ON THE ROLE OF PROSODIC CONSTITUENCY IN TURKISH[1]

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1 Introduction

The aim of this paper is to discuss the factors operating on the sentence melodic structure of Turkish declaratives. Constraints that apply to Turkish intonation phrases will be discussed with respect to two aspects: (i) information structure, (ii) word order restrictions.

Prosodic constituency is determined by syntactic constituency. The Match Theory (Selkirk 2009) states that (i) clauses are mapped as intonational phrases (ɪs), (ii) sub-clausal constituents (DPs, PPs, APs) are mapped as phonological phrases (Φs), and (iii) words are mapped as prosodic words (ωs) in the prosodic representation. Like syntax, prosodic constituency is compositional and hierarchical: ωs form Φs, and Φs form ɪs. In the Autosegmental-Metrical Model of intonational phonology (AM) (cf. Pierrehumbert 1980, Beckman and Pierrehumbert 1986, among many others), these prosodic constituents are delimited via the marking of tonal variation and certain F0 events. This paper focuses on Φ-level prosodic constituency within the framework of AM.

The tonal variation and F0 events of an utterance are argued to be subject to information structural input in languages like *intonation languages* (Wagner and Watson 2010 and the references therein). The consensus is that, elements are shipped to the prosodic component pre-specified as foci and/or topics. This pre-specification occurs either in the narrow syntax–where elements are assigned [F]ocus or topic 'features'–or at some post-syntactic level of the grammar. The outcome of this pre-specification is that the prosodic component does not employ its own internal mechanisms to reflect information structure; rather the prosodic representation

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of an utterance is organized around the pitch accents that are inherently assigned to foci or topics.

I argue that the situation is reversed in Turkish. In Turkish, prosody-internal constraints determine the prosodic organization of an utterance. These constraints provide particular linear positions within an utterance in which prosodic prominence is perceived. Because syntactic constituents that bear information-structural features must be on these prosodic positions of perceived prominence, it is the prosody that restricts the ordering of the words in Turkish, and not *vice versa*. In this regard, the prosodic component employs its own mechanism. Information structural units are aligned to certain prosodic positions rather than triggering their own pre-specified tones/domains. Therefore, prosodic phrasing is the primary mechanism in the *alignment* of information structural units.[2] It should be noted that these properties are not only restricted to Turkish: these are general properties of *phrase* (Féry 2010) or *head/edge prominent* (Jun 2005, 2012) languages.

Taking the domains within the intonation phrase of Turkish utterances defined in Kan (2009), Kamali (2011), and Güneş (2012a, b) as a basis, the present study presents novel data to discuss some dependencies that are utilized for the organization of the ι-internal architecture of Turkish utterances.

Thus, I provide a novel prosodic account that adequately predicts some basic facts of Turkish, such as the restrictions on the word order. Although Turkish is a free word order language, there are some restrictions on the ordering of the constituents. I show that word order infelicities are predictable if one appeals to the prosodic distribution of words.

The paper is organized as follows: In §2, I outline my conception of how the prosodic utterance in Turkish is organized. In §3, I advance the constraints that interact to form this pattern of organization. §4 poses a prosodic account that predicts the distribution of focused constituents. In §5, I illustrate that constraints adumbrated in §3 naturally account for the distribution of the verb in Turkish. §6 concludes.

2 Preliminaries: Prosodic Constituency in Turkish

2.1 Intonational Phrase (ι) and its constituents

Until recently, Turkish words were assumed to display "regular" word-final stress, where the lexical stress falls on the final syllable of the word (Lewis 1967, Sezer 1981, van der Hulst and van de Weijer 1991, Inkelas and Orgun 1998, Kabak and Vogel 2001, Göksel and Kerslake 2005, among others). Under this assumption, lexical stress is equated with the perceptually prominent syllable in a word. This assumption is maintained without supporting metrical evidence (e.g. F0 alternation, syllable quality, duration, intensity differences). There is also a class of words that bear non-final stress; this class is considered to be "irregularly-stressed". In irregularly-stressed words, stress is assigned according to the presence of lexically stressed/pre-stressing syllables or due to the use of a lexically stressed root, such as in those words known as *Sezer's roots* (Lewis 1967, Sezer 1981, Barker 1989, Kabak and Vogel 2001, among many others).

[2] Here I adopt a view on *alignment* in the sense of Féry (2012).

Among the instrumental studies that compare the metrical properties of the "final" and "non-final" stress in Turkish (Konrot 1981, Konrot 1987, Fukumori 2004, Levi 2005), Konrot (1981) observes that, while the F0 peak attaches to the stressed syllable, it does so only in the cases of non-final prominence. Considering that F0 is suggested to be the correlate of *stress* in Turkish, Konrot (1981) advances a distinction between (i) *pitch accent* and (ii) *stress accent*. Accordingly, the final syllable of a finally stressed word exhibits *stress accent* but not *pitch accent*. Therefore, the F0 in finally stressed words is realized as a plateau in the pitch contour. In cases of non-final stress, the stressed syllable takes a coexisting pitch accent, which creates a rise-fall pattern in the intonation contour.

Levi (2005) argues that Turkish is a *pitch accent language* in terms of its word-melodic classification. Following Levi (2005), Kamali (2011) also adopts the view that Turkish is a pitch accent language. Considering the fact that in pitch accent languages there may be accentless words as well as lexically accented words, Kamali (2011) further argues that so-called finally-stressed words are accentless; and it is the "irregularly-stressed" words that bear the only lexical tones (realized as H*L) in Turkish.

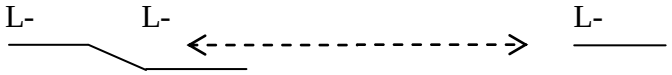
Leaving the discussion of whether Turkish is a Pitch accent language or not for future inquiry, and adopting the view that there are accentless words in Turkish, I refer to the words that bear an F0 peak on their stressed syllables as lexically *accented* words (H*L), and those that do not bear an F0 excursion on the syllables that are perceived as bearing stress as *accentless* syllables. My stand diverges from Kamali's account, in that I assume that (i) all words bear stress (final or non-final), (ii) pitch accent is an intonational cue that may or may not co-exist with the stressed syllable, (iii) final stress marks the right edge boundary of ωs, and (iv) L- is a ω-level left-edge boundary tone.

In the remainder of this paper, I focus on the prosodic phrasing properties of *accentless* words. Any F0 rise observed on these words is interpreted as present not due to the lexical properties of these words at the ω-level, but to positional requirements that operate on the Φ-level constituent formation.

Turkish sentence prosody is not completely devoid of the influence of syntax. Like in intonational languages, the basics of prosodic constituency within an ι are derived from the basics of syntactic constituency. Especially for the Φ-level constituency, syntactic parsing of sub-clausal constituents provides a basis.

On the Φ-level representation, the leftmost ω bears the most prominent element in a Φ (Kabak and Vogel 2001; Kan 2009; Kamali 2011; Güneş 2012a) (the head of which is bold faced hereafter).

(1)

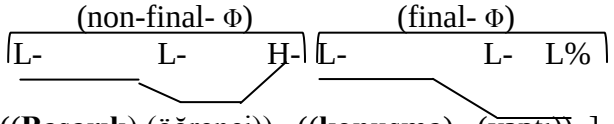


a. ((**başarılı**)$_{\omega}$ (öğrenci)$_{\omega}$)$_{\Phi}$
Successful student
'successful student'

b. ((**öğrenci**)$_{\omega}$)$_{\Phi}$
student
'student'

What distinguishes the head of a Φ from the rest of that Φ is the levelling difference. In neutral contexts, Φ-level prominence is conveyed through relatively higher F0-leveling of the leftmost ω of that Φ–as in (1a). In cases of single-ω phonological phrases, the F0 level of that phrase is as high as a Φ head would be–compare the representation of F0 in (1b) to that of (1a). Following this general mapping schema, we get a mapping of an all-new sentence as in (2).

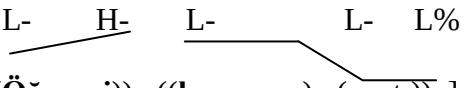
(2)



[((**Başarılı**) (öğrenci))$_{Φ}$ ((**konuşma**)$_{N}$ (yaptı))$_{Φ}$]$_{ι}$
successful student speech made
'The successful student gave a speech.'

In Turkish, ι is right prominent, that is; the head of the rightmost Φ in an ι is the head and therefore the nucleus ($_{N}$) of that ι (Kan 2009; Kamali 2011; Güneş 2012a, b) ('N' marked constituent in (2) and hereafter). All ωs are marked with a low left-edge boundary tone (L-) that is usually aligned with their initial syllable (Güneş 2012a,b). The last and the rightmost Φ bears the head of its ι and is referred to as a *final-Φ* (Güneş 2012a,b). Any Φ that precedes the final-Φ is referred to as a *non-final-Φ* (Güneş *ibid*.). What distinguishes a final-Φ from a non-final-Φ is the right-edge boundary tones. Unlike final-Φs, all the non-final-Φs in Turkish exhibit a Φ-level high boundary tone aligned with their last syllable (H-) (Kamali 2011; Güneş 2012a,b). Compare the F0 representation on the area aligned with öğrenci 'student' and yaptı 'made'. Note that the F0 level of a non-head part of a non-final-Φ is relatively higher than the non-head (post-nuclear) part of the final-Φ. This, I claim, is the result of phonological assimilation due to H- on non-final-Φs. In particular, the terminal rise that is aligned with the right edge of non-final-Φs gives rise to the relatively higher realization of the non-head part of those non-final-Φs. Also, this assimilation yields a less steep terminal rise on Φ-level right edge boundaries in comparison to ι-level right edge boundaries. If a non-final-Φ is composed of a single ω, then its overall F0 level is as high as the nucleus of its ι. This is illustrated in (3):

(3)



[((**Öğrenci**))$_{Φ}$ ((**konuşma**)$_{N}$ (yaptı))$_{Φ}$]$_{ι}$
student speech made
'The student gave a speech.'

The ι-domain, in Turkish, is not a domain across which downstep applies. In cases of multiple non-final-Φs, all Φs are realized at the same F0 level. The only part of the utterance that exhibits a very low, flat contour is the area that succeeds the nucleus. A low levelled F0 contour aligned with this area delimits the nucleus as the last F0 excursion-bearing unit, yielding the nucleus as the only prominent constituent of its ι.

(4) provides a sample of a declarative that is uttered in an all-new context with S-DO-IO-V order where the non-final-Φs are composed of single ωs and the final-Φ is a complex Φ.

(4) A: What is the eating habit of your culture?
B: Milyon-lar menemen-i ayran-a buluyor.
Million-PL omelet-ACC buttermilk-DAT mix-prog
'Millions mix the omelet with buttermilk.'

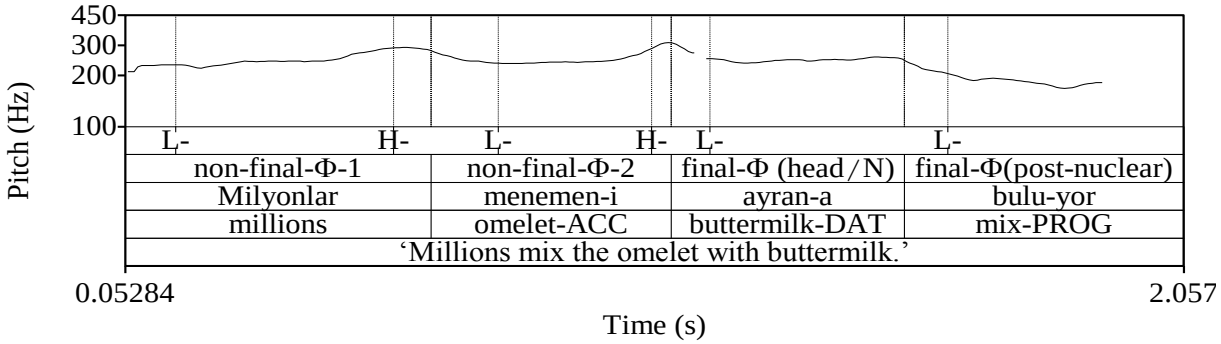


Figure 1. Pitch contour (in Hz) of a declarative root clause in all-new context uttered by a female speaker

Figure 1 provides an example of a sentence with a ditransitive verb, where all the arguments are accentless. The subject milyonlar 'millions' is in sentence-initial position and is parsed as a non-final-Φ. The direct object menemeni 'the omelet' is phrased as another non-final-Φ. The indirect object ayrana 'lit. to the buttermilk' is parsed as a final-Φ, together with the verb following it. As the pitch contour shows, the non-final-Φs bear the typical rising intonation that is decomposed of a left edge ω-boundary tone (L-) and a right edge boundary tone (H-). The pitch level remains the same in the transmission across the non-final-Φs to the final-Φ (pitch interval is between 230-290 Hz in this case). The final-Φ starts with a left ω-boundary (L-) that is aligned with the first syllable of the object. The pitch level remains the same until the end of the first ω within the final-Φ. The second ω of the final-Φ (the verb buluyor 'mixing') starts with a left edge (L-), the level of which is scaled relatively lower than the first ω in the final-Φ (and also lower than the other non-final-Φs). The high plateau in the final-Φ is the nucleus of the sentence that is perceived as prominent.

Note that Figure 1 evidences the existence of the nucleus in the ɪs of all-new utterances in Turkish. Also, notice that there is no F0 expansion that is aligned with the nuclear area, and the only tone that is visible on the nucleus is a left edge boundary tone that extends over the end of its ω. This indicates that, unlike intonation languages, in Turkish, sentence prominence is not conveyed via F0 expansion or pitch accent placement.

Post-nuclear levelling is only visible when there are one or more constituents following the nucleus. Any item that follows the nucleus should be levelled and low (c.f. Göksel 1998, and Özge and Bozşahin 2010). This pattern is related to the distinction between a final-Φ and a non-final-Φ. Specifically, the pitch rise that is observed due to the right-edge boundary tone 'H-' is only visible in non-final-Φs (i.e. before the nucleus). In other words, 'H-' is reserved for non-final-Φs. Therefore, any XP that is expected to be *matched* as individual Φs will not be realized as individual Φs when they are linearized after the nucleus–as part of the final-Φ, due to the unavailability of a H- boundary tone in that area.[3] This assumption leads us to conclude that the final-Φ is strictly non-recursive. Such a limitation on MATCH is permissible, considering that Turkish, as a phrase language, has limits on syntax-prosody mapping.

In cases of all-new contexts, nucleus is defined syntactically. For instance, when an utterance that displays the canonical SOV word-order is uttered in an all-new context, the object is in the nucleus, as in (5) (Üntak-Tarhan 2006). When an adverb intervenes between O and V (i.e. S-O-Adverb-V) then the adverb occupies the nucleus (ibid.). In cases of narrow focus, the

[3] Further research is required to see if there are any metrical cues marking XPs as Φs in the post-nuclear area.

left-edge of the nucleus is aligned with the left edge of the narrowly focused ω. For example, in the canonical SOV order, if the focus is the subject, then the subject is the nucleus and the rest of the utterance bears a low and flat F0. In such a case, the ι is composed of a single Φ, the head of which matches with the subject (i.e. $[(S_NOV)_{F\text{-}\Phi}]_\iota$). The same holds for the case of V-focus in SOV order, where the ι is composed of three Φs, and where the final-Φ matches with the verb ($[(S)_{NF\text{-}\Phi}(O)_{NF\text{-}\Phi}(V_N)_{F\text{-}\Phi}]_\iota$). The constituents that precede the nucleus bear a pre-nuclear rise and are parsed as a separate Φs.[4]

(5) [(**SUBJECT**)$_\Phi$ (**OBJECT**$_N$ VERB)$_\Phi$]$_\iota$

In this section, I presented some preliminaries about Turkish in terms of its word, phrase, and sentence melody. I stated that Turkish is left prominent on the Φ-level and it is right prominent on the ι-level. The constituency structure of an intonation phrase in Turkish is also discussed. In sum, there are two types of prosodic constituents in an ι. These are: (i) non-final-Φ, and (ii) final-Φ. The former bears a final rise at the Φ-level, whereas the latter does not.

3 Prosodic Well-formedness and Constituency Structure

The issue of how to describe the distribution of the nucleus in Turkish ιs remains unresolved. I claim that this distribution can be described by appealing to the general prosodic phrasing rules listed in (6). These phrasing rules interact with the preference principles outlined in (7). These are ordered from 'most preferred' to 'least preferred'.

(6) Properties of Turkish ι:
   a. All ιs in Turkish display a nucleus.
   b. There is only one nucleus in an ι and it is the head of the final-Φ.
   c. Nucleus is a prosodic position and is information structurally neutral.

(7) Well-formedness constraints of Turkish ι:
   a. Nucleus must be inside the (rightmost) narrow focus.
   b. Position the nucleus on the argument left-adjacent to the verb (Büring 2001).
   c. Position the nucleus on the verb or other constituents.

(6) and (7) have presented the constraints that operate on the organization and restrictions on the alignment of Φs. §4 and §5 discuss how these prosody internal dependencies predict the data and provide a novel prosodic account to well-known restrictions on the ordering of the words.

[4] Parsing the object as the nucleus in this context (i.e. SOV, all-new context) is not obligatory. The verb or subject may also be aligned with the nucleus in all-new sentences. See Özge (2012) also §4 for a discussion of such cases.

4 Prosodic Distribution of the Focus

Focus in Turkish does not bear a H* tone or a particular pitch expansion aligned with it (Kamali 2011; İpek 2011; Ivosevic 2011).[5] Instead of a pitch peak, the area where focus is aligned exhibits a plateau contour that is higher than the area following it. The nucleus retains the pitch level introduced by the pre-nuclear non-final-Φs.

In §2.1, Figure 1 we have seen that sentences uttered in all-new condition exhibit a nucleus. However, in conditions other than all-new, the nucleus is the area primarily reserved for focus marking. That is, if there is an information structurally focused constituent in an utterance, then it is assigned as the head of the final-Φ of its ι. This is expected as Turkish marks focus via phrasing, rather than pitch accent placement. In this sense, the head of the final-Φ is the preferred prosodic constituent with which a focused item seeks to be adjusted.[6]

Although phrasing is sensitive to information structure, we have seen that nuclear parsing occurs regardless of the information status of the candidate in (5) (cf. Kamali 2011 for all-new cases, İpek 2011 and Güneş 2012 a,b, for all-new and narrow focus cases and Ivosevic 2011 for a comparison of neutral, contrastive and narrow focus conditions).[7] This evidences that nucleus in Turkish is information structurally neutral (cf. Göksel and Özsoy 2000; Güneş 2012b). In a SOV sentence where the final-Φ starts with the object, (8), the sentence yields ambiguity between narrow-focus on the object '$_F$', and all-new condition readings. The ambiguity results from the identical prosodic phrasing of both conditions. Consequently, the generalization in (6c) can be advanced regarding the Turkish nucleus.

(8) A: Ne oldu? 'What happened?'
A': Yumak neyi yedi? 'What did Yumak eat?'

B: [(**Yumak**)$_\Phi$ (**mama-yı**$_{N/(F)}$ ye-di)$_\Phi$]$_\iota$
Y. food-ACC eat-PAST
'Yumak ate the food.'
or
'Yumak ate [the food]$_F$.'

Furthermore, (7a) predicts that, in a dual focus construction, nucleus aligns with the rightmost focus: (9B). (9B') shows how the structure is not well-formed when prosodic phrasing does not satisfy (7a).

[5] For counter-observations, see Göksel and Özsoy (2000), and Özge and Bozşahin (2010).
[6] Among prosody-oriented accounts for focus marking, see Göksel and Özsoy (2000), and Özge and Bozşahin (2010). Although these studies argue that focus in Turkish is marked via; (i) stress assignment in the former or (ii) prosodic phrasing and designated tunes in the latter, the prosodic properties of focus are, still, defined with respect to designated focal tones/tunes. See Güneş (2012b) for a detailed discussion of these studies.
[7] Some of these studies do not mention the alignment of a focused item with a prosodic position (i.e. the nucleus), however, the notions that they refer to are indicative of an *alignment* to what I call the nucleus.

(9) A: To whom did Emre give what?

L- H- L- H- L- L%

B: [(**Emre**)$_{\Phi}$ (**elma-lar-ı**$_{F\text{-}1}$)$_{\Phi}$ (**yeğen-ler-i-ne**$_{N/F\text{-}2}$ ver-miş)$_{\Phi}$]$_{\iota}$

E. apple-PL-ACC cousin-PL-POSS-DAT give-EVD

'Emre gave [the apples$_F$] [to his cousins$_F$].' (Güneş 2012b)

L- H- L- L%

B': *[(**Emre**)$_{\Phi}$ (**elma-lar-ı** $_{N/F\text{-}1}$ yeğen-ler-i-ne$_{F\text{-}2}$ ver-miş)$_{\Phi}$]$_{\iota}$

E. apple-PL-ACC cousin-PL-POSS-DAT give-EVD

'Emre gave [the apples]$_F$ [to his cousins]$_F$.'

(7a) thus implies that if an utterance contains one focused constituent, the nucleus will align with it. (10) illustrates the case of a single focus condition where the focused constituent that is adjacent to the verb is underlined.

(10) A: Onur nereye gitmiş? 'Where did Onur go?'

B: [(**Onur**)$_{\Phi}$ (**<u>komşu</u>**$_N$ <u>köy-e</u>$_F$ git-miş)$_{\Phi}$]

O. neighbour village-DAT go-EVD

'Onur went [to the village nearby]$_F$.'

If an utterance does not contain a focused constituent (i.e. all-new utterances), nucleus is the constituent that is immediately left-adjacent to the verb, as stated in (7b).[8] In certain environments, (7b) is ignored for the sake of nuclear alignment in all-new context (i.e. in certain intransitive utterances or when the verb displays particular semantics, see Özge 2012 for a discussion). Instead, the nucleus and the verb are aligned together as (7c) states. (11) is a case from Özge 2012 in which the verb aligns with the nucleus (with my prosodic phrasing). Note that, with the current prosody-driven proposal, non-canonical alignment cases discussed in Özge 2012 can easily be accounted for.

(11) [(**Ali**)$_{\Phi}$ (**Aynur-u**)$_{\Phi}$ (**aldat-ıyor-muş**$_N$)$_{\Phi}$]$_{\iota}$

A. A.-ACC cheat-PROG-EVD.COP

'Ali has been cheating on Aynur.' (modified from Özge 2012)

Non-canonical nuclear-alignment may also target subjects. Consider (12) (with my notations):

(12) A: Bisiklet nere-de?

Bike where-LOC

'Where is the bike?'

B: [(**Ahmet**$_N$ bin-iyor)$_{\Phi}$]$_{\iota}$

A. ride-PROG

'[Ahmet]$_F$ is riding it.' (modified from Özge 2012)

[8] I refer the reader to Féry (2011) for the details of a prosody-oriented account for *neutral stress assignment*.

The application of the properties listed in (6) and the preference principles listed in (7) provides the correct description of the distribution of the nucleus within an ι, and requires no recourse to information structural notions such as [F]-marking. While it is true that there exists a preference for positioning the nucleus in a narrow-focus constituent, this positioning is only a preference. Thus, unlike in intonation languages, the existence of the Turkish nucleus is not dependent upon the presence of an information structurally marked item within an utterance.

To summarize; the nucleus in Turkish is a prosodic unit in the ι. Its only relation to a focused item arises as a positional restriction on the Φ-level. If there is a focus in an utterance, then the focus has to contain the nucleus. If there is more than one focus, then the rightmost focus contains the nucleus of its ι. Finally, considering the dual focus cases, I concluded that all ιs bear one and only one nucleus, which is the leftmost prosodic word of the rightmost Φ in its ι. In sum, ι-internal prosodic patterns in Turkish show limited effects of the variation in the information structural conditions. With this respect, in line with Güneş (2012b), Turkish exhibits the characteristics of a phrase language.

5 Prosodic Distribution of the Verb

Although Turkish is considered as a 'free-word order' language, the verb in Turkish is subject to some ordering restrictions. This has been discussed in a number of studies from syntactic and/or information structural point of view (c.f. Şener 2010 and the references therein).[9] In this section, I propose a new view on the word order restrictions of the verb. Specifically, I argue that the sole restriction on the ordering of the verb is due to a prosodic constraint: i.e. (13).

(13) Position the verb inside a final-Φ

First, let me illustrate a few cases in which the scrambling of the verb is not permitted. Consider (14):

(14) A: Ne oldu? 'What happened?'
B: [(**Onur**)$_{\Phi}$ (**Ayşe-ye**)$_{\Phi}$ (**kitab-ı-nı**$_{N}$ ver-di)$_{\Phi}$]$_{\iota}$
O. A.-DAT book-POSS-ACC give-PAST
'Onur gave (his/her) book to Ayşe.'

In (14), B's utterance is uttered in all-new context, in which case the immediately pre-verbal constituent is prosodically parsed together with the verb as a final-Φ. The direct object kitabını '(his) book' is aligned with the head of the final-Φ, and therefore the nucleus of its ι. Notice that, in all examples we have seen so far, the verb is aligned somewhere in the final-Φ. This is not a coincidence. The distribution of the verb is always restricted to the final-Φ. (15) illustrates what happens when the verb is positioned in a final-Φ (as in 15a-f), and a non-final-Φ (as in 15g-l).

[9] I refer the reader to Özge and Bozşahin (2010) for an information structure-syntax-prosody interface account, which points out the importance of prosodic structuring/phrasing on the limited word order variations in Turkish.

(15) A: Onur kime kitabını verdi?
‘Who did Onur give his book?’

a. B: [(**Ayşe’ye**$_{N/F}$ Onur kitabını verdi)$_{Φ}$]$_{ι}$
b. B: [(**Ayşe’ye**$_{N/F}$ verdi Onur kitabını)$_{Φ}$]$_{ι}$
c. B: [(**Ayşe’ye**$_{N/F}$ Onur verdi kitabını)$_{Φ}$]$_{ι}$
d. B: [(**Kitabını**)$_{Φ}$ (**Ayşe’ye**$_{N/F}$ verdi Onur)$_{Φ}$]$_{ι}$
e B: [(**Onur**)$_{Φ}$ (**Ayşe’ye**$_{N/F}$ verdi kitabını)$_{Φ}$]$_{ι}$
f. B: [(**Onur**)$_{Φ}$ (**kitabını**)$_{Φ}$ (**Ayşe’ye**$_{N/F}$ verdi)$_{Φ}$]$_{ι}$
g. B: * [(**Kitab-ı-nı**)$_{Φ}$ (**Onur**)$_{Φ}$ (**verdi**)$_{Φ}$ (**Ayşe’ye**$_{N/F}$)$_{Φ}$]$_{ι}$
h. B: * [(**Onur**)$_{Φ}$ (**kitabını**)$_{Φ}$ (**verdi**)$_{Φ}$ (**Ayşe’ye**$_{N/F}$)$_{Φ}$]$_{ι}$
i B: * [(**Onur**)$_{Φ}$ (**verdi**)$_{Φ}$ (**Ayşe’ye**$_{N/F}$ kitabını)$_{Φ}$]$_{ι}$
j. B: * [(**Onur**)$_{Φ}$ (**verdi**)$_{Φ}$ (**kitabını**)$_{Φ}$ (**Ayşe’ye**$_{N/F}$)$_{Φ}$]$_{ι}$
k. B: * [(**Verdi**)$_{Φ}$ (**kitabını**)$_{Φ}$ (**Onur**)$_{Φ}$ (**Ayşe’ye**$_{N/F}$)$_{Φ}$]$_{ι}$
l. B: * [(**Verdi**)$_{Φ}$ (**Ayşe’ye**$_{N/F}$ Onur kitabını)$_{Φ}$]$_{ι}$
‘Onur gave (his/her) book [to Ayşe]$_{F}$.’

In (15a-f) the verb is inside the phonological phrase that is headed by the nucleus (and also the focus in this case). Notice that parsing of non-focused arguments does not create a variation in judgments. (15a-c) illustrates the cases in which the two given arguments (subject and the direct object) are parsed as part of the final-Φ. (15d-f) illustrates the cases in which they are parsed as separate non-final-Φs. The sentences in (15g-l) are not well-formed. We have seen that the change in judgments cannot be due to parsing of given arguments. The asymmetry between (15g-l) and (15a-f) is due to the parsing of the verb. Observe that in all infelicitous structures listed in (15) the verb is parsed as a non-final-Φ. The asymmetry in (15) hints toward the existence of a strong constraint on the prosodic position of the verb. This was stated in (13).

(13) rules out structures as in (15g-l) and adequately predicts variation in prosodic constituency for cases such as in (15a-f), as well as the structures like (16), in which case the focused verb is aligned with the nucleus and hence is part of the final-Φ of its ι.

(16) A: Onur kitabını ne yaptı?
‘Lit. What did Onur do with the book?’

a. B: [(**Onur**)$_{Φ}$ (**kitab-ı-nı**)$_{Φ}$ (**sat-tı**$_{N/F}$)$_{Φ}$]$_{ι}$
O. book-POSS-ACC sell-PAST
‘Onur [sold]$_{F}$ (his) book.’

b. B: [(**Onur**)$_{Φ}$ (**sattı**$_{N/F}$ kitabını)$_{Φ}$]$_{ι}$
c. B: [(**Kitabını**)$_{Φ}$ (**sattı**$_{N/F}$ Onur)$_{Φ}$]$_{ι}$
d. B: [(**Sattı**$_{N/F}$ Onur kitabını)$_{Φ}$]$_{ι}$
e. B: [(**Sattı**$_{N/F}$ kitabını Onur)$_{Φ}$]$_{ι}$

As (6), (7), and (13) predicts, the structures such as (17) are not well-formed.

(17) A: Onur kitabını ne yaptı?
‘Lit. What did Onur do with the book?’

a. B: * [(**Onur**)$_{\Phi}$ (**sat-tı**$_{F}$)$_{\Phi}$ (**kitab-ı-nı**$_{N}$)$_{\Phi}$]$_{\iota}$
O. sell-PAST book-POSS-ACC
‘Onur [sold]$_{F}$ (his) book.’
b. B: * [(**Sattı**$_{F}$ kitabını)$_{\Phi}$ (**Onur**$_{N}$)$_{\Phi}$]$_{\iota}$
c. B: * [(**Sattı**$_{F}$ Onur)$_{\Phi}$ (**kitabını**$_{N}$)$_{\Phi}$]$_{\iota}$
d. B: * [(**Sattı**$_{F}$)$_{\Phi}$ (**Onur**$_{N}$ kitabını)$_{\Phi}$]$_{\iota}$
e. B: * [(**Sattı**$_{F}$)$_{\Phi}$ (**kitabını**$_{N}$ Onur)$_{\Phi}$]$_{\iota}$

(17a-e) are out for two reasons: First, as (7a) predicted, the focused item is the preferred candidate for nuclear alignment. However, in cases of (17) this condition is not satisfied, instead, a given constituent is aligned as the nucleus and the sentence focus is parsed as a non-final-Φ. Second, (13) states that the verb has to be parsed as part of the final-Φ. None of the utterances in (17) satisfies this constraint, either.

In sum, properties of the nucleus listed in (6) together with the constraints on the prosodic position of the verb stated in (13) should be utilized to obtain well-formed structures in Turkish declarative utterances.

6 Summary and Conclusion

This study has presented a novel analysis against the approaches that favour phonological correlates of information structural units in Turkish. It appears that the informative status of a constituent (topic/focus/neutral) does not license a phonetic correlate for focus and topic in Turkish. Following Güneş 2012b, I suggested an information structure-free ι the constituents of which are delimited via prosodic constraints. This structure is shown to be composed of two types of constituents: (i) non-final-Φ, and (ii) final-Φ. The former can be optionally multiple, single, or none. The latter, is obligatorily present hosting the only head of its ι. When there is a focused constituent, nucleus provides the preferred prosodic position for its alignment. As for their fixed-order, final-Φs are preceded by non-final-Φs. Given this ι, I discussed the word order restrictions in declarative root clauses. Turkish, as a free-word order language, seems to mark the boundaries of its clauses not syntactically but prosodically. The flexibility in the constituent order of Turkish clauses is shown to be strictly constrained by the rigidly fixed order of prosodic constituents. Scrambling is allowed as long as they satisfy the requirements of this fixed prosodic structure. As for the constrained prosodic position of the verb; in a verb-final language such as Turkish, a requirement on the finality of the verb is not surprising. Even in cases in which the verb is scrambled to sentence initial position, its prosodic distribution ensures that it is still in the final position; i.e. in the final-Φ (this time this position is not a linear word order position but a prosodic position). The approach that is motivated in this study sheds more light on the properties of prosodic structuring. It opens a new discussion on the interaction of prosodic constituency and syntactic constituency in Turkish utterances and the architecture of languages in general.

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