Zeshan 2004)
- a. *Yes/No Question*

BOOK INDEX INTERESTING
'Is the book interesting?'
- b. *Declarative Clause*
_____ top
INDEX BOOK INDEX INTERESTING
'As for the book, it is interesting.'

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Regarding the syntax of clause-typing, the feature that marks a clause as an interrogative has been commonly attributed to a head in the functional domain of a clause, higher than IP, which attracts the auxiliary in English-type languages, and hosts the question particle in Chinese-type languages. Even though in the French-type languages it is only the intonational contour that marks a clause as an interrogative, the relevant feature is still attributed to this functional head with analogy to the first two types of languages mentioned above. Specifically, Cheng & Rooryck (2000) and Aboh & Pfau (forthcoming) argue for intonation to be a Q(uestion)-morpheme which realizes the [+question] feature of the head of the clause. This head may be C^0 or $Inter^0$ in line with various proposals (see Pfau 2006 and references therein), but for the sake of simplicity, we refer to it as C here. We believe TID interrogatives support the proposal put forth in these works; namely, TID is another language where suprasegmental features clause-type interrogatives.

6. Conclusion and Implications

In this paper we have argued that there are designated suprasegmental features that (i) distinguish declaratives from response seeking utterances, and (ii) distinguish the yes/no questions from content questions. We suggest that these functions occur both in spoken and in signed modalities, as illustrated below:

(12) Comparison of TID and Turkish:

	TID		TURKISH	
<i>Prompt-for-a-response function</i>	Head Tilt		High Plateau	
<i>Subtypes of questions</i>	<i>yes/no Q</i>	<i>content Q</i>	<i>yes/no Q</i>	<i>content Q</i>
	head forward head nod	head backward head shake	H*L%	H*LH%
<i>Mode of encoding</i>	simultaneous partitioning		sequential partitioning	

In both TID and Turkish, interrogatives provide further support for the hypothesis that suprasegmental features (non-manual signs in sign languages, intonation in spoken languages) can be clause-typers.

At this point we would like to raise a question regarding the syntax of clause-typing: as mentioned in Section 5, the claim that the feature that marks utterances as [+question] resides in C is based on an assumption and an observation: the assumption is that the highest head in the clause, C, contains the feature(s) expressing the illocutionary force of the clause. The observation that question

particles in head-final languages occur in clause-final positions, and that the inflected verb dislocates to a position higher than the subject in head-initial languages has been argued to show that the particles reside in C, and the inflected verb moves to C to check question-related features. The case with non-manual signs/intonation as markers of interrogatives is less clear, however. Since suprasegmental features, by nature, do not have visually or auditorily observable positions within the utterance, and they spread over the entire utterance, it is impossible to pinpoint their specific position in syntax. The question that arises is: is the clause-typer non-manual sign/intonational contour located at the *left* periphery of the clause because it starts at the onset of the utterance, or is it located at the *right* periphery of the clause because it coincides with the end of the utterance?

We would like to end our paper with a speculative note on the phonetic and phonological parallelism between TİD and Turkish suprasegmental features of interrogatives. Recall that the prompt for a response corresponds to a compressed pitch contour forming a high plateau at the beginning of the utterance in Turkish. Note that the intonation associated with compressed pitch forces the speaker to keep the frequency of the vibration of the vocal cords steady to achieve a compressed pitch. This is in contrast with the pitch contour of declaratives. Uttering a declarative involves variation in the frequency of the vibration of the vocal cords, and the pitch contains a random sequence of high and low tones. Uttering declaratives then might involve a more relaxed manner in contrast to interrogatives.

This reminds us of our observation in TİD that whereas the articulation of interrogatives involves a steady head tilt resulting in the stiffening of the muscles of the neck, the articulation of declaratives involves relaxed head movements in various directions. Unless this parallelism in these two languages of different modalities is totally coincidental, it may be showing that interrogatives are more marked than declaratives if we—very informally—assume that “minimal physical effort” signals the unmarked utterance type as opposed to “forced physical effort”.

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