The Prosody of Aboutness and Contrastive Topics in Turkish

Türkçe Hakkındalık ve Karşıtsal Konularının Bürünsel Yapısı

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ABSTRACT

This study investigates prosodic marking of sentence initial aboutness topics and contrastive topics in Subject-Object-Verb (SOV) order in Turkish under six different conditions within experimental and theoretical perspectives. Fundamental frequency (F_0) and duration values are the evaluation criteria of the study. The conditions illustrate aboutness and contrastive topics - discourse-new or discourse given - in different information packaging options. These conditions are compared with focus phrases under broad focus conditions. The data were collected from native speakers with the help of dialogues including the target sentences. The sentences, extracted from the recordings, were annotated via Praat (Boersma & Weenink, 2020). The results indicate that F_0 values at the right edge of the prenuclear domain and the nuclear domain are higher with topic phrases. Aboutness topics have higher values than contrastive topics. However, the statistical analysis indicates that this is not a categorical property when all six conditions are analyzed. Duration measurements of prenuclear, nuclear and postnuclear domains also do not differ under these six conditions. To conclude, Turkish aboutness and contrastive topics are marked with different syntactic and semantic tools, but they are not marked with a distinctive prosodic strategy and they do not differ from broad focus sentences.

Keywords: Prosody, Semantics, Aboutness topic, Contrastive topic, Broad focus

ÖZET

Bu çalışma, Özne-Nesne-Eylem (ÖNE) sıralamasında tümce başındaki Türkçe hakkındalık ve karşıtsal konularını araştırmaktadır. Hakkındalık ve farkındalık konuları altı farklı koşul altında araştırılmıştır. Konuların bürünsel işaretlemesi deneysel ve kuramsal açıdan incelenmiştir. Temel sıklık değerleri (F_0) ve süre değerleri çalışmanın temel ölçüm kriterleridir. Koşullar, söylem yenisi ve eskisi olarak ortaya çıkabilecek hakkındalık ve karşıtsal konularını farklı bilgi yapısı sıralamaları bazında karşılaştırır. Bu koşullar, geniş odak koşulu altındaki odak cümlelerinin bürünüyle karşılaştırılmıştır. Anadil konuşurlarından diyaloglar aracılığıyla toplanan verilerden hedef tümceler çıkartılarak Praat (Boersma & Weenink, 2020) ile bölümlenmiş ve incelenmiştir. Sonuçlara göre öznenin bulunduğu çekirdek öncesi alanın sağ kenarındaki ve nesnenin bulunduğu çekirdek alandaki F0 değerleri tümce başı konu koşulları ile daha yüksektir. Hatta bu ölçüm noktalarında hakkındalık konuları karşıtsal konulardan daha yüksek F_0 değerine sahiptir ancak devamında yürütülen istatiksel çalışma bunun tüm koşullar karşılaştırıldığında bile kategorik bir özellik olmadığını göstermektedir. Çekirdek öncesi, çekirdek ve çekirdek sonrası alanların süre ölçümleri de bu altı koşul için anlamlı bir fark olmadığını ortaya koymuştur. Çalışma, Türkçe için hakkındalık ve karşıtsal konularının sözdizimsel ve anlambilimsel olarak farklı işaretlenmelerine rağmen, ayırt edici bir bürünsel stratejiyle işaretlenmedikleri ve geniş odak tümcelerinden ayrı olmadıkları sonucuna varmıştır.

Anahtar Kelimeler: Bürünbilim, Anlambilim, Hakkındalık konusu, Karşıtsal konu, Geniş odak

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INTRODUCTION

In Turkish, prosody of focus phrases has been widely investigated by way of systematic experimental studies (Özge & Bozşahin, 2010; Ipek, 2011; İvoşeviç & Bekâr, 2015; Gürer, 2015, 2020). However, prosody of topics is understudied. Güneş (2010) investigates the pragmatic and prosodic properties of sentence topics in naturally occurring dialogues and suggests that sentence topics are marked with a rising tone in the preverbal position. In this study, a finer classification is not made for topics and hence it is still not known whether this rising tone is characteristic of topics in general or not. The current study aims to investigate the prosodic properties of aboutness and contrastive topics in sentence initial position building on a controlled experimental study. The aim is to answer the following questions:

(i) How do topics shape prosody when they are in sentence initial position in SOV order? Do topics affect phonological phrasing? Are topics marked with distinctive F_0 or duration values when compared to broad focus sentences?

(ii) Is there a significant difference between aboutness and contrastive topics with respect to F_0 or duration values?

(iii) Is there an effect of overt discourse particles on prosody contrastive topics?

(iv) Does information status, being discourse-new or discourse-given, affect prosody of topics?

Phonological or intonational phrase boundaries[1], and changes in fundamental frequency (F_0)[2] are possible prosodic tools to mark topics. However, prosody is not the only way to signal topics. Languages may opt for different strategies to signal topic phrases: syntactic, morphological, or semantic markings. Ordering restrictions, overt morphological markers, different semantic compositions can also mark topics.

For Italian and German, based on a spoken corpus data, Frascarelli & Hinterhölzl (2007) classify topics as aboutness, familiar and contrastive topics. They suggest that aboutness, familiar and contrastive topics have distinctive syntactic and prosodic properties. In Italian, the L*+H contour, H* contour and L* contour are associated with aboutness topics, contrastive topics and familiar topics respectively.[3] In German, the L+H* contour, L*+H contour and L* contour are associated with aboutness topics, contrastive topics and familiar topics respectively.   As for the syntactic hierarchy, aboutness topic > contrastive topic > familiar topic ordering is proposed. For German, Wagner (2012) further suggests a bridge contour for contrastive topics.

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1 Syntactic constituents map onto prosodic constituents. Although there is not necessarily an isomorphism, syntactic phrases match with phonological phrases and clauses with intonational phrases (Selkirk, 1984).

2 Frequency is defined in the following way (Ladefoged, 2011: 24) "Frequency is a technical term for an acoustic property of a sound—namely, the number of complete repetitions (cycles) of a pattern of air pressure variation occurring in a second."

3 L and H stand for low and high tones respectively. The tone bearing the superscript (*) aligns with the tonic vowel.

In Japanese, topics are morphologically marked by -*wa*. Additionally, the prosodic strategy used for focus is used for contrastive topics (Tomioka, 2010). Hence, topics do not use a distinctive prosodic pattern in this language.

The goal of this study is to find out how Turkish marks prosody of topic phrases in sentence initial position in SOV order based on the research questions given above. In Section 2, semantic and syntactic manifestations of topics are discussed in detail. Section 3 illustrates prosodic marking of topics in different languages. The prosodic strategies used for focus phrases are also discussed in this section which paves the way for the current study. Section 4 explicates the current experimental study in detail and Section 5 concludes the paper.

SEMANTIC AND SYNTACTIC STRUCTURE OF TOPIC PHRASES

With the aim of setting the stage for contrastive topic phrases, semantic and syntactic properties of focus phrases are discussed first. Rooth (1985) suggests that focus indicates the presence of alternative propositions. Focus can be further classified as contrastive and presentational focus. Contrastive focus can be triggered by way of alternative questions (1) or corrective statements (2). One of the alternatives is exhaustively identified as the correct answer and all the other alternatives are excluded. That is why an additional answer is fine with an expression of opposition as in (1c).

(1) A: Parti-ye   Ahmet mi   yoksa   Ayşe mi gel-ecek?
        party-DAT Ahmet QP   or   Ayşe QP come-FUT
        'Will Ahmet or Ayşe come to the party?'

    B: [Ahmet]$_{CF}$ gel-ecek.   (Ayşe-nin başka   plan-lar-ı   var.)
        Ahmet   come-FUT   Ayşe-GEN other   plan-PL-POSS   exist
        'Ahmet will come. (Ayşe has some other plans).'
        Alternative propositions {Ahmet gelecek, Ayşe gelecek, Ahmet ile Ayşe gelecek}

    C: Hayır!   Ayşe   de   gel-ecek.
        No,   Ayşe   too   come-FUT
        "No! Ayşe, too, will come."

(2) A: Partiye   Ayşe   gelecek.
        'Ayşe will come to the party.'

    B: Hayır,   [Ahmet]$_{CF}$ gel-ecek.
        no   Ahmet   come-FUT
        'No, Ahmet will come.'
   Alternative propositions {Ahmet gelecek, Ayşe gelecek, Burcu gelecek}

When focus is on the subject, it is understood that *Ahmet* is the only person that will come to the party, not the other alternatives. As the examples clearly illustrate, contrastive focus can be discourse-given (1) or discourse-new (2).

Presentational focus is triggered by way of *wh-* questions. One of the alternatives is chosen as the correct answer in contrast to the other alternatives. However, the answer is not exhaustively identified as the correct answer. That is why an additional answer that starts with an expression of opposition yields unacceptability as in (3c). The answer in (2b) is not exhaustively identified as the correct answer and hence additional answers are possible. Presentational focus can only be discourse-new.

(3) A: Parti-ye   kim   gel-ecek?

      party-DAT who   come-FUT

   'Who will come to the party?'

B: [Ahmet]$_{PF}$ gel-ecek.   (Ayşe-nin başka plan-lar-ı   var.)

    Ahmet   come-FUT Ayşe-GEN other   plan-PL-POSS   exist

   'Ahmet will come. (Ayşe has some other plans).'

    Alternative propositions {Ahmet gelecek, Ayşe gelecek, Burcu gelecek}

C: #Hayır!   Ayşe   de   gel-ecek.

    No,   Ayşe   too   come-FUT

   "No! Ayşe, too, will come."

Contrastive topic, too, indicates the presence of alternatives. Contrastive topics evoke a set of alternative questions under a big question or a set of sets of alternative propositions (Büring, 2003, 2016). The big question under discussion is decomposed into sub-questions (Roberts, 1996). The set of alternative questions include sets of alternative propositions as in (4). Focus is on the verb and two alternative propositions are triggered.

(4) A: Parti-ye   kim   gel-ecek?

      party-DAT who   come-FUT

   'Who will come to the party?'

B: [Ahmet]$_{CT}$ [gel-ecek]$_F$. (Ayşe-den   haber-im yok.)

    Ahmet   come-FUT   Ayşe-ABL news-1SG absent

   'Ahmet will come. (I know nothing about Ayşe)
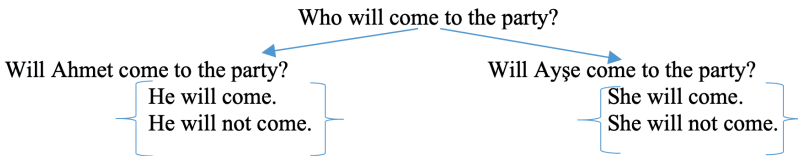
Contrastive topic signals a discourse strategy in the sense that the speaker avoids talking about some alternative questions. The answers in (1b) and (2b) resolve the issue thoroughly. However, the answer in (4b) is an incomplete answer avoiding the alternative questions evoked under the big question under discussion.

The incompleteness reading also affects scope interpretations (Büring, 1997, 2003). In the following context, if the discourse-given subject is taken as a contrastive topic that marks a shift in conversation, negation takes scope over the universal quantifier. Otherwise, the universal quantifier takes scope over negation which leads to surface scope.

(5) A: *All the teachers came to school. What about the students?*

B: [Bütün   öğrenci-ler]$_{CT}$ [gel-me-di]$_F$ not > all

   all   student-PL   come-NEG-PAST

   "All students did not come."

Contrastive topic is also suggested to be a focus phrase with a specific configuration (Tomioka, 2010; Wagner, 2012; Constant, 2014). However, this analysis is problematic for Turkish, as contrastive topic and focus have different ordering restrictions. A contrastive topic never follows a focus phrase (6) and it is infelicitous in the absence of a focus phrase (7). It is possible to form a sentence in the absence of a contrastive topic, but this is not possible for a focus phrase.

(6) A: *What about John? What did he eat at the party?*

B: Valla Can-ı   bil-mi-yor-um   ama [Aylin]$_{CT}$ [dolma-lar-dan]$_F$ ye-di.

frankly   Can-ACC know-NEG-IMPF-1SG but Aylin   dolma-PL-ABL eat-PAST

   'Frankly, I don't know about John, but Aylin ate from dolmas.'

   #[Dolma-lar-dan]F [Aylin]CT ye-di.

   (adapted from Şener, 2010: 19–20)

(7) A: *After the meeting the workers gave the resignation letters.*

B: #Valla, çalışan-lar-ı   bil-me-m   ama [patron]$_{CT}$ istifa

   well   worker-PL-ACC know-NEG-1SG but boss   resignation

   mektub-un-u   ver-miş.

   letter-CM-ACC   give-PERF

Intended reading: 'Well, I don't know about the workers, but the boss gave the resignation letter.'

C: #Çalışan-lar istifa   mektub-un-u   ver-miş-ler,   [patron]$_{CT}$ da.

   worker-PL resignation letter-CM-ACC give-PERF-3PL boss   as for

D: Çalışan-lar   istifa   mektub-un-u   ver-miş-ler,   [patron]$_{CT}$ da
worker-PL   resignation letter-CM-ACC give-PERF-3PL   boss   as for
[rapor-u]$_F$
report-ACC
'The workers gave the resignation letter, as for the boss (he gave) the report.'
(adapted from Gürer, 2020: 73)

Contrastive topic can appear in the postverbal domain as illustrated in (8) below. However, scrambling to the postverbal domain is not possible for focus in Turkish.

(8) a. [Anne-si-yle   de]$_{CT}$ Ahmet   bugünlerde [hiç]$_F$
mother-3SG.POSS-COM   dA   Ahmet   nowadays   at all
anlaş-a-mı-yor-muş.
get along-B-NEG-PROG-EVID
'As for his mother, Ahmet can't along at all with her nowadays.'
   b. Ahmet bugünlerde [hiç]$_F$ anlaş-a-mı-yor-muş [anne-si-yle de]$_{CT}$
(adapted from Göksel and Özsoy, 2003: 1148)

Gürer (2020) suggests that all these distinctive properties of contrastive topic in Turkish is against the assumption that contrastive topic is focus with a specific configuration.

Another important information packaging tool is aboutness topics. Aboutness topics differ from focus and contrastive topics in that they do not evoke alternatives. They can be discourse-given (9) or discourse-new (10) and they mark what the rest of the sentence is about (Erkü, 1982; Erguvanlı, 1984; Hoffman, 1995; Gürer, 2015, 2020).[4]

(9)   A: Ahmet   ne   yap-acak?
Ahmet   what   do-FUT
'What is Ahmet going to do?'
      B: [Ahmet]$_{AT}$ parti-ye   gel-ecek.
Ahmet   party-DAT   come-FUT
'Ahmet is going to come to the party.'
(10) A: Ne   ol-uyor?   Ne   arı-yor-lar?
what   happen-IMPF   what   search-IMPF-3PL
'What is happening? What are they looking for?'
      B: [Öğrenci-ler]$_{AT}$ kitap-lar-ın-ı   arı-yor-lar
student-PL   book-PL-3PLPOSS-ACC   search-IMPF-3PL
'The students are looking for their books.'

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4   Erkü (1982) and Erguvanlı (1984) use the term 'topic' to capture this notion. Erguvanlı (1984) labels contrastive topics as 'strong topics.'

When there is an aboutness and a contrastive topic, the aboutness topic always precedes the contrastive topic as illustrated in the following example.

(11) A: *The guest worker groups from Alanya and Anamur who went abroad won recognition with their work. Now, a vote of thanks is delivered to the people from Anamur on a German TV channel.*

        B: [Almanyalı-lar]$_{AT}$ [Alanyalı-lar-ı]$_{CT}$ [övü-yor]$_F$ mu?

          German-PL   people of Alanya-PL-ACC praise-IMPF QP

'Do the German people praise the people from Alanya?'

        B': #[Alanyalı-lar-ı]$_{CT}$ [Almanyalı-lar]$_{AT}$ [övü-yor]$_F$ mu?

    (adapted from Gürer, 2020: 77)

The final information packaging tool is discourse anaphoric phrases. Discourse-anaphoric phrases are non-contrastive and they are always discourse-given. As illustrated below, a discourse anaphoric phrase can be dislocated to the postverbal domain (12b) or deleted (12c).

(12) A: Kitab-ı   nere-ye   bırak-acak-sın?

           book-ACC   where-DAT   leave-FUT-2SG

           'Where will you leave the book?'

        B: Masa-nın   üst-ün-e   bırak-acağ-ım   [kitab-ı]$_{DA}$

           table-GEN   top-3SGPOSS-DAT   leave-FUT-1SG   book-ACC

           'I will leave the book on the table.'

        C: Masa-nın   üst-ün-e   bırak-acağ-ım

           table-GEN   top-3SGPOSS-DAT   leave-FUT-1SG

           'I will leave the book on the table.'

As the discussion indicates, aboutness topics and contrastive topics have distinctive semantic and syntactic properties. The aim of this study is to reveal whether these distinctive properties are accompanied by distinctive prosodic strategies. The next section focuses on the prosodic properties of topic phrases discussed in the literature.

PROSODIC STRUCTURE OF TOPIC PHRASES

For English, Jackendoff (1972: 259) notes [A] and [B] accents and suggests that "(…) the A accent concludes with a fall in pitch, and the B accent concludes with a rise in pitch." Topicalized phrases are identified with the [B] accent but these two accents can surface in the same utterance as illustrated in the following contexts.

(13) "(…) there were a number of people and a number of different things to eat, and that various people ate various things."

    A: Well, what about FRED? What did HE eat?

    B: FRED ate the BEANS.

    (Jackendoff 1972: 261)

In (13), [B] accent is on Fred as the phrase marks a shift in conversation. As a focus phrase, [A] accent is on the beans as it is given as an answer to a *wh-* question. Büring (2003) suggests that the [B] accent, fall-rise accent, is the one for contrastive topics. Note that, in this context, the presence of other alternatives that are not addressed namely other people who ate various things marks this phrase as a contrastive topic. Hence, contrastive topic phrases are suggested to have a distinctive prosodic structure.

Féry (2007: 78) proposes Stress-Topic constraint according to which "a topic phrase has the highest prosodic prominence in its topic domain." A broad focus sentence is given in (14a). The preverbal object is marked as focus. The subject and the arguments are within a separate phonological phrase. When the indirect object is topicalized, in accordance with Stress-Topic constraint it attracts the highest prominence in its domain. However, focus also attracts the highest prosodic prominence to its focus domain, as noted by Truckenbrodt (1995). These requirements yield a clash for these two strong accents.

(14) a. [[Mein Bruder]$_P$ [hat seiner Tochter]$_P$ [neue SCHUHE gekauft]$_P$]]$_I$

      my brother   has his-DAT daughter new   shoes   bought

     'My brother has bought new shoes for his daughter.'

   b. [[[Seiner TOCHTER]$_P$]$_I$ [[hat mein Bruder]$_P$ [neue SCHUHE gekauft]$_P$]$_I$

     his daughter   has my   brother new   shoes   bought

     (Féry 2007: 77)

As a result of these prosodic constraints, the topicalized constituent moves and forms a separate intonational phrase as in (14b). The dislocated topic receives the highest prosodic prominence in its domain. As topic and focus do not appear in the same intonational phrase, a possible clash is avoided. Syntax and prosody go hand in hand to mark information packaging. This study shows that topicalized phrases shape phonological phrasing and topicalized phrases form a separate intonational phrase.

Wang & Xu (2011) investigate factors that have an impact on sentence initial F_0. This study has certain implications for the prosodic marking of Mandarin contrastive topic and focus phrases in this target position. The results indicate that when the first word is focus or topic, (i) a higher pitch height is observed on the first word with focus phrases, (ii) a lower pitch height is observed on the second word with focus phrases which is triggered by post-focal lowering.

The results further reveal that topics at a higher discourse level (discourse-initial, isolated) have a higher F_0 value on the first word than contrastive topics in a non-initial sentence. Hence, topic phrases have distinctive prosodic properties.

In contrast to German, English and Mandarin, for Japanese, Tomioka (2009) suggests that contrastive topic is realized as a high pitch accent followed by lowering. This prosodic strategy is the one used for focus phrases and hence Japanese does not have distinct strategies for focus and contrastive topics.

To sum up, languages use different strategies to mark topics: the prosodic strategy to mark focus phrases or a distinctive marking. This study aims to reveal how Turkish marks topics along this scale. First, we will go over the prosodic properties of broad and narrow focus constructions in Turkish. The comparison of prosody of broad focus sentences with topic phrases will reveal whether topics shape phonological phrasing or not. Gürer (2015) investigates narrow focus constructions with presentational focus and contrastive focus when prominence is on the preverbal argument in SOV order and compares them with broad focus constructions. In Figure 1, "broad" represents pitch contour of broad focus sentences, "gng" is the contour of presentational focus when preceded and followed by given constituents and "gcg" is the contour of contrastive focus when preceded and followed by given constituents. The results indicate that narrow focus constructions do not differ from broad focus constructions in terms of F_0 or duration measurements at any points as illustrated in Figure 1 for F_0 measurement points. In all these conditions, focus is characterized by post-focal compression. The results further support the argument that immediate preverbal position is the default main prominence position in Turkish (Erguvanlı, 1984; Göksel & Özsoy, 2000; İşsever 2003; Kan, 2009; Kamali, 2011).
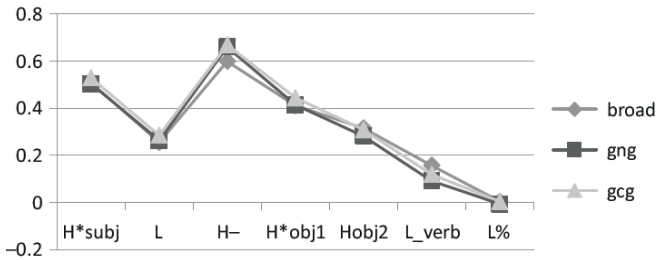

Figure 1: Plot of narrow focus constructions with preverbal focused argument and broad focus condition (Gürer, 2020: 113).

Broad and narrow focus conditions share the same phonological phrasing. However, this pattern is changed when focus is not in preverbal position. When focus is on the subject, post-focal compression begins following this initial domain as in Figure 2.
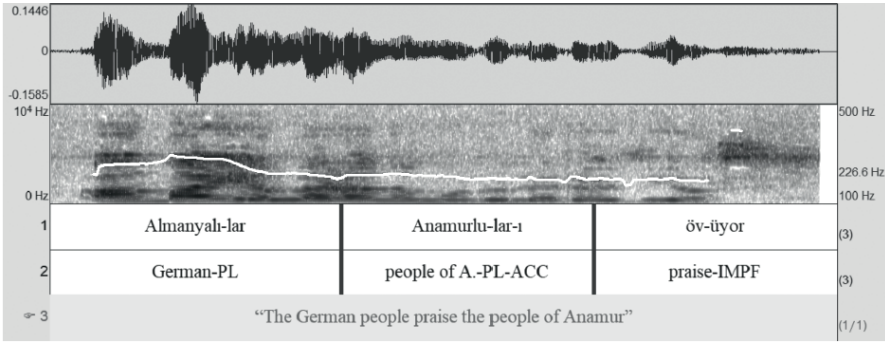
Figure 2: Pitch contour of a sentence when focus is on the subject (Gürer, 2020: 103).

When focus is on the verb, all the preceding arguments form an independent phonological phrase leaving the verb in its own phonological phrase as in Figure 3. Lowering occurs following the accented syllable of the verb in this case.
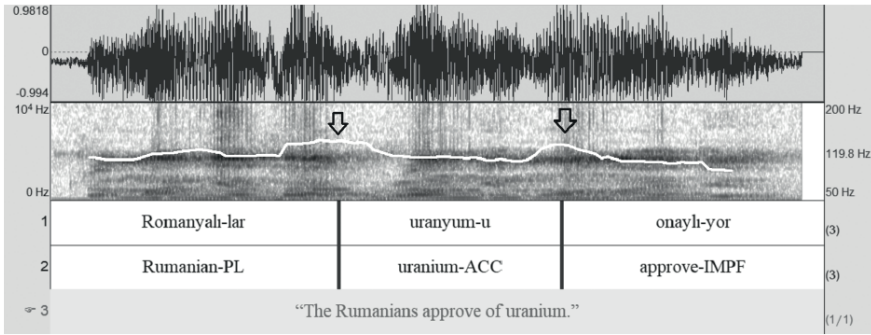

Figure 3: Pitch contour of a sentence when focus is on the verb (Gürer, 2020: 105).

With this background in mind, the next section investigates prosodic structure of topics in Turkish building on an experimental study.

PROSODIC STRUCTURE OF TOPIC PHRASES IN TURKISH

1. Stimuli

The investigation is restricted to the prosody of Turkish contrastive topics and aboutness topics in SOV order when focus is on the object. Remember that immediate preverbal position is the default position for sentence prominence (Erguvanlı, 1984; Göksel & Özsoy, 2000; İşsever 2003; Kan, 2009; Kamali, 2011). In broad focus constructions, all elements bear focus but again the main prominence is on the object. Hence, it is possible to compare constructions with sentence initial topic phrases to broad focus constructions as illustrated under the conditions of A, B, C, D, E and F in Table 1.

Table 1: Patterns of information packaging used in the current study

Conditions	S	O	V
A	Contrastive Topic (Given)	Focus (Given)	Discourse anaphoric (Given)
B	Contrastive Topic (New)	Focus (New)	Discourse anaphoric (Given)
C	Contrastive Topic +da (New)	Focus (New)	Discourse anaphoric (Given)
D	Contrastive Topic (New)	Focus (New)	Focus (New)
E	Aboutness Topic (Given)	Focus (Given)	Discourse Anaphoric (Given)
F	Aboutness Topic (New)	Focus (New)	Discourse anaphoric (Given)
G	Focus (New)	Focus (New)	Focus (New)

Féry & Kügler (2008) find out that prefocal given arguments have lower F_0 than in a focused context; in the postfocal domain, on the other hand, given arguments are deaccented. As the information status of the constituents may affect prosodic structure, target topic phrases are embedded in different contexts to make them discourse-new or discourse given. The conditions in A and B for contrastive topics are exact counterparts of the conditions in E and F for aboutness topics. The comparison of Condition A and B will reveal whether being discourse-given or discourse-new affects prosody of contrastive topics and Condition E and F will check the same point with aboutness topics. The condition in D is prepared to compare contrastive topics in sentence initial position with sentence initial focus phrases in condition G. All the constituents are discourse-new in both conditions and main prominence is on the preverbal argument. They share the same information packaging except for the sentence initial constituents. The condition in C is also included in this study to reveal the prosodic structure of contrastive topic phrases with an overt particle which is -*dA* in this context.

For each condition, the same three sentences were used, and they were embedded within a context to trigger correct information packaging as illustrated in (15), (16) and (17) below for conditions A, F and G respectively.

(15) A: Pek çok şehirde çiçek yolma işleri başlamış. Alanyalılar laleleri yoluyorlar, bunu biliyorum. Peki ya Anamurlular? Onlar gülleri mi yoksa manolyaları mı yoluyorlar?

'The act of picking flowers has started in many cities. I know that the people of Alanya pick tulips. What about the people of Anamur? Do they pick roses or magnolias?'

    B: ANAmur-lu-lar   maNOLya-lar-ı   yol-Uyor-lar.

       Anamur-from-PL   magnolia-PL-ACC   pick-IMPF-3PL

       'People of Anamur pick the magnolias.'

(16) A: Çalışmalar nasıl gidiyor? Neyi yeniliyorlar?

  'How is things? What do they renew?'

  B: RoMANya-lı-lar   moBİLya-lar-ı   yeni-Lİ-yor.

    Rumania-from-PL   furniture-PL-ACC   new-VERBL-IMPF

    'People of Romania renew the furniture.'

(17) A: Ne oluyor?

  'What happens?'

  B: Okullar tatil oluyor.

    'The schools are on holiday.'

  A: Başka?

    'What else?'

  B: İYONya-lı-lar   nuMAra-lar-ı   bul-Uyor-lar.

    Ionia-from-PL   number-PL-ACC   find-IMPF-3PL

    'People of Ionia find the numbers.'

The constituents of each sentence are chosen as lexically accented words composed of sonorant sounds to avoid perturbation in the pitch contour.[5] The target sentences were adapted from Gürer (2015, 2020). However, they are embedded in new contexts to trigger correct information packaging. The accented syllables are shown in capital letters. All these three sentences have the same number of syllables in subject, object and verb position. In addition to these target sentences, 25 filler sentences were used in the study (See Appendix for all target and filler sentences used in the study).

2. Participants

Six native speakers of Turkish participated in the study. Four of them were female and two were male. The age span of the informants ranged from 35 to 65. They were all naïve to the purpose of the study. They volunteered to take part in this study, and they did not report any hearing or speech impairments.

3. Procedure

The participants were recorded in pairs in a quiet setting. The dialogues composed of utterances of Speaker A and B were presented to them on a computer screen. As the target sentences appeared as utterances of Speaker B, the informants switched their roles after the first recording session. Hence, both informants read the target sentences at a natural conversational tempo with another native speaker. The informants re-read the dialogues only

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5   Lexically accented words are those with non-final stress.

when mispronunciation cases or hesitation pauses occurred. The researcher did not interrupt the flow of the recording for any other reasons. The whole session was recorded as a single session. The recording time was about 20 minutes for each pair.

4. Analysis

First, the target sentences were extracted from the recordings. Then, word and syllable boundaries were marked on pitch tracks. For each target sentence, four measurement points were chosen from the subject domain and three from the object and the verb domains. The minimum pitch value at sentence initial position, the maximum pitch value of the accented syllable of the subject, the maximum pitch value of the boundary tone and the minimum pitch value preceding the boundary tone were measured manually in the initial subject domain based on the commands of Praat (Boersma & Weenink, 2020, version 6.1.09). The minimum pitch value at the beginning and at the end of the medial and final domains and the maximum pitch value of the accented syllable of the object and the verb were the other measurement points.

The extracted values were listed on an Excel sheet for normalization. The utterances of two speakers were excluded from the study as one of them acted out the dialogues at an unnatural conversational tempo and the other had a creaky voice and it was hard to pinpoint the measurement points, even in the nuclear domain. For each sentence, a baseline was calculated for each speaker -four speakers- based on the minimum pitch value in the final verb domain. The values for each measurement point were transformed based on a formula proposed by Pierrehumbert (1980: 49) as illustrated below.

Transformed value = measured F_0-baseline ÷ baseline

As for duration measurements, for each sentence, subject, object and verb boundaries were marked. Then, duration of these domains was measured via Praat (Boersma & Weenink, 2020, version 6.1.09) under each condition for all speakers. The following section presents the results in detail.

5. Results

First, the pitch contours of the target constructions were investigated to reveal whether phonological phrasing was shaped in a different way with sentence initial topic phrases. The following figures illustrate the pitch tracks of the constructions given in (15), (16) and (17) above. Although the F_0 values seem to differ, they share the same prosodic phrasing pattern. There is a bump with the accented syllable of the subject followed by a high boundary tone. There is a slight bump with the accented syllable of the object and the lowest values are found in the final postnuclear domain.
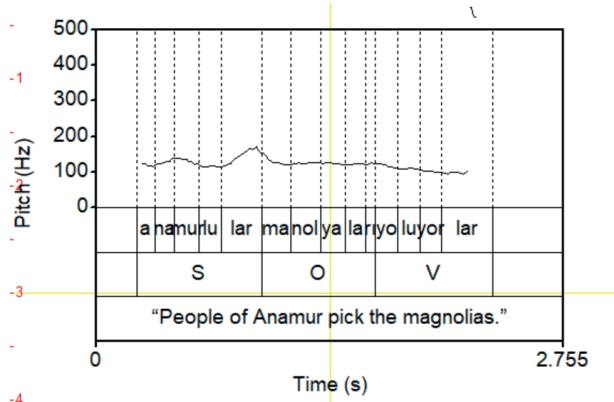
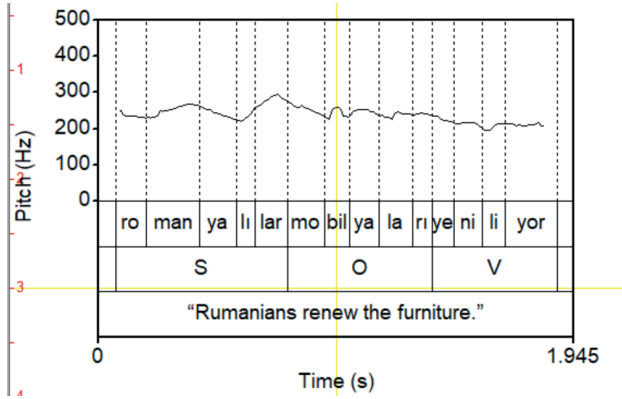**Figure 4:** Pitch track of a sentence in Condition A, speaker OG.

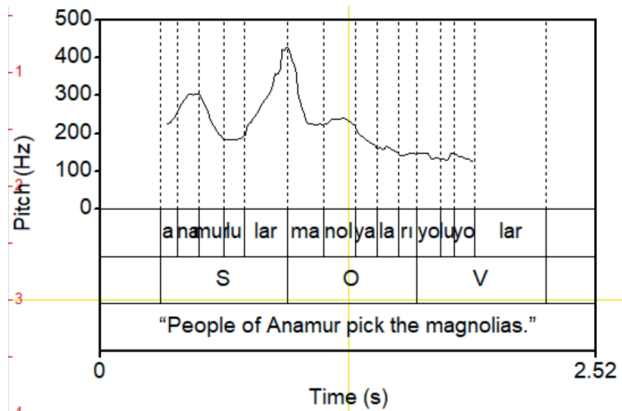**Figure 5:** Pitch track of a sentence in Condition D, speaker AB.

Figure 6: Pitch track of a sentence in Condition G, speaker BD.

As a next step, we focused on F_0 measurements to see whether the conditions differ at any of the measurement points in the pitch contour, as illustrated below. Based on the normalized values for each speaker, the following plot was obtained from the mean values of each condition.
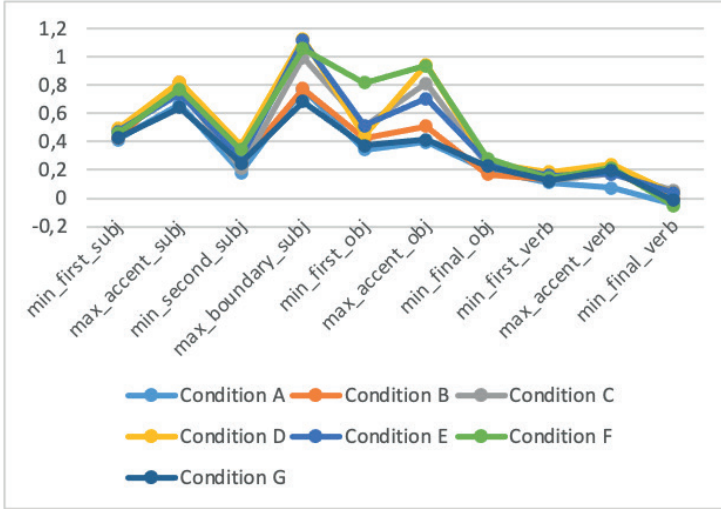

Figure 7: Plot of the target constructions under each condition based on F_0 values.

The first observation is that Condition G, namely broad focus condition, had the lowest values at nearly at all measurement points. The comparison of aboutness and contrastive topics under the same conditions revealed the following plots. Note that in both plots, constructions with aboutness topics, discourse-given or discourse-new, have higher values especially in the nuclear domain than constructions with contrastive topics.
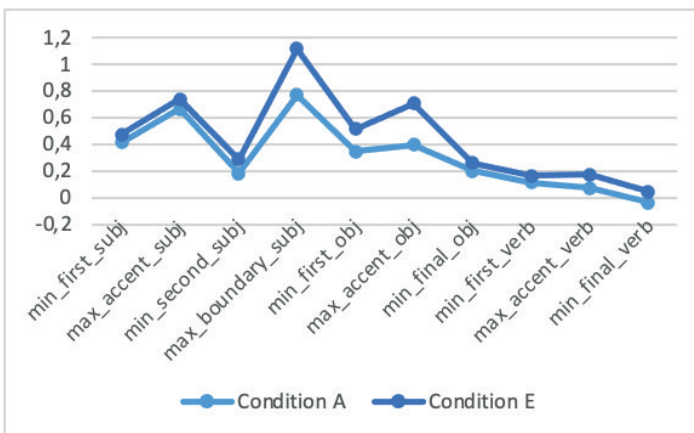

Figure 8: Plot of target constructions under Conditions A and E based on F_0 values.
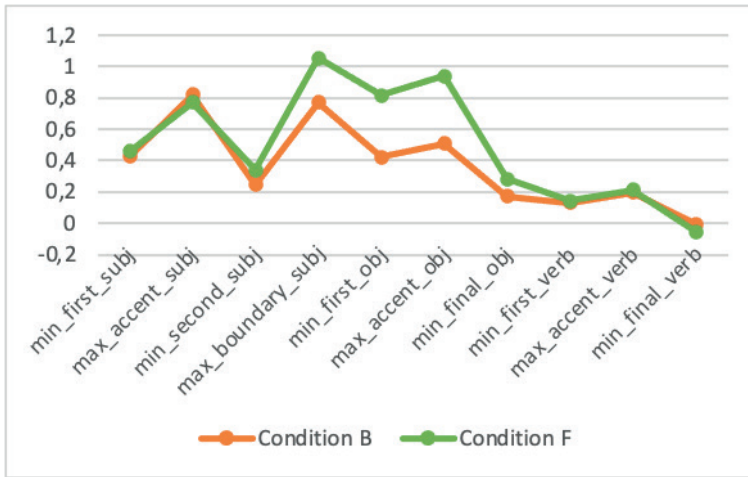
Figure 9: Plot of target constructions under Conditions B and F based on F_0 values.

Remember that Condition D with contrastive topic had the same information packaging in the nuclear and postnuclear domain with Condition G.[6] The next plot illustrates this comparison. The constructions with contrastive topic under Condition D had higher values than broad focus constructions especially in the prenuclear and nuclear domains.
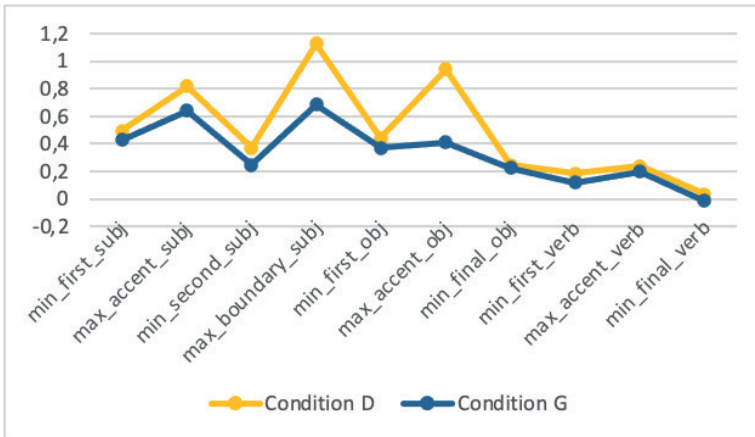

Figure 10: Plot of target constructions under Conditions D and G based on F_0 values.

Finally, the following plot illustrates comparison of constructions with contrastive topic under Conditions A, B and C. The first observation is that out of these conditions, Condition B and C had higher values especially in the nuclear domain.

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6   It is not possible to check discourse-new aboutness topic phrases under this condition. When all the constituents are discourse-new, the end result is a broad focus construction.
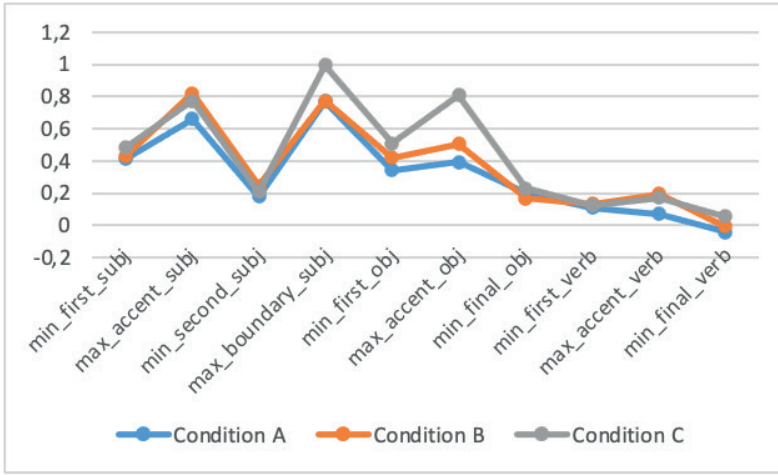
Figure 11: Plot of target constructions under Conditions A, B and C based on F_0 values.

As a next step, a statistical analysis was conducted to find out whether these differences in pitch values were statistically significant or not. The data were analyzed with IBM SPSS V23. The Shapiro-Wilk test was used to decide if the data conformed to the normal distribution. One-way analysis of variance (ANOVA) was used for normally distributed data and the Kruskal Wallis test was used for non-normally distributed data to compare measurement values at different points according to three and more groups. The univariate method was used to examine the effects of condition, sentence, item main effects and interactions on time values, and the comparison of means was conducted by three-way analysis of variance. The Tukey HSD test was used for multiple comparisons. The significance level was taken as $p < 0.050$.

For the comparison of F_0 values at ten measurement points under each condition one-way ANOVA on ranks, Kruskal Wallis statistical tests were applied and no significant difference was detected at any of the measurement points. The F_0 values at the right boundary of the prenuclear domain and the nuclear domain seemed to be the highest when the subject was an aboutness topic and higher with contrastive topics when compared to broad focus conditions. However, this difference was not categorical according to the statistical analyses.

The duration of the subject, object and verb were also measured. As for the comparison of duration values under each condition one-way ANOVA on ranks analysis, Tukey HSD tests were applied. The results indicated that only the subject under Condition C was significantly longer than the subjects in all other conditions (p=0,036). However, this is predictable as the discourse particle was included in the subject domain for this condition. No significant difference was detected for object and verb duration under any of the conditions.

6. Discussion

This section discusses the findings of the current study building on our research questions repeated below for ease of exposition.

(i)   How do topics shape prosody when they are in sentence initial position in SOV order? Do topics affect phonological phrasing? Are topics marked with distinctive F_0 or duration values when compared to broad focus sentences?

(ii) Is there a significant difference between aboutness and contrastive topics with respect to F0 or duration values?

(iii) Is there an effect of overt discourse particles on the prosody contrastive topics?

(iv) Does information status, being discourse-new or discourse-given, affect prosody of topics?

Figure 7 indicates that phonological phrasing is the same for constructions with sentence initial topics and broad focus sentences. A high boundary tone marks the right edge of the prenuclear domain, the fall starts following the bump on the accented syllable of the object and the postnuclear domain has the lowest F_0 values. The statistical analysis reveals that constructions with sentence initial topics do not differ significantly from broad focus condition with respect to F_0 values at ten measurement points in the prenuclear, nuclear and postnuclear domains.

Figures 8, 9 and 10 illustrate a comparison of aboutness and contrastive topics. Aboutness topics seem to have higher values especially at the right edge of the prenuclear domain and nuclear domains. However, this difference is not categorical according to the statistical analysis. Being discourse-new or discourse-given also does not have a significant effect on prosody of aboutness and contrastive topics. When there is an overt discourse particle the subject has a longer duration as expected. However, the discourse particle does not have an effect on F_0 values.

The results indicate that Turkish uses syntactic and sematic tools to mark topic phrases, but a distinctive prosodic strategy is not used. There are syntactic ordering restrictions for aboutness and contrastive topics. From a semantic perspective, only contrastive topics evoke a set of alternative questions. However, the prosody of topic phrases do not differ when F_0 values or duration are considered. This is similar to Japanese in which the same prosodic marking is used by topic and focus phrases (Tomioka, 2010).

However, additional experimental studies are needed with large groups of native speakers to gain a better understanding of prosody of topics in Turkish. The investigation of other possible word orders and additional criteria such as intensity will shed further light on prosody of topics. We leave these issues for further research.

CONCLUSION

Building on an experimental study, this paper investigates prosody of aboutness and contrastive topics in sentence initial position in SOV order. Aboutness and contrastive topics have different semantic values in the sense that only contrastive topics evoke alternative sets of questions. Aboutness topics mark what the rest of the sentence is about without a contrastive reading. Contrastive topics and aboutness topics also have different ordering restrictions. The results of the current study indicate that sentence initial topics in SOV order do not differ with respect to phrase boundaries, changes in F_0 or duration measurements. Being a discourse-new or discourse-given topic does not affect these results. Additionally, these constructions also do not differ from broad focus constructions. The study shows that Turkish uses distinctive semantic and syntactic strategies to mark topics, but they share the same prosodic pattern with broad focus sentences.

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Appendix

A

Contrastive Topic (Given)   Focus (Given)   Discourse anaphoric (Given)

(1)   Pek çok şehirde çiçek yolma işleri başlamış. Alanyalılar laleleri yoluyorlar, bunu biliyorum. Peki ya Anamurlular? Onlar gülleri mi yoksa manolyaları mı yoluyorlar?

B: Anamurlular manolyaları yoluyorlar. (A1)

(2)   Uluslararası kongre merkezi için pek çok ülke hazırlıklara başlamış. Yunanlılar ses sistemini yeniliyor, bunu biliyorum. Peki ya Romanyalılar? Onlar döşemeleri mi yoksa mobilyaları mı yeniliyor?

B: Romanyalılar mobilyaları yeniliyor. (A2)

(3)   Anadolu medeniyetleri tarihte pek çok şey bulmuş. Lidyalılar parayı buluyorlar, bunu biliyorum. Peki ya İyonyalılar? Onlar takvim sistemini mi yoksa numaraları mı buluyorlar?

B: İyonyalılar numaraları buluyorlar. (A3)

B

Contrastive Topic (New)   Focus (New)   Discourse anaphoric (Given)

(1)   Pek çok şehirde çiçek yolma işleri başlamış. Peki, kim neyi yoluyor?

B: Anamurlular manolyaları yoluyorlar. Valla, diğerlerini pek bilmiyorum. (B1)

(2)   Uluslararası kongre merkezi için pek çok ülke hazırlıklara başlamış. Peki, kim neyi yeniliyor?

B: Romanyalılar mobilyaları yeniliyor. Valla, diğerlerini pek bilmiyorum. (B2)

(3)   Anadolu medeniyetleri tarihte pek çok şey bulmuş. Peki, kim neyi buluyor?

B: İyonyalılar numaraları buluyorlar. Valla, diğerlerini pek bilmiyorum. (B3)

C

Contrastive Topic +da (New)   Focus (New)   Discourse anaphoric (Given)

(1)   Pek çok şehirde çiçek yolma işleri başlamış. Mesela Alanyalılar laleleri yoluyorlar.

B: Anamurlular da manolyaları yoluyorlar. (C1)

(2)   Uluslararası kongre merkezi için pek çok ülke hazırlıklara başlamış. Mesela Yunanlılar ses sistemini yeniliyor.

B: Romanyalılar da mobilyaları yeniliyor. (C2)

(3)   Anadolu medeniyetleri tarihte pek çok şey bulmuş. Mesela Lidyalılar parayı buluyorlar.

B: İyonyalılar da numaraları buluyorlar. (C3)

D

Contrastive Topic (New)   Focus (New)   Focus (New)

(1)   Pek çok şehirde çalışmalar başlamış. Sen biliyor musun peki, kim ne yapıyor?

  B: Anamurlular manolyaları yoluyorlar. Valla, diğerlerini pek bilmiyorum. (D1)

(2)   Uluslararası kongre merkezi için pek çok ülke hazırlıklara başlamış. Sen biliyor musun peki, kim ne yapıyor?

  B: Romanyalılar mobilyaları yeniliyor. Valla, diğerlerini pek bilmiyorum. (D2)

(3)   Anadolu medeniyetleri tarihte pek çok şey yapıyor. Sen biliyor musun peki, kim ne yapıyor?

  B: İyonyalılar numaraları buluyorlar. Valla, diğerlerini pek bilmiyorum. (D3)

E

Aboutness Topic (Given)   Focus (Given)   Discourse Anaphoric (Given)

(1)   A: Anamurlular laleleri mi yoksa manolyaları mı yoluyorlar?

  B: Anamurlular manolyaları yoluyorlar. (E1)

(2)   A: Romanyalılar döşemeleri mi yoksa mobilyaları mı yeniliyor?

  B: Romanyalılar mobilyaları yeniliyor. (E2)

(3)   İyonyalılar takvim sistemini mi yoksa numaraları mı buluyorlar?

  B: İyonyalılar numaraları buluyorlar. (E3)

F

Aboutness Topic (New)   Focus (New)   Discourse anaphoric (Given)

(1)   A: İşler nasıl gidiyor? Neyi yoluyorlar?

  B: Anamurlular manolyaları yoluyorlar. (F1)

(2)   A: Çalışmalar nasıl gidiyor? Neyi yeniliyorlar?

  B: Romanyalılar mobilyaları yeniliyor. (F2)

(3)   Burada ne oluyor? Neyi buluyorlar?

  B: İyonyalılar numaraları buluyorlar. (F3)

G

Broad Focus

(1)   A: Ne oluyor?

  B: Altın fiyatları artıyor.

  A: Başka?

  B: Anamurlular manolyaları yoluyorlar. (G1)

(2) A: Ne oluyor?

B: Ağaçlar çiçek açıyor.

A: Başka?

B: Romanyalılar mobilyaları yeniliyor. (G2)

(3) A: Ne oluyor?

B: Okullar tatil oluyor.

A: Başka?

B: İyonyalılar numaraları buluyorlar. (G3)

H

Fillers

(1) A: Begonyalar nasıl yetiştirilir?

B: Begonyalar küçük saksılarda yetiştirilir.

(2) A: Lidyalılar nerede yaşıyor?

B: Lidyalılar Efes'te yaşıyor.

(3) A: Hafta sonu etkinliğe kimler gelecek?

B: Bizim gruptan kimse gelmiyor.

(4) A: Makarna nasıl pişirilir?

B: Suda haşlanarak pişirilir.

(5) A: Koalalar nasıl hayvanlardır?

B: Koalalar keseli hayvanlardır.

(6) A: Bal porsuğu neyle beslenir?

B: Bal porsuğu etle beslenir.

(7) A: Bu gürültüyü kim çıkarıyor?

B: Ayşe güya spor yapıyor.

(8) A: Proje metnini kimler yazacak?

B: Benim başka işlerim var.

(9) A: Sakız ağacı kaç yıldan sonra sakız verir?

B: Beş yıldan sonra sakız salgılar.

(10) A: Hangi mantarlar zehirlidir?

B: Kırmızı mantarlar zehirlidir.

(11) A: Bu sarayı kimler inşa etmiş?

B: Balyan ailesi inşa etmiş.

(12) A: Ahmet okula ne zaman gidecek?

B: Öğleden sonra gidecek?

(13) A: Bu oyunu kimler oynayabilir?

B: 18 yaş üstü herkes oynayabilir.

(14) A: Her girdiğin sınavı başarıyla geçiyorsun. Şimdiye kadar hiçbir ödevden de düşük not almadın. Nasıl çalışıyorsun?

B: Her gün düzenli çalışıyorum.

(15) A: Eskiden Marmara adasında mermer çıkarırlarmış. Ada halkının büyük çoğunluğu geçimini buradan sağlarmış. Peki Marmaralılar mermerleri nasıl çıkarıyorlarmış?

B: Marmaralılar mermerleri kazarak çıkarıyorlarmış.

(16) A: Köprü ve metro çalışmalarına rağmen trafik sorunu devam ediyor. Trafik sıkışıklığı nasıl çözülür?

B: Mimarlar alternatif yollar arıyorlar.

(17) A: Bu hafta sonu bir yerlere gidelim. Hava durumu nasıl olacakmış?

B: Sıcaklık mevsim normallerinin bile üstünde.

(18) A: Meyveli pastayı sen sevdiğin için sana özel almıştım. Neden bir parça yiyip bıraktın?

B: Meyvelerin aromaları birbirine karışmış.

(19) A: Arkadaşın bu filme gelmek istediğini söylemişti. Neden son anda gelmekten vazgeçti?

B: Abonelerle aylık görüşmesi varmış.

(20) A: Ünlü telefon şirketinin çıkardığı son telefona ne gibi yenilikler eklemişler?

B: Parmak izi okuyabiliyormuş ve diğer modelden daha hızlı.

(21) A: Altın çilek meyvesi genellikle zayıflamak için yeniliyor. Peki ne gibi faydaları var?

B: Kanı temizler, sindirim sitemini güçlendirir.

(22) A: Mısırlılar ölülerini neden mumyalıyorlarmış?

B: Öldükten sonra da yaşayacaklarını düşünüyorlarmış.

(23) A: Yakınlara yeni bir alışveriş merkezi açılmış. Dünyaca ünlü markaların mağazaları varmış. En üst katında da kafesi varmış.

B: Çocuklar için de oyun sahası varmış.

(24) A6: Kutup ayıları 35 kilometre hızla koşabiliyorlarmış. Ayrıca beyaz görünüyorlar ama derileri siyahmış.

B: Son yayınlanan rapora göre onların da nesli tükenmek üzere.

(25) A: Adana pamuk tarımı yapan illerin başındaydı. Şimdi ise Adanalılar daha fazla kar getiren ürünlere ağırlık veriyorlarmış.

B: Artık Adana'da bambular boy veriyor.