PROSODIC DOMAINS AND THE SYNTAX-PROSODY MAPPING IN TURKISH

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PROSODIC DOMAINS AND THE SYNTAX-PROSODY MAPPING IN TURKISH

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Prosodic Domains and the Syntax-Prosody Mapping in Turkish

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Thesis Abstract

Seda Kan, "Prosodic Domains and the Syntax-Prosody Mapping in Turkish"

This study investigates the phonetics and phonology of phrasal domains in Turkish prosody and discusses its implications for the syntax-prosody mapping. The findings and proposals are based on a corpus of 1152 sentences extracted from a total number of 1144 spoken dialogues. The dialogues were acted out by nine native speakers who speak the standard variety of modern Turkish.

In the light of the data, an inventory of pitch accents and edge tones is proposed for Turkish. The findings indicate that Turkish prosody governs a separate and single level of phrasing above the Phonological Phrase, namely the Intonational Phrase (IP). The evidence is from boundary tone placement, linguistic pause distribution, the position of head-prominence, and phrase final lengthening of vowels at IP-final positions.

Based on the structures where IP-formation is and is not induced, a new theory of intonational phrasing is proposed. It is shown that every structure with illocutionary force yields intonational phrasing in phonology. Considering that the same structures are also the loci of the so-called "clausal tunes", we further question the clause-typer status of intonation, as pursued in some studies in the literature. With evidence from a variety of grammatical processes, specifically complementation, it is shown that intonation cannot be envisaged as a clause-typer. Rather than being sentential force indicators, such tunes are argued to be the reflexes of illocutionary force. In relation to these proposals, the conception of a single ForceP layer (Rizzi 1997) is rejected, and a two-way partitioned representation of ForceP is proposed: an outer $\text{Force}_{\text{Illocutionary}}\text{P}$ layer, which dominates an inner $\text{Force}_{\text{Sentential}}\text{P}$ layer. In this mechanism, clause-typing operates at $\text{Force}_{\text{Sentential}}{}^{0}$, whereas $\text{Force}_{\text{Illocutionary}}{}^{0}$ specifies speaker intentional meaning (Grice 1957, Searle 1965, Chierchia and McConnell-Ginet 1990). This proposal captures not only why both intonational phrasing and the "clausal tunes" are restricted to the same structures, i.e. those with the $\text{Force}_{\text{Illocutionary}}\text{P}$ layer, but also why the structures lacking both phenomena are devoid of illocutionary force. The latter are argued to be truncated from $\text{Force}_{\text{Sentential}}\text{P}$.

Intonational phrasing facts are also the source of another proposal regarding relativization. Based on the phonological, semantic and pragmatic disparities between prerelatives and the *ki*-headed postrelatives, a new classification for relativization is proposed for Turkish. Prerelatives are integrated relatives and *ki*-relatives are supplementary relatives in the sense of Potts (2003, 2005). *ki*-relatives and the *ki*-headed clauses that only act as parentheticals are subsumed under the supplemental *ki*-clause category, and they are contrasted with the *ki*-headed finite complement clauses (*ki*-FCC). It is shown that supplemental *ki*-clauses initiate IP-formation, whereas *ki*-FCCs are prosodically integrated structures. This disparity is attributed to the nature of the ForceP layers in their syntax.

Finally, the prosody of arguments is discussed. Contra impressionistic approaches to prosody, it is shown that the phrasing behaviors of arguments are not as rigid as they are envisioned to be. It is argued that some of these patterns yield distinct classes of meanings, while some of them are semantically vacuous structures.

Tez Özeti

Seda Kan, "Türkçe'de Ezgi Birimleri ve Sözdizim-Ezgi Eşleşmesi"

Bu çalışma Türkçe'deki öbeksel ezgi birimlerinin sessel ve sesdizimsel yapısını incelemekte ve bunların sözdizim-ezgi eşleşmesine dair sezdirimlerini tartışmaktadır. Çalışmadaki bulgular ve öneriler 1144 sözlü diyalogdan çıkarılmış olan 1152 cümlelik bir korpusa dayanmaktadır. Diyaloglar çağdaş Ölçünlü Türkçe kullanan dokuz anadil konuşuru tarafından seslendirilmiştir.

Verilerin ışığında Türkçe için çeşitli perdesel vurgu birimleri ve sınır tonları ortaya konulmaktadır. Ayrıca, Türkçe'nin ezgi sisteminde Sesdizim Öbeği'nin üstünde ayrı bir birim, Tonlama Öbegi (TÖ), olduğu gösterilmektedir. Kanıtlar tonlama, durak dağılımı, sesdizimsel baş pozisyonu ve TÖ-sonu sesli uzatmasına dayanmaktadır.

TÖ oluşumunun gözlemlendiği ve gözlemlenmediği yapılar üzerinden yola çıkılarak, çalışmada yeni bir tonlama öbeklenmesi kuramı önerilmektedir. TÖ oluşumunun gözlemlendiği yapıların Edimsöz Gücü taşıdığı gösterilmektedir. "Tümcesel ton" olarak nitelendirilen tonların aynı yapılarda gözlemlenmesi üzerine bazı çalışmalarda iddia edilmiş olan tonlamanın tümce-tipleme statüsü sorgulanmaktadır. Çeşitli dilbigisel operasyonlar, özellikle yantümceleme, tonlamanın tümce-tipleyici olamayacağını göstermektedir. Bu önerilerden yola çıkılarak, Güç Öbeği için yekpare bir yapıdan (Rizzi 1997) ziyade iki bölümlü bir katmanlama önerilmektedir: $Güç_{Tümcesel}$Öbek pozisyonu üzerinde yer alan $Güç_{Edimsöz}$ Öbek pozisyonu. Bu mekanizmada $Güç_{Tümcesel}^{0}$ tümce-tiplemeyi gerçekleştirirken, $Güç_{Edimsöz}^{0}$ konuşmacı odaklı anlamı belirlemektedir (Grice 1957, Searle 1965, Chierchia ve McConnell-Ginet 1990). Çalışmada önerilenler hem tonlama öbeklenmesinin hem de "tümcesel ton" olarak nitelendirilen tonların neden sadece aynı yapılarda gözlemlendiğini ve bunların gözlemlenmediği yapıların da edimsöz gücü taşımadığını açıklamaktadır. İkinci türdeki yapıların $Güç_{Tümcesel}$Öbek pozisyonundan budaklanmış yapılar olduğu öne sürülmektedir.

Tonlama öbeklenmesi ortaç yapılarıyla ilgili bir yeni öneri için de kaynak teşkil etmektedir. Aralarındaki sesdizimsel, anlamsal ve kullanımsal ayrımlar üzerinden yola çıkılarak, Türkçe'deki önortaçlar ve *ki*-başlı ortaçlar için Potts (2003, 2005)'un çalışmaları ışığında yeni bir sınıflandırılma önerilmektedir. Önortaçların tümleşik ortaçlar, *ki*-başlı ortaçların ise tamamlayıcı ortaçlar olduğu iddia edilmektedir. *ki*-ortaçları ve sadece parantez yapıları olarak kullanılan *ki*-başlı tümceler ise tamamlayıcı *ki*-tümceleri kategorisi altında toplanmaktadır ve bunlar çekimli *ki*-başlı yantümceler ile karşılaştırılmaktadır. İlk kategori TÖ oluşumunu tetiklerken, diğer kategori ezgisel olarak tümleşik bir sesdizim göstermektedir. Bu farklılık iki kategorinin sözdizimlerindeki Güç Öbek katmanlarının doğasına bağlanmaktadır.

Çalışmada son olarak üye ezgisi tartışılmaktadır. İzlenimci yaklaşımların tersine üyelerin sesdizimdeki öbeklenme davranışlarının düşünüldüğü kadar katı olmadığı gösterilmektedir. Bazı öbeklenmelerin anlambilimsel farklılıklara sebep olduğu, bazılarının ise anlamsal bir etkisinin olmadığı ortaya konmaktadır.

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CHAPTER 1

INTRODUCTION

1.1 Aim

This study investigates the nature of phrasal domainhood in Turkish prosodic structure and discusses its implications for the syntax-prosody mapping. Our research questions are the following:

i. Can we identify another level of phrasing above the Phonological Phrase (PPh), which is the highest/largest prosodic domain hitherto explored in Turkish phonology (cf. Kabak and Vogel 2001)?
ii. If yes, how many levels of phrasing above the PPh does Turkish prosodic structure contain?
iii. What are the modes of mapping between syntax and phonology at the level of the domain(s) higher than the PPh?
iv. In what ways, if ever, do alternations in argument structure, argument referentiality, argument modification and clausal complexity affect prosodic organization?

The investigation of the first two questions involves the phonetics and phonology of phrasal domains in Turkish prosody, in particular, the prosodic structure above the PPh. The third question explores an understudied area of the syntax-phonology interface, namely the mapping of the prosodic structure above the PPh, with special

reference to the clausal complexity parameter, and the fourth question aims to draw a detailed picture of the prosody of arguments within the context of experimental prosody.

1.2 Layout of the Thesis

Our findings and proposals are based on a corpus of 1152 sentences extracted from a total number of 1144 spoken dialogues. The dialogues were acted out by nine native speakers who speak the standard variety of Modern Turkish.[1]

The organization of the thesis is as follows: in Chapter 2 we introduce the theoretical background of the study, namely the integrated approach (cf. Frota 2000; Hellmuth 2006, 2007), Prosodic Structure Theory (cf. Selkirk 1978, et seq.; Nespor and Vogel 1986; Hayes 1989; among others), and the Autosegmental-Metrical Model of Intonational Phonology (cf. Pierrehumbert 1980; Beckman and Pierrehumbert 1986; Pierrehumbert and Beckman 1988; among others).

In Chapter 3 we outline the methodology. The details of the participant profile, the structure and design of the stimuli and the data collection procedure are explained.

In Chapter 4 we discuss our findings pertaining to the phonetics and phonology of phrasal domains in Turkish. We propose an inventory of pitch accents and edge tones, and characterize the nature of pitch accent distribution, which we display to be sensitive to prosodic-headedness at the PPh-level in this language.

In what follows, we argue that Turkish prosody governs a separate and single level of phrasing above the PPh, namely the Intonational Phrase (IP). Our evidence

[1] See Chapter 3 for the details of the methodology.

is based on boundary tone placement, linguistic pause distribution, the position of head-prominence, and phrase final lengthening of vowels at IP-final positions.

In Chapter 5 we focus on the syntactic environments where intonational phrasing is and is not induced. In view of the data where root clauses and *ki*-relatives exhibit a strong affinity to the IP, we first inquire whether a syntactic clause is essentially parsed as an IP or whether it can start an "intonational unit" (cf. Scheer 2008, 2009) at PF. Based on the prosodic organization of finite complementation structures, we illustrate that syntactic clausehood does not have a unique prosodic reflex. Following this fact, we address the question of whether the non-restrictive nature of the post-head *ki*-relative could be correlated with its disintegrated prosody akin to the case in languages where non-restrictive/appositive relatives are observed to trigger intonational phrasing.

In order to investigate this question, we contrast the prosody of non-restrictive prerelatives and post-head *ki*-relatives. We show that the former RC type does not prompt IP-formation in contrast to the latter. We further display that non-restrictive prerelatives are prosodically similar to restrictive prerelatives; both RC types do not exhibit detachment at the IP-level from the elements of the superordinate clause. Contra the general assumption in the literature that the restrictive/non-restrictive taxonomy also divides RCs into two classes regarding their phonological structure (e.g. Emonds 1979; Bing 1979; Nespor and Vogel 1986; among many others), it is shown that the relevant taxonomy does not correctly capture the phrasing behaviors of relative clauses. Non-restrictiveness does not entail prosodic disintegration at the IP-level.

Besides their phonology, we delve into the semantic and pragmatic disparities between non-restrictive prerelatives and *ki*-relatives. We show that the

two clause types also differ in terms of their anchors, how they behave in indirect quotation environments, their degree of restriction and their discourse-pragmatic functions. Based on the differences between the two types of non-restrictives, we argue that *ki*-relatives and another class of *ki*-clauses that only function as parentheticals carry the typical properties of supplements (cf. Potts 2003, 2005). Consequently we unify both clause types under the supplement category, and we analyze them under two classes: supplementary *ki*-relatives and *ki*-parentheticals. With this classification, we propose a novel analysis of these clauses, which did not receive much attention in the literature.

Our analysis of *ki*-relatives as supplementary relatives is the source of another proposal regarding the typology of relativization in Turkish. We argue that prerelatives are integrated relative clauses in the sense of Potts (2003, 2005) based on the facts that they are potentially restrictive and prosodically integrated structures along with their non-strictly-speaker-oriented nature.

Next, we return to the question of why root clauses and *ki*-relatives behave uniformly in prosody. We evaluate Selkirk's (2005) unification of supplements and root/matrix level clauses as [+comma] constituents (cf. Potts 2003, 2005), namely Comma Phrases. We argue against this unification because it loses the secondary entailment nature of supplemental expressions by treating them on a par with root clauses, and it also disregards the empirical coverage in Potts (ibid.) that clearly distinguishes between at-issue content and Conventional Implicature content.

In what follows, we propose a new account of intonational phrasing which centers on the notion of illocutionary force. We start our discussion by pointing out that the studies which attribute intonation a unique role in clause-typing base their assumptions on root-level phenomena and they fail to account for the absence of

intonational cues, more specifically the so-called clausal tunes, in complementation structures, which do carry their own clause type information. We also show that they cannot explain why certain forms of "questions" cannot undergo embedding.

Considering that intonational phrasing and the so-called clausal tunes are restricted to structures with illocutionary force (IF) specification, we claim that both phenomena are the reflexes of IF, as defined in Chierchia and McConnell-Ginet (1990), whereas clause-typing is strictly intertwined with sentential force, as defined in (ibid.). We argue for a two-way partitioned representation of ForceP in the CP domain: an outer $\text{Force}_{\text{Illocutionary}}$P layer, which dominates an inner $\text{Force}_{\text{Sentential}}$P layer.

In this model, clause-typing operates at $\text{Force}_{\text{Sentential}}{}^{0}$, a grammatical process which specifies how the content of a clause is conventionally presented, whereas $\text{Force}_{\text{Illocutionary}}{}^{0}$ specifies speaker intentional meaning (cf. Grice 1957; Searle 1965). The proposed model captures not only the phonological similarity between root clauses and supplemental expressions and their speech act nature, but also why the so-called clausal tunes are observed in structures with distinct illocutionary force(s) rather than all clausal structures.

Following up on our proposal, we analyze non-IP-inducing clauses as truncated structures. We argue that prerelatives, i.e. in our analysis integrated RCs, finite complement clauses and *ki*-headed finite complement clauses are phonologically integrated into their superordinate clause as a result of the fact that they are truncated from the $\text{Force}_{\text{Sentential}}$P layer, i.e. what is left is the domain of the clause starting from $\text{Force}_{\text{Sentential}}$P. This predicts that they do not trigger intonational phrasing and they do not carry "clausal tunes" despite carrying sentential force.

Regarding the nature of the mapping, we adopt an End-based approach (cf. Selkirk 1986; 1996; 2000; 2005; Selkirk and Tateishi 1988, 1991; Selkirk and Shen 1990; McCarthy and Prince 1993). We argue that the IP is derived through a right-edge-alignment constraint which matches the right edge of a $Force_{Illoc}P$ with the right edge of an IP in the interface phonological representation, which captures the surface asymmetries in intonational phrasing in Turkish. We also point out the obvious shortcoming of an alternative phase-based approach: it generates more IP-edges than we actually observe.

In Chapter 6 we explore the prosodic organization of arguments in Turkish. In contrast with the assumptions of impressionistic approaches to prosodic phrasing and stress, we show that the prosody of arguments is not as rigid as it is envisioned to be. We discuss that some of the phrasing patterns yield distinct classes of meanings, while some of them are semantically vacuous. For both cases, we raise a number of hypotheses and research questions regarding the nature of syntactic derivations and the organization of interfaces.

CHAPTER 2

THEORETICAL BACKGROUND

2.1 Preliminaries

In the current study, we pursue an integrated approach to prosody following Frota (2000) and Hellmuth (2006, 2007), whereby we employ the essential constructs of the Prosodic Structure Theory (cf. Selkirk 1978, et seq., Nespor and Vogel 1983, 1986; Hayes 1989, among others) and use the tools of the Autosegmental-Metrical Model of Intonational Phonology (cf. Pierrehumbert 1980, et seq.; Beckman and Pierrehumbert 1986; Pierrehumbert and Beckman 1988; among others) for the description of intonation.

In the first part of this chapter, we outline the theoretical frameworks above, which we adopt in our investigation of Turkish prosodic structure. We first introduce the basic tenets of the Prosodic Structure Theory (henceforth PST) and then provide an overview of a variety of grammatical processes that cue different levels of the Prosodic Hierarchy of PST across different languages. Next, we outline the main premises of the Autosegmental-Metrical Model. Finally, we present the theoretical and empirical aspects of the integrated approach to prosody.

In the second part of the chapter, we provide an overview of the previous works on Turkish intonation and related work on Turkish prosodic structure.

2.2 Prosodic Structure Theory

Prosodic Structure Theory (henceforth PST) is an Indirect Reference Approach to Syntax-Phonology interface which explores the nature of relation between morpho-syntactic structure and prosodic structure (cf. Selkirk 1978, 1981, 1984, 1986, et seq.; Nespor and Vogel 1983, 1986; Hale and Selkirk, 1987; Hayes 1989; Truckenbrodt 1995, 1999; among others).[2]

One of the integral assumptions of the theory is that there is an autonomous level of prosodic representation in grammar whose constituent types are phonological primitives. Among these phonological primitives, the ones above the Foot and below the Utterance are derived from the syntactic structure via mapping rules that conform to Focus structure (Selkirk 2005). However, subsequent to the parse, the phonological component of the faculty of language does not have access to syntax but only to prosodic constituent structure. Phonological rules thus operate in prosodic domains without reference to syntactic domains. A phonological rule (metrical, intonational or segmental) that seems directly sensitive to a syntactic object (e.g. minimal/maximal projection or phase) is actually constrained by a prosodic domain that is mapped from a syntactic category type.[3]

Once in phonology (and ultimately phonetics), the prosodic constituents have a separate life and are independently manipulable by different factors such as speech rate, length or narrow focus (cf. Nespor and Vogel 1986; Jun 1993, 1998, 2003;

[2] For Direct Reference Approaches, see Kaisse (1985), Odden (1990), Cinque (1993), Legate (2003), Kahnemuyipour (2004), Pak (2008), among others. See Seidl (2000) for a Minimal Indirect Reference Approach.

[3] Note that the questions "Which levels of the hierarchy are relevant for the syntax-prosody mapping?", "What is the nature of the mapping?" or "Does prosody constrain syntax?" have been answered in quite a number of different ways in the literature (e.g. Selkirk 1978, 1981, 1984, 1986, 1996; 2000, 2005; Nespor and Vogel 1986; Zec and Inkelas 1990; Truckenbrodt 1995, 1999; Zubizarreta 1998; Dobashi 2003; Ishihara 2007; Kratzer and Selkirk 2007; among others).

Truckenbrodt 1995, 1999; Selkirk 2000, 2005, 2007; Sugahara 2003; among others). Accordingly the derived domains are not necessarily isomorphic to syntactic categories.

The sample model in (1) is from Selkirk (1986). It demonstrates the route from syntax to phonology and phonetics in grammar as pursued in (ibid.):

(1)

Subcomponents / syndromes	Levels of Representation
	surface syntactic structure
'phonosyntactic'	⎪
	P-structure
'phonological'	⎪
	PI-structure
'phonetic implementation'	⎪
	Phonetic representation

P-structure is a "watershed" between syntax and phonology (Selkirk 1986, p. 375). It includes the prosodic structure and the rules that operate with sensitivity to prosodic domains (ibid.). Pre-P-structure rules, i.e. phonosyntactic rules, can be envisaged as directly syntax sensitive rules (such as the translation of prosodic structure from the syntactic structure), and post-P-structure rules might only be indirectly syntax-sensitive "via their sensitivity to syntax-dependent prosodic structure" (ibid., p.374).

PI-structure is a "watershed" between phonological rules and phonetic rules (ibid., p. 375). Between PI-structure and Phonetic Representation, phonetic implementation rules apply to different aspects of phonological representation by assigning quantitative values to them (ibid.). For instance, in the Autosegmental-Metrical Model of Intonational Phonology (cf. Pierrehumbert 1980; Liberman and

Pierrehumbert 1984; Beckman and Pierrehumbert 1986; among others), phonetic implementation rules that operate on the phonological representation of intonation in a language generate the fundamental frequency contour as the phonetic representation of intonation. Some of these phonetic implementation rules are language particular, while some others are not. Accordingly, as Selkirk (1986) states, phonetic rules can participate in language-particular descriptions of grammars as opposed to any view that envisages them to be relatively universal in nature.

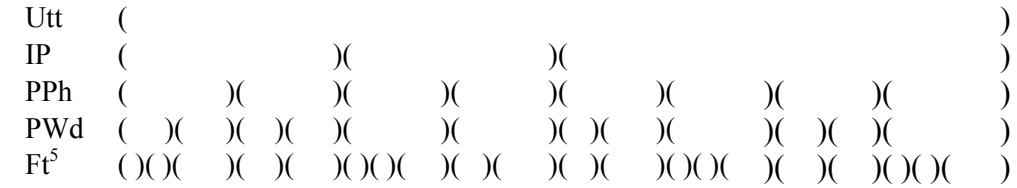
According to PST, the constituents of prosodic structure are hierarchically arranged mental units (Nespor and Vogel 1986). The organization of speech involves the decomposition of utterances into these phonological units which correspond to the members of a finite set of prosodic constituent types. This finite set is called the Prosodic Hierarchy (PH) (Selkirk 1978, et seq.; Nespor and Vogel 1986). One version of the PH is illustrated below: [4]

(2) The Prosodic Hierarchy (adapted from Selkirk 1986)

Utterance (Utt)
|
Intonational Phrase (IP)
|
Phonological Phrase (PPh)
|
Prosodic Word (PWd)
|
Foot (Ft)
|
Syllable (σ)

[4] Although the conception of hierarchy is a convention among prosodic structure theorists, the levels posited in the hierarchy vary in terms of the nature and number of labels and levels. For instance, for particular languages, e.g. Japanese, English, German, Egyptian Arabic, the PPh level is further classified into Minor and Major (Phonological) Phrases (cf. McCawley 1968; Selkirk and Tateishi 1988, 1991; Selkirk 2000; Kratzer and Selkirk 2007; Hellmuth 2006). For some languages, Japanese being a canonical example, the 'Mora' is posited below the Syllable. Nespor and Vogel's (1986) Prosodic Hierarchy includes a level between the PPh and the PWd, i.e. the Clitic Group (CG), which has been considered controversial among linguists (cf. Inkelas 1989; Zec and Inkelas 1992; Booij 1996; Selkirk 1996).

(3) The Prosodic Hierarchy



The PH forms the core of the theory of phonological constraints concerning prosodic structure. Selkirk's (e.g. 1984) Strict Layer Hypothesis (SLH) was the earliest single phonological constraint as such requiring that a prosodic constituent of level C^i immediately dominate only constituents of level C^{i-1} in the hierarchy. Later on, SLH was decomposed into a set of ranked and violable constraints on prosodic structure within an Optimality Theoretic approach in Selkirk (1996):[6]

(4) Constraints on Prosodic Domination (Selkirk 1996, p. 190)

(where C^n = some prosodic category)

Layeredness: No C^i dominates C^j, j>i

e.g. "No σ dominates a Ft."

Headedness: Any C^i must dominate C^{i-1} (except if $C^i = \sigma$)

e.g. "A PWd must dominate a Ft."

Exhaustivity: No C^i immediately contains a constituent C^j, $j < i-1$

e.g. "No PWd immediately dominates a σ."

Nonrecursivity: No C^i dominates C^j, i = j

e.g. "No Ft. dominates a Ft."

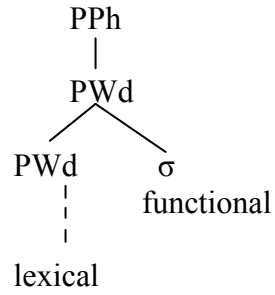
[5] Selkirk (1986) questions whether syllables and feet really belong to this hierarchy and maintains that they require a separate subtheory of the syntax-phonology relation.

[6] Constraint interaction is the core of Optimality Theory (OT), which sees grammar as a set of ranked constraints on output representations. The constraints are claimed to be universal, whereas languages differ with respect to the ranking of constraints. A constraint can be violable for the satisfaction of a higher ranked constraint. A grammatical output representation may not respect all constraints, but it is the optimal output representation that best satisfies the constraint hierarchy in a language (cf. Prince and Smolensky 1993, 2004).

Among these constraints, Layeredness and Headedness are taken as universally undominated, i.e. inviolable, in the constraint ranking of every language, while Nonrecursivity and Exhaustivity are relatively violable.

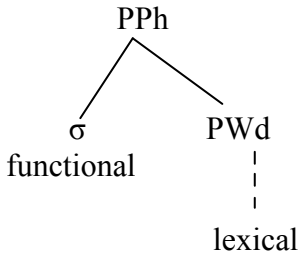
(5) is adapted from Selkirk (1996). It includes sample structures generated via violation of Nonrecursivity and Exhaustivity due to a free clitic, a function word of D^0 type, that is attached to a PPh and an affixal clitic, a function word of P^0 type, that is attached to a PWd, respectively.[7]

(5) a. Violation of Nonrecursivity



(need)$_{PWd}$'m)$_{PWd}$ 'need him'

b. Violation of Exhaustivity



((to)σ (London)$_{PWd}$)$_{PPh}$ 'to London'

Another significant characteristic of prosodic structure is its metrical aspect (specifically in stress-accent languages). In the prosodic structure theory of stress, the conception of stress is defined via prosodic headedness (cf. Selkirk 1980; Hayes 1995; Hellmuth 2006; Kratzer and Selkirk 2007). Inside each prosodic constituent type, one of the constituents is the head and it is more prominent than the others, which is manifested by stress-marking in languages that employ stress in their phonological system. This can be depicted by using constituent-bracketed metrical grids (cf. Halle and Vergnaud 1987) as in (6) below. Here, each grid mark *x* inside a

[7] Besides Selkirk (1996), see Inkelas (1989), Ladd (1986), Zec and Inkelas (1992), Wagner (2005), Kabak and Revithiadou (*to appear*) and Selkirk and Kratzer (2007) for recursive structures in phonology, and see Inkelas (1989), Ito and Mester (1992) for structures that violate Exhaustivity.

constituent cues the location of the head at the next level down in the hierarchy. Every head, i.e. the metrically most prominent constituent, projects up to the next prosodic level in the hierarchy in a bottom-up fashion:

(6) Prosodic headedness (adapted from Selkirk 1995)

(x) Intonational Phrase, and IP-level stress

(x) (x) Phonological Phrase, and PPh-level stress

(x)(x) (x)(x) Prosodic Word, and word-level stress

Volunteer firemen save lives.

Nespor and Vogel (1986) state that they assume the phonological system of every language to include all the units of the PH, based on general and theory-specific reasons, although "there is no a priori reason" that this should be the case. In their argumentation, a theory that requires all languages to have the same set of prosodic domains is stronger than "a theory which allows some languages to have some units and other languages to have other units" (ibid., p. 11).

Selkirk (1986), on the other hand, points out that a layered conception of derived domains in sentence phonology is significantly supported by Nespor and Vogel's work (e.g. 1983, 1986) which demonstrates a wide range of phonological rules that apply by virtue of the domains in the PH, although "cases of languages where all layers are instantiated are rare" (Selkirk 1986, p. 384). This raises the possibility that not every layer in the Prosodic Hierarchy might be a part of the phonological system of every language. Conceptually, such an approach forms the basis of our investigation without assuming the existence of all levels above the PPh in the hierarchy, i.e. the Intonational Phrase and the Utterance, in Turkish prosody.

2.3 Prosodic-level-cueing Processes Across Languages

In the literature, various types of phonetic and phonological processes have been observed to operate with reference to prosodic structure and mark particular prosodic constituents in different languages. Now we will exemplify some of these processes and their relation to prosodic constituency.

A general observation regarding prosodic organization is that prosodic domains are demarcated by relative degrees of disjunctures at their edges. Thus, each domain differs from the other with respect to the degree of disjuncture it displays. For instance, the IP exhibits a higher degree of disjuncture than the PPh and the PWd: $IP_{disjuncture} > PPh_{disjuncture} > PWd_{disjuncture}$ (cf. Beckman and Edwards 1990; Beckman and Ayers-Elam 1997; Brugos et al. 2006).[8] A recent finding of Kawahara and Shinya (2008) indicates that in Japanese obligatoriness of pauses can differentiate the MaP from the IP in that the latter always requires an obligatory pause marking its end, while the former rarely does or does not at all, except for careful speech. Thus, the existence of pauses in fast versus careful speech that display a systematic distribution can distinguish prosodic levels.

One phenomenon related to the degree of disjunctures between/among prosodic constituent types is boundary strength. Based on experimental evidence from diverse languages, it is now generally accepted that prosodic breaks between higher constituents are stronger than those between lower constituents. Its implication is that there is more of a degree of articulatory integration in lower constituents than in higher ones (Gussenhoven and Jacobs 2005). This has phonetic

[8] Note that a break/disjuncture is not equal to a linguistic pause. A pause is merely a high/strong degree of disjuncture which is clearly manifested as a break in the F_0 curve. Mahjani (2003) states that the degree of disjunctures is often judged from auditory impressions and there are no absolute acoustic criteria hitherto specified.

consequences as well. For instance, the stronger a boundary is, the more clearly the initial segments of a constituent are pronounced (ibid.). Fougeron and Keating (1997) provide evidence that the initial consonants and final vowels at the edges of prosodic domains have more extreme lingual articulations, which they call "articulatory strengthening".[9] Another acoustic evidence for the prosodic organization is that speech segments increase in duration when they are in the vicinity of prosodic boundaries (cf. Wightman et al. 1992).

In addition to these, the degree of pitch register reset can differentiate the PPh from the IP in that the left-boundary of an IP causes a stronger pitch reset compared to the left-boundary of a PPh in correlation with the fact that the higher a prosodic edge is, the stronger pitch resetting it induces (cf. Ladd 1988; van den Berg et al. 1992; Féry and Truckenbrodt 2005).[10, 11]

Intonational events are among prosodic-level-cueing processes as well.[12] They do not associate with a segment, but they span over segments (see Ladd 1996; Pierrehumbert 1999 for overviews). The alignment of intonation contour with words is constrained by prosody, whereby intonational events fall on the most prominent

[9] In Fougeron and Keating's (ibid.) work, the linguopalatal contact for [n] sound was more extreme in domain initial positions and this initial strengthening was found to be cumulative in different prosodic domains of the hierarchy (Utt>IP>PPh>Word>Syllable). Fougeron and Keating also observe a phonetic asymmetry between consonants and vowels at the edges of prosodic domains: "Domain-initial consonants show more linguopalatal contact than domain-medial or domain-final consonants, at three prosodic levels. Most vowels, on the other hand, show less linguopalatal contact in domain-final syllables compared to domain-initial and domain-medial. As a result, the articulatory difference between segments is greater around a prosodic boundary, increasing the articulatory contrast between consonant and vowels, and prosodic domains are marked at both edges" (p. 3728). See Keating et al. (2003) for a similar study.

[10] One of the facts pertinent to human speech is that the pitch of the voice declines over the course of an utterance and at the beginning of particular domains the pitch returns to a higher level within the speaker's pitch range, which is called reset

[11] "Register is usually construed as an interval on the vertical F_0 scale, with H tones scaled to the top of the interval and L tones fixed to the bottom of the interval" (Truckenbrodt 2002, p. 83).

[12] In the literature, intonation is canonically taken to refer to the phrase level characteristics of the melody of voice and is considered to mark non-lexical/postlexical meanings such as information structure, illocutionary force, etc. (Ladd 1996). It excludes features of accent, which are lexical characteristics and are used to distinguish one word from another (ibid.).

elements of prosodic structure and their edges. In other words, prosodic structure is a delimiter for tune-text association.[13, 14]

We list below a non-exhaustive list of some phonetic and phonological processes that are delimited by or operate in specific domains of the PH in different languages:

The PWd is the locus of regular word stress in Turkish, which is final, (Nespor and Vogel 1986; Kabak and Vogel 2001), while the PPh is the locus of PPh stress, which is leftmost (Kabak and Vogel 2001). In Hungarian, Vowel Harmony is delimited by the PWd (Nespor and Vogel 1986). In Egyptian Arabic, the PWd is the domain of pitch accent distribution (Hellmuth 2006, et seq.). In Demotic Greek, the PWd is the domain of word stress assignment and obligatory Nasal Assimilation and obligatory Stop Voicing (Nespor and Vogel 1986). In Italian, intervocalic s-voicing applies in the PWd, the gemination rule and stress retraction apply in the PPh, while intervocalic spirantization applies in the IP (Nespor and Vogel 1986). The Minor Phonological Phrase can contain at most one lexical accent in Japanese (Poser 1984; among many others). The PPh is the domain for tone retraction, penultimate lengthening, non-final doubling and prehigh doubling in Chichewa̱ (Kanerva 1990), Monosyllable rule (Selkirk 1978) and rhythm rule in English (Nespor and Vogel 1986; Hayes 1989), High Deletion in Kinyambo (Bickmore 1990) and r-assimilation in Bengali (Hayes and Lahiri 1991). The Major Phonological Phrase is the domain of downstep in English and Japanese (Beckman and Pierrehumbert 1986; Selkirk and Tateishi 1988, 1991). The IP is the domain of boundary tone association and the PPh

[13] In some studies on signed modality (e.g. Sandler and Lillo-Martin 2006), non-manual markers are envisaged as intonational events that cue prosodic grouping. Here we are providing our definitions based on spoken modality.

[14] We refer the reader to the following section for a thorough overview of the relation between intonation and prosody as pursued in the Autosegmental-Metrical Model of Intonational Phonology and the integrated approach.

is the domain of phrase accent association in many languages such as Bengali (Hayes and Lahiri 1991), English (Pierrehumbert 1980 with minor modifications in Beckman and Pierrehumbert 1986), German (Truckenbrodt 2002), to name just a few. The IP is maintained to be the domain of nasal assimilation in Spanish (Nespor and Vogel 1986), stress percolation rule in Chimwi:ni (Hayes 1989), the domain of upstep in German (Truckenbrodt 2002) and the domain of tonal catathesis (downstep) in Chicheŵa (Kanerva 1990). As for the Utterance, it is the domain of declination in Dutch (Gussenhoven 2004), English and Japanese (Beckman and Pierrehumbert 1986, Pierrehumbert and Beckman 1988), Hausa (Lindau 1986), /r/-epenthesis in British English (Nespor and Vogel 1986) and final H tone in Japanese (Kawahara and Shinya 2008).

Another type of prosodic-level-cueing process is that special cases of allomorphy have been attested to apply in certain prosodic domains pointing out to prosodic locality conditions in morphological operations. Discussing agreement weakening in Dutch and Arabic, pronoun weakening in Middle Dutch and Celtic and pro-drop in Old French and Arabic, Ackema and Neeleman (2003) argue that the insertion of phonological content targets the prosodic structure, which is parsed from the morpho-syntactic structure prior to lexical insertion. In their argumentation, this phenomenon gives way to a class of allomorphy that is sensitive to prosodic domainhood rather than syntactic adjacency. Regarding the phenomena listed above, their instantiation is dependent on the parsing of constituents X and Y within the same PPh, without any PPh-boundary between them (ibid.).[15]

[15] This approach is clearly a separationist one, though it is distinct from other separationist approaches such as the studies in Distributed Morphology (cf. Halle and Marantz 1993, 1994; Harley and Noyer 1999; among others) or Beard's (1995) Lexeme-morpheme Base Morphology due to its discussion of the relation between prosodic structure and lexical insertion, specifically the hypothesis that lexical insertion is sensitive to prosodic constituency.

Recent studies in sentence comprehension also point out to a correlation between processing of certain linguistic phenomena with specific domains in the PH. Based on English data; Schafer (1997) argues that the PPh governs syntactic processing, while the IP governs semantic/pragmatic processing.[16] Hirotani (2005), who investigates the processing of scopally ambiguous Japanese sentences, proposes a processing principle which requires that the scope of an element X should not extend beyond the Major Phonological Phrase containing X.[17] Ishihara (2007) is another work which claims that the scope of negation is sensitive to the MaP edges in Japanese, similar to Hirotani (2005).[18]

As stated Chapter 1, the intonational structure of the elicited data constitutes an object of inquiry in our exploration of the nature of phrasal domainhood in Turkish phonology. In the following section, we outline the framework we adopt for the description of intonation: the Autosegmental-Metrical Model of Intonational Phonology.

[16] Her hypotheses are as follows:

Prosodic Visibility

a. The phonological phrasing of an utterance determines the visibility of a syntactic node.
b. Nodes within the phonological phrase currently being processed are more visible than nodes outside of that phonological phrase; visibility is gradient across multiple phonological phrases.
c. In first analysis and reanalysis, attachment to a node with high visibility is less costly in terms of processing/attentional resources than attachment to a node with low visibility.

Interpretive Domain Hypothesis

1. An intonational phrase boundary defines a point at which the processor performs as yet any outstanding semantic/pragmatic evaluation and integration of material within the intonational phrase.

[17] Her processing principle is as follows:

Scope Prosody Correspondence

When a term X requires a c-commanding licensor Y, X should be contained in the same Major (phonological) Phrase as Y.

[18] Hirotani (2005) and Ishihara (2007) mainly differ with respect to their treatment of wh-questions.

2.4 The Autosegmental-Metrical Model of Intonational Phonology

In contrast with the Prosodic Structure Theory, which argues that the prosodic structure is initially shaped by syntactic structure, the Autosegmental-Metrical Model of Intonational Phonology (cf. Pierrehumbert 1980; Beckman and Pierrehumbert 1986; Pierrehumbert and Beckman 1988; Pierrehumbert and Hirschberg 1990; Féry 1993; Jun 1993, 1998; among others) defines prosodic constituents based on the phonetic form of the intonational structure of an utterance, specifically the F_0 patterns.[19] In the AM model, these tonally-defined constituents are represented as hierarchical units which are marked with discrete tonal entities (pitch accents, phrase accents and boundary tones). At this point, one can observe that both approaches posit a hierarchy that governs the organization of speech into phonological chunks. The point at which the two hierarchies diverge starts at the level higher than the word. In the AM model, these are:

- the Accentual Phrase (ac) < the Intermediate Phrase (ip) < the Intonational Phrase (IP)

[19] F_0 is the primary phonetic correlate of intonation. It corresponds to the frequency of vibration of vocal folds and is generally expressed in Hz or hertz (Gussenhoven 2004). F_0 contour/track (a.k.a. pitch contour/track) is a plot of this frequency against time. Intonation is not the only source of F_0 variation, though. Speech segments affect F_0 as well. Therefore, F_0 contours can be envisaged as a superposition of segmental factors on the intonationally determined contour (Pierrehumbert 1999). Pitch is the psychophysical correlate of F_0. F_0 is perceived as pitch, just like loudness is the psychophysical correlate of intensity, which is physical (Ladd 1996). Accordingly, F_0 track is the phonetic representation of a contour which is computed from the abstract phonological representation by rules of phonetic implementation (Pierrehumbert 1980; Beckman and Pierrehumbert 1986; Pierrehumbert and Beckman 1988; Hayes and Lahiri 1991; among others). The abstract phonological representation is a string of H(igh) and L(ow) tones, which is called tune or melody. Hence, tune is the abstract source of F_0 patterns, i.e. the pitch pattern of an utterance. For instance, the difference between a declarative intonation and a question intonation is a tune difference (Pierrehumbert and Hirschberg 1990). Rules of phonology align the tune and the text with autosegmental association lines. Phonetic implementation rules take the phonological representation of an utterance as input and give the quantitative specification of phonetic representation as output (Selkirk and Tateishi 1991).

The intermediate phrase was posited as a constituent below the Intonational Phrase in Japanese and English by Beckman and Pierrehumbert (1986). Later on, its role in different languages was investigated, too (cf. Féry 1993; Nibert 1999; Yim 2004; Jun 2005b, c; among many others). This constituent is defined as an intonation contour with one or more pitch accents and a phrase accent, which is represented with a dash symbol at its right edge but with no final boundary tone: [T* T-].[20]

As for the IP, it minimally contains one intermediate phrase and a peripheral boundary tone: T% (i.e. [[T* T-] T%]). For instance, Brugos et al. (2006) state that in English every ip edge is tonally marked but not as strongly as an IP. In addition to tonal marking of the ip and the IP, there are other cues for distinguishing them. The intermediate phrase exhibits a smaller degree of disjuncture than a full Intonational Phrase. There is durational lengthening at the end of both constituent types (also see §2.3); however, this duration is less strongly marked in the ip than in the IP (Brugos et al. 2006).

The Accentual Phrase is a constituent that contains at most one pitch accent, i.e [T*]. In languages such as Japanese or Korean, where words are divided into accented and unaccented categories, an Accentual phrase can dominate, for instance, an accented word, which is locus of a pitch accent, plus an unaccented word, which does not carry a pitch accent by definition (cf. Beckman and Pierrehumbert 1986; Pierrehumbert and Beckman 1988; Jun 1993; among others).[21]

In the next two sections, we describe the notions of pitch accent, phrase accent and boundary tone for the readers that are not familiar with them. The readers already familiar with these notions can skip these sections and move onto §2.5.

[20] See Chapter 4 for the inventory of phrase accents we propose for Turkish.
[21] The PST correlate of the Accentual Phrase is taken to be the Minor (Phonological) Phrase.

2.4.1 Pitch Accents

In the Autosegmental-Metrical Model, tones divide into three types with respect to their association with the text: (i) pitch accents, (ii) phrase accents, and (iii) boundary tones. Pitch accents are envisaged as tones that get linked to prosodically prominent elements of the segmental string. They can be classified into two types: lexical pitch accents and intonational pitch accents. Lexical pitch accents are those that create lexical contrasts, i.e. lexical minimal pairs, in a given language. Intonational pitch accents, on the other hand, take part in non-lexical meanings as part of a larger tune. Therefore, in the so-called 'intonational languages', which employ intonational pitch accents, pitch accents are not envisioned as a part of the underlying representations of lexical items.[22]

Concerning intonational pitch accents, there are mainly three views in the literature that remark on the factors governing their distribution.[23] The first one is the "highlighting-based" approach (Ladd 1996) (e.g. Bolinger 1972; Chafe 1974; among others) according to which speakers exploit pitch accent placement to highlight a particular part or parts of an utterance. This view has already been challenged in the theory of intonation, since pitch accent placement does not necessarily reflect pragmatic highlighting cross-linguistically (Ladd ibid.).

The second view is the one proposed in Selkirk (1984). It is called the "pitch-accent-first" account (ibid.). In this approach, the position of pitch accents is determined by the syntactic structure and focus structure. Stress does not play a role

[22] Though the very question of whether tunes themselves can be abstracted as lexical items is a valid one and has been the center of a variety of discussions in the literature (cf. Liberman and Sag 1974; Liberman 1975; Pierrehumbert 1980; Pierrehumbert and Hirschberg 1990; among others).
[23] For a more comprehensive discussion of these approaches, we refer the reader to Ladd (1996), Gussenhoven (2004), Hellmuth (2006), among others.

in pitch accent placement or focus. The presence of a pitch accent marks focus and its absence indicates the absence of focus. After "pitch accent placement", (a) pitch accent(s) get(s) associated with the prominent syllable(s) through the application of pitch accent association (Selkirk 1984) that pairs metrical structure and intonational structure.

On the other hand, it has been observed in the literature that the presence of a pitch accent does not necessarily indicate focus, but rather prosodic headedness. According to what is called the "stress-first" view, pitch accent placement is determined by the organization of prosodic constituents rather than focus structure (Ladd 1996). For instance in Egyptian Arabic (EA), a stress-accent language, every content word is routinely the locus of a pitch accent regardless of the focus context (Hellmuth 2006, 2007). A direct relation approach between pitch accent distribution and focus/information structure would not suffice to explain such cases where there is instead an indirect relation between the two (Hellmuth ibid.).[24]

The indirect relation between focus and pitch accent placement supports the stress-first approach, which envisages prosodic headedness as the determinant of tune-text alignment (cf. Ladd 1996; Frota 2000; Post 2000; Féry and Samek-Lodovici 2006; Hellmuth 2006, 2007; Kratzer and Selkirk 2007; among others). Ladd (ibid.) states that conditions on prosodic well-formedness require that pitch accents occur with prominent syllables. Therefore, the position of a pitch accent serves as a cue to the location of prominence.[25] He adds that the essential nature of pitch accents is, thus, prominence-cueing rather than prominence-lending. To put it in another way, pitch accents do not lend prominence to the syllable they dock into.

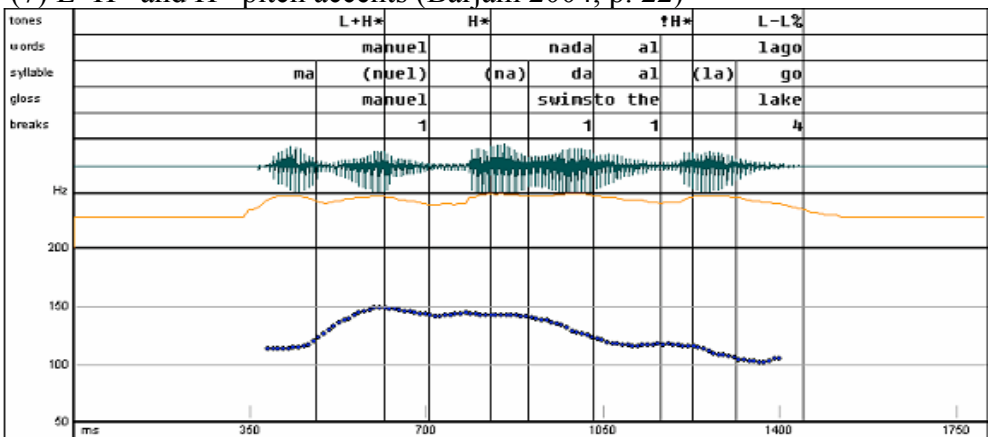
[24] Also see Ladd (ibid.) for other problematic examples implicating an indirect relation.
[25] Namely, prosodic headedness at some level of the hierarchy.

Rather, they dock into prominent positions wherein they give away the location of prominence.

Pitch accents can be monotonal, e.g. H* or L*, or bitonal, e.g. H*+L, L*+H, H+L*, L+H*, etc. The tone marked with * is locally aligned with the prominent syllable of a(n accented) word. A tone that lacks * and locally follows a starred tone in a bitonal accent is called a trailing tone. It refers to "the less stable targets of rapid pitch movement" following a starred tone, whereas a tone that lacks * and locally precedes a starred tone in a bitonal accent is called a leading tone (Jansen 2005, p. 2). It refers to "the less stable targets of rapid pitch movement" preceding a starred tone (ibid., p. 2).[26]

(7) illustrates an F_0 track including (i) a bitonal L+H* pitch accent, (ii) a H* pitch accent, and (iii) the downstepped variant of H*, namely !H* in Porteño Spanish.

(7) L+H* and H* pitch accents (Barjam 2004, p. 22)



Manuel nadó al lago.

'Manuel swam to the lake.'

[26] We refer the reader to Ladd (1996) for a comparison of Bruce's (1977) and Pierrehumbert's (1980) approaches to the identification and abstraction of tones.

The high tone of the L+H* is aligned with the final syllable of Manuel. The peak on this prominent syllable, namely the high tone, is preceded by a (leading) low tone yielding L+H*. The monotonal H* tone, which is docked into the initial syllable of the word *nada* 'swam', corresponds to an F_0 peak and the tone target is in the mid upper part of the speaker's range. The downstepped variant of this high tone, namely !H* is aligned with the initial syllable of the word *lago* 'lake'.[27]

(8) illustrates an F_0 track including a low pitch accent L* aligned with the penultimate syllable of the word banana. The falling F_0 reaches a minimum on –na-.

[27] Downstep includes the lowering of pitch after an accented syllable and is a tone-to-tone compression of the tonal space superimposed on effects of declination (Sugahara 2003). A downstepped tone is marked as !T. In Pierrehumbert (1980), downstep is analysed as a context-sensitive phonetic realization rule that lowers the phonetic value of a H tone triggered by a HLH sequence that has a bitonal pitch accent in it (either H+L H or H L+H). When downstep applies, the result is a mid tone lower than the preceding H tone but still well above the bottom of the speaker's range. When downstep applies iteratively, a terracing contour is observed. In (a), we display examples of downstep in Japanese. In the first sentence the third pitch accent has been downstepped, whereas in the second sentence, the second pitch accent has been downstepped.

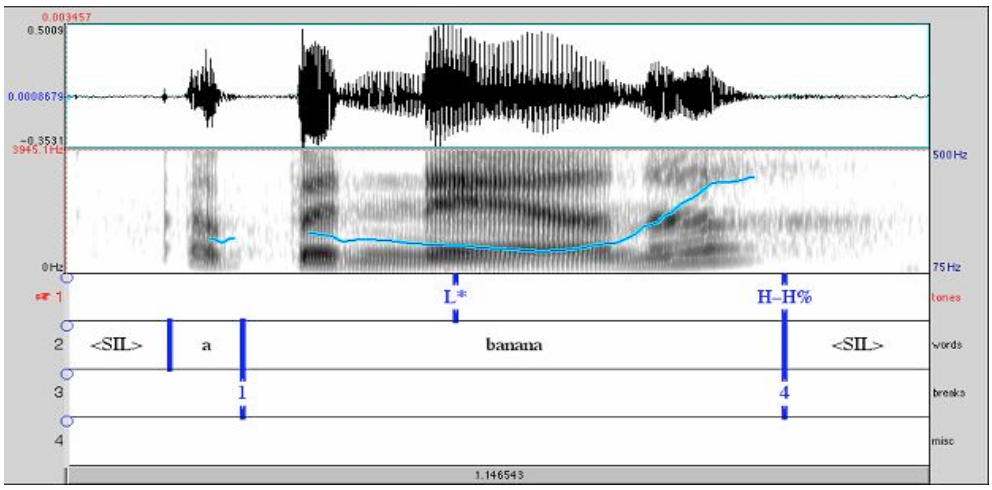
(a) Downstep In Japanese (Selkirk and Tateishi 1991, p. 519)

[Ao'yama-no [Yama'guchi-no ani'yome-ga]] [inai]
We cannot find Mr. Yamaguchi's sister-in-law from Aoyama.

[Ao'yama-no Yama'guchi-ga] [ani'yome-o yonda]
Mr. Yamaguchi from Aoyama called his sister-in-law.

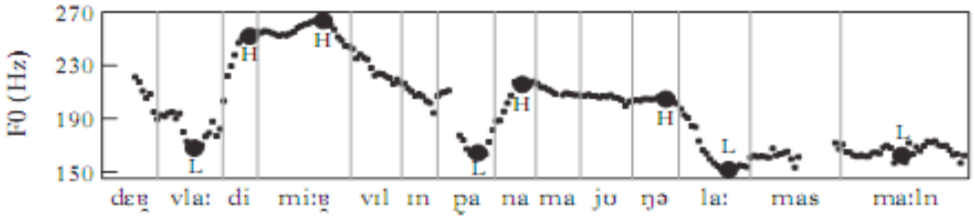
In Beckman and Pierrehumbert (1986), each bitonal pitch accent is analysed to trigger downstep. Yet in some instances, what seems to trigger the downstepping of a H tone is obviously a monotonal H* as in French (Gussenhoven 2004). Gussenhoven (ibid.) states that in the phonetic absence of a bitonal pitch accent having a leading or trailing L tone, it is better to regard the downstep phenomenon as a phonetic implementation rule affecting sequences of H tones. In Mainstream English ToBI, it is also maintained that downstep can follow any pitch accent that has H target in it (Beckman et al. 2005).

(8) L* pitch accent (Brugos et al. 2006, §2.2)



(9) illustrates an F_0 track including two bitonal pitch accents, i.e. L*+H, and H+L* in German. L*+H is observed on two words: Vladimir and panama. The starred L* tone is aligned with the prominent syllables of each of the words, i.e. vla- and pa-, which is followed by a trailing H tone. H+L* is observed in the word *lamas* 'llamas'. The starred L* tone is aligned with the prominent syllable of the word, i.e. la-, and it is preceded by a leading H tone.

(9) L*+H and H+L* pitch accents (Truckenbrodt 2002, p. 80)



Der Vladimir will in Panama junge Lamas malen.

'Vladimir wants to paint young llamas in Panama.'

After representative examples for pitch accents and their acoustic manifestations, let us now focus on two other tonal entities: the phrase accent and boundary tone.

2.4.2 Phrase Accents and Boundary Tones

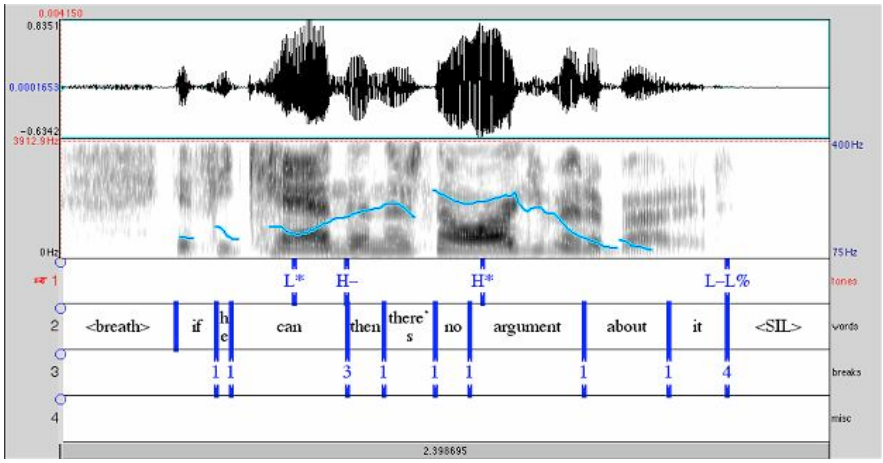
Neither the phrase accent nor the boundary tone is associated with prominence-cueing pitch configurations, thus, contrasting with pitch accent. Both of them are phrasal tones which are "defined by their position relative to the phrase edge; a boundary tone stays at the phrasal boundary regardless of the rhythmic pattern of the phrase, and the phrase accent fills the space between the last accent and the phrasal boundary" (Beckman and Pierrehumbert 1986, p. 258).

A phrase accent (T-) is phonetically realized as a change in F_0 between the last pitch accent in an intermediate phrase and its end (see §2.4). Based on Beckman and Pierrehumbert's (1986) work on the intonational structure of Japanese and English, Féry (1993) recapitulates their proposals on the functions of the phrase accent: "First, it controls the melody between the pitch accent and the boundary tone, and secondly, it delimits the smaller intonational intermediate phrase constituent" (p. 74).

As stated in §2.4, the boundary tone (T%) marks a higher intonational domain, i.e. the Intonational Phrase, in the AM model. H% indicates an abrupt final rise, whereas L% can be described as "indicating the absence of a final rise" (Ladd 1996, p. 88) along with other edge demarcating properties such as an accompanying linguistic pause or pre-boundary lengthening (see §4.2.2.2.1 and §4.2.2.2.3). After a low phrase accent, it is instantiated as a fall to the bottom of the speaker's range, but after a high phrase accent, "it indicates a level sustention of the previous tone" (ibid., p. 88).

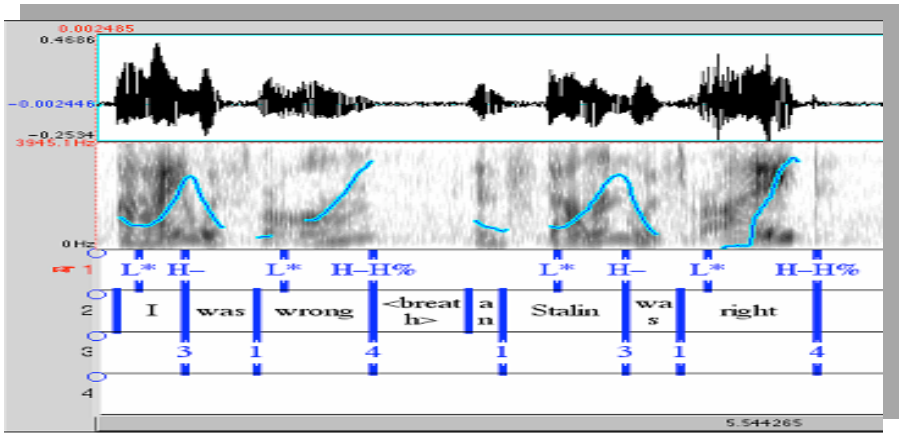
(10) illustrates two phrase accents H- and L- at the end of two ips and a final boundary tone L% at the end of the IP.

(10) Two ips inside an IP (Brugos et al. 2006, §2.8)



(11) illustrates two coordinate questions: 'I was wrong? And Stalin was right?' In both questions, the ips have intermediate phrase breaks marked with H- phrase accents. The ends of both IPs are marked with H% boundary tones.

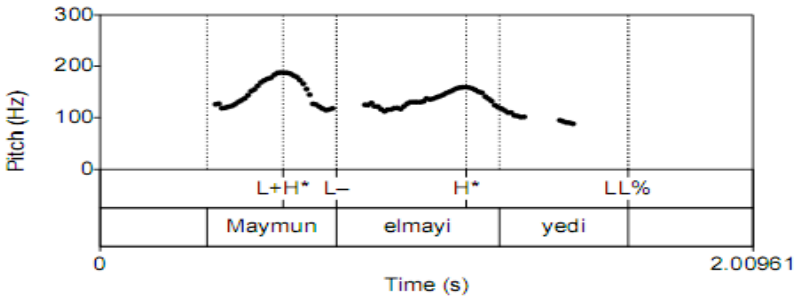
(11) Four ips inside two IPs (adapted from Brugos et al. 2006, §2.8)



One study in Turkish linguistics that uses the dash symbol '–' in transcribing tones is Özge's (2003) work on the information structural function of tunes in Turkish. (12) illustrates an F_0 track including a bitonal pitch accent L+H* which is observed on the word *maymun* 'monkey' in Turkish. H* is aligned with the prominent syllable –mun-

and is preceded by a leading L tone. In the same figure, it can be noticed that there is a tonal target transcribed as L- after the bitonal L+H*.

(12)



Maymun elma-yı ye-di.

monkey apple-Acc eat-Past

'The monkey ate the apple.' (Özge 2003, p. 55)

Considering the transcription conventions in ToBI, one might opt to think that L- corresponds to a phrase accent. However, Özge notes that he uses a dash with tones that mark the edges of intonational groups and this does not have any relation to a specific level in intonational phonology. He states that he does not propose a phonological analysis of the prosodic/intonational phrases and his aim is not to uncover whether the ip is a part of Turkish phonology. He also does not discuss why he uses the dash symbol in intermediary 'prosodic/intonational phrases' or the boundary tone symbol %, after syntactic clauses. In the same work, he uses the terms intonational phrase and prosodic phrase interchangeably to refer to groupings of the words in the F_0 tracks.[28]

[28] Since the author implements Steedman's (2000) tune-based account of information structure to Turkish, the choice of particular diacritics seem to be related to which diacritics are used in the tonal specification of information structural primitives in Steedman (ibid.).

In our analysis of the intonational structure of Turkish, we will be abstracting the phonological status of tones with reference to the methods and tools of the AM Model. However, prior to the discussion of our findings in Chapter 4, we would also like to stress some crucial points regarding the conception of tune-text association in the AM model in §2.5 below. The aim is to emphasize how and why we represent the phonological status of tones the way they are in the current study.

2.5 A Short Note on Tune-Text Association

In her work on the phonetics and phonology of intonation in English, Pierrehumbert (1980) states that the phonological aspect of intonation consists of three components:

- a grammar of allowable phrasal tunes
- the metrical representation of the text
- the rules for lining up the tune with the text

"The complete phonological representation for intonation is thus a metrical representation of the text with tones lined up in accordance with the rules" (Pierrehumbert 1980, p. 11). Hence, for a language that employs stress in its phonological system, the metrical representation is an integral part of the description of tones and intonation. The tonal entity called pitch accent docks into a metrically strong position. Likewise the starred-unstarred dichotomy in bitonal pitch accents is dependent on which tone of the bitonal pitch accent is aligned with the stressed syllable: the starred tone is the one anchored to the stressed syllable, while the other either immediately follows or precedes it. On the other hand, edge tones are, by

definition, tones that do not dock into prominent syllables, but stretch over or localize at a region controlling the melody between the last pitch accent and the end of a designated phrasal domain. Accordingly, the diacritics "%, -, *" do not represent distinct tonal values. For instance, H%, i.e. a high IP boundary tone, H-, i.e. a high phrase accent, or H*, i.e. a high pitch accent, do not differ in terms of their tonal values; all of them are equally high tones (Pierrehumbert ibid.). Yet, what determines their phonological status is their manner of association with the segmental and metrical structure of the text.

Throughout the study, we will be classifying the phonological identity of tones (pitch accent versus edge tones) with reference to their association with the segmental and metrical structure of the text following Pierrehumbert (1980, et seq.).

2.6 The Integrated Approach

As discussed in §2.2 and §2.4, both the Prosodic Structure Theory and the AM Model of Intonational Phonology argue for a hierarchical organization of prosodic constituency. However, to what extent and at which levels the hierarchies of the PST and the AM model overlap is a question of debate. In this respect, Hayes and Lahiri's (1991) work on Bengali Intonational Phonology is an important study, which shows that the constituents of PST and the AM Model overlap in Bengali, whereby the intermediate phrase corresponds to the PPh, and the IP corresponds to the IP based on suprasegmental and segmental phonological evidence.

In her work on European Portuguese, Frota (2000) illustrates that intonational events and the rules of phrasal phonology apply to single prosodic hierarchy in this language. Selkirk and Tateishi's (1991) work on downstep in Japanese is also a

significant study in this respect. Prior to their work, Pierrehumbert and Beckman (1986) depict a terracing pitch pattern that occurs in particular phonological contexts in Japanese and English. They show that this terracing contour is sensitive to the intermediate phrase (ip) edges in both languages. They call this special phenomenon catathesis (a.k.a. the downstep in Pierrehumbert 1980) and argue that the ip is the domain of catathesis in both languages (see footnote 27 for the application of downstep in Japanese). On the other hand, Selkirk and Tateishi (1991) show that catathesis is blocked at the left edge of a set of lexical maximal projections in Japanese, and that the domain of catathesis, i.e. the ip, overlaps with the prosodic constituent Major Phonological Phrase, which is derived from syntactic structure through edge alignment with lexical maximal projections.[29]

Accordingly, the MaP and the ip are used interchangeably in the literature in many works on Japanese phonology. Similarly, Selkirk (e.g. 2000, 2005) uses the MaP and the ip on a par with each other in her work on English prosody assuming a single Prosodic Hierarchy. Together with Selkirk and Tateishi (ibid.), Hellmuth's (2006) work on Egyptian Arabic and Frota (ibid.) further illustrate that the very prosodic representation, which is the locus of tonal events and/or phrasal rules, displays a strong affinity to syntactic structure.

The idea that all phonetic and phonological processes apply to a single, syntax-grounded prosodic structure is the basis of what Frota terms the integrated view and throughout the study we pursue this idea as the null hypothesis, unless any evidence points to the contrary.

[29] Also see Selkirk (1986, 1996, and 2000), Hale and Selkirk (1987), Selkirk and Shen (1990), and McCarthy and Prince (1993) for End-based analyses.

2.7 Previous Work on Intonation and Prosodic Structure in Turkish

In this section we introduce previous studies on Turkish intonation and prosody. In the first part, we provide an overview of the previous work on Turkish intonation. In the second part, we outline related work on Turkish prosodic organization, upon which we base our study.

2.7.1 Previous Work on Turkish Intonation

Turkish is considered as a stress-accent language (cf. Lees 1961; Lewis 1967; Sezer 1981; Konrot 1981; Inkelas 1999; Çakır 2000, 2006; Kabak and Vogel 2001; Inkelas and Orgun 2003; Özsoy 2004; Göksel and Kerslake 2005; among others), which employs intonation as a means to convey non-lexical meanings[30] such as information structure (cf. Özge 2003) or "clause type" (cf. Nash 1973; Demircan 1983; Özsoy 2004; Kawaguchi et al. 2006; Göksel et al. *to appear*; among others).[31] This is a contrasting point with languages that involve pitch accent as a part of the underlying representations of lexical items in their phonemic system (e.g. Japanese, Korean).

In the literature, there exists a small number of studies discussing Turkish intonation. These are Tansu (1963), Nash (ibid.), Selen (1973), Demircan (ibid.), Ekenel et al. (2002), Özge (2003), Özsoy (2004), Yılmaz (2005), Fidan (2005), Aydıner (2006, as cited in Göksel 2008), Kawaguchi et al. (2006) and Göksel et al. (*to appear*).

[30] Or not-so-standard lexical meanings.
[31] See Chapter 5, §5.6.1 where we dissociate clause-typing from tunes and intonational phrasing.

Except for Ekenel et al. (2002), all these works mainly highlight intonational meaning within the realm of associations between tunes and clause types or information structural units.[32] In this respect the studies are not directly concerned with the phonetics and phonology of Turkish prosodic organization. They mainly remark on the global aspects of intonation without an investigation of its internal structure. With respect to the relation between intonation contours and clause types, the common findings in these studies are that a falling pitch contour is observed at the end of a declarative, a rising pitch contour is observed at the end of a wh-question, an incomplete statement or continuation, and a rise-fall pitch pattern is observed at the end of a polar question (Demircan 1983; Özsoy 2004).[33]

Among those works, Özge (2003) focuses on the relationship between tunes and information structural units. A point directly relevant to our topic of inquiry is that the author uses the terms prosodic phrase and intonational phrase interchangeably throughout his work. However, as also stated by the author, the use of those terms is not a theoretical choice. Both of the terms are used as cover terms to represent information structural chunks and their melodies. The author maintains that a detailed phonological analysis of prosodic constituency is not relevant for his study because his main focus is the information structural aspects of intonation in Turkish. Based on Steedman's (2000) tune-based account of information structure in English, he proposes a tune-based account of Turkish information structure, where each information structural unit such as theme or rheme is associated with a particular melody.[34]

[32] Ekenel et al. (2002) state that their aim is to explore whether pitch curves can be modelled with respect to word order variations.
[33] See Göksel et al. (*to appear*) on more detailed aspects of the intonation of root-level questions in Turkish.
[34] We refer the reader to the actual work for relevant examples.

2.7.2 Related Work on Turkish Prosodic Structure

Despite a large body of work on word stress and some work on non-phrasal prosodic domains such as the Foot, Syllable or the Prosodic Word (cf. Sezer 1986; Nespor and Vogel 1986; Inkelas 1999; Kabak and Vogel 2001), phrasal domainhood is a highly understudied area in Turkish phonology. In the literature, the highest/largest prosodic domain hitherto investigated is the Phonological Phrase in Kabak and Vogel (2001).

In this section, we make a brief introduction to the Prosodic Word and word stress in Turkish in order to provide a background for our arguments regarding the PPh and our investigation of higher-level phrasal domainhood. Our summary will center around Kabak and Vogel's (ibid.) work since the authors draw a fine distinction between the PWd and the PPh based on the position of head-prominence in both constituent types. Their PPh stress rule will be of utmost importance for our proposals regarding the domain of pitch accent distribution in Turkish in the next chapter.

2.7.2.1 Prosodic Word and Word Stress

According to Nespor and Vogel (1986) and Kabak and Vogel (2001), PWd is the domain of application of regular word stress assignment, which targets the final syllable, in Turkish. Nespor and Vogel (1986), which is the first study that remarks on Turkish prosody within the framework of Prosodic Structure Theory, maintains that PWd (their Phonological Word) is the domain within which the Main Stress Rule, which assigns primary stress at the word level, operates. Kabak and Vogel

(2001) elucidate the role of this prosodic constituent in Turkish by contrasting it with two other prosodic levels, i.e. the Clitic Group and the Phonological Phrase. Both Nespor and Vogel (1986) and Kabak and Vogel (2001) point out to mismatches between a morphological word and a phonological word, which presents evidence for the PWd in Turkish grammar.

Turkish has a word stress assignment rule that locates primary stress on the final syllable of a word (cf. Lees 1961; Lewis 1967; Sezer 1981; among others). This is the regular word stress assignment. The following examples illustrate a sequence of suffixes concatenated to a stem, whereby stress assignment targets the final syllable of a word at each morphological operation:

(13) a. boyá ‘dye’

b. boyací ‘painter’

c. boyacılár ‘painters’

d. boyacılarím ‘my painters’

e. boyacılarımíz ‘our painters’

f. boyacılarımızdán ‘from our painters’

In addition to regular stress patterns, Turkish has non-final stress patterns as well (cf. Lees 1961; Lewis 1967; Sezer 1981; Poser 1984; Halle and Vergnaud 1987; Idsardi 1992; Inkelas 1999; Çakır 2000, 2006; Kabak and Vogel 2001; Inkelas and Orgun 2003; Özsoy 2004; Göksel and Kerslake 2005; among others). Non-final stress in Turkish can be further classified into two types. The first one is exceptional root stress, which covers “certain place names” (14a, c), “unfamiliar person names” (2d,

e), “uninflected adverbs and conjugations of foreign origin” (14f, g), and “certain other borrowings” (14h, i) (Kabak and Vogel ibid., p. 316):

(14) Examples for exceptional root stress[35]

a.	Ánkara	‘Ankara’	
b.	Üsḱűdar	‘Üsküdar’	
c.	Belçḯka	‘Belgium’	
d.	Bárbara	‘Barbara’	
e.	Mandéla		‘Mandela’
f.	fákat		‘but’
g.	akváryum		‘aquarium’
h.	ácaba		‘one wonders’
i.	négatif		‘negative’

The second type of irregular stress is exceptional non-final stress which arises when particular affixes are attached to a word. The treatment of such affixes is not uniform in the literature though. For instance, they are referred to as enclitic suffixes by Sezer (1981), as prestressing suffixes by Inkelas (1999), as phonological word adjoiners by Kabak and Vogel (2001) and as irregular suffixes by Çakır (2006). We illustrate examples of irregular stress due to affixation in (15), where the relevant suffixes are underlined:

(15) Non-final stress due to affixation

a.	uyu-du-núz	‘You slept.’
	sleep-Past-2Pl	
b.	uyú-<u>ma</u>-dı-nız	‘You did not sleep.’

[35] Words with exceptional root stress involve not only the so-called Sezer roots whose stress pattern is accounted for with a quantity-sensitive rule in Sezer (1981), but other roots with non-final stress which cannot be accounted for by the rules in Sezer (1981).

sleep-Neg-Past-2Pl

c. uyu-du-núz-mu ‘Did you sleep?’

sleep-Past-2PL-Ques

d. uyan-míş-sa ‘If s/he has woken up’

wake up-Evid-Cond

e. uyan-míş-sa-lar ‘If they have woken up.’

wake up-Evid-Cond-3Pl

f. uyan-sá-da ‘Even if s/he wakes up.’

wake up-Cond-Conn

There have been various attempts to account for non-final word stress patterns in Turkish (cf. Sezer 1981; Poser 1984; Halle and Vergnaud 1987; Idsardi 1992; Inkelas 1999; Çakır 2000, 2006; Kabak and Vogel 2001). One study that relates non-final word stress to prosodic domainhood above the Foot level is Kabak and Vogel (2001), which argue that word stress assignment rule marks the domain of the PWd in Turkish.[36, 37]

In Kabak and Vogel (ibid.), mechanisms of regular word stress and exceptional root stress are assembled under a single rule, which we illustrate in (16) below. In this rule words with exceptional root stress, which is one type of irregular word stress, are treated in a uniform manner in that they include both Sezer-roots whose metrical structure was claimed to be quantity-sensitive in Sezer (1981), and

[36] The other study which claims that PWd is the domain of word stress assignment in Turkish is Nespor and Vogel (1986) as we have mentioned above. However unlike Kabak and Vogel (2001), Nespor and Vogel do not discuss exceptional word stress and do not relate this phenomenon to prosodic constituency.

[37] In order to account for the so-called pre-stressing suffixes and their interaction with what she refers to as ‘Sezer stems’ (= words with exceptional root stress), Inkelas (1999) proposes an Optimality Theoretic End-Based analysis concerning Foot structure in Turkish, following McCarthy and Prince (1993).

other roots with non-final stress that the rules in Sezer (1981) cannot account for. For Kabak and Vogel, exceptional root stress is lexically marked no matter whether the root is a Sezer-root or not.[38]

(16) Word Stress Assignment in Turkish (Kabak and Vogel 2001, p. 329)

a. Stress a lexically marked syllable

b. Otherwise, stress the final syllable of a Phonological Word

Regarding the dichotomy between regular word stress and non-final stress due to affixation or clitization, the authors state that it can be explained by referring to prosodic domainhood. The main difference between a suffix that is affected by word stress assignment and a suffix that is not can be grounded on the prosodic domain each suffix type attaches to: the Phonological Word (= the PWd):

(17) Phonological Word in Turkish (Kabak and Vogel 2001, p. 328)

The Phonological Word consists of a root plus all suffixes up to, but not including a Phonological Word Adjoiner. [39]

The authors also maintain that the suffixes and clitics which are not affected by word stress assignment in Turkish should be treated under a single category in prosodic phonology: Phonological Word Adjoiners (PWA). The suffixes and clitics which are

[38] In this view, exceptional root stress is not quantity-sensitive.

[39] The so-proposed PWAs in Turkish are "the negative marker –mA, adjectives/adverb deriving suffixes -leyin, -CA, -In, the post-clitic coordinator –dA, the complementizer ki, the epistemic copula –DIr, the copular forms –y/Ø and i-, yes/no question particle or focus particle –mI, the commutative/instrumental suffix –(y)lA, -(y)ken which is a converbial marker and –gil which denotes familiarity or derives family names from nouns" (Kabak and Vogel 2001, p. 328).

obligatorily excluded out of the PWd domain are claimed to be lexically-marked as PWAs.

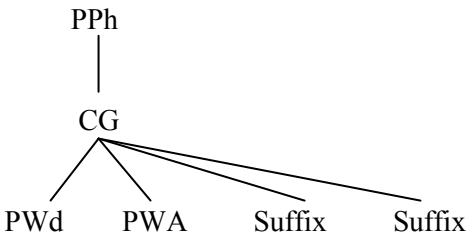
A PWA that adjoins to a PWd is unaffected by word stress assignment because it is outside the domain of that PWd. According to the authors, the prosodic constituent which can dominate a PWd and PWA(s) adjoined to it is the Clitic Group (CG), which is an intermediary level between the PWd and the PPh in Nespor and Vogel's (1986) prosodic model.

(18) illustrates the internal structure of the Clitic Group. (19) illustrates prosodic tree representations for PWAs, compounds and PPhs:

(18) Internal Structure of the Clitic Group (adapted from Kabak and Vogel 2001)

$[[\ldots]_{PWd}$ PWA suffix suffix$]_{CG}$

(19) a. An n-ary branching CG dominated by a PPh

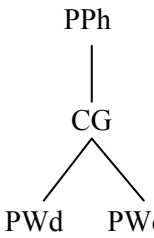


Ayşé - gil - de - ler

Ayşe-Famil-Loc-3Pl

'They are at Ayşe's.'

b. Compound Structure

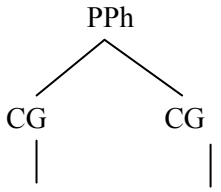


açí ölç-er

angle measure-Aor

'Protractor'

c. Phrasal Structure



açí ölç-er

angle measure-Aor

'(It) measures an angle.' (ibid., p. 341)

In (20), the stress rules for the CG and PPh, as proposed by (ibid.), are given: [40]

(20) a. CG Stress Rule (ibid., p. 340)

Promote stress of first word in CG; reduce the prominence of any other stress(es).

b. PPh Stress Rule (ibid., p. 340)

Promote stress of first word in PPh.

[40] Nespor and Vogel (1986) also suggest that the CG be a part of Turkish prosodic structure. In their argumentation, Turkish vowel harmony has CG as its domain of application since vowel harmony does seem to proceed beyond the PWd where the rule spreads over a word plus its clitics. They provide examples containing what they refer to as "the interrogative clitic *mu*":

a. doğrú	'true'	c. doğrú mu	'true?'
b. búgün	'today'	d. búgün mü	'today?'

Kabak and Vogel (2001), on the other hand, argue that Vowel Harmony does not crucially refer to any prosodic domain in Turkish. They show that some morphemes outside of a PWd are affected by this rule while some others are not. In the example below the –mA suffix, which is outside of the PWd, is affected by the [+front, - round] features of the root but the suffix -(I)yor is not:

e. sevîl–mi- yor- uz 'We are not loved.'

Based on examples such as the one above plus disharmonic roots, they explain Turkish Vowel Harmony by referring to underlyingly specified features without recourse to prosodic domainhood.

Via these stress rules and prosodic structural models for compounds and the PPh, the authors aim to explain why a rightmost constituent in a PPh is perceptually more prominent compared to the rightmost constituent of a compound consisting of two PWds.[41] This dichotomy can be depicted in a bracketed metrical grid representation as in (21) below. In (21a), the two PWds are parsed into two distinct CGs whereas in (21b) they are parsed into one CG, which results in a difference in the metrical strength of the rightmost PWds in the structures.

(21) a. Phrasal Structure

(x) PPh
(x)(x) CG
(x)(x) PWd

Açí ölçer

'(It) measures an angle'

b. Compound Structure

(x) PPh
(x) CG
(x)(x) PWd

Açí ölçer

'Protractor'

Throughout the study, following Kabak and Vogel (2001) we will consider the PWd and the PPh to be a part of Turkish prosodic organization based on the evidence proposed by the authors, i.e. the differences between head-directionality and metrical strength between the two constituents. In our investigation of the domain(s) higher than the PPh, we will also provide intonational evidence for the PPh domain in the following chapters.[42]

[41] According to the authors, the *ölçer* in (19c) is more prominent than the *ölçer* in (19b).They base their argument on tests like –mI insertion, where minimal pairs are found between compounds and PPhs:

a. Phrase: Açí ölçeŕ mi? 'Does it measure an angle?'
b. Compound: Açí ölçer mi? 'Is it a protractor?

[42] We will not assume that the CG is a part of Turkish phonology (see Kabak and Revithiadou *to appear* for a discussion of the issue).

CHAPTER 3

THE STUDY

3.1 Introduction

In this study our main aims are to investigate the nature of prosodic structure above the Phonological Phrase in Turkish, discuss its implications for the syntax-prosody mapping and explore the prosody of arguments in Turkish. Let us recap our main research questions:

i. Can we identify another level of phrasing above the Phonological Phrase (PPh), which is the highest/largest prosodic domain hitherto explored in Turkish phonology (cf. Kabak and Vogel 2001)?
ii. If yes, how many levels of phrasing above the PPh does Turkish prosodic structure contain?
iii. What are the modes of mapping between syntax and phonology at the level of the domain(s) higher than the PPh?
iv. In what ways, if ever, do alternations in argument structure, argument referentiality, argument modification and clausal complexity affect prosodic organization in Turkish?

In order to investigate these questions, we conducted an instrumental analysis of semi-naturally recorded speech. We prepared a set of 148 declarative sentences, which consists of subsets of sentences that were designed according to the four

syntactic parameters mentioned in the research question (iv) above. We incorporated each sentence into a written dialogue to ensure a focus-neutral context for each of them and to elicit the data as naturally as possible. Eight native speakers of the standard variety of Modern Turkish acted out the dialogues with the researcher in a silent setting without being aware of what the target sentences were. Thus, the dialogues were acted out by nine native speakers in total. The conversations were recorded with a digital sound recorder. Next, we extracted the target sentences from the conversations and put them into instrumental analysis Praat. We have a corpus of 1144 dialogues and a set of 1152 sentences analyzed in Praat. In what follows in this chapter, the details of the methodology, the structure and design of the stimuli and the participant profile are explained.

3.2 Participants

All participants are speakers of the standard variety of Modern Turkish. They have the same educational background. They are non-linguists, hence, naive to the subject matter. The age span of the participants was between 22 and 49 at the time of the recording.[43]

3.3 The Stimuli

In this section, we focus on the structure of the stimuli. In the first part of the section, we outline the syntactic structure of the alternating target sentences and the research

[43] See Appendix A for the details of the participants.

questions related to each set. In the second part, we explain the segmental structure of the stimuli.

3.3.1 Syntactic Structure of the Stimuli

The stimuli consist of 148 declarative sentences divided into subsets, displaying alternations in:

i. argument structure
ii. argument referentiality
iii. argument modification
iv. clausal complexity

In the following sub-sections, we will discuss each syntactic parameter.

3.3.1.1 Argument Structure

Concerning the syntactic configurations of our stimuli, the first condition that we took into account is argument structure. We aim to investigate whether argument-structural changes directly influence prosodic phrasing patterns, whether inter-speaker or intra-speaker variation can be observed in the prosody of arguments, and if any, what it implies for the nature of syntactic derivations and the syntax prosody-mapping.

It has been pointed out in the literature that argument structure has a significant effect in phrase stress and prosodic phrasing patterns (see Kahnemuyipour 2004 and Selkirk and Kratzer 2005 for stress-based accounts, see Kratzer and Selkirk 2007 for a prosodic-phrasing-based account). From the perspective of stress-based accounts, unergative verbs that do not θ-mark internal arguments as well as unaccusative verbs and passives that do not θ-mark external arguments have been maintained to exhibit a dichotomy in terms of 'sentential stress' in Persian (Kahnemuyipour 2004) and Turkish (Üntak-Tarhan 2006).[44] For both languages, it has been claimed that in sentences consisting of merely a subject and an unaccusative or a passive verb, the subject bears sentential stress, while in 'Subject+Unergative verb' pairs, the verb bears sentential stress rather than the subject.[45] In their phrasing-based account, Kratzer and Selkirk (2007) point out that in English and German, when the verb is intransitive and the subject is not a sentence topic, it resides in the same Major (Phonological) Phrase stress with the verb and carries MaP stress (or simply phrase stress). However, if the subject is a topic, the subject and the intransitive verb are parsed into distinct MaPs yielding distinct phrase stresses.

Based on Selkirk (1984, 1995) and Uhmann (1991), Hartmann (2007) states that in focus-neutral contexts, internal arguments are parsed into the same prosodic phrase with their heads whereby the phrasal accent falls on the internal argument in transitive structures.[46]

[44] Here, we use the notion sentential stress in order to comply with the authors' terminology. See Chapter 4 for our arguments against the conception of sentential stress as a level of metrical prominence directly assigned to some level of syntactic domain.
[45] However, in Chapter 6 we will see that such a generalization does not actually hold for Turkish.
[46] Note that Selkirk's (1984, 1995) Focus Projection Algorithm is also sensitive to argument structure.

In our stimuli, we used declarative sentences with transitive and intransitive, (unaccusative and unergative) verbs. We illustrate three simple declaratives from the stimuli below. The sentences contain a transitive verb in (1), an unergative verb in (2), and an unaccusative verb in (3).[47, 48, 49]

(1) Ayla anı-lar-ın-ı yaz-ıyor.
Ayla memoir-Pl-3Sg.Poss-Acc write-Prog
'Ayla is writing her memoirs.'

(2) Abla-n uyu-yor.
sister-2Sg.Poss sleep-Prog
'Your sister is sleeping.'

(3) Dondurma-m eri-di.
ice-cream-1Sg.Poss melt-Past
'My ice-cream melted.'

In general, the understanding of argument structure-prosody relation does not only encompass the prosody of arguments and their predicates, but also the prosody of the outsiders of thematic structure, i.e. adjuncts: "Given a pragmatically neutral clause,

[47] Here, the unergative/unaccusative classification for Turkish verbs is based on Nakipoğlu-Demiralp (1998, 2001).
[48] Note that the isolated examples are incorporated into dialogues in the stimuli.
[49] One example can actually provide implications for the effects of more than one parameter on prosody. For instance the prosodies of all sentences in (1), (2) and (3) can also be scrutinized with reference to (i) argument referentiality-prosody relation in that all of the arguments in the sentences are referential and they can be contrasted with non-referential arguments, or (ii) clausal complexity-prosody relation in that all of the clauses are root-level single CPs and they can be contrasted with multiple CP structures.

(internal) arguments form prosodic phrases together with their heads. In this case, the phrasal accent is assigned to the argument. Adjuncts are always phrased separately (cf. Selkirk 1984, 1995, and Uhmann 1991 for German)" (Hartmann 2007, p. 224). Here what Hartmann seems to have in mind is not NP adjuncts but *v*P/ VP adjuncts, since she compares the phrasing behaviour of 'adjuncts' in contrast with that of arguments.

In the literature, two studies remark on the stress properties of adverbs in Turkish, without emphasis on their place in phrasal phonology. These are Kabak and Vogel (2001) and Üntak-Tarhan (2006). Before delving into these studies and the relevance of adverbs to our study; however, we will discuss the second parameter, i.e. argument referentiality, since our discussion of adverbs is closely intertwined with both argument structure and argument referentiality.

3.3.1.2 Argument Referentiality

The definition of referentiality that we adopt is based on Givon (1978) and Massam (2001): "A referential nominal is one which has a nonempty reference, i.e., which 'exists' in a particular universe of discourse (though not necessarily in the real world). A non-referential nominal, on the other hand, does not introduce a potential discourse referent, but is instead used as a label, referring to type not token" (Massam ibid., p. 169).

In Turkish, the direct object of a transitive verb can be Accusative-marked (4a) or zero-marked (4b). Zero-marked objects are semantically non-referential; they do not set discourse referents, nor do they carry number interpretation denoting singularity or plurality (Dede 1986; Öztürk 2004, 2005, 2009). They do not delimit

the reading of the event (Öztürk ibid.). Acc-marked objects denote referential entities, which introduce discourse referents. As shown in (5a) and (5b), zero-marked objects, which are non-referential, cannot establish discourse referents in contrast to Acc-marked objects:

(4) a. Ali kitab-ı okudu.
Ali book-Acc read-Past
'Ali read the book.'

b. Ali kitap okudu.
Ali book read-Past
'Ali did book-reading.' (Öztürk 2004, p. 36-37)

(5) a. *Ali kitap okudu. Reng-i kırmızı-ydı. (non-referential)
Ali book read. color-3Sg.Poss red-Past
'Ali did book-reading. It was red.'

b. Ali kitab-ı okudu. Reng-i kırmızı-ydı. (referential)
Ali book-Acc read. color-3Sg.Poss red-Past
'Ali read the book. It was red.' [50] (ibid., p. 37)

[50] Accusative-marked internal arguments and zero-marked internal arguments of transitive verbs have been argued to reside in distinct positions in Turkish clause structure. Zero-marked ones are generally assumed to occupy a lower position in the phrase marker (cf. Knecht 1986; Kennelly 1994; Kornfilt 1995, 2003; de Hoop 1996; Kelepir 2001; Öztürk ibid.; Arslan-Kechriotis 2006; among others). Despite such a consensus; zero-marked objects have not received a uniform treatment regarding their morpho-syntax. There are mainly two camps of analyses: (a) those that consider such nouns to form complex predicates with their verbs in syntax, and (b) those that do not. Mithun (1984), Knecht (1986), Kornfilt (1995, 2003), Aydemir (2004), among others treat such objects as bare nouns and propose a head-incorporation account whereby the bare N^0 undergoes incorporation to its verb in the sense of Baker (1988). However, Öztürk (2004, 2005, 2009) challenges the head incorporation

account and argues that such zero-marked nouns are phrasal structures rather than head categories because:

- Q-particles and focus particles can intervene between the zero-marked object and its verb (also see Erguvanlı 1984) (a).
- The verb can be elided without the zero-marked object (b).
- Such objects allow for adjectival or participial modification (c, d).
- They exhibit scrambling under particular discourse-pragmatic contexts (e, f).

a. Ali kitap mı / bile oku-du.
Ali book Q-particle even read-Past
'Did Ali do book-reading? / Ali did even book-reading.'

b. Ali kitap oku-du, dergi değil.
Ali book read-Past, magazine not
'Ali did book reading, not magazine (reading).'

c. Ali ekşi elma ye-di.
Ali sour apple eat-Past
'Ali did sour apple eating.'

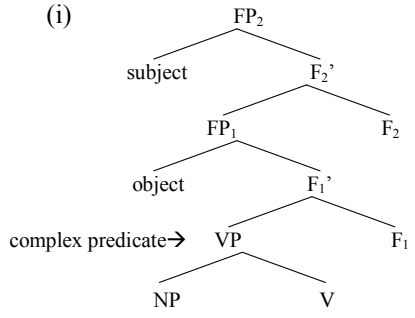
d. Ali oku-yacak kitap al-dı.
Ali read-Participle book buy-Past
'Ali bought books to read.'

e. Çay$_i$ ben t$_i$ iç-me-di-m.
tea I drink-Neg-Past-2Sg
'I did not do tea-drinking.'

f. Ben t$_i$ ye-me-di-m pasta$_i$.
I eat-Neg-Past-1Sg cake
'I did not do cake-eating.' (Öztürk 2009, p. 339)

Considering the empirical inadequacies of the head-incorporation account, Öztürk (ibid.) proposes a pseudo-incorporation analysis for all non-referential bare NPs in Turkish (adopting Massam's (2001) treatment of non-referential internal arguments as pseudo-incorporated NPs in Niuean). In this mechanism, the non-referential NP, which is the sister of the verb, undergoes pseudo-incorporation to the verb, whereby they form a complex predicate:

(i)



(Öztürk 2004, p. 90)

Any NP which is merged as the immediate sister of the lexical verb will be interpreted as part of a complex predicate (Öztürk ibid.) In order to be interpreted as syntactic arguments, NPs have to occur in the Specifier positions of higher theta-role inducing functional projections (FP). Note that in her analysis, Öztürk assumes a Neo-Davidsonian model (cf. Lin 2001; Borer 2005), where the arguments of a verb are introduced via distinct functional projections above the VP, which represents the predicative domain. In Öztürk's argumentation, Case and referentiality features are not convergent

Aside from transitives, intransitive verbs also allow non-referential arguments in Turkish. In (6a) the theme of the unaccusative verb, which is below the locative adverbial, is interpreted non-referentially, while the theme in (6b), which is above the locative adverbial, is interpreted referentially:

(6) a. Köy-e doktor gel-di.
village-dat doctor come-Past
'Doctors came to the village.'

b. Doktor köy-e gel-di.
doctor village-dat come-Past
'The doctor came to the village.' (Öztürk 2009, p. 335)

(7a) and (8a) illustrate non-referential agents of transitive and unergative verbs respectively; whereas in (7b) and (8b) the relevant agents are referential.

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upon higher functional heads such as TP, *v*P, or DP but are available within the thematic domain via theta-role introducing FPs.

Arslan-Kechriotis (2006), on the other hand, argues against both the head-incorporation and the pseudo-incorporation accounts. She maintains that Öztürk's (2005) proposal assumes a pre-syntactic operation where the NP and the V^0 form a complex predicate before the V^0 enters syntax. As opposed to Öztürk, Arslan-Kechriotis argues for the *v*P projection above the VP layer in Turkish and considers *v*P as the predicative domain, i.e. the domain of nuclear scope (cf. Diesing 1992). She further argues that referentiality is assigned to a predicative NP by D^0 rather than Case, whereby non-referential NPs stay in-situ, namely at [Spec *v*P] for agents and the complement position of V^0 for internal arguments, and "adhere" to their verbs as last resort in order to be licensed in the structure. Following de Hoop (1996), Arslan-Kechriotis assumes a strong vs. weak Case distinction in Turkish; for her, DPs check strong Case via dislocation out of the *v*P domain, whereas NPs check weak Case via φ-feature Agree relation between them and the relevant probes (v^0 and T^0). At this point, Arslan-Kechriotis' account diverges from those of Kennelly (1994), Zidani-Eroğlu (1997) and Kelepir (2001). According to these works, indefinite zero-marked object DPs, i.e. bir NP constructions, remain in-situ, whereas all Acc-marked DPs undergo dislocation for case-checking. For Arslan-Kechriotis, zero-marked indefinite object DPs undergo dislocation as well as their Acc-marked counterparts. She envisages Acc-marking as the instantiation of specificity rather than referentiality. All object DPs are referential, but Acc-marked ones are specific, thus assuming a direct correlation between designated syntactic features and case morphology. Öztürk (2005) views case as both a syntactic and a morphological phenomenon. She argues that syntactic case is responsible for referentiality, whereas the realization of case morphology is governed by the Mechanical Case Parameter (cf. Harley's (1995) dissertation).

(7) a. Ali-yi arı sok-tu.

Ali-Acc bee sting-Past

'Ali got bee stung.'

b. Arı Ali-yi sok-tu.

bee Ali-Acc sting-Past

'The bee stung Ali.' (Öztürk 2009, p. 335)

(8) a. Ağaç-ta kuş öt-üyor.

tree-Loc bird sing-Prog

'There is bird singing in the tree.'

b. Kuş ağaç-ta öt-üyor.

bird tree-Loc sing-Prog

'The bird is singing in the tree.' (Öztürk 2009, p. 335)

To our knowledge, the prosody literature has not particularly focused on the argument structure-prosody relation in a language that employs non-referential arguments.[51] In the same vein, existing hypotheses or generalizations regarding this relation (e.g. the attested phrasing behaviours of arguments and their verbs) have not taken the referentiality parameter into consideration, as the source of data is mainly from languages with DP-type, i.e. referential, arguments. Below, we provide

[51] In Chapter 6, we will see that referential and non-referential arguments are not distinguishable by their suprasegmental properties.

representative examples from the stimuli, which contrast in terms of the referentiality of arguments.[52]

(13) Referential Agent and Theme in a Transitive Construction

Ayla anı-lar-ın-ı yaz-ıyor.

Ayla memoir-Pl-3Sg.Poss-Acc write down-Prog

'Ayla is writing her memoirs.'

(14) Referential Agent, Non-referential Theme in a Transitive Construction

Ayla yemek yi-yor.

Ayla meal eat-Prog

'Ayla is doing meal-eating.'

(15) Referential Theme, Non-referential Agent in a Transitive Construction

Abla-m-ı arı sok-tu.

sister-1Sg.Poss bee bite-Past

'My sister got bee-bitten.'

(16) Referential Agent in an Unergative Construction

Abla-n uyu-yor.

sister-2Sg.Poss sleep-Prog

'Your sister is sleeping.'

[52] Note that in generic contexts non-referential external arguments are not restricted to the immediately preverbal position in Turkish. For various examples, see Dede (1986).

(17) Non-referential Agent in an Unergative Construction

Oda-da bebek uyu-yor.

room-Loc baby sleep-Prog

'There is baby sleeping in the room.'

(18) Referential Theme in an Unaccusative Construction

Dondurma-m eri-di.

ice-cream-1Sg.Poss melt-Past

'My ice-cream melted.'

(19) Non-referential Theme in an Unaccusative Construction

Oda-da mum yan-ıyor.

room-Loc candle burn-Prog

'There is candle-burning in the room.'

A remark is in order now. Although the interplay between (in)definiteness and referentiality is not considered as a direct one in Turkish in some studies (e.g Öztürk 2004, et seq.), we incorporated indefinite DPs (e.g. 20, 21, 22, and 23) into the stimuli along with definite DPs (e.g. the subjects of 13, 14, 16, 18 and the object of 15). If referential and non-referential arguments do display a dichotomy in their prosody, do definite and indefinite arguments also do so? If both definites and indefinites are referential expressions occupying identical syntactic positions (cf. Arslan-Kechriotis 2006), how can such a dichotomy be accounted for, if it is attested at all?

(20) Indefinite Theme in a Transitive Structure

Gazeteci-ler bir adam-ı bekli-yor-muş.

journalist-Pl a man-Acc wait for-Prog-Evid

'The journalists have been waiting for a man.'

(21) Indefinite Agent in a Transitive Structure

Bir lama yavru-lar-ın-ı besli-yor.

a llama baby-Pl-3Sg.Poss-Acc feed-Prog

'A llama is feeding her babies.'

(22) Indefinite Agent in an Unergative Structure

Bir arkadaş-ım ağlı-yor.

a friend-1Sg.Poss cry-Prog

'A friend of mine is crying.'

(23) Indefinite Theme in an Unaccusative Structure

Bir yakın-ım öl-dü.

an acquitance-1Sg.Poss die-Past

'An acquaintance of mine died.'

We would like to note that there exist different camps of proposals relating to (i) the syntax of referentiality, specifically how it can be represented in narrow syntax, (ii) the nature of theta domains, and (iii) Case in Turkish (for an overview see Footnote 50). At this point, we will not dwell upon these arguments. We refer the readers to the original works for further data and discussion. Throughout the study, we will

refrain from adopting any of the aforementioned models, aside from assuming (i) the referentiality/non-referentiality distinction of arguments, which can be cued by case marking (4, 5) or the relative positions of arguments with respect to time and locative adverbials (6, 8) or the positions of arguments with respect to each other (7), and (ii) D^0 as a part of Turkish grammar. Thus, following the large body of literature which has argued for the DP projection (cf. the references in footnote 50 except for Öztürk (ibid.)), we will be assuming that Turkish syntax possesses the DP layer and that referential entities are DPs, whereas non-referential ones are NPs.

Along with Nakipoğlu-Demiralp's (1998, 2001) unaccusative/unergative classification of Turkish verbs, these will be the sole assumptions pertinent to the argument structure and argument referentiality parameters in our research on prosodic organization. Thereby we will not adopt a designated syntactic skeleton for the theta domains. Rather than informing our phonological analyses with a particular syntactic skeleton, we thus aim to inform the syntactic analyses with our findings.

In the following section, we return to adverbs and outline their relevance for our study.

3.3.1.3 Adverbial Modification

As we stated previously, a common observation/conception in the literature is that *v*P/VP adjuncts undergo phonological phrasing separate from other constituents in the prosodic representation (cf. Hartmann 2007 and the references therein). In the present study, we focus on one class of *v*P/VP adjuncts: adverbs.

In the literature, two studies have remarked on the stress properties of adverbs in Turkish, without reference to their phrasing behaviours. These are Kabak

and Vogel (2001) and Üntak-Tarhan (2006). Both studies discuss the metrical structure of non-derived manner adverbs, while the latter also contrasts non-derived manner adverbs with their derived counterparts within the context of sentential stress. Let us first explain what is meant by derived and non-derived, and outline the morphological structure of both types of manner adverbs in Turkish.

In Turkish most manner adverbs are derived from adjectives (cf. Lewis 1967; Erguvanlı 1984). Examples of derived (a.k.a. complex) manner adverbs are illustrated below. In (24) the adverbs are derived by concatenating -CA to adjectives, in (25) by full reduplication, in (26) by concatenating –CA(+ -cIk) to adjectives, in (27) by concatenating –CAsInA to adjectives.

(24)

Adjective	Adverb
hızlı araba	hızlı-ca yürü-
fast car	fast-CA walk
‘fast car’	‘to walk quickly’

(25)

Adjective	Adverb
yavaş at	yavaş yavaş yürü-
slow horse	slow slow walk
‘slow horse’	‘to walk slowly’

(26)

Adjective	Adverb
güzel bebek	güzel-ce-(cik) çal-
beautiful baby	nice-CA-(cIk) play
‘beautiful baby’	‘to play nicely’

(27) Adjective Adverb

deli dana deli-cesine sev-

mad cow mad-CAsInA love

'mad cow' 'to love madly'

However, there are some other manner adverbs that can be considered to have undergone zero-derivation. These adverbs are homophonous with adjectives (Erguvanlı 1984). (28) and (29) illustrate such non-derived (a.k.a. simple) manner adverbs:

(28) Adjective Adverb

güzel kız güzel konuş-

beautiful girl nice speak

'beautiful girl' 'to speak nicely'

(29) Adjective Adverb

yavaş at yavaş yürü-

slow horse slow walk

'slow horse' 'to walk slowly'

Üntak-Tarhan (ibid.) discusses the stress properties of simple manner adverbs in sentences with unergative verbs (30a) and 'Subject + Simple Manner Adverb + Bare

NP Theme +Transitive Verb' structures (31). She observes that these adverbs bear sentential stress unlike their derived counterparts (30b) in these configurations:[53]

(30) a. Ayşe zor uyuyor.

Ayşe difficult sleep-Prog

'Ayşe has difficulty in sleeping.' (ibid., p. 68)

b. Çocuk-lar güzel-ce yüz-dü-ler.

child-Pl nicely swim-Past-3Pl

'The children nicely swam.' (ibid., p. 60)

(31) Ali yavaş kitap oku-du.

Ali slow book read-past

'Ali read a book slowly.' (ibid., p. 48)

Aside from simple manner adverbs, there is another class of adverbs which can be analysed similarly. These are simple measure adverbs. Simple measure adverbs are homophonous with adjectives akin to simple manner adverbs:[54]

[53] In the light of the notion of word stress, there are other types of adverbs that are "distinguished from the otherwise homophonous nouns or adjectives only by stress on their first syllable (e.g. yálnız (adv) ' lonely, only' vs. yalníz (adj) 'alone', níhayet (adv) vs. nihayét (n) 'end') (Kabak and Vogel 2001). According to Hameed (1985, as cited in ibid.) such adverbs are derived from the relevant nouns or adjectives by a zero-suffixation rule which shifts stress to their initial syllable. However, Kabak and Vogel (ibid.) challenge this proposal by illustrating that there is full homophony (both segmentally and suprasegmentally) between adjectives and many adverbs in Turkish in terms of the position of word stress. Though they do not classify the adverbs in their examples, the ones that they bring up for this case of homophony involve simple manner adverbs:

a. iyí adám iyí yık-ár
good man well wash-Aor
'good man' '(S/he) washes well.'

(32) Adjective Adverb

a. az ekmek az iç-

little bread little drink

'a little bread' 'to drink a little'

b. çok ekmek çok iç-

much bread much drink

'a lot of bread' 'to drink (very) much'

We will not dip into the syntax of manner/measure adverbs. What we essentially investigate is the phrasing behaviors of adverbs; whether they are invariably phrased separately or not, and whether there exists any optionality in their phrasing behaviors. We first focus on the prosody of simple manner and measure adverbs (SMA). The following examples are from the stimuli.

(33) Subject + Acc-marked Object + Manner Adverb + Verbal Complex

Leyla yemeğ-in-i yavaş ye-di.

Leyla meal-3Sg.Poss-Acc slow eat-Past

'Leyla ate her meal slowly.'

(34) Subject + Measure Adverb + Verbal Complex

Abla-m az uyu-yor.

sister-1Sg.Poss little sleep-Aor

[54] It is also possible to distinguish a class of measure adverbs under the class of complex measure adverbs. See Göksel and Kerslake (2005) for their morphological make-up.

‘My sister sleeps a little.’

(35) Subject + Manner Adverb + Non-referential Theme + Verbal Complex

Anne-m iyi yemek yap-ar.

mother-1Sg.Poss good meal make-Aor

‘My mother cooks well.

Note that the structures including non-referential themes and agents of unaccusatives and unergatives involve circumstantial adverbials (cf. Cinque 1999) in the stimuli. Aside from SMAs, such adverbials are also eligible to provide implications for the phrasing properties of ıp/VP adjuncts in Turkish.

(36) Circumstantial Adverbial + Non-referential Agent + Verbal Complex

Oda-da bebek uyu-yor.

room-Loc baby sleep-Prog

‘There is baby-sleeping in the room.’

(37) Circumstantial Adverbial + Non-referential Theme + Verbal Complex

Oda-da mum yan-ıyor.

room-Loc candle burn-Prog

‘There is candle-burning in the room.’

Having drawn an outline of the argument structure and argument referentiality parameters, we now move onto a new parameter, namely argument modification.

3.3.1.4 Argument Modification

As stated in Chapter 2, in their work on the PWd in Turkish, Kabak and Vogel (2001) delve into the PPh level in the same language as well. A few of their examples for the PPh consist of attributive adjectival modification, where the adjective is argued to bear phrase stress. In the native pattern of modification, modifiers typically precede the modified constituents in Turkish:

(38) (X)$_{PPh}$
(X) (X)$_{PWd}$

[güzel araba]

beautiful car

'The beautiful car'

Concerning (38), whether adjectival modification always yields an identical metrical structure or phrasal pattern in larger syntactic or prosodic domains is a question of inquiry. The same question targets prosodic configurations in the environment of numeral modification (41) and simultaneous application of numeral and adjectival modification as well (42).

For this purpose, we compare and contrast the prosodies of non-modified arguments (39), arguments with adjectival modification (40), arguments with numeral modification (41) and arguments with both numeral and adjectival modification (42) both in subject and object positions in non-citation-environments:

(39) a. Arguments without modifiers

Memur-lar Anamur-u anlat-ıyor.

officer-Pl Anamur-Acc talk about-Prog

'The officers are talking about Anamur.'

b. Arguments without modifiers

Leyla rüya-lar-ın-ı anlat-ıyor.

Leyla dream-Pl-3Sg.Poss-Acc tell-Prog

'Leyla is telling her dreams.'

(40) a. Adjectival Modification with Subjects

Yeni memur-lar Anamur-u anlat-ıyor.

new officer-Pl Anamur-Acc talk about-Prog

'The new officers are talking about Anamur.'

b. Adjectival Modification with Objects

Leyla yeni rüya-lar-ın-ı anlat-ıyor.

Leyla new dream-Pl-3Sg.Poss-Acc tell-Prog

'Leyla is telling her recent dreams.'

(41) a. Numeral Modification with Subjects

Yedi memur Anamur-u anlat-ıyor.

seven officer Anamur-Acc talk about-Prog

'Seven officers are talking about Anamur.'

b. Numeral Modification with Objects

Leyla iki rüya-sın-ı anlat-ıyor.

Leyla two dream-3Sg.Poss-Acc tell-Prog

'Leyla is telling her two dreams.'

(42) a. Numeral and Adjectival Modification with Subjects

Yedi yeni memur Anamur-u anlat-ıyor.

seven new officer Anamur-Acc talk about-Prog

'Seven new officers are talking about Anamur.'

b. Numeral and Adjectival Modification with Objects

Leyla iki yeni rüya-sın-ı anlat-ıyor.

Leyla two new dream-3Sg.Poss-Acc tell-Prog

'Leyla is telling her two recent dreams.'

In Chapter 6, we will see that 'modifier + (modifier +) NP' sequences display a great degree of variability in their phrasing patterns, contra Kabak and Vogel's (2001) assumption.

3.3.1.5 Clausal Complexity

In the case of clausal complexity, we compare and contrast the prosodies of simplex and complex clauses encompassing both root-level and embedded CPs. We first aim to explore whether the notion of syntactic clause is relevant for any specific prosodic domain in the grammar of Turkish. For instance, based on the intonation of

coordination and gapping, Kawahara and Shinya (2008) propose that each syntactic clause projects its own Intonational Phrase in Japanese. Based on the famous "cat-rat-cheese" example in SPE (cf. Chomsky and Halle 1968), Scheer (2008, 2009) conjectures that every CP starts an "intonational unit", though what it is meant by the term "intonational unit" is not clear.[55]

If each and every syntactic clause turns out to induce a level higher than the PPh, this would shed light on both the prosodic organization of Turkish and the nature of the mapping. Regarding Scheer's (ibid.) assumption, another question arises as to whether each and every CP starts an "intonational unit" at PF.[56]

We list below the structures that we scrutinize under the clausal complexity parameter:

Simple (root-level) clauses
Three-way root-level clausal coordination
Finite complement clauses with a null C^0 (i.e. FCC)
Finite complement clauses headed by ki (i.e. ki-FCC)
Restrictive and non-restrictive –DIK and –(y)An prerelatives
ki-relatives

Figure 1: Clause Types

[55] Scheer (2009, p. 15):
"[…] mismatch of phonological and morpho-syntactic domains
there is no syntactic node that contains exclusively [that caught the rat], which however is a discrete intonational unit in phonology
1. syntactic structure: nested
This is [the cat that caught [the rat that stole [the cheese]]]
2. structure that is treated by phonology: flat
[This is the cat] [that caught the rat] [that stole the cheese]
[…] Non-isomorphism evaporates when boundaries are used
a. cat-rat-cheese has a straightforward analysis when boundaries are used instead of domains: every CP starts a new intonational unit."

[56] Since Scheer (ibid.) does not state that his proposal is intended to explain the phonological facts of English, we assume that it is hypothesized to operate in all languages.

In what follows, we provide an example for each structure from the stimuli and provide brief information about the clause type, where necessary.

The examples below involve a simple declarative clause (43), and three-way root-level clausal coordination (44):

(43) Ayla anı-lar-ın-ı yaz-ıyor.
Ayla memoir-Pl-3Sg.Poss-Acc write-Prog
'Ayla is writing her memoirs.'

(44) Root-level Clausal Coordination
Numan anne-sin-i bul-du, Leman abla-sın-ı ara-dı,
Numan mother-3Sg.Poss-Acc find-Past, Leman sister-3Sg.Poss-Acc call-Past,
Ayla abi-sin-i bekle-di.
Ayla brother-3Sg.Poss-Acc wait for-Past
'Numan found his mother, Leman called her sister, and Ayla waited for her brother.'

As shown in Figure 1 above, the stimuli include complementation structures as well. In (45), the embedded clause is a finite complement clause (FCC) without an overt complementizer (cf. Kornfilt 2007, Şener 2008). It is finite, as signalled by the nominative-case-bearing subject and the verb fully inflected with tense and person. Following Kornfilt (2007) and Şener (2008), we assume that it is headed by a null C^0.[57]

[57] Even though most verbs in Turkish take the arguably non-finite, nominalized complement clauses, some verbs of belief such as *san-*, which is a homophonous form meaning 'think, believe or consider', allow finite complement clauses which are not nominalized. FCCs can occur in indicative or

(45) [$_{CP}$[$_{TP}$ Numan [$_{CP}$ [$_{TP}$ ben araba-yı yenile-di-m]C^0] san-ıyor]C^0]

Numan I car-Acc renew-Past-1Sg think-Impf

'Numan thinks (that) I renewed the car.'

In (46), the matrix clauses have finite complement clauses headed by the complementizer *ki*, which is a product of the Turkish-Persian language contact. It is the contemporary Turkish counterpart of *ke* that marks subordinate clauses in contemporary Persian.[58] We will refer to such clauses in (46) as *ki*-FCCs. *ki*-FCCs can be the complements of verbs of perception (46a) or cognition (46b) or a particular type of verb of saying, i.e. *de-* 'say', in Turkish (Göksel and Kerslake 2005). They exhibit typical Indo-European style complementation obligatorily following the matrix predicate in the linear representation:[59]

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subjunctive mood in Turkish (Şener 2008). The data include solely the ones in the indicative mood. Aside from the structure in (45), there are other finite complement clauses which are not nominalized in Turkish such as the FCCs headed by the so-called complementizer *diye* (Şener 2008). However, we incorporated one structure for each clause type into the stimuli; therefore our data do not include all FCC types in Turkish.

[58] The contemporary Persian counterpart of *ki*, namely *ke* is the result of the contamination of three distinct morphemes (ke, ka, ku) in Middle Persian, where:

- *ke* functioned as the interrogative pronoun 'who(m)' and also as a relative pronoun
- *ka* functioned as a subordinator introducing temporal clauses, conditional clauses, reason clauses and as a relative adverbial denoting expressions such as 'on the day when….'
- *ku* was used for 'where' in wh-questions and other subordinate clause types such as conditional clauses, temporal clauses, reason clauses, purpose clauses

(Erguvanlı 1981)

At the time of the Turkish-Persian language contact, the contamination had taken place; the three morphemes had already merged into a single form. In Early Classical Persian, *ke* was used as an interrogative pronoun, relativizer and complementizer. It was first borrowed into Turkish as *kim* along with the patterns of subordination in Persian (Erguvanlı ibid.). According to Erguvanlı, the nature of the borrowing is closely related to the use of *kim* in Turkish as the interrogative pronoun during the time of the contact and its phonetic similarity to *ke*. While *ke* was used to mark all types of subordination, the use of *kim* was extended to instances where *ke* was used, thus the Persian complementizer *ke* was borrowed as a loan translation (calque) in the form of *kim*. Later on, Turkish speakers distinguished it into two elements: *kim* as a relativizer and *ki* as a complementizer. In contemporary Turkish, the relativizer usage of *kim* can only be encountered in free relatives meaning "whoever", but it is not as productive as *ki* is.

[59] The stimuli include only examples with verbs of cognition and perception. We illustrate below a *ki*-FCC as the complement of the verb *de-* 'say' (note that *de-* is a homophonous predicate. It might

(46) a. Duy-du-k ki Numan-lar Almanya-ya yerleş-iyor-muş.
hear-Past-1Pl Comp Numan-Pl Germany-Dat settle -Fut-Evid
'We heard that Numan's are settling in Germany.'

b. San-ıyor-um ki bu kış yağmur yağ-ma-yacak.
think-Impf-1Sg Comp this winter rain rain-Neg-Future
'I think it won't rain this winter.'

In Turkish *ki* not only heads FCCs, as we have illustrated from our stimuli in (46), but also finite clauses that function á la appositive/non-restrictive relative clauses, which we will refer to as *ki*-relatives.

ki-relatives right-adjoin to their anchors and they introduce right-branching into a typically left-branching syntax. Functionwise, they are non-restrictive modifiers. Note that the appositive/non-restrictive *ki*-clauses have not received much attention or formal treatment in the literature.[60] In Chapter 5, we will provide a detailed investigation of *ki*-relativization.

Below, we illustrate three examples from the stimuli: DP modification in (47) and (48), and CP modification in (49):

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either be used as a verb of saying as in (i), or as a verb of cognition meaning 'assume/suppose/think' (see Göksel and Kerslake (2005) for the second use)).

(i) De-di-m ki "Bu not-lar-la sınıf-ı geç-e-me-z".
say-Past-1Sg Comp this grade-Pl-Inst class-Acc pass-Mod_{Abil}-Neg-Aor
'I said "S/he cannot pass the class with these grades".'

Considering that *de-* 'say' introduces direct quotations in Turkish, one might question the complementizer status of *ki* in (i) due to a popular conception that indirect quotations, but not direct quotations, can be introduced by a complementizer. However in the light of cross-linguistic data, (i) may not be considered an unusual grammatical construction. The conception at stake is merely an overgeneralization. In Tikar, for instance, it is the direct quotation but not the indirect quotation which must be introduced by a complementizer (Li 1986). Languages essentially vary regarding whether they employ complementizers in introducing quotations (see Aikhenvald 2008 for a detailed discussion of this issue).

[60] See §5.3.2 where we discuss the studies that remark on *ki*-clauses.

(47) Subject DP Modification

Ayla, ki lise-yi yeni bitir-di, üniversite-yi kazan-mış.

Ayla, Comp high school-Acc new finish-Past university-Acc win-Evid

'Ayla, who recently finished high school, won the university (entrance exam).'

(48) Object DP Modification[61]

Alanya-yı, ki anne-m ora-yı bayağı sev-er, yağmur bas-mış.

Alanya-Acc Comp mother-1Sg.Poss there-Acc much love-Aor rain attack-Evid

'Alanya, where my mother loves very much, has been flooded due to rain.'

(49) CP Modification[62, 63]

Anneanne-m ev-i yenile-di, ki bu on-a

grandmother-1Sg.Poss house-Acc renew-Past Comp this she-Dat

pahalı-ya mal ol-du.

expensive-Dat cost Copula-Past

'My grandmother renewed the house, which cost her a lot.

3.3.1.6 Restriction and Relativization

As we have shown at the beginning of §3.3.1.5, another structure that we scrutinize under the clausal complexity parameter is prerelatives. However, we have particular

[61] Our participants consider object-*ki*-relativization to be better when the object is not immediately preverbal. Therefore, object relativization cases with *ki*-clauses in our stimuli include the modified objects of 'non-referential agent + verb' structures as in (48). Objects are never immediately preverbal in such configurations in focus-neutral episodic contexts.

[62] As has long been pointed out in the literature, non-restrictive relatives can have antecedents of any category unlike restrictives (de Vries 2000).

[63] Here the relative has a root clause as its antecedent; its interpretation is dependent on the predication in the root CP.

reasons other than clausal complexity for looking into the phonological structure of prerelatives and contrasting it with that of post-head *ki*-relatives.

In the literature, a general observation is that unlike restrictive relatives, non-restrictive/appositive relatives are surrounded with IP edges/comma intonation in phonology (cf. Ross 1967; Emonds 1979; Bing 1979; McCawley 1982; Nespor and Vogel 1986; Demirdache 1991; Truckenbrodt 1995; among many others). Below are examples of non-restrictive post-relatives from English, French and Italian, which all involve comma intonation:

(50) Enrico, who is the smartest of us all, got the answer in seven seconds.

(Ross 1967, p. 435)

(51) Lisa, que j'ai vu hier, me surprendra toujours.
Lisa, who I saw yesterday, will always surprise me.

(Demirdache 1991, p. 113)

(52) Ho interrogato gli studenti, che avevano superato tutti la prova scritta.
'I examined the students, who had all passed the written exam.'

(Bianchi 1999, p. 137)

Nespor and Vogel (1986) go as far as claiming that along with parenthetical expressions, tag questions and vocatives, non-restrictive relatives will obligatorily form Intonational Phrases in all languages that make use of them. In this respect, they obviously extend their claim to all languages that make use of non-restrictive relative clauses regardless of whether the relativization strategy is postrelativization

(i.e. the native pattern of relativization in English (50), French (51), Italian (52) etc.), or prerelativization (i.e the native pattern of relativization in Japanese, Turkish, etc.). However, the claim logically involves non-restrictive prerelatives as well.

Given the so-observed relation between intonational phrasing and non-restrictive relativization, and Nespor and Vogel's (ibid.) claim, the questions are whether (non-)restrictiveness really plays a particular role in the computation of prosodic structure and what the findings imply for the theory of syntax-prosody mapping and the typology of relativization, specifically considering that some works have attributed non-restrictive relatives a distinguished syntax, which is seen as the source of their distinguished prosody (e.g. Downing 1970, as cited in Bing 1979; Emonds 1979; McCawley 1982; among others).

If Nespor and Vogel's claim is not on the right track, i.e. if all prerelatives are phonologically uniform regardless of their restriction in Turkish, then a phonological disparity would arise between postrelativization and prerelativization, requiring an explanation of what is special about postrelatives such as the ones in (50)-(52). Such a finding would also raise the questions of whether the disparity is solely a matter of left- versus right-adjunction and its phonological reflexes, or whether there are further uncovered differences between the two strategies. Relating to this issue, the RCs that we contrast are:

i. *ki*-relatives, i.e. the non-restrictive postrelatives (47, 48, and 49)
ii. prerelatives with restrictive (53, 54) interpretation
iii. prerelatives with non-restrictive interpretation (55, 56)

(53) Object Relativization (Restrictive)

[[Alanyalı-lar-ın yolla-dığ-ı] elma-lar mide-m-i

Alanyalı-Pl-Gen send-*DIK*-3Pl.Poss apple-Pl stomach-1Sg.Poss-Acc

boz-du].

upset-Past

'The apples that the people of Alanya sent upset my stomach.'

(54) Subject Relativization (Restrictive)

[[Ev-in-i ara-yan] bir Anamurlu yol-un-u

house-1Sg.Poss-Acc look for-*(y)An* a Anamurlu way-3Sg.Poss-Acc

kaybet-miş].

lose-Evid

'A person from Anamur who was looking for his house lost his way.'

(55) Object Relativization (Non-restrictive)[64]

[[Alanyalı-lar-ın ağırla-dığ-ı] Bayülgen okul-lar-ı gez-di].

Alanyalı-Pl-Gen put up-*DIK*-3Pl.Poss Bayülgen school-Pl-Acc visit-Past

'Bayülgen, whom the people of Alanya put up, visited the schools.'

(56) Subject Relativization (Non-restrictive)

[[Evini yenile-yen] Bayülgen araba-sın-ı sat-tı].

house-3Sg.Poss-Acc renew-*(y)An* Bayülgen car-3Sg.Poss-Acc sell-Past

'Bayülgen, who renewed his house, sold his car.'

[64] Aygen (2003) argues that non-restrictive prerelatives in Turkish are not relative clauses but absolute constructions in the sense of Stump (1985). See Appendix D, where we argue that this claim cannot be verified on Turkish based on the proper application of Stump's tests on a wider range of data and further native speaker judgements. Also note that absolute constructions involve intonational phrasing (cf. Stump 1985) in contrast to non-restrictive prerelatives, which do not (cf. §5.3).

As can be seen in the examples above, in Turkish prerelatives, when relativizing a subject the suffix –(y)An is used (54, 56), whereas when relativizing a non-subject, the suffix –DIK is used and genitive-possessive agreement morphology is observed between the subject and the predicate (53, 55).[65]

Most studies have considered the –DIK and –(y)An suffixes as the instantiation of nominalization morphology. Moreover, "the view generally found in traditional Turkological studies is that Turkish does not have genuine RCs, and that the nominalized verbal forms found as nominal modifiers are 'just' participles, i.e. deverbal adjectives" (Kornfilt 2000, p. 123). However, based on a variety of phenomena such as subjacency effects, binding, sentential adverb attachment and EPP effects, recent studies maintain that these modifiers are fully spelled-out clausal structures (see specifically Kornfilt 2000; 2008; Çağrı 2005; Ulutaş 2006 and Öztürk 2007 for data and discussion). Following this line of research, we assume that such prerelatives involve CP structures.

Throughout this section, we have drawn a picture of the structures we incorporated into the stimuli and outlined which parameters are operative on which structures, and why they are significant for the current study and for prosodic and syntactic typology in general. In the following section, we describe the segmental structure of the stimuli.

[65] Actually, the mechanisms behind this choice are more complex (cf. Hankamer and Knecht 1976; Özsoy 1998; Kornfilt 2000; Çağrı 2005; Öztürk 2007; among others). However, we will not remark on these mechanisms in this work, as they are not directly germane to our discussion.

3.3.2 Segmental Structure

Aside from the syntactic structure of our stimuli, we took into consideration their segmental structure as well. We tried to use sonorants in our stimuli as much as we could. This was done in order to avoid pseudo-rises or perturbations in the F_0, which can easily be triggered especially by obstruents due to their acoustic nature.

3.4 Methodology

3.4.1 The Design of the Stimuli

In the study, we controlled the focus structure of the stimuli. We designed the study to elicit the target sentences in wide focus interpretation.[66]

The presentation of the stimuli was designed specifically to avoid narrow focus in the target sentences as it is known that wide focus and narrow focus contexts result in distinct patterns of prosodic organization and/or intonation (cf. Truckenbrodt 1995, 1999; Sugahara 2003; Selkirk 2005; among many others). We embedded each sentence into a dialogue to ensure a focus-neutral context for it. Another reason behind incorporating target sentences into dialogues was to make sure that the participants would not realize which sentences would be under investigation and produce the target sentences as naturally as possible while acting out the dialogues.

[66] This is one limitation of our study. If narrow foci were allowed in the stimuli, another variable would be introduced to our analysis in addition to the syntactic parameters involved. The investigation of the same research questions in narrow focus contexts is left to future inquiry.

We wrote a short context for each dialogue that would act as an introduction to the forthcoming dialogue for the participants. Note that the contexts and dialogues were prepared in such a way that they would not contain accessible antecedents or evoke alternatives for the entities in the target sentences (cf. Rooth 1996), thus avoiding narrow focus interpretation. For the actual test material, we designed a PowerPoint Presentation (PPP), where each written context precedes the relevant dialogue. (57) illustrates a sample context and the corresponding dialogue:

(57) a. Context (Presented as visual text in the PPP)[67]

Birgün, birinin erkek kardeşi saatlerce ev telefonunu meşgul eder. Bu onu rahatsız eder çünkü yapması gereken bir telefon görüşmesi vardır. Kardeşini uyarır ve aralarında şöyle bir diyalog geçer:

"One day, someone's brother keeps the phone busy for hours. This gets on her nerves, because she is supposed to make a phone call. She warns her brother and a dialogue takes place between them:"

b. Dialogue (Presented as visual text in the PPP)

Speaker A:	Bitirsene şu konuşmayı artık.
	'Come on, finish up!'
Speaker B:	Abla bir dakika ya. Önemli birşey.
	'Give me a minute. This is really important.'
Speaker A:	Ne var bu kadar önemli?
	'What is it that is so important?'
Speaker B:	Miray ağlıyor.

[67] See Appendix C for the sample context and the dialogue as presented in PPP.

'Miray is crying.'

Speaker A: Niye ağlıyormuş?

'Why is she crying?'

Speaker B: Bir dakika. Teselli etmeye çalışıyorum.

'Give me a minute. I am trying to cheer her up.'

3.4.2 Data Collection Procedure

In each recording session, one participant acted out the dialogues with the researcher in a silent setting. In total, eight native speakers took part in the data collection procedure.

Before the sessions, the participants were informed that they would be required to act out a number of the dialogues in the most natural way, as if in actual life. In the sessions, prior to acting out each dialogue, the participants read the context and the relevant dialogue beforehand from the PPP. When the participant and the researcher were ready, they acted out the corresponding dialogue. The conversations were recorded with a digital sound recorder (SONY ICD-P110). The duration of the recording process changed according to the participants, ranging from approximately three to six hours. Some recordings were repeated for clarity.

After the recording process, the data were re-digitized at an 11,025 Hz sampling rate and 16 bit quantization level. Then, the target sentences were extracted from the dialogues and they were sent to instrumental analysis in Praat.

CHAPTER 4

THE PHONETICS AND PHONOLOGY OF PHRASAL DOMAINS IN TURKISH PROSODY

4.1 Preliminaries

As stated in §1.1, in the current study we combine the machinery of the Prosodic Structure Theory (cf. Selkirk 1978, et seq.; Nespor and Vogel 1983, 1986; Hayes 1989, among others) and the Autosegmental-Metrical Model of Intonational Phonology (cf. Pierrehumbert 1980; Beckman and Pierrehumbert 1986; Pierrehumbert and Beckman 1988, among others) in our approach to prosody, á la Frota (2000) and Hellmuth (2006, 2007), among others. In her work on European Portuguese, Frota (2000) terms this approach the integrated view.[68]

The main premise of the integrated view/approach is that prosodic structure, which is mapped from the syntactic derivation, has a pivotal place in sentence phonology and it acts as the sole application domain for rules of phrasal phonology and intonational events. In this respect, the intonational structure of an utterance is not considered to contribute its own levels of phrasing to the phonological structure independent of syntax. Phrasing effects observed in the intonational structure are the reflexes of phrasing in prosodic structure cueing different constituent levels.[69]

Let us now outline the content of the current chapter. In this chapter, we mainly discuss the phonetic and phonological aspects of phrasal domainhood in

[68] See Gussenhoven (1992) for a different perspective.
[69] See Chapter 2, which includes an overview of the findings in the literature that support this hypothesis.

Turkish and provide answers to our research questions (i) and (ii): Can we identify another level of phrasing above the Phonological Phrase (PPh), which is the highest/largest prosodic domain hitherto explored in Turkish phonology (cf. Kabak and Vogel 2001)?, (ii) If yes, how many levels of phrasing above the PPh does Turkish prosodic structure contain?

Focusing on the phonetic and phonological structure of the data we argue that there is a separate and single level of phrasing above the PPh, i.e. the Intonational Phrase (IP), with evidence from boundary tone placement, linguistic pause distribution, head-prominence, and phrase final lengthening of vowels.

In addition to providing answers to the questions above, we also bring up independent observations and claims on Turkish intonational phonology and prosodic structure: (i) we propose an inventory of pitch accents and characterize the nature of pitch accent distribution in focus-neutral contexts in Turkish, and (ii) we propose an inventory of edge tones and address the interaction between edge tone and pitch accent placement in Turkish. The findings are particularly important since this is the first study that aims to work out the tonal inventory of Turkish based on an experimental data collection procedure.

Note that we will not be discussing our findings in the light of our syntactic parameters in this chapter. We refer the reader to Chapter 5 for our analysis of the mapping of the IP from the syntactic derivation and the role of clausal complexity in phonology, and Chapter 6 for the implications of our findings for the prosody of arguments.

4.2 The Phonological Phrase and Beyond

In this chapter we will first recapitulate Kabak and Vogel's work on the PPh and the notion of phrase stress, which will be essential for our discussion of prosodic constituency above the PPh. Next, we will discuss our own findings and proposals.

4.2.1 Some Background

As stated in §1.1, the highest/largest prosodic domain hitherto investigated in Turkish is the PPh by Kabak and Vogel (2001). The authors portray the PPh level based on the notion of phrase stress, which is assigned to the leftmost PWd as opposed to regular word stress which is rightmost in Turkish. Examples in (1) are from Kabak and Vogel. We illustrate them in (prosodic-)constituent-bracketed metrical grids (cf. Halle and Vergnaud 1987):

(1) a. (x)$_{PPh}$ b. (x)$_{PPh}$
(x)(x)$_{PWd}$ (x) (x)$_{PWd}$

[açı ölçer] [güzel araba]

angle measure-Aor beautiful car

'(It) measures an angle.' 'The beautiful car'

Kabak and Vogel's work centers on the Prosodic Word and word stress in Turkish. As can be seen, however, the authors also depict a larger domain above the PWd, namely the PPh, by pointing out a specific type of stress pattern which contrasts with word stress in terms of directionality and metrical strength. In our discussions

concerning the PPh, we will be exploiting the term phrase stress in the sense of Kabak and Vogel.

4.2.2 Specification of Phrasal Domains

This section is centred on the structure of intonation and prosodic constituency both at the level of the PPh and above the PPh in Turkish. As described in §3.4.2, subsequent to the recording process, we extracted the target sentences from the dialogues and proceeded to the instrumental analysis of 1152 sentences using Praat. Our analyses are based on:

A) Metrical Structure: (i) the number of phrase stresses, (ii) whether there exists another degree of metrical prominence higher than phrase stress (iii) if yes, what the position of this metrical prominence is
B) Intonational Structure: Tonal configurations: accentual pitch events, i.e. pitch accents, vs. non-accentual pitch events, i.e. edge tones[70]
C) The degree and the position of temporal disjunctures
D) Vowel durations in the vicinity of prosodic boundaries, in particular, PPh-final and IP-final vowel durations

Figure 2: Phonetic and Phonological Criteria

[70] We use fundamental frequency contour as the phonetic representation of intonation following Pierrehumbert (1980): "F_0 contours are the most accessible data that are relevant to quantitative description of intonation".

Before discussing the prosodic constituency above the PPh, in the next section, we present our findings and analyses regarding (i) Turkish pitch accent inventory, (ii) pitch accent distribution, and (iii) the intonational reflexes of phonological phrasing. Thereby we aim to contribute to the investigation of the structure of Turkish intonation and provide a background for further discussion.

4.2.2.1 The PPh and Its Relation to Pitch Accent Distribution

Pitch and stress are sometimes used interchangeably in the literature. However, it has long been maintained that both features have distinct acoustic correlates and are phonologically distinct from each other (see Ladd 1996 for a detailed discussion). The physical correlate of pitch is F_0; whereas stress is related to duration, amplitude and spectral characteristics of speech (Pierrehumbert and Hirschberg 1990).

As mentioned in Chapter 2, Egyptian Arabic is a stress-accent language, where every PWd routinely carries a pitch accent regardless of the focus context (cf. Hellmuth 2006, 2007). However, this is not a very canonical case indeed. It is actually the case that not every stress-bearing-constituent is the locus of a pitch accent in the intonational representation (e.g. English), or not every language that employs pitch accents is a stress-accent language (e.g. Japanese). In this respect, not only the acoustic properties of stress and pitch are distinct, but the level where they coexist varies across languages as well.

Unlike Egyptian Arabic, which has a crowded pitch accent placement system, the prosodic constituent levels that govern pitch accent placement are the Minor Phrase in English (cf. Selkirk 2000; Kratzer and Selkirk 2007), Japanese (cf.

Pierrehumbert and Beckman 1988) and Korean (cf. Jun 1997)[71]; Phonological Phrase in French (cf. Post 2000) and European Portuguese (cf. Frota 2000).[72] Regarding this variation, Hellmuth (ibid.) proposes that the domain which governs pitch accent placement is parameterized across languages, which we will refer to as the Pitch Accent Placement Parameter (PAPP).

As for Turkish, the distribution of pitch accents (henceforth, PA) has not received a thorough investigation in the literature. Despite a large body of work characterizing Turkish as a stress-accent language, the exact domain of pitch accent placement remained unexplored because existing studies on prosody and intonation (cf. §2.7) base their findings on a limited set of structures, e.g. isolated syntactic phrases or (root-level) simplex clauses. Therefore, it is a question how metrical structure aligns with intonational structure in Turkish.

Regarding this issue, we propose that the prosodic level governing pitch accent distribution is the Phonological Phrase in Turkish.[73] With this statement we mean that pitch accents are anchored to syllables that bear phrase stress in focus-neutral contexts. Thus not every PWd, in particular, a word-stress-bearing syllable is the locus of a PA in the intonational structure. The distribution is also not governed by the IP level, whereby only one PA is observed in every single IP. Let us state our PA placement rule:

(2) Pitch Accent Placement Rule (PAPR)

The head of a Phonological Phrase requires an intonational pitch accent.

[71] See Footnote 4 for the definition of the MiP.
[72] Note that Egyptian Arabic possesses the Phonological Phrase in its prosodic system but this level does not function as the domain of pitch accent distribution (Hellmuth ibid.).
[73] In this respect the level germane to PAPP is the PPh.

As we will see in the following examples, this phonological rule captures the fact that pitch accents are anchored to only phrase-stress-bearing syllables in the intonational structure in focus-neutral contexts in Turkish.

In (3), there are three hypothetical PPhs each dominating different numbers of PWds. The one in (a) dominates two; the one in (b) dominates one, and the one in (c) three. In Turkish, as predicted by the phrase stress rule of Kabak and Vogel (ibid.), the leftmost prosodic words would project as the heads of the dominating PPhs, whereby their prominent syllables would be assigned phrase stress.[74] In line with our Pitch Accent Placement Rule, PAs would dock into phrase-stress-bearing syllables of the head PWds in the intonational representation.[75]

(3) A Model of Pitch Accent (PA) Placement in Turkish

a.
```
        PA
        |
(       X          )PPh
(       X)(        X)PWd
```

b.
```
        PA
        |
(       X      )PPh
(       X      )PWd
```

c.
```
     PA
     |
(    X                    )PPh
(    X   )(      X  )(     X)PWd
```

Our second proposal is that the end of the PPh is tonally-marked in Turkish. The way this marking is instantiated depends on the phonological contexts depicted below:

[74] Since the second PPh dominates one PWd, the phrase stress rule would apply vacuously.
[75] Here we stick to the literature and assume that Turkish possesses stress (cf. Lees 1961; among others). See Lees (1961) for a detailed discussion of the difference between stress and pitch in Turkish.

(4) a. When a syllable that bears phrase stress (+ a corresponding pitch accent) is non-PPh-final, a non-accentual pitch event controls the melody between the pitch accent and the end of the phrase, which we refer to as a phrase accent adopting the terminology of the AM model.

b. When a phrase-stress-bearing syllable is located at the end of a PPh, a corresponding pitch accent marks the end of the PPh, where a phrase accent is not instantiated.

Let us now move into sample F_0 curves from the data to see how these rules are at work in Turkish phonology. Before introducing the F_0 curves, we would like to indicate that we argue for a distinct tonal entity that marks the very end of each structure. However, prior to its discussion, we will not indicate it in our transcription of intonation for expository purposes.

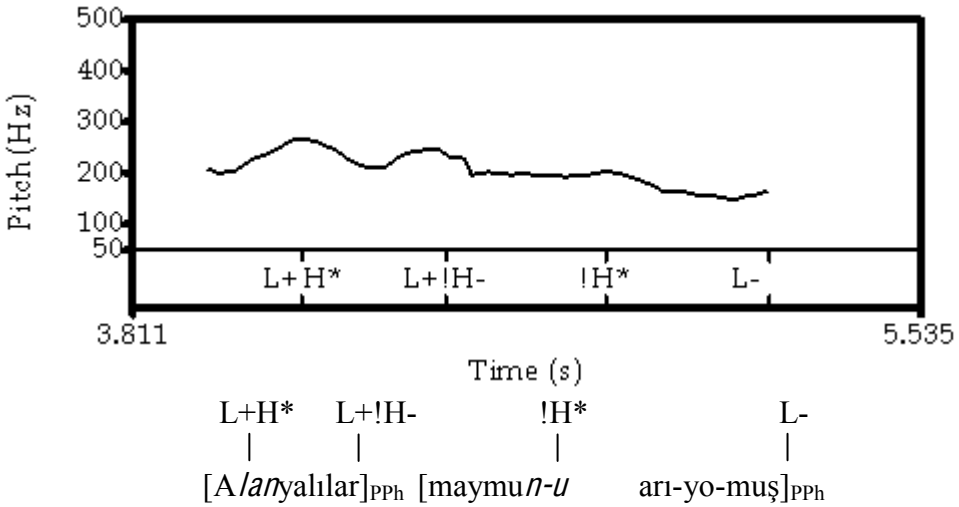
Consider (5) below. There are two phonological phrases in the structure. The first PPh dominates a single PWd, and the second one dominates two PWds. In the initial PPh, the sole PWd *Alanyalılar* is the head and it bears phrase stress.[76] The prominent syllable of this PWd is aligned with a pitch accent as a consequence of our Pitch Accent Placement Rule. The prominent syllable, namely *–lan-*, bears a bitonal L+H* pitch accent, in which a high peak is realized on the stressed syllable, which makes it a starred tone, and is immediately preceded by a low valley. After the peak, there is an immediate fall that stretches over the antepenultimate and penultimate syllables *–ya-* and *–lı*, which is followed by a rise that reaches a peak at the end of *–lar-* and is approximately 15 Hz lower than the preceding peak. We

[76] The syllables that bear phrase stress are indicated in italics.

analyze this fall-rise which is not associated with a metrically prominent position as a downstepped bitonal L+!H- phrase accent, which marks the end of the first PPh.[77] Note that the phrase accent cannot be a monotonal H-, as it would imply a monotonous interpolation between the L+H* and H-, which is not the case in this example and similar examples (see Pierrehumbert 1980 on this issue).

In the second PPh, the leftmost PWd *maymunu* bears phrase stress as predicted by the phrase stress assignment rule of Kabak and Vogel (ibid.). The prominent syllable *–nu* carries phrase stress and a corresponding high pitch accent !H*, which is downstepped with respect to the preceding peak. !H* is followed by a fall (stretching over the verbal complex). We analyze this fall as a low phrase accent, L-, that marks the end of the second PPh. Thus both PPhs exemplify the context in (4a): When a syllable that bears phrase stress (+ a corresponding pitch accent) is non-PPh-final, a non-accentual pitch movement controls the melody between the pitch accent and the end of the phrase.

(5)



[77] In the literature, it has been attested that phrase accents are not necessarily monotonal, but they can be bitonal as well (cf. Jun, Vicenik and Lofstedt 2007; among others).

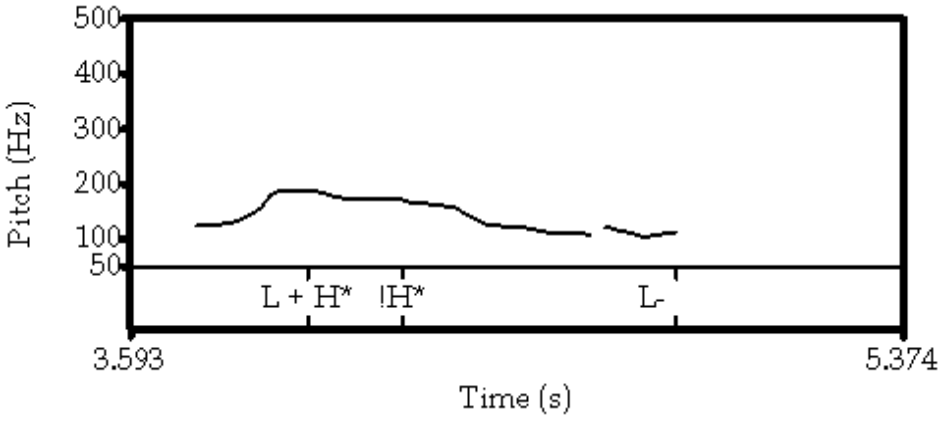
Alanyalı-Pl monkey-Acc look for-Prog-Evid[78]

'The people of Alanya have been looking for the monkey.' *Speaker T*

In both PPhs, the syllables that are the loci of phrase stress and pitch accents (i.e. –*lan*- and -*nu*) are non-PPh-final, and there is a pitch movement that follows them. These pitch events end at the positions that are also the loci of disjunctures. [79] These non-accentual pitch events which contrast with pitch accents in terms of their association with the text are, as we have discussed, phrase accents.

Consider (6) below. There are two phonological phrases again. The initial PPh dominates a single PWd *Ayla* which is the head of the PPh and the locus of phrase stress and a pitch accent.

(6)



L+H* !H* L-

[Ay*la*]$_{PPh}$ [Al*man*ya-yı özle-miş]$_{PPh}$

Ayla Germany-Acc miss-Evid

[78] The /r/ sound at the end of the suffix –(I)yor alternates with ø in spoken form.

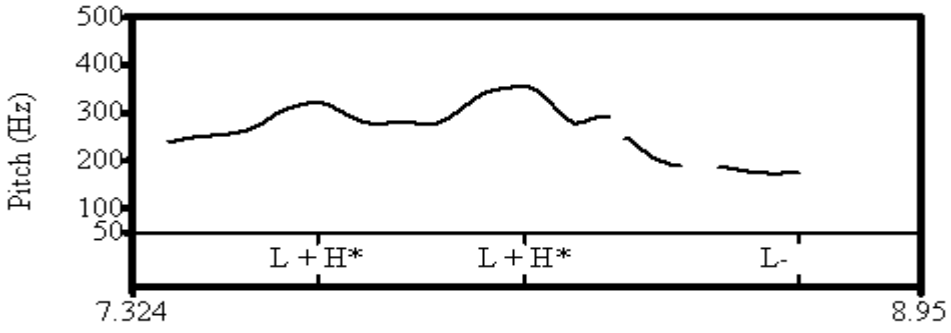
[79] As pointed out in Chapter 2, a break/disjuncture is not equal to a linguistic pause. A pause is merely a high/strong degree of disjuncture which is clearly manifested as a break in the F_0 curve. Mahjani (2003) states that the degree of disjunctures is often judged from auditory impressions and there are no absolute acoustic criteria hitherto specified. Despite varying approaches to the study of intonation and its role in grammar what has remained unchanged is the fact that transcribers must at least partially rely on their auditory impressions in the transcription of intonation.

‘Ayla missed Germany.’ *Speaker K*

The next PWd *Almanya* is the head of the next PPh displaying the same properties. However, the prominent syllable of *Ayla* is PPh-final and there is no phonological space for the linking of a phrase accent. Thus, this PPh is closed by the pitch accent L+H* exemplifying the context in (4b): If a phrase-stress-bearing syllable is located at the end of a PPh, a corresponding pitch accent marks the end of the PPh, where a phrase accent is not instantiated.

In our examples so far, the nuclear accents are in the form of downstepped high tones.[80] However, the nuclear pitch accent in declaratives is not necessarily a downstepped high tone or a monotonal high tone in focus-neutral contexts. This is obvious in the nuclear accent in (7); the high peak is preceded by a valley lower than the peak. This bitonal nuclear accent is as frequent as a monotonal one:

(7)



L+H* L+H* L-
| | |
[Ay*la*]$_{PPh}$ [ayna-*yı* getir-cek]$_{PPh}$

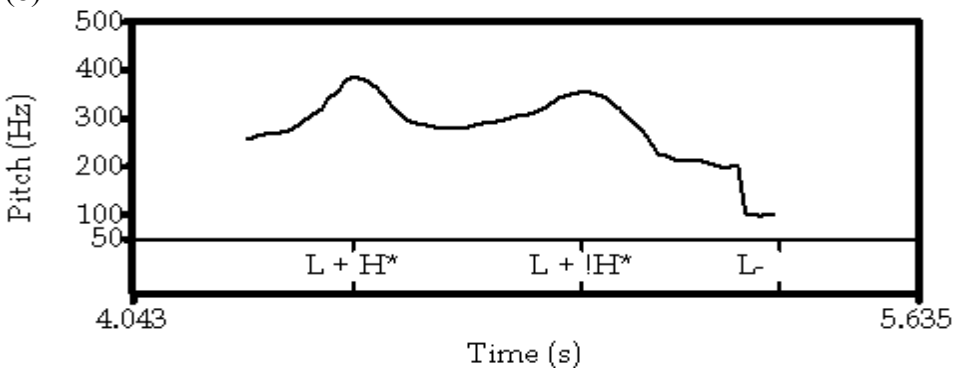
Ayla mirror-Acc bring-Future

‘Ayla will bring the mirror.’ *Speaker Ş*

[80] The nuclear accent is the final pitch accent in the intonational representation (Pierrehumbert 1980).

The downstepped variant of L+H*, i.e. L+!H* is also encountered in the data. In (8), the peak of the nuclear accent is downstepped with respect to the preceding L+H*:

(8)



L+H* L+!H* L-

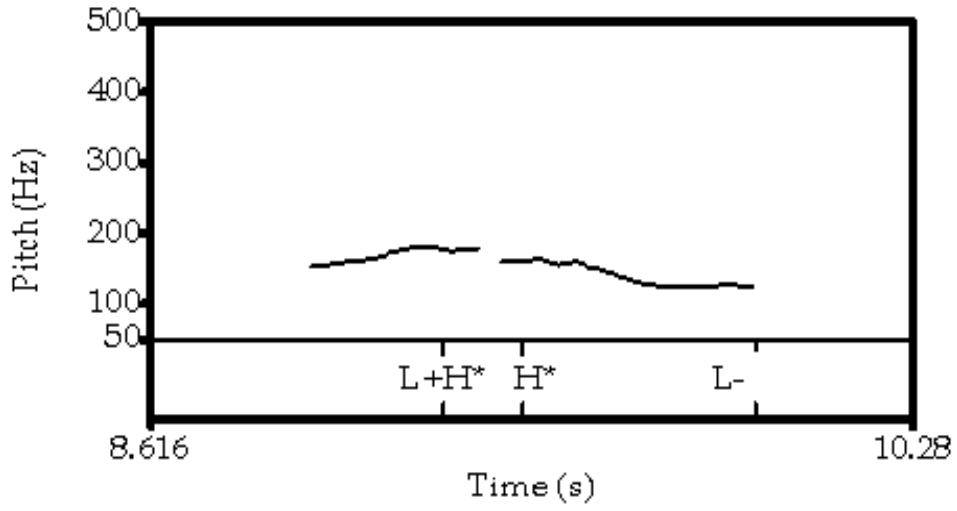
[Ay*la*]$_{PPh}$ [anı-lar-ı*n*-ı yaz-ıyo]$_{PPh}$

Ayla memoir-Pl-3Sg.Poss-Acc write-Prog

'Ayla is writing her memoirs.' *Speaker G*

In (9) below, the nuclear accent is in the form of a high tone this time, but not a downstepped one in contrast with the nuclear accents in (5) and (6).

(9)



L+H* H* L-

[Ab*la-m*]$_{PPh}$ [*az* uyu-yo]$_{PPh}$

sister-1Sg.Poss little sleep-Habit

'My sister does not sleep much.' *Speaker E*

The suspension of downstep (e.g. (7), (9)), or the alternation of bitonal and monotonal pitch accents (e.g. (5)-(9)) in the nuclear accent position does not change the information structural values of the sentences. The sentences equally denote wide focus. The attested alternations do not have a semantic import. Similar observations regarding the pitch pattern of nuclear accents have been made in the literature (cf. Barjam (2004) on Porteño Spanish; Sadat-Tehrani (2007) on Persian; among others). Barjam (ibid.) states that in Porteño Spanish, it is possible to mark the rheme with either 'H*' or 'L+H*' in the same sentence with the same segmental content with no apparent meaning difference between the two.

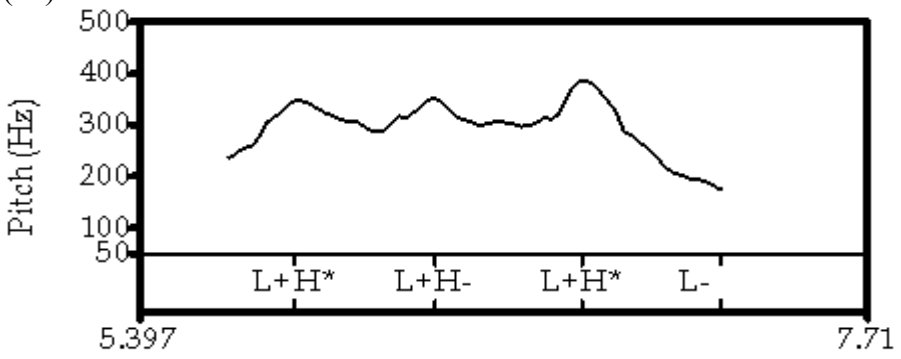
At this point, rather than acknowledging a free variation case among these monotonal and bitonal pitch accents in the nuclear positions, could we assume that all nuclear accents are phonologically L+H* but are realized as H* (or !H*) due to the lack of phonological space between the beginning of the PPh and the syllable that bears phrase stress (+ a corresponding pitch accent)?

Our data show that we cannot make such an assumption. In other words, the existence of a nuclear monotonal high pitch accent cannot be attributed to the fact that there is not enough number of syllables before the stressed syllable for a leading low tone to be realized. This can be seen in (10), where the same sentence in (5) has been produced by another participant. In (5), the prominent syllable of the second and final PPh, i.e. *–nu*, bears a nuclear accent !H*; whereas in (10), the same syllable

bears L+H*. This means that although there is sufficient segmental material for a leading L to be realized, a !H* is realized in (5). In (10), on the other hand, the high peak on the stressed syllable is preceded by a low valley giving rise to a bitonal nuclear accent. Most important of all, there is no meaning difference between the two sentences.

In the light of these observations, we propose that H*, !H*, L+H* and L+!H* are in free variation in the nuclear position in Turkish. Accordingly, their alternation does not create a semantic effect.[81]

(10)



L+H* L+H- L+H* L-
| | | |
[A*lan*yalı-lar]$_{PPh}$ [maymu*n-u* arı-yo-muş]$_{PPh}$

Alanyalı-Pl monkey-Acc look for-Prog-Evid

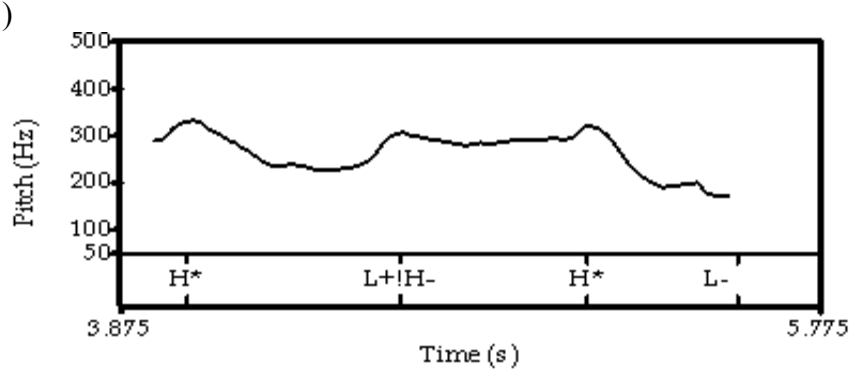
'The people of Alanya have been looking for the monkey.' *Speaker Ş*

In all examples we have hitherto considered, the initial PPh dominates a single PWd. In (11), on the other hand, it dominates two PWds. The leftmost PWd *On* 'ten'

[81] A. Sumru Özsoy (p.c.) raises the questions of whether the alternation has pragmatic import and whether the different choices are speaker-specific. We might conjecture that these four pitch patterns have distinct affective functions. However, this issue needs further inquiry. As for the second question, the attested alternation is not speaker-specific, though certain speakers tend to produce particular nuclear accents predominantly. For instance, Speaker Ş tends to produce L+*H more than other patterns.

carries phrase stress and a pitch accent. It is followed by a long fall that stretches over the three initial syllables of *Yalovalı* followed by a rise over the penultimate and final syllables (i.e. over *–va.lı*) reaching a high target at the end of the PPh.

(11)



H* L+!H- H* L-

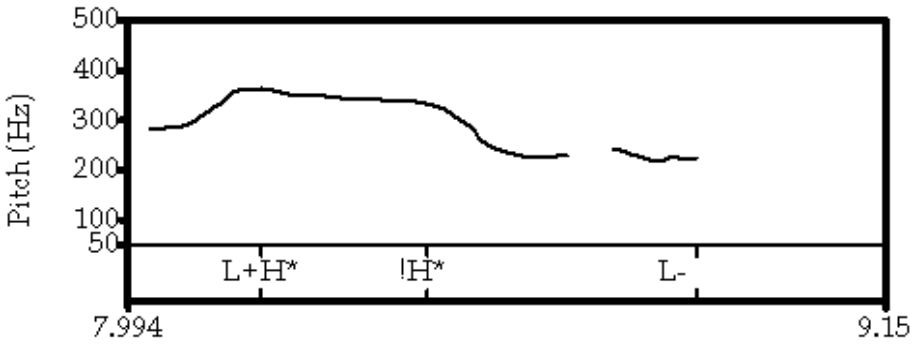
[*On* Yalovalı]$_{PPh}$ [anı-lar-ı*n*-ı yaz-mış]$_{PPh}$

ten Yalovalı memoir- Pl-3Sg.Poss-Acc write-Evid

'Ten people of Yalova have written their memoirs.' *Speaker S*

The second and the final PPh in (12) illustrates the maximal size of a PPh. As far as our data are concerned, a PPh can dominate at most three prosodic words.

(12)



L+H* !H* L-

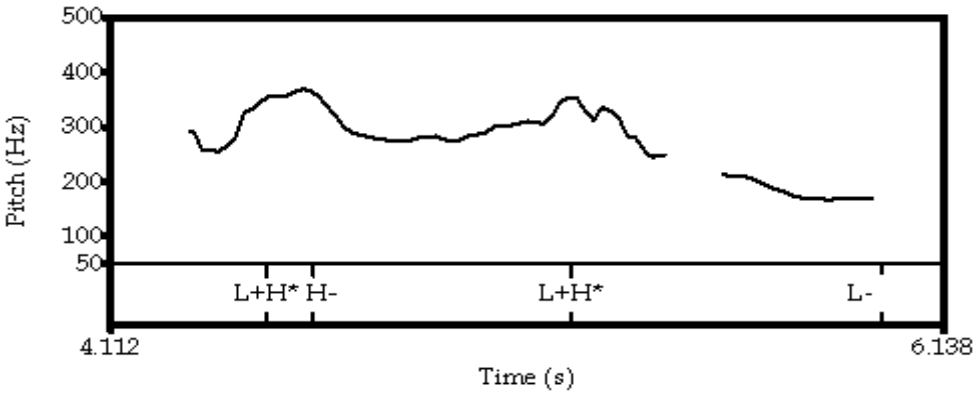
[An*ne-m*]$_{PPh}$ [i*yi* yemek yap-ar]$_{PPh}$

mother-1Sg.Poss good meal make-Aor

'My mother cooks well.' *Speaker G*

Following up on the examples with bitonal L+H- and L+!H- and the monotonal L- phrase accents above, we illustrate a high phrase accent in (13). The head of the initial PPh is the PWd *lama*. It is the locus of both phrase stress and a bitonal L+H*, where the high tone is slightly sustained, and then it is followed by a further rise that reaches a peak on the adjacent final syllable *–ma*. We analyse this further rise as a high phrase accent H- that ends the PPh.

(13)



L+H* H-[82] L+H* L-

[Bi *la*ma]$_{PPh}$ [yavru-lar-ı*n*-*ı* besli-yo]$_{PPh}$[83]

a llama baby-Pl-3Sg.Poss-Acc feed-Prog

'A llama is feeding her babies.' *Speaker Ş*

Note that throughout this section we postponed the issue of why the final falls in all examples above are steeper than, for instance, the falls in the bitonal phrase accent

[82] Here the absence of a leading L in the phrase accent could be due to the lack of phonological space for a low tone to be realized.

[83] In Turkish the final /r/ sound of both the unaccented *bir* 'a/an' that denotes indefiniteness and the accented numeral *bir* 'one' alternates with ø in spoken Turkish.

L+H-. We also postponed the discussion of examples where the whole intonational structure ends with an abrupt rise that follows L-. In the following section, we raise these questions and explore them within our discussion of the prosodic constituency above the PPh.

4.2.2.2 Prosodic Structure Above the PPh: Evidence for the IP Domain

In this section, we propose that Turkish prosody governs a separate and single level of phrasing above the PPh, namely the Intonational Phrase, with evidence from:

i. Boundary tone placement
ii. Linguistic pause distribution
iii. Head-prominence
iv. Phrase-final lengthening of vowels

Thus, our analysis departs from the canonical Prosodic Hierarchy, which includes two levels above the PPh, namely the Intonational Phrase and the Utterance:

(14) The Prosodic Hierarchy (adapted from Selkirk 1986)

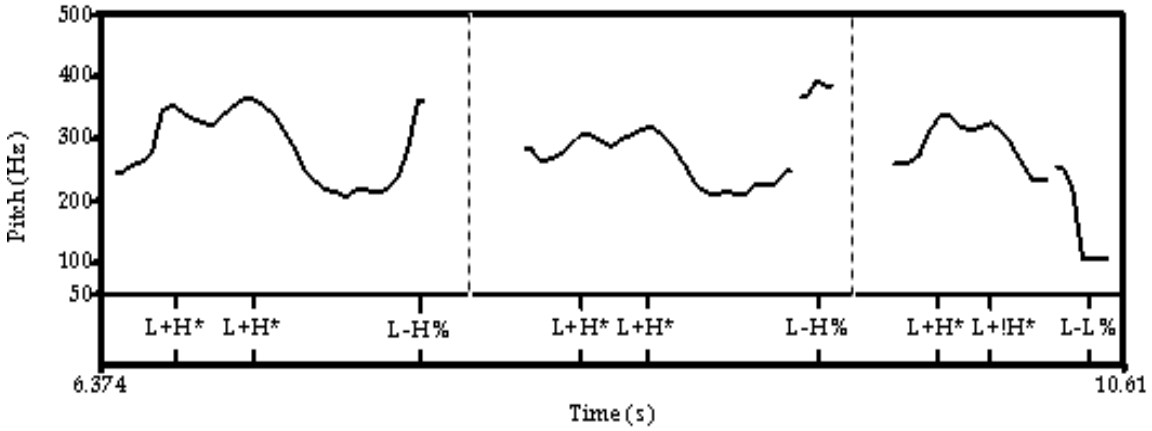
Utterance (Utt)
|
Intonational Phrase (IP)
|
Phonological Phrase (PPh)
|
Prosodic Word (PWd)
|
Foot (Ft)
|
Syllable (σ)

Since our data do not point to a higher level above the IP which would be expected to be marked by a discrete grammatical process, we do not posit the Utterance level in Turkish prosodic organization just for theory-internal reasons. Let us now delve into our examples and arguments for the IP level.

4.2.2.2.1 Boundary Tone Placement and Linguistic Pauses

Consider (15) below. It is a phonologically (and syntactically) larger structure than the ones we scrutinized in the previous sections, which are all single root-level declarative CPs. What we have in (15) is a three-way root-level clausal coordination encompassing simplex CPs. At the end of the final conjunct we observe a sustained fall that reaches a low target. In the non-final conjuncts, the nuclear accents are followed by falls in the F_0. However, rather than a sustained fall, what we observe is a fall followed by a rapid rise.

(15)



L+H* L+H* L- H% L+H* L+H* L- H%

[[Ay*la*]$_{PPh}$ [muz-la*r-ı* soy-uyo]$_{PPh}$]$_{IP}$ [[Nu*man*]$_{PPh}$ [elma-la*r-ı* yıkı-yo]$_{PPh}$]$_{IP}$

Ayla banana-Pl-Acc peel-Prog Numan apple-Pl-Acc wash-Prog

L+H* L+!H* L- L%

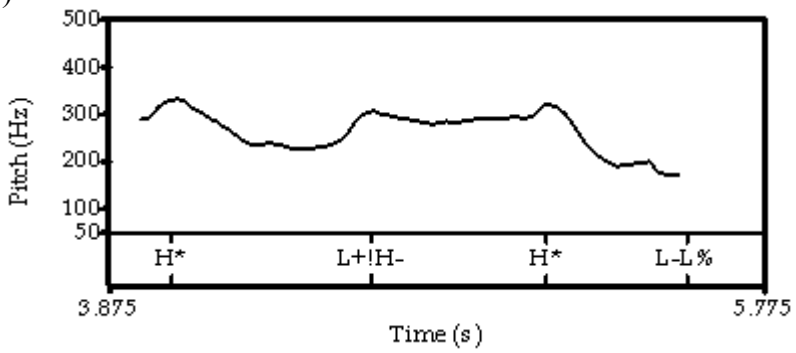
[[Mi*ray*]$_{PPh}$ [ayva-la*r-ı* dilimli-yo]$_{PPh}$]$_{IP}$

Miray quince-Pl-Acc slice-Prog *Speaker K*

'Ayla is peeling the bananas, Numan is washing the apples, and Miray is slicing the quinces.'

The rapid rise in (15) is stronger than the high tone of a L+H- phrase accent, which we exemplify in (16) below. And most important of all, this fall-rise observed at the end of the non-final conjuncts is accompanied by a linguistic pause unlike the fall-rise sequences that we have covered before. Note that what we consider as a linguistic pause is "the deliberate insertion of a longer or shorter period of silence" (Taglicht 1998, p. 183). For the sake of exposition, we henceforth place vertical dotted lines over string internal linguistic pauses in order to differentiate them from the perturbations in the F_0 contour caused by obstruents.

(16)



H* L+!H- H* L- L%

[[*On* Yalovalı]$_{PPh}$ [anı-lar-ı*n-ı* yaz-mış]$_{PPh}$]$_{IP}$

ten Yalovalı memoir- Pl-3Sg.Poss-Acc write-Evid

'Ten people of Yalova have written their memoirs.' *Speaker S*

Based on the nature of (i) the sustained fall that follows the nuclear accent as in (16) or in the final conjunct of (15) [84], and (ii) the rapid rise that is observed, for instance, at the end of non-final conjuncts in (15) we maintain that what we are dealing with cannot be simple phrase accents. We analyze the former as a sequence of a low phrase accent followed by another discrete tonal entity, a low boundary tone (L%), and the latter post-nuclear fall-rise as a sequence of a low phrase accent followed by a high boundary tone (H%). These boundary tones mark a higher level of phrasing above the PPh: the Intonational Phrase (IP). Thus, boundary tone placement is the first type of evidence we propose for the IP level.

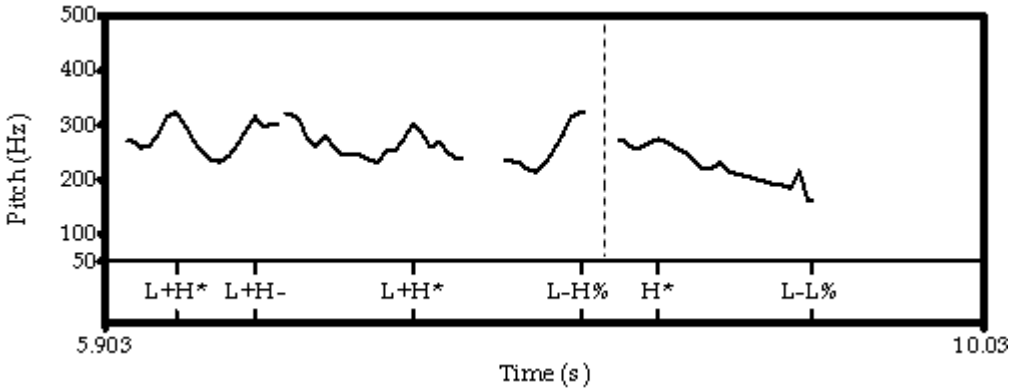
The second piece of evidence that signals a distinct level of phrasing above the PPh is linguistic pause distribution as can be seen in (15). In Turkish, the boundary tone, which marks the end of the IP, is frequently accompanied by a linguistic pause. Conversely, at PPh-final positions, pause distribution is almost never observed in the data.[85] In other words, a mere PPh is not followed by a linguistic pause; however, the IP can be followed by a linguistic pause in Turkish. Consequently, we consider the possibility of linguistic pause insertion to IP boundaries to be an indication of the fact that linguistic pauses are cues to a discrete and higher level of phrasing.

We exemplify boundary tone placement and pause distribution as cues to intonational phrasing in another structure below. In (17), there are two IPs. The first one is detached from the following IP with a linguistic pause and a high boundary tone (H%) which is, as we have discussed, categorically distinct from a L+H- phrase

[84] Note that all examples that we exemplified in the previous section display that post-nuclear sustained fall.
[85] This fact does not exclude the sense of disjuncture at PPh-final positions. Yet, it is qualitatively distinct from the linguistic pause (cf. Chapter 2).

accent at the end of the initial PPh. This phrase accent is not followed by pause as the relevant PPh is not followed by an IP boundary. [86, 87]

(17)



L+H* L+H- L+H* L- H% H*

[[A*lan*yalı-lar]$_{PPh}$ [ki genelde *muz* yetiştir-ir-ler]$_{PPh}$]$_{IP}$ [[*man*go-yu

Alanyalı-Pl Comp generally banana grow-Aor-3Pl mango-Acc

L- L%

deni-yo-lar-mış]$_{PPh}$]$_{IP}$

try-Prog-3Pl-Evid *Speaker EA*

'The people of Alanya, who generally grow bananas, are trying (growing) mangos now.'

[86] The perturbation in the F_0 observed after L+H- is caused by the initial sound of *ki*, which is an obstruent, more specifically a voiceless, palatal, oral, stop [c].

[87] In (17), the complementizer *ki* and the adverb *genelde* 'generally' are unaccented. Considering that *ki* is a function word and that function words are unaccented categories (cf. Selkirk 1996), the phonological status of *ki* is an expected consequence. However we do not have an answer to why *genelde* 'generally' is unaccented. Both the complementizer and the adverb are procliticized to the second PPh, as they are observed after the phrase accent L+H-, hence, out of the domain of the first PPh. If they were inside the domain of the first PPh, the phrase accent would stretch over the region including them.

4.2.2.2.2 Head Prominence

Aside from boundary tone placement and linguistic pause distribution, another contrast between the PPh and the IP is the location of head-prominence. By location of head-prominence we mean that in focus-neutral contexts, phrase stress is assigned to the leftmost PWd within a PPh, while IP stress is assigned to the rightmost PPh within an IP.

In (18a), the head of the PPh is the PWd *Ablan*, which bears phrase stress. Being the only PPh dominated by the IP, IP stress is assigned to this sole PPh and located in the same position with the head of the PPh, namely on *Ablan*. In (18b), the IP dominates two PPhs. This time, the head of each PPh is assigned phrase stress, i.e. *on* and *anılarını*, however, the rightmost PPh has projected up to the next level and is the locus of IP stress, i.e. the strongest degree of metrical prominence.

(18) a. (x)$_{IP}$
(x)$_{PPh}$
(x)(x)$_{PWd}$

[Ablan uyuyor]

your sister sleeping

'Your sister is sleeping.

b. (x)$_{IP}$
(x) (x)$_{PPh}$
(x)(x) (x) (x)$_{PWd}$

[On Yalovalı anılarını yazmış]

ten people of Yalova their memoirs written

'Ten people of Yalova have written their memoirs.'

We have hitherto classified a distinct stress type which contrasts with phrase stress in terms of directionality and strength. We have maintained that this stress level is governed by the IP domain.

Considering that the examples in (18) are sentences, can't we simply call it sentential stress, which is canonically taken to be the most prominent stress level in the literature? Our answer is we cannot. In this respect the notion of IP stress is beyond a simple terminological choice.

In what follows, §4.2.2.2.2.1 lays out a variety of structures problematic for the understanding of SS as sentence- or clause-level: (i) structures with multiple sentential stresses but without multiple sentence configurations, and (ii) structures with multiple clauses but without multiple sentential stresses.

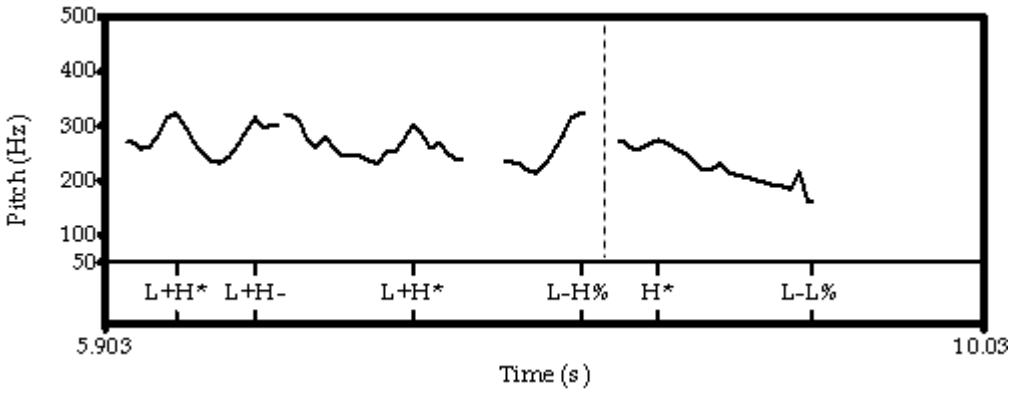
§4.2.2.2.2.2 revisits the phonology of the postverbal domain in Turkish. Contra Özge (2003) and Göksel and Özsoy (2000) we show that the division of a root clause into preverbal and postverbal areas does not suffice to account for the distribution of intonation contours or focus in Turkish.

4.2.2.2.2.1 IP Stress as a Reflex of Prosodic Structure

In Turkish linguistics, "sentential stress", i.e. the perceptually most salient stress, which cues wide focus interpretation, is defined as "sentence-level stress" or "clause-level stress" without reference to prosodic constituency (e.g. Özsoy and Göksel 2000; Üntak-Tarhan 2006; among others). Although this approach seems to account for the stress pattern of a limited set of constructions, it leaves many aspects of "sentential stress" unexplained.

The problem with considering the phenomenon as sentence-level is revealed in structures where the prosodic structure includes multiple sentential stresses without multiple sentence configurations. This is attested in examples such as (19a) for instance. In (19a), one sentential stress is observed on *muz*, which is a constituent of the *ki*-relative; whereas, another sentential stress is on *mangoyu*, which is a constituent of the matrix clause.

(19) a.



L+H* L+H- L+H* L- H% H*

[[Al*an*yalı-lar]$_{PPh}$ [ki genelde *muz* yetiştir-ir-ler]$_{PPh}$]$_{IP}$ [[*man*go-yu

Alanyalı-Pl Comp generally banana grow-Aor-3Pl mango-Acc

L- L%

deni-yo-lar-mış]$_{PPh}$]$_{IP}$

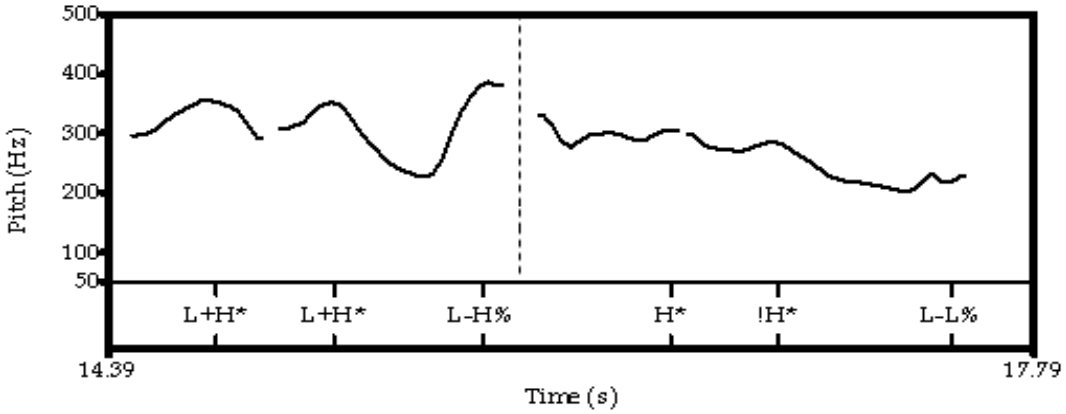
try-Prog-3Pl-Evid *Speaker EA*

'The people of Alanya, who generally grow bananas, are trying (growing) mangos now.'

The same observation applies to (19b) below, where the sentential stresses are on *evi* and *pahalıya*. However, it is disputable whether the *ki*-relative is a sentence in both examples; it obviously is not. Furthermore, one could hardly argue that [Alanyalılar

ki genelde muz yetiştirirler] is a sentence in (19a). In short, the label sentential stress and its classification as sentence-level stress do not capture the distribution of this strongest degree of metrical prominence in phonology; because the phenomenon is not sentential at all.

(19) b.



L+H* L+H* L- H%

[[Ana*ne-m*]$_{PPh}$ [e*vi* yenile-di]$_{PPh}$]$_{IP}$

grandmother-Acc-1Sg.Poss house- Acc renew-Past

H* !H* L- L%

[[ki bu o*n-a*]$_{PPh}$ [pahalı-*ya* mal ol-du]$_{PPh}$]$_{IP}$

Comp this she-Dat expensive-Dat cost Copula-Past

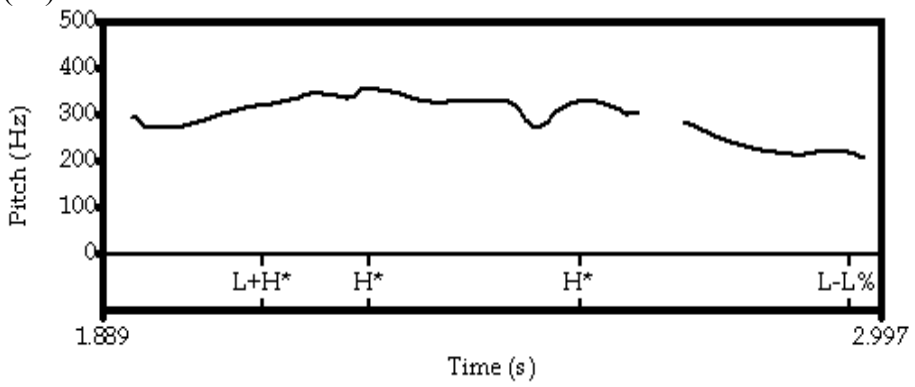
'My grandmother renewed the house, which cost her a lot.' *Speaker A*

Considering it as a clause-level phenomenon, as Üntak-Tarhan (2006) assumes /suggests, does not suffice to explain its distribution either. Such an assumption has the immediate implication of multiple sentential stresses in clausal embedding, i.e distinct sentential stresses in a complement clause and its superordinate clause, which is not the case at least for Turkish.

Consider (20) and (21). They both involve declarative CPs with clausal embedding. In (20), the embedded CP is a finite complement clause with a null C^0 (cf. Kornfilt 2007; Şener 2008). It is the native pattern of complementation displaying left-branching, whereby the embedded clause precedes the matrix predicate in the linear representation. In (21) the finite complement clauses are headed by *ki*, the product of Turkish-Persian language contact (cf. Chapter 3), whereby they follow the matrix predicates.[88, 89]

In both (20) and (21) there exist multiple clauses but we do not observe multiple sentential stresses. In (20) the strongest degree of metrical prominence is on *uyudun*, namely the verbal complex of the complement clause. If we consider (21), this time the prominence is on the oblique object of the complement CP, namely on *Almanyaya* in (21a), and on the verbal complex of the complement CP, namely on *yağmicak* in (21b).

(20)



L+H* H* H* L- L%

[[Le*man*]$_{PPh}$ [*sen*]$_{PPh}$ [uyu-*du-n* san-mış]$_{PPh}$]$_{IP}$

[$_{CP}$[$_{TP}$ Leman [$_{CP}$[$_{TP}$ sen uyu-du-n]C^0] san-mış]C^0]

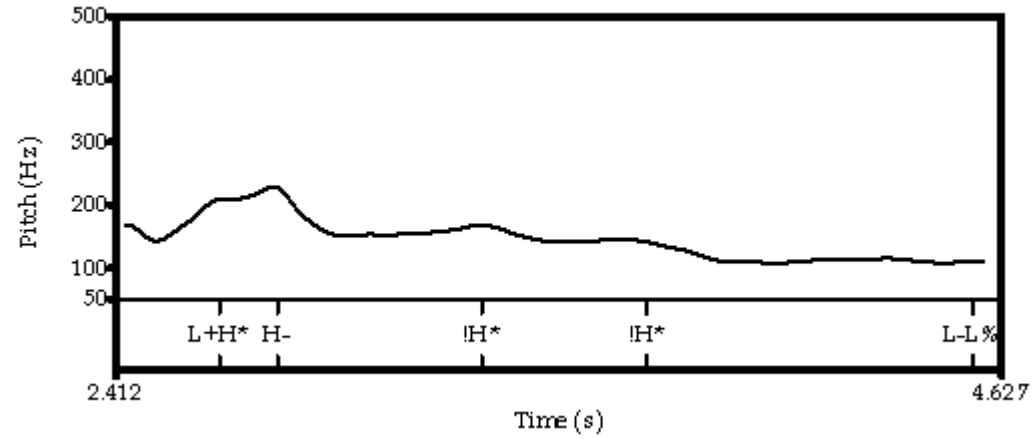
[88] We refer the reader to Chapter 3 for detailed information on the syntactic structure of these finite complement clause types.

[89] As has long been discussed in Turkish linguistics, the negative suffix attracts "sentential stress" to the verbal complex (cf. Göksel and Özsoy 2000; among many others).

Leman you fall sleep-Past-2Sg think-Evid

'Leman thought (that) you fell asleep.' *Speaker Ş*

(21) a.



L+H* H- !H* !H* L- L%

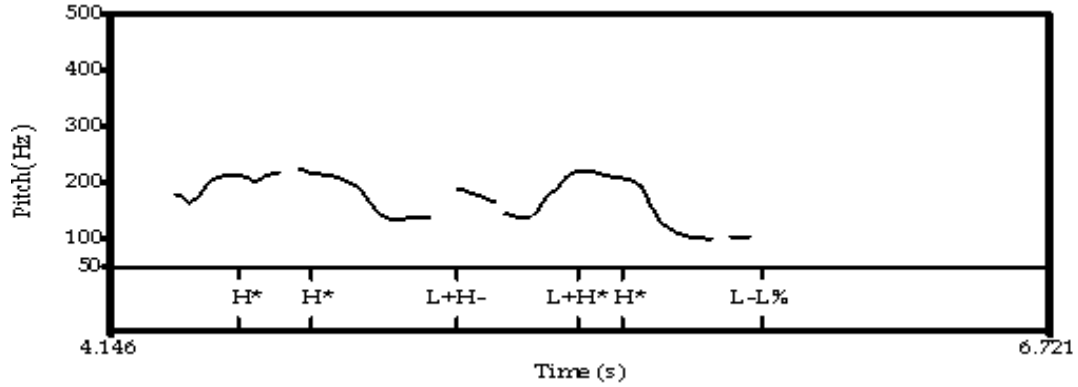
[[Duy-*du*-k ki]$_{PPh}$ [Numan-*lar*]$_{PPh}$ [Al*man*ya-ya yerleş-iyo-muş]$_{PPh}$]$_{IP}$

[$_{CP}$[$_{TP}$ Duy-du-k $_{CP}$[ki $_{TP}$[Numan-lar Almanya-ya yerleş-iyor-muş]]]C^0]

hear-Past-1Pl Comp Numan-Pl Germany-Dat settle-Prog-Evid

'We heard that Numan's are settling in Germany.' *Speaker K*

b.



H* H* L+H- L+H* H* L- L%

[[Bu *yıl*]$_{PPh}$ [sa*n*-ıyor-um ki]$_{PPh}$ [yağ*mur*]$_{PPh}$ [*yağ*-mi-cak]$_{PPh}$]$_{IP}$

[$_{CP}$[$_{TP}$ Bu yıl san-ıyor-um $_{CP}$[ki $_{TP}$[yağmur yağ-ma-yacak]]]C^0]

this year think-Impf-1Sg Comp rain rain-Neg-Future

'I think it won't rain this year.' *Speaker K*

In short, the understanding of the phenomenon as clause-level or sentence-level is oversimplistic and it does not capture the distribution of what has been dubbed as "sentential stress". With a closer look, it becomes clear that multiple sentential stresses follow from multiple IP configurations, a totally prosodic factor. The crux of the fact is that in (19) the elements that carry the relevant prominence are located in different IPs. As for (20) and (21), we observe a single sentential stress because each structure is a single IP. This being the case, we propose to replace the term sentential stress with IP stress and rather than considering it as being assigned to a unique syntactic domain, we argue that IP stress assignment operates on prosodic structure: It is always the rightmost PPh that projects to the IP level, an observation which does not have any exception in focus-neutral contexts in Turkish.

We illustrate the metrical structures of (19), (20) and (21) below, where the IP stress rule is at work: [90]

(22) IP Stress

a.

(x) (x)$_{IP}$
(x)(x) (x)$_{PPh}$
[A*lan*yalılar ki genelde *muz* yetiştirirler]$_{IP}$ [*man*goyu deniyolarmış]$_{IP}$

[90] We would like to note that some recent studies in the literature aim at explaining a set of phonological phenomena in a Direct Reference Model by employing the notion of phase as pursued in recent Minimalism (cf. Chomsky 2000, et seq.) (e.g. Kahnemuyipour 2004; Pak 2008; among others). We are reserved with this endeavour since the status of phases in Minimalism is not as clear as it is assumed to be (see Epstein and Seely 2002, 2006 and Boeckx and Grohmann 2007 for the problematic aspects of the notion of phase).

‘The people of Alanya, who generally grow bananas, are trying (growing) mangos now.’

b.

(x) (x)IP
(x)(x) (x)(x)PPh
[A*na*nem e*vi* yeniledi]IP [ki bu o*na* pahalı*ya* mal oldu]IP

‘My grandmother renewed the house, which cost her a lot.’

c.

(x)IP
(x)(x)(x)PPh
[Le*man* *sen* uyu*dun* san-mış]IP

‘Leman thought (that) you fell asleep.’

d.

(x)IP
(x)(x)(x)PPh
[Duy*duk* ki Numan*lar* Al*man*yaya yerleşiyomuş]

‘We heard that Numan’s are settling in Germany.’

e.

(x)IP
(x)(x)(x)(x)PPh
[Bu *yıl* sa*nı*yorum ki yağ*mur ya*ğmicak]IP

‘I think it won’t rain this year.’

4.2.2.2.2.2 The Postverbal Region Revisited

Now let us focus on (21) again. The intonational structure of this sentence and other sentences with an identical syntactic structure in the data are counterexamples to the claims in the literature that the postverbal region is associated with what has been called the flat contour or pitch flooring in Turkish (cf. Özge 2003; Aydıner 2006, as

cited in Göksel 2008). Özge (ibid.) argues that a Turkish speaker always falls to the bottom of his/her normal pitch range after articulating the main functor of the sentence, e.g. the matrix predicate, and keeps a flat line on this lowered pitch until the end of the sentence. Özge terms this pitch flooring. According to Özge's analysis, all postverbal constituents are expected to undergo pitch flooring, which is actually the case in his examples.

However, Özge's proposal faces an overgeneralization problem. In (21a/b), the main functor, here the matrix predicate, is followed by the complement clause. Nevertheless, the elements of the complement clause do not exhibit pitch flooring. The relevant PPh heads in the postverbal region are the loci of their own pitch accents. At this point, we will not discuss what governs the distribution of pitch flooring in Turkish intonation. Yet we would like to point out the fact that the phenomenon does not seem to be directly related to whether the elements that display pitch flooring follow the main functor or not. In this sense, the issue is not solely a matter of linearity.

Besides pitch flooring facts, the discussion is closely related to nature of focus as well. The structures in (21) clearly show that focus is not invariably restricted to the pre(matrix)verbal field. The loci of IP stress, where focus projects, reside in the post-main functor position, here the postverbal region (cf. (22d) and (22e)).

In the literature, there exist two dominant views pertaining to the distribution of focus in Turkish. Ahmet Cevat (1931), Erkü (1983) and Erguvanlı (1984) associate the immediately preverbal position with focus position, whereas Göksel and Özsoy (2000) argue that focus is not confined to the immediately preverbal position in Turkish. They maintain that the placement of focus is not associated with

a designated position but with a particular field, namely the preverbal field.[91] They also distinguish between sentential stress and focal stress and claim that the immediately preverbal position is not the focus position in Turkish, but the position for "sentential stress". A constituent with focal stress can also occur in this position since the immediately preverbal position falls within the territory of the focus field (ibid.). [92]

The two camps, on the other hand, reach a consensus regarding the postverbal field: postverbal elements cannot be focused (Erguvanlı 1984; Göksel and Özsoy 2000; among others).

Despite the valid observations regarding the interaction between focus and preverbality/postverbality, such a linear division that is anchored at the matrix verbal complex is too simplistic and it does not provide a comprehensive account of focus in Turkish. The observations are attested only in a particular configuration: verb-final structures, e.g. SOV. However, Turkish, being in close contact with languages that employ a head-initial syntax such as Persian, has developed certain right-branching forms through time (e.g. the structures in (21)), and it employs both right-branching and left-branching (see Chapter 3 for detailed information). [93]

In informationally neutral contexts, we have shown that IP, which we claim to be a syntax-derived constituent (cf. Chapter 5), governs the placement of a particular level of stress, i.e. IP stress, that marks wide focus. IP stress rule operates

[91] This line of argumentation is also pursued in Özge (2003) and Üntak-Tarhan (2006), which follow Göksel and Özsoy (2000).

[92] ..... {XP'.....V} .....
Focus field

[93] From a synchronic point of view, we therefore do not consider the language as a strictly head-final one. This contrasts with the description of the language as being strictly SOV in a great number of studies in theoretical syntax (cf. Kural 1992, 1993, 1997; Kelepir 1996; among many others) and introductory linguistics texts. Haig (1998) states that right-branching structures are quite abundant in spoken Turkish.

within the domain of the Intonational Phrase: the rightmost PPh projects to the IP level (22). This rule is simpler and has a wider empirical coverage than the "sentential stress" assignment rule in Göksel and Özsoy (2000) that resorts to immediate preverbality in SOV contexts.

According to our rule, any rightmost PPh is eligible for stress assignment under focus-neutrality in both right-branching (SVO) (21) and left-branching (SOV) (20) structures. Despite the use of linearity in both Göksel and Özsoy's (ibid.) account and our own account, there is a fundamental difference between the two approaches: the former refers to surface linearity in relation to the position of the matrix predicate, whereas the latter refers to linearity in relation to syntax-determined prosodic constituency. In our proposal, what is at the heart of stress assignment is the output of mapping algorithms that generate fixed levels of prosodic constituents out of syntactic structure. In this sense, the syntax-grounded domains reflect the history of derivations and nature of phrase structure composition.

Note that in the environment of postverbal constituents in left-branching SOV-type sentences, which are taken to be base generated preverbally (Kural 1992), only narrow focus interpretation is possible.[94] In inherently SVO structures (21), on the other hand, narrow focus reading is not obligatory.[95] Considering the

[94] In such configurations, any non-postverbal constituent can be the locus of narrow focus. Below, we list the three possibilities. Each constituent that carries narrow focus is indicated in capitals:

a. ALI Ayşe'ye t_i ver-di kitab-ı$_i$.
Ali Ayşe-Dat give-Past book-Acc
'ALI gave the book to Ayşe.'

b. Ali AYŞE'YE t_i ver-di kitab-ı$_i$.
Ali Ayşe-Dat give-Past book-Acc
'Ali gave the book to AYŞE.'

c. Ali Ayşe'ye t_i VER-DI kitab-ı$_i$.
Ali Ayşe-Dat give-Past book-Acc
'Ali GAVE the book to Ayşe.'

[95] Note that the sentences in (21) are wide focus sentences.

accumulating number of movement approaches to postverbal constituents in inherently verb-final clauses in Turkish (e.g. Kural 1992, 1997; Kelepir 1996; Kornfilt 2005; among others), the information structural (IS) difference between derived and inherent SVO structures is a natural consequence if syntax is taken to reflect IS relations. Deviations from a basic word order might then be considered to facilitate different IS structures. Needless to say, the syntactic and prosodic organizations of informationally non-neutral sentences require a detailed inquiry to shed some light on the issue. Specifically the interaction between phrase structure composition and information structural primitives, which we conjecture to be reflected in prosodic constituency, remains to be investigated. However, we will not take this endeavour in this work since it would take us too far afield.

In the next section, we provide another piece of evidence for the IP domain which is based on our preliminary study of segment durations in the vicinity of prosodic boundaries.

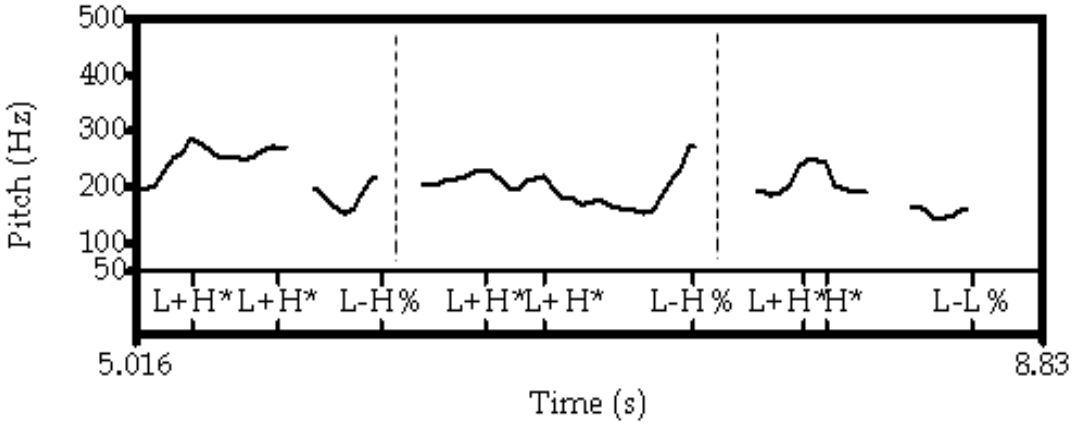
4.2.2.2.3 Phrase Final Lengthening of Vowels

As stated in §4.2.2.2.2.1, the end of the IP is frequently followed by a linguistic pause and at the end of a mere PPh, we do not find a linguistic pause. There is also a remarkable degree of phrase final lengthening of vowels in IP-final positions, which contrasts with the end of the PPh. Even in the absence of a linguistic pause, this phrase final lengthening accompanies the boundary tone.

Consider (23) below. They are the same sentences produced by different participants. In (23a) we observe a linguistic pause at the end of each IP, whereas in (23b), we see an exceptional case where the non-final IPs do not exhibit pause

distribution, which is closely related to speech rate. However, their ends are still marked with boundary tones and there is elongation of IP-final vowels by the speaker, i.e. the phrase final lengthening of IP-final vowels. Note that phrase final lengthening and linguistic pause are not in overlapping distribution. Regardless of whether an IP is followed by a pause or not, there is always phrase final lengthening; IP final vowels are longer than PPh-final vowels.

(23) a.



L+H* L+H* L- H% L+H* L+H* L- H%

[[Ay*la*]$_{PPh}$ [yer-le*r-i* sil-iyo]$_{PPh}$]$_{IP}$ [[Nu*man*]$_{PPh}$ [oda-*yı* düzenli-yo]$_{PPh}$]$_{IP}$

Ayla floor-Pl-Acc wipe-Prog Numan room-Acc tidy up-Prog

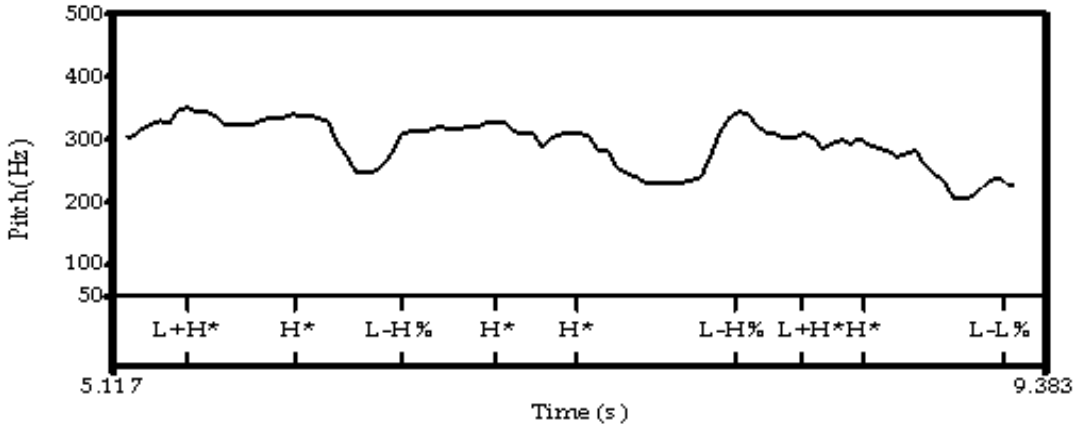
L+H* H* L- L%

[[Ya*lın*]$_{PPh}$ [e*v-i* süpür-üyo]$_{PPh}$]$_{IP}$

Yalın house sweep-Prog

'Ayla is wiping the floor, Numan is tidying up the room, and Yalın is sweeping the house.' *Speaker T*

b.



L+H* H* L- H% H* H* L- H%

[[Ay*la*]$_{PPh}$ [yer-le*r-i* sil-iyo]$_{PPh}$]$_{IP}$ [[Nu*man*]$_{PPh}$ [oda-*yı* düzenli-yo]$_{PPh}$]$_{IP}$

Ayla floor-Pl-Acc wipe-Prog Numan room-Acc tidy up-Prog

L+H* H* L- L%

[[Ya*lın*]$_{PPh}$ [e*v-i* süpür-üyo]$_{PPh}$]$_{IP}$

Yalın house sweep-Prog

'Ayla is wiping the floor, Numan is tidying up the room, and Yalın is sweeping the house.' *Speaker A*

In order to capture the difference between vowel durations at IP- and PPh-final positions, we made a small scale preliminary study of phrase final lengthening in Turkish. Vowel durations in the final syllables of 96 IPs and 96 PPhs in multiple IP structures were measured using Praat.

A paired-samples *t*-test was conducted to gauge whether IP-final vowel durations and PPh-final durations of the participants differed statistically significantly from each other.[96] A statistically significant difference was found between the two categories. On average, the vowel duration at IP-final positions

[96] The assumptions of normality and homogeneity were tested beforehand, $p > .05$.

(M = .1714, SE = .006), is significantly higher than the vowel duration at PPh-final positions (M = .0471, SE = .002), $t(6)$ =, p < .001, r = .98.[97]

Table I: Descriptive statistics for IP-final and PPh-final vowel durations

	M	*SD*
IP-final	.1714	.016
PPh-final	.0471	.007

Table II: Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	IP-final	,1714	7	,01676	,00634
	PPh-final	,0471	7	,00756	,00286

Table III: Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
Pair 1	IP-final – PPh-final	,12429	,01397	,00528	,11136	,13721	23,534	6	,000

Cohen's (1992) d was implemented to gauge the effect size for each test conducted (as cited in Field and Hole 2003). The eta squared statistic (.98) indicated a large

[97] The values are indicated in terms of seconds.

effect size with a substantial difference between IP-final vowel duration and PPh-final vowel duration.

With this small scale study, we have aimed to capture the elongation of IP-final vowels. A large scale study conducted with more tokens would provide a more comprehensive understanding of phrase-final lengthening of vowels in Turkish.[98]

4.2.2.3 A Summary of the Differences Between the PPh and the IP

In our investigation of the prosodic structure above the PPh, we have argued that there is a separate and single prosodic level above the PPh in Turkish, i.e. the Intonational Phrase, with evidence from tonal marking, linguistic pause distribution, stress assignment/head-prominence and vowel lengthening in IP-final positions. In (24), we illustrate the properties of the PPh and the IP, which basically cue the two discrete prosodic entities:

(24)

	The Phonological Phrase	*The Intonational Phrase*
Tonal Marking	Phrase accent (T-) / Pitch Accent (T*)	Boundary Tone (T%)
Pause Distribution	No	Yes
Head-prominence	Leftmost	Rightmost
Vowel Duration	*Mean:* .0471	*Mean:* .1714

Note that the current study has argued for a single level of phrasing above the PPh. In this respect, the hierarchy we propose diverges from the Prosodic Hierarchy of the

[98] See Şaylı et al. (2002) for a study of the duration properties of Turkish phonemes.

Prosodic Structure Theory, which posits two levels above the PPh: the IP and the Utterance. The data do not suggest any particular evidence for another prosodic level above the IP. Consequently we do not employ a higher domain such as the Utterance in our model.

In the next chapter, we investigate the syntax of intonational phrasing in Turkish with special reference to the clausal complexity parameter.

CHAPTER 5

THE INTONATIONAL PHRASE IN TURKISH AND ITS IMPLICATIONS FOR THE SYNTAX-PROSODY MAPPING

5.1 Preliminaries

In this chapter we explore the mapping of the IP domain from the syntactic structure. The main concerns of the investigation are whether we can unify the IP-inducing categories into a natural class, and which mechanism(s) are involved in the mapping process.

5.2 Syntactic Clausehood and Intonational Phrasing

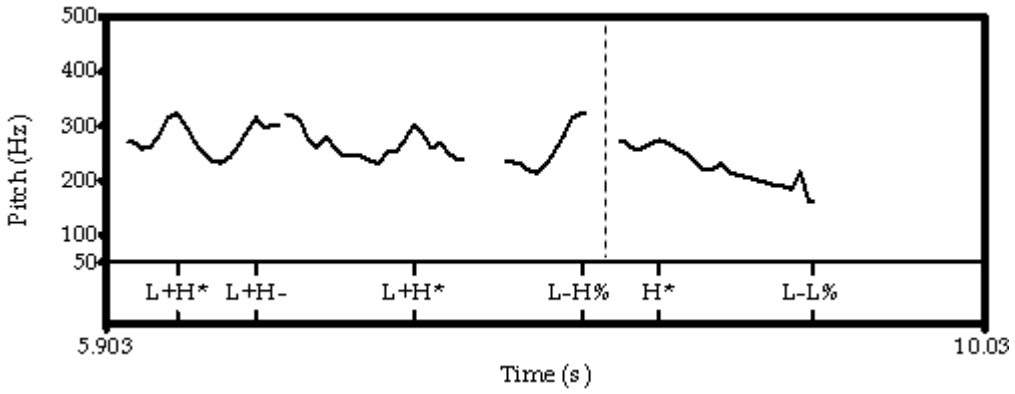
We have so far exemplified two types of syntactic structures that prompt intonational phrasing in focus-neutral contexts in Turkish phonology. These are root clauses and *ki*-relatives, both of which are CPs (e.g. (19)). As shown in the previous chapter, a root clause typically corresponds to an IP (e.g. (16) in Chapter 4). Accordingly, in root-level clausal coordination, each conjunct is typically parsed as an IP displaying the processes inherent to the IP domain (e.g. (22), (23) in Chapter 4).

At this point, a valid question arises: Do all CPs trigger intonational phrasing? The data indicate that there is not a one-to-one correspondence between CPs and IPs all the time. In (20) and (21) in Chapter 4, we do not observe that the complement CPs are detached from the matrix clauses with IP boundaries. Both CPs are prosodically integrated into their subordinating clauses. In this respect, although

root clauses and *ki*-relatives, which are CPs, typically induce IP-formation in Turkish, the prosody of finite complement clauses and finite complement *ki*-clauses reveals that it is not always the case that a syntactic clause invariably induces intonational phrasing. Our findings also indicate that every CP does not start an "intonational unit" contra Scheer's (2008, 2009) assumption. As far as our data are concerned, syntactic clausehood does not have a direct reflex in prosodic organization; it does not result in prosodic partitioning at a unique level.

Our findings have another unexpected implication; *ki*-headed clauses diverge in terms of their prosodic properties: the *ki*-relative instantiates IP-formation in (1-2 below); whereas the finite complement *ki*-clause, i.e. the *ki*-FCC, does not:

(1)



L+H* L+H- L+H* L- H% H*

[[A*lan*yalı-lar]$_{PPh}$ [ki genelde *muz* yetiştir-ir-ler]$_{PPh}$]$_{IP}$ [[*man*go-yu

Alanyalı-Pl Comp generally banana grow-Aor-3Pl mango-Acc

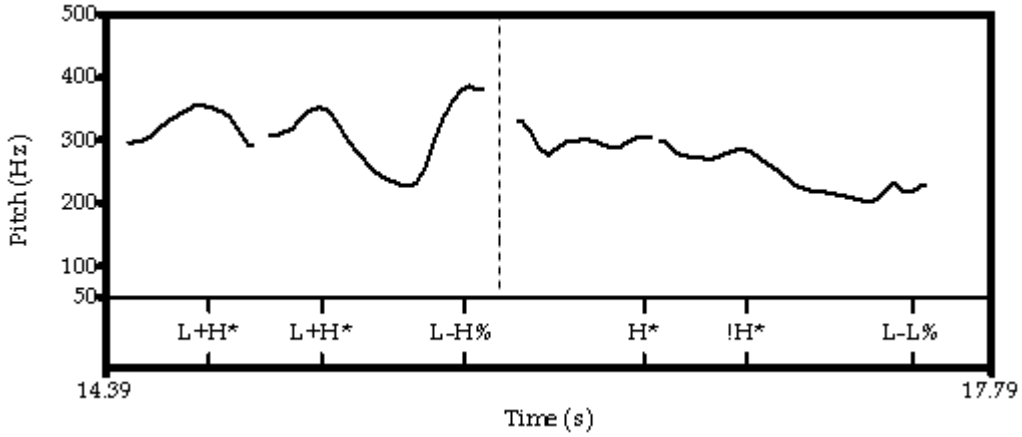
L- L%

deni-yo-lar-mış]$_{PPh}$]$_{IP}$

try-Prog-3Pl-Evid *Speaker EA*

'The people of Alanya, who generally grow bananas, are trying (growing) mangos now.'

(2)



L+H* L+H* L- H%

[[Ana*ne-m*]$_{PPh}$ [e*vi* yenile-di]$_{PPh}$]$_{IP}$

grandmother-Acc-1Sg.Poss house- Acc renew-Past

H* !H* L- L%

[[ki bu o*n-a*]$_{PPh}$ [pahalı-*ya* mal ol-du]$_{PPh}$]$_{IP}$

Comp this she-Dat expensive-Dat cost Copula-Past

'My grandmother renewed the house, which cost her a lot.' *Speaker A*

Then the question is what renders *ki*-relatives akin to root clauses as regards their prosody? Could we attribute this property to their non-restrictive nature? As mentioned in Chapter 3, a general observation in the literature is that unlike restrictive relatives, non-restrictive/appositive relatives are surrounded with IP edges/ comma intonation in phonology (cf. Ross 1967; Emonds 1979; Bing 1979; McCawley 1982; Nespor and Vogel 1986; Demirdache 1991; Truckenbrodt 1995; among others). Nespor and Vogel propose that along with parenthetical expressions, tag questions and vocatives, non-restrictive relatives will obligatorily form IPs in all languages that make use of them.

In the following section, however, we will argue that non-restrictiveness does not play any role in IP-formation directly or indirectly, and that the restrictive/non-restrictive taxonomy does not correctly divide RCs into two classes regarding their phonology, and particular semantic/pragmatic properties.

5.3 Restrictives and Non-restrictives: A Restrictive Classification

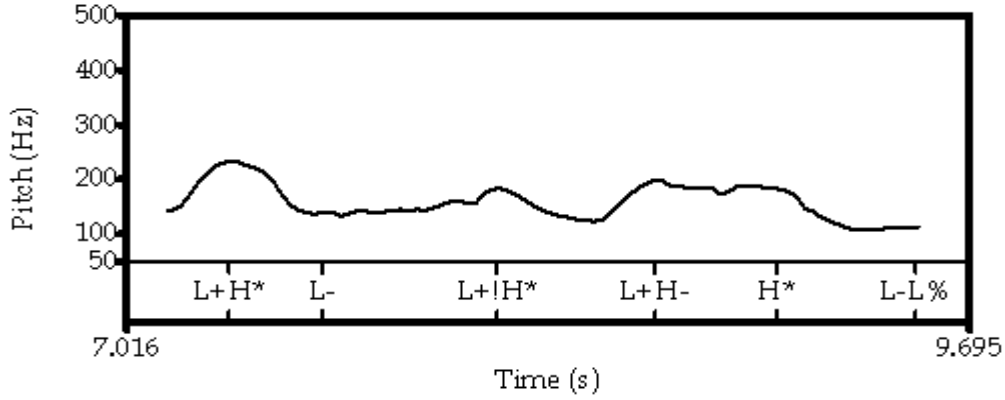
5.3.1 The Prosody of Prerelatives and Postrelatives in Turkish

As stated in §5.2, post-head *ki*-relatives induce IP-formation akin to root clauses (cf. (1) and (2)). In order to investigate whether this property can be correlated with their non-restrictiveness, we contrast the prosody of *ki*-relatives with the prosody of non-restrictive and restrictive prerelatives. Our findings indicate a significant fact: restrictive and non-restrictive prerelatives are prosodically identical structures.

Before discussing the prosody of non-restrictive prerelatives, let us briefly show that restrictive prerelativization does not induce intonational phrasing in Turkish. Consider the F_0 curves of the restrictive prerelatives in (3) and (4) below. In each example the prerelative is not segregated from the matrix clause with IP edges. Rather it is prosodically integrated into the matrix clause, whereby the whole structure corresponds to a single IP. [99]

[99] Considering that the works cited in Chapter 3 analyze prerelatives as involving full CP structures, this fact further supports our discussion in §5.2 that the IP does not have a direct affinity to syntactic clausehood.

(3) Restrictive Prerelative with –DIK



L+H* L- L+!H* L+H- H*

[[A*lan*yalı-lar-ın]$_{PPh}$ [yolla-dığ-*ı* elma-lar]$_{PPh}$ [mide-*m-i*

Alanyalı-Pl-Gen send-*DIK*-3Pl.Poss apple-Pl stomach-1Sg.Poss-Acc

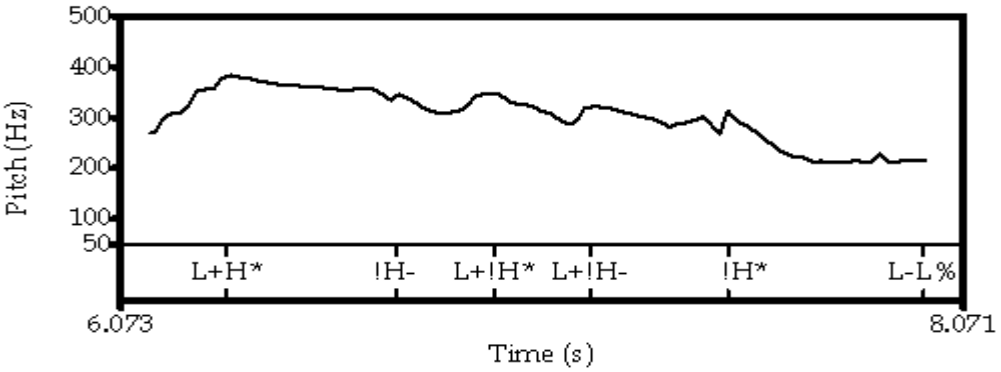
L- L%

boz- du]$_{PPh}$]$_{IP}$

upset-Past

'The apples that the people of Alanya sent upset my stomach.' *Speaker K*

(4) Restrictive Prerelative with –(y)An



L+H* !H- L+!H* L+!H- !H*

[[Ev-i*n-i* ara-yan bi]$_{PPh}$ [A*na*murlu]$_{PPh}$ [yol-u*n-u*

house-3Sg.Poss-Acc look for-*An* a Anamurlu way-3Sg.Poss-Acc

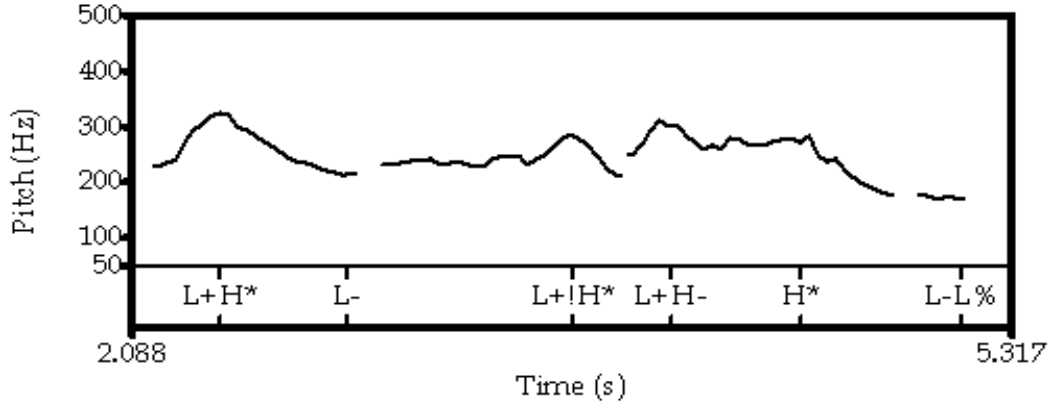
L- L%
| |
kaybet-miş]$_{PPh}$]$_{IP}$[100]

lose-Evid

'A person from Anamur who was looking for his house lost his way.' *Speaker S*

Now consider the F_0 curves from the data below. The non-restrictive prerelatives are phonologically integrated into their matrix clauses, whereby all constituents are assembled inside a single IP in each structure.[101] This is the point of similarity in the phonology of restrictive and non-restrictive prerelativization.

(5) Non-restrictive Prerelative –DIK



L+H* L- L+H* L+H- H* L- L%
| | | | | | |
[[A*lan*yalı-lar-ın ağırladığı]$_{PPh}$ [*Ba*yülgen]$_{PPh}$[okul-la*r-ı* gez-di]$_{PPh}$]$_{IP}$

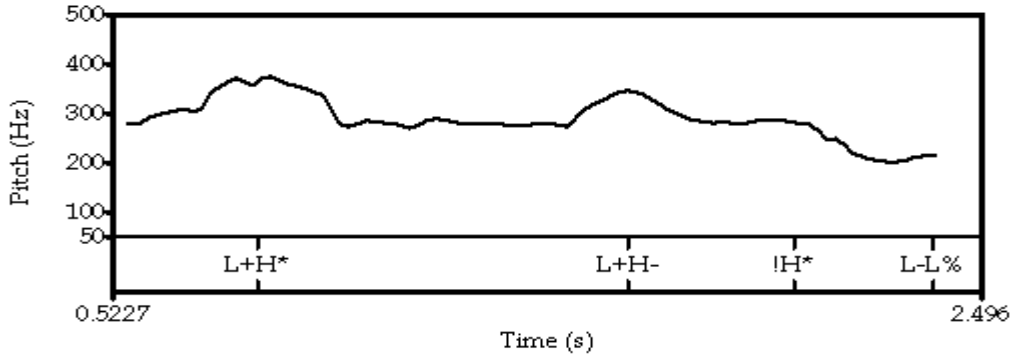
Alanyalı-Pl.Gen put up-*DIK*-3Sg.Poss Bayülgen school-Pl-Acc visit-Past

'Bayülgen, who was put up by the people of Alanya, visited the schools.' *Speaker Ş*

[100] This example is a unique one in terms of the position of the weak numeral *bir* 'a/an' that denotes indefiniteness. In our examples the weak numeral is canonically procliticized to its NP. In such instances, it is not the locus of any tonal event and it falls outside of the domain of the previous PPh, if there is any. However, here it is encliticized to the previous PPh. There is not only a lack of disjuncture between the initial PPh and the enclitic but also a clear disjuncture between the enclitic and the following PPh which encompasses the NP and the verbal complex. The weak numeral is the locus of a H- phrase accent. The adjacent L+H* and H- tones are the source of the monotonous interpolation between them. Since this form of cliticization is rare, we assume that it is the result of a post-derivational restructuring process which alters PPh boundaries.

[101] The syntactic position of the relativized NP/DP does not change this fact.

(6) Non-restrictive Prerelative –(y)An



L+H* L+H- !H* L- L%

[[Ya*l*o*v*a-yı gez-en Erdoğan]$_{PPh}$ [ev-le*r-i* dolaş-tı]$_{PPh}$]$_{IP}$

Yalova-Acc travel around-*An* Erdoğan house-Pl-Acc visit-Past

'Erdoğan, who travelled around Yalova, visited the houses.' *Speaker G*

The case of prosodically integrated non-restrictive relatives poses a significant problem for any hypothesis that attributes the notion of non-restrictiveness an active role in IP-formation directly or indirectly. We have shown that non-restrictiveness does not entail prosodic disintegration at the IP-level. In this respect, the restrictive/non-restrictive classification for relative clauses is immaterial to prosodic organization, in particular, intonational phrasing. As the data from Turkish suggest, it wrongly divides RCs concerning their phonological structure.

On the other hand, it is still a puzzle why *ki*-relatives induce IP-formation similar to root clauses. It is evident that the answer does not lie in their non-restrictive nature. Then, what sort of mechanism renders them distinct from prerelatives and complementation structures in Turkish? In §5.6, we propose an account of this puzzle.

In the next section, we contrast our findings with previous proposals in the literature relating to the phonology of *ki*-clauses.

5.3.2 Previous Accounts: Problems and Clarifications

In this section we outline the studies that focus on the phonology of *ki*-clauses. We will see that the assumptions of these studies are convergent upon partial and/or impressionistic data and do not provide a proper picture of the subject matter.

Kerslake (2007) states that an important characteristic that distinguishes the relative clause function of *ki* from its function of introducing a complement or an adverbial clause is that while the former is preceded by a pause in speech and comma in writing, the latter is followed by a pause. She notes that the phonological distinction between different uses of *ki* appears to have been first recognized by "Bainbridge (1987: 48–54). It is mentioned in Haig 1998: 123–125, and systematized in Schroeder (2002: 74–75)" (p. 257). However, only one of claims put forth by Kerslake (2007) consistently holds in the phonology of *ki*-clauses in Turkish.

First of all, Schroeder's (2002) and (1997) data are based on only one type of *ki*-clause where it always stands in apposition to a clausal structure, such as example (2) from our data in §5.2. Our findings indicate that such *ki*-relatives are segregated from the preceding clause with IP-boundaries, which supports Schroeder's (1997, 2002) view that the *ki*-clause is preceded by a pause. However, contra what Kerslake (2007) states, our findings indicate that neither the *ki*-headed finite clause is followed by a pause (e.g. (21) in §4.2.2.2.2.1), nor does the *ki*-relative which stands in apposition to a DP is always preceded by a pause in Turkish (e.g. (1) in §5.2).[102]

[102] We think Kerslake's (2007) remarks on the position of pauses might be based on the commas that are optionally placed after *ki*-FCCs, and the commas that surround *ki*-relatives in writing, since she comments on pauses and commas within the same sentence in her work (cf. Kerslake 2007, p. 244).

In contrast with Kerslake's (2007) assumptions, what distinguishes the phonology of *ki*-relativization from *ki*-complementation is that *ki*-relatives are typically followed by a pause, whereas finite complement *ki*-clauses (*ki*-FCCs) are not. More specifically, *ki*-relatives display detachment at the IP-level displaying all the properties inherent to the IP domain (i.e. boundary tone placement, preboundary lengthening, pause distribution and IP stress), whereas *ki*-FCCs are prosodically integrated into their superordinate clause.

There is more to say about the phonology of *ki*-relativization. As we previously discussed in detail, although the right edges of *ki*-relatives match with IP-edges, those that modify DPs are parsed into the same prosodic domain (IP) with their anchors without a preceding pause, and those that stand in apposition to CPs are always parsed separately.[103]

To sum up, our data indicate that complement *ki*-clauses and *ki*-relatives are distinguished in terms of the suprasegmental properties of their ends, but not their onsets unlike what Kerslake (2007) assumes. Furthermore, the two types of *ki*-relatives differ in terms of the phonological properties of their onsets, a point not explored in the literature before.

In the following section, we dwell upon further differences between prerelatives and *ki*-relatives, which will provide a background for our novel analysis of non-restrictive *ki*-constructions and our discussion of how the IP is mapped from the syntactic structure.

However such orthographic cues are not always reliable, as we have shown. Aside from our study, we refer the reader to Selkirk (2005), where commas do not always correspond to pauses.

[103] See §5.6.2 for our account of this asymmetry.

5.3.3 *ki*-relatives and Prerelatives

ki-relatives stand in apposition to the modified category. Their anchors can be proper names (7a), definite and indefinite descriptions (7b, c) and root clauses (7d):

(7) a. Leyla, ki (kendisi) biyoloji-yi sev-er, okul-u bırak-mış.
Leyla Comp (resumptive) biology-Acc love-Aor school-Acc leave-Evid
'Leyla, who loves biology, left school.'

b. Anne-m, ki her sene doğumgünü-m-ü hatırla-r,
mother-1Sg Comp every year birthday-1Sg.Poss-Acc remember-Aor
bu sefer unut-muş.
this time forget-Evid
'My mother, who remembers my birthday every year, forgot (it) this time.'

c. Bir adam/ adam-ın bir-i, ki oldukça telaşlı görün-üyor-du,
a man man-Gen a-3Sg.Poss Comp very hectic seem-Prog-Past
gel-di ve sen-i sor-du.
come-Past and you-Acc ask for-Past
'A man, who seemed very hectic, came and asked for you.'

d. Ev-de yemek yi-yor-um, ki bu harcama-lar-ım-ı
home-Loc meal eat-Prog-1Sg Comp this expense-Pl-1Sg.Poss-Acc
bayağı azalt-ıyor.
quite reduce-Prog
'(I) eat at home, which quite reduces my expenses.'

Like prerelatives, they can stand in apposition to not only subjects, as in (7a)-(7c), but also objects:

(8) Ahmet-i, ki kendisin-den uzun süredir haber al-a-ma-mış-tı-k,
Ahmet-Acc C^0 Resumptive-Abl long time news get-Mod-Neg-Perf-Past-1Pl
polis tutukla-mış.
police arrest-Evid
'Police arrested Ahmet, from whom we have not been able to hear for a long time.'

(9) (Biz) kuzen-ler-i, ki en son bayram-da gör-müş-tü-k, uzun süredir
we cousin-Pl-Acc C^0 most last bayram-Loc see-Perf-Past-1Pl long time
ara-ma-dı-k.
call-Neg-Past-1Pl
'(We) have not called our cousins, who we had last seen in the bayram, for a long time.'

ki-relatives and prerelatives differ in their eligibility to modify CPs. Prerelatives cannot stand in apposition to a CP. A hypothetical structure such as (10) is completely out in Turkish:

(10) * Harcama-lar-ım-ı bayağı azalt-an ev-de yemek yi-yor-um.
expense-Pl-1Sg.Poss-Acc quite reduce-*(y)An* home-Loc meal eat-Prog-1Sg
Intended meaning: '(I) eat at home, which quite reduces my expenses.'

ki-relatives and prerelatives differ in the way they affect the denotation of their anchors. Prerelatives restrict the denotation of indefinites (11a, 11b), whereas *ki*-relatives do not. The non-restrictive use of prerelatives is limited to definite noun phrases and proper names (12a, 12b):

(11) a. Oldukça telaşlı görün-en bir adam gel-di ve sen-i sor-du.
very hectic seem-*An* a man come-Past and you-Acc ask for-Past
'A man who seemed very hectic came and asked for you.'

b. Dün sokak-ta gör-düğ-üm bir çocuk ban-a
yesterday street-Loc see-*DIK*-1Sg.Poss a kid I-Dat
kuzen-im-i hatırlat-tı.
cousin-1Sg.Poss-Acc remind-Past
'A child that I saw yesterday reminded me of my cousin.'

(12) a. Her sene doğumgünü-m-ü hatırla-yan anne-m
every year birthday-1Sg.Poss-Acc remember-*yAn* mother-1Sg.Poss
bu sefer unut-tu.
this time forget-Past
'My mother, who remembers my birthday every year, forgot it this time.'

b. Geçen kış izle-diğ-imiz Yalın bu sene yeni bir konser
last winter watch-*DIK*-1Pl.Poss Yalın this year new a concert
ver-ecek.
give-Future

'Yalın, who we watched last winter, is going to give a new concert this year.'

Prerelatives are actually potentially restrictive in Turkish. Without a context in which it is not clear that *Yalın* (12b) refers to the famous popstar or *Bayülgen* (5) refers to the popular showman in Turkey, they could easily be interpreted with restrictive meanings. As for *ki*-relatives, their interpretation is non-restrictive.[104] For instance, in (13) below if Speaker A replies to the final utterance of Speaker B by using a *ki*-relative as in (16) or (17), his response would be completely infelicitous, because the context requires a restrictive interpretation of the head noun. In this respect, only (14) and (15) are felicitous responses to Speaker B's question in (13).

(13) Speaker A: Bu akşam misafir-imiz var.
this evening guest-1Pl.Poss *var*
'We have a guest this evening.'

Speaker B: Kim?
who
'Who?'

Speaker A: Ali.

Speaker B: O sen-in lise-den arkadaş-ın, değil mi?
he you-Gen high school-Abl friend-2Sg.Poss not Q
'He is a friend of yours from high school, isn't he?

[104] Göksel and Kerslake (2005) state that with a very limited usage, *ki*-relatives can be restrictive: "In such constructions which have a rather literary flavor, the head is usually the subject of the RC and the verb of the clause is negative and has optative marking" (p. 458):

(i) Bir ahçı, [ki baklava yap-may-ı bil-me-sin,] ben on-a ahçı de-me-m.
a cook C baklava make-VN-Acc know-Neg-3Sg.Opt I s/he-Dat cook call-Neg-1Sg
'A cook [who can't make baklava]! I don't call that a cook.'

Since such constructions are rare and have a literary flavour, we maintain that *ki*-relatives are non-restrictive.

(14) Speaker A: Yok o değil. Yan ofis-te çalış-an Ali biz-e
no he not next office-Loc work-*An* Ali we-Dat
gel-ecek
come-Future
'No, it is not him. Ali who is working in the next office is coming to us.'

(15) Speaker A: Yok o değil. Ankara-dan tanı-dığ-ım Ali biz-e
no he not Ankara-Abl know-*DIK*-1Sg.Poss Ali we-Dat
gel-ecek.
come-Future
'No, it is not him. Ali who I know from Ankara is coming to us.'

(16) Speaker A: #Yok o değil. Ali, ki yan ofis-te çalış-ıyor, biz-e
no he not Ali Comp next office-Loc work-Prog we-Dat
gelecek.
come- Future
Intended meaning: 'Ali who is working in the next office is coming to us.'

(17) Speaker A: # Yok o değil. Ali, ki Ankara-dan tanı-yor-um, biz-e
no he not Ali Comp Ankara-Abl know-Prog-1Sg we-Dat
gel-ecek.
come-Future
Intended meaning: 'Ali who I know from Ankara is coming to us.'

In view of the examples in this section, it is clear that prerelatives (restrictive or non-restrictive) and *ki*-relatives do not only diverge in terms of their phrase structural and prosodic properties. They also differ with respect to what type of anchors they modify in which grammatical contexts. In the following section, we will characterize both RC types delving into further contrasts between the two.

5.4 A New Taxonomy for Turkish Relativization

What we have seen so far implies that distinguishing relative clauses along model-theoretic lines, i.e. as restrictive versus non-restrictive, fails to capture (i) the phonological similarity between restrictive and non-restrictive prerelatives, and (ii) the syntactic and semantic distinctions between non-restrictive post-head *ki*-relatives and non-restrictive prerelatives in Turkish.

On the other hand, it is not only in Turkish where the very taxonomy proves to be ineffective. For instance Potts (2003, 2005) states that in English when the anchor is an indefinite, the truth conditions alone do not distinguish between restrictive and non-restrictive relatives in monoclausal, extensional environments:[105]

(18) a. A plumber that endorses nephrology came by.

b. A plumber, who endorses nephrology, came by.

(Potts 2005, p. 94-95)

Moreover, structurally restrictive relative clauses, which lack comma intonation/IP-edges, do not always involve genuine restriction:

[105] Potts states that the reason for the suspension of such a truth conditional distinction can be attributed to the fact that the indefinite contributes a free variable plus a restriction on its value as pursued in the dynamic semantics of Heim (1982) and Kamp and Reyle (1993).

(19) a. the positive numbers that aren't negative

b. the bachelors who are unmarried

> The relative clauses […] do not impose any restrictions that are not already entailed by the head noun. Even if we decided to talk about non-standard structures where they could be restrictive--models in which we have married bachelors, say--we would not be much better off with regard to the terms 'restrictive' and 'nonrestrictive', because their meanings would in effect contain a hidden modality ranging over possible structures. This level of complexity is highly undesirable in descriptive terminology.
>
> (Potts 2005, p. 94)

Potts (2003, 2005) proposes an alternative to the traditional restrictive/non-restrictive taxonomy for RCs that is also closely related to their phonological properties. He analyzes RCs as "integrated" for the potentially restrictive kind that does not involve comma intonation, and "supplementary" for the non-restrictive kind that involves comma intonation. Potts treats supplementary relatives as part of a larger class of expressions which he terms supplements. Supplements include a variety of structures indicated below:

(20) a. Ames, who was a successful spy, is now behind bars.

(supplementary relative)

b. Ames, a successful spy, is now behind bars.

(nominal appositive)

c. Ames was, as the press reported, a successful spy.

(*As*-parenthetical)

d. Amazingly, they refused our offer.

(speaker-oriented adverb)

c. Thoughtfully, Ed destroyed the evidence for us.

(topic-oriented adverb)

d. Just between you and me, Aldo is a dangerous spy.

(utterance-modifying adverb) (Potts 2005, p. 90)

Supplements are speaker-oriented discourse-new comments made on the regular assertive content, i.e. "the at-issue entailments", by the speaker (Potts 2005, p.6). They are secondary entailments that are utilized to "guide the discourse in a particular direction or help the hearer to better understand why the at-issue core is important at that stage" (ibid., p. 7).[106] To put it in another way, supplements refer to a class of expressions "that permit speakers to comment upon their assertions, to do a bit of editorializing in the midst of asking questions and imposing demands" (ibid., p. 8) The phonological specification of supplements essentially involves comma intonation/IP-formation.

Returning to Turkish, we argue that *ki*-relatives involve the fundamental characteristics of supplements:

[106] Indeed these properties classify a larger set which Potts (2003, 2005, and 2007) envisages as Conventional Implicatures (cf. Grice 1975). Conventional implicatures involve supplemental expressions (appositives, parentheticals) and expressives (epithets, honorifics). Building on Grice (1975), Potts (2007, p. 2) lists the integral properties of CIs as such:

- CIs are part of the conventional (lexical) meaning of words.
- CIs are commitments, and thus give rise to entailments.
- These commitments are made by the speaker of the utterance "by virtue of the meaning of" the words he chooses.
- CIs are logically and compositionally independent of what is "said (in the favored sense)", i.e., the at-issue entailments.

Since we mainly focus on *ki*-relatives, which we will analyze as supplements in this study, our argumentation will center on the term supplement in the sense of Potts (ibid.).

(21) a. They trigger intonational phrasing.

b. They are non-restrictive and are strictly speaker-oriented.

c. They provide discourse-new comments on the at-issue content.

In (22), for instance, commenting on the at-issue core, the speaker provides a clue as to how his audience should interpret the utterance: Leyla left school. However, this might not have to do with the fact that she does not like her major area of study. She actually loves biology. So she might have left school due to some other problem:

(22) Leyla, ki biyoloji-yi sev-er, okul-u bırak-mış.
Leyla Comp biology-Acc love-Aor school-Acc leave-Evid
'Leyla, who loves biology, left school.'

On the other hand, one could hardly argue that non-restrictive prerelatives have a comment-providing function on the regular assertive content in Turkish.[107]

Indirect quotations provide a reliable testing ground to distinguish the speaker-oriented nature of *ki*-relatives from non-restrictive prerelatives. If an indirect quotation contains a *ki*-relative, the content of this RC is interpreted as a contribution made by the speaker of the utterance, not the grammatical subject of the verb of saying. In (23a) Yalın's manager speaks. If we want to report his utterance, we can felicitously do so by embedding the non-restrictive prerelative into an indirect quotation as in (23b). However, if we report the manager's utterance by using a *ki*-relative as in (23c), we violate discourse appropriateness, because the proposition

[107] In the following section we will provide an example where a *ki*-clause merely provides a comment on the at-issue core without functioning as a relative clause (e.g. (25)).

expressed by the prerelative in (23a) is now inferred as the speaker's contribution rather than that of the manager's.

(23) a. Yalın's manager: "5 albüm çıkar-an Yalın yeni bir film cek-ecek".
5 album release-*An* Yalın new a film shoot-Future
'Yalın, who released five albums, will shoot a new film.'

b. Menajer-i 5 albüm çıkar-an Yalın-ın yeni bir film
manager-3Sg.Poss 5 album release-*An* Yalın-Gen new a film
çek-eceğ-in-i söyle-di.
shoot-Nom-3Sg.Poss-Acc say-Past
'His manager said that Yalın, who released 5 albums, will shoot a new film.' → subject oriented

c. # Menajer-i Yalın-ın, ki 5 albüm çıkar-dı, yeni bir film
manager-3Sg.Poss Yalın-Gen Comp 5 album release-Past new a film
çek-eceğ-in-i söyle-di.
shoot-Nom-3Sg.Poss-Acc say-Past
'His$_i$ manager said that Yalın$_i$, who released 5 albums, will shoot a new film.' → strictly speaker-oriented

In (24), we provide a set of the asymmetries between *ki*-relatives and non-restrictive –DIK and –(y)An prerelatives we have hitherto covered:

(24)

ki-relative	*non-restrictive –DIK and –(y)An relatives*
postrelative	prerelative
non-restrictive	potentially restrictive
with comma intonation	without comma intonation
invariably speaker-oriented	not necessarily speaker-oriented
DP and CP anchors	[+definite] DP anchors only
with overt complementizer	without overt complementizer
without wh-pronouns	without wh-pronouns
right-adjoin	left-adjoin

In consideration of the data and discussion so far, we propose that *ki*-relatives are supplementary relatives, and non-restrictive prerelatives are integrated relatives in the sense of Potts (ibid.). We, thus, propose a new classification for Turkish relativization beyond the non-restrictive/restrictive taxonomy, which fails to explain many of the properties we have hitherto outlined. The supplementary versus integrated distinction not only captures the prosodic properties of relative clauses in Turkish, but also the semantic and pragmatic distinctions between prerelatives and *ki*-relatives.

5.5 Supplemental *ki*-clauses

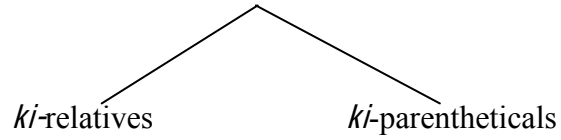
As mentioned in the previous section, the supplementary *ki*-relative stands in apposition to a variety of syntactic structures. It not only provides information about its anchor without narrowing down its reference, which is a typical property of non-

restrictives; but it also acts as a comment on the at-issue core. However, there are instances where the *ki*-clause merely provides a comment on the at-issue core without functioning as a relative clause. In (25), the supplemental *ki*-clause functions only as a parenthetical. Unlike the previous examples, it does not have an antecedent in the superordinate clause. It is pronounced akin to its RC counterpart carrying comma intonation:

(25) Ev-de yemek kal-ma-dığ-ın-ı gör-ünce, ki her hafta alışveriş
home-Loc meal leave-Neg-Nom-3Sg -Acc C^0 every week shopping
yap-ar-ım, hemen market-e git-tim.
make-Aor-1Sg immediately market-Dat go-Past
'When I saw that there was nothing left to eat – and I go shopping every week – I immediately went to the market.'

In this respect, regardless of whether they function as RCs or not, there is a class of *ki*-clauses in Turkish, which (i) essentially induce IP-formation, (ii) carry the discourse-pragmatic function of supplemental expressions, and (iii) are strictly speaker-oriented. Recall that the notion of supplement is a superordinate category involving different types of parenthetical structures such as supplementary relatives, *as*-parentheticals, nominal appositives and parenthetical adverbs (Potts 2003, 2005). In the light of this superordinate category type, we analyze all *ki*-clauses that induce IP-formation and are secondary entailments on the at-issue core as supplemental *ki*-clauses. Supplemental *ki*-clauses divide into two classes: supplementary *ki*-relatives, and *ki*-parentheticals (e.g. 25):

(26) Supplemental *ki*-clauses



A remaining question, which we will not address in this work, is why such supplemental clauses tend to undergo right-adjunction. Even in languages which employ both left-branching and right-branching such as Turkish, supplemental clauses are those which right-adjoin. In this respect, the roots of the asymmetry between the two adjunction types and its reflexes at the interfaces require further comprehensive inquiry.

In the following section, we will mainly be concerned with modelling the structures that induce IP-formation and investigate how the mapping is realized at the syntax-phonology interface.

5.6 On Intonational Phrasing

5.6.1 Illocutionary Force and Intonational Phrasing: A New Proposal

In the literature, there have been different accounts for the intonational phrasing of the expressions Potts unifies as supplements.[108] Contra the works which assume

[108] According to Ross (1967), an appositive/ non-restrictive clause is a main clause in the underlying representation, where it is conjoined to another main clause. He illustrates that any parenthetical coordinate clause which begins with 'and' can be paraphrased as a non-restrictive/appositive relative:

a. Enrico, and he is the smartest of us all, got the answer in seven seconds.
b. Enrico, who is the smartest of us all, got the answer in seven seconds. (Ross 1967, p. 435)

Emonds (1976) envisages parenthetical expressions as immediately dominated by the sentence that contains them, thus, sentential. In his terminology, they are root sentences (Emonds 1976). In his work on appositive/non-restrictive relatives (cf. Emonds 1979), he pursues Ross' proposal that non-

special modes of merger or linearization or distinct structural dimensions for such structures (e.g. Emonds 1979; McCawley 1982; Safir 1986; Fabb 1990; among others), Potts (2003, 2005) argues that supplemental expressions reside in canonical modifier positions in the phrase marker via adjunction to their anchors forming constituents with them in syntax.

If supplements reside in routine modifier positions, which mechanism distinguishes them from non-supplemental expressions? Potts proposes that the crux of the answer is not a special syntax, but rather a syntactic feature [+comma], which annotates the syntactic structure and is interpreted in the semantic and phonological components of grammar. Therefore, it is the [+comma] feature associated with a constituent that renders it as a supplement, but not its status as a root or matrix clause/sentence. For supplementary relatives, he proposes the structure in (27) and for integrated relatives the structure in (28):

---

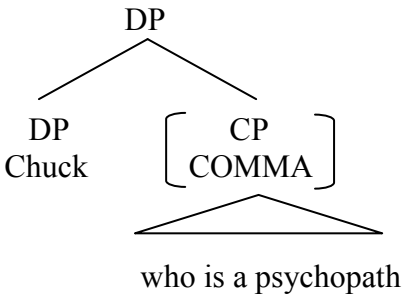
restrictive relatives are independent root-level clauses. He suggests a DS-level conjoined structure akin to Ross'. The conjunction structure involves two coordinate clauses. The second conjoined clause, which contains a pronoun that must be anaphoric to an antecedent in the non-final conjunct, is derived into a non-restrictive relative through the application of three transformational rules. First the intervening constituents between the antecedent in the first conjunct and the second conjunct are moved to the right of the second conjunct as a result of the transformation of Parenthetical Formation. Second, the conjunction is deleted and the second conjunct attaches directly to the first one by the rule of S' Attachment. Third, *wh*-fronting rule moves the coreferent pronoun in the attached S' to the beginning of S'. Note that in Emonds (1979), the highest node that dominates these sentences at every level of representation is called the E(expression) node. E cannot be subordinated and it represents the fact that every separate declarative or interrogative sentence is a separate assertion or question (cf. Banfield 1977, as cited in Emonds 1979).

McCawley (1982) posits a "discontinuous constituent structure" where such expressions are syntactically *outside* but linearized *within* the containing sentence by the application of an order-changing transformation that modifies the linear ordering of constituents without altering the phrase structure of the sentence. Considered as distinct relations, precedence and dominance are, thus, taken to be independently manipulable by different transformational rules.

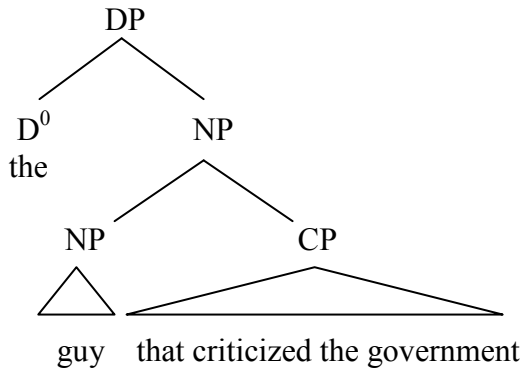
Safir (1986) argues that a non-restrictive relative gets attached to the head at a post-LF representation which he dubs LF'. Thus he intends to account for the islandhood of non-restrictive relatives with respect to a range of binding relations and the fact that they do not give rise to Weak Crossover Effects.

Fabb (1990) pursues the so-called radical orphanage hypothesis (ROP). In ROP, the non-restrictive relative does not form a constituent with its anchor at any level of representation but it is attached at the discourse level.

(27) Supplementary Relative



(28) Integrated Relative



Potts argues that the reflex of [+comma] in semantics is to correlate the denotation of the [+comma]-marked constituent with the semantics of a conventional implicature (cf. Grice 1975). A [+comma] constituent is an integral part of the phrase structure of the surrounding sentence, yet it is "logically and compositionally independent" of the at-issue entailments (Potts 2005, p. 6).

Selkirk (2005) builds upon Potts' proposal and suggests that a [+comma]-marked constituent be considered as a Comma Phrase. She also states that another way of putting the logical and compositional independence of supplemental expressions is that they are performed as a separate speech act (ibid.). She argues that root clauses are by default [+comma]-marked, because they are distinct speech acts, which are independent from other root clauses. Thereby she aims to assemble supplements and root clauses into a natural class, namely the CommaP.

Selkirk's unification of supplements and root clauses into a single category brings a solution to why they both induce intonational phrasing in English without resort to special modes of merger or extra levels of representation (e.g. the studies in footnote 108). Due to [+comma]-marking in syntax, both categories are typed as CommaPs, whose reflexes are interpreted in semantics and phonology. At the heart

of this unification lies the redundancy of a statement that intonational phrasing is grounded on supplements and root clauses, since both categories are subsumed under a natural class.

Despite the desired phonological outcome, the treatment of root clauses and supplemental expressions as [+comma]-marked constituents has certain shortcomings. For instance, it fails to maintain the secondary entailment nature of supplemental expressions by treating them on a par with root clauses. With this proposal, some of the empirical coverage in Potts (ibid.) is also sacrificed. In Potts (ibid.), [+comma]-marking triggers a shift from at-issue content to conventional implicature (CI) content (Potts 2005, p. 133). However, the case is that not every root clause is invariably donated with CI content.[109]

On the other hand, Selkirk's correlation of the CommaP with the notion of speech act has certain implications. One of the implications is that each supplemental expression or root clause carries its distinct illocutionary force, a term for which it is very hard to give a designated definition. We mainly use it along the lines of Chierchia and McConnell-Ginet (1990): "An illocutionary act is a part of speaker's strategy in meaningfully using language; the speaker offers the utterance as a particular sort of interactional move" (p. 221) (also see Grice 1957; Searle 1965).

If we evaluate supplemental *ki*-clauses, which encompass supplementary *ki*-relatives and *ki*-parentheticals, in the light of this definition, we can observe that they represent interactional moves in discourse. More specifically, they are used by the speaker to comment on the regular assertive content (cf. §5.4 and §5.5). Their strictly speaker-oriented nature derives from this discourse-pragmatic property. As

[109] See, for instance, Potts (2007, p. 8) for a summary of the differences between at-issue content and CI content.

for root clauses, each contributes its own illocutionary force independent from other root clauses.

In the syntax literature, Force^0 (Rizzi 1997) has been used with a variety of meanings. Sometimes it is presumed to refer to illocutionary force; however, it is not clear how the distinctions and mismatches between sentence form and speaker intentional meaning can be handled in such an approach since it subsumes both aspects of clausal interpretation under the same notion (and syntactic node).

> The illocutionary force of a sentence, as defined by e.g. Searle (1965), incorporates the Gricean analysis of meaning as intentional: 'In speaking a language I attempt to communicate things to my hearer by means of getting him to recognize my intention to communicate just those things' (Searle 1965: 258). A sentence would thus have the illocutionary force of ordering if and only if the speaker intends to impose an obligation by getting the hearer to recognize this intention. According to such a definition, since someone saying *Could you come in at 9:00?* may have the relevant intention, the sentence would in such cases have the illocutionary force of ordering. But this shouldn't lead to the conclusion that it is an imperative. Crucially its form is that conventionally associated with the force of asking.
>
> (Zanuttini and Portner 2003, p. 3)

Following Chierchia and McConnell-Ginet (1990) and Zanuttini and Portner (2003), we assume a two-way classification of force: sentential force, i.e. "what the grammar assigns to the sentence to indicate how that content is conventionally presented" (Chierchia and McConnell-Ginet 1990, p. 213), and illocutionary force (see p. 138 above). We also consider the definition of sentential force (or alternatively 'sentence mood' (Reis 1999)) by Chierchia and McConnell-Ginet (ibid.) above as referring to the process commonly known as clause-typing (cf. Cheng 1991; among others).

Relevant to our discussion is the fact that mismatches between sentential force and illocutionary force are often cued by distinct intonational patterns. Even so, to what extent should we incorporate intonation into the theory of clause-typing?

We maintain that intonational phrasing and all the so-called clausal tunes, i.e. tunes such as question intonation or declarative intonation, should be treated under the notion of illocutionary force rather than sentential force/clause-typing. Now let us discuss why we pursue this analysis.

In Turkish, a root-level wh-question typically ends with rising intonation. A recent study by Göksel et al. (*to appear*) also argues that question intonation is decomposable into fragments of tunes. They claim that the intonational contours of response seeking constructions, which include questions, involve a fragment of compressed pitch/high plateau, which starts at the onset of the utterance. A wh-question and a polar question differ in that the former ends with rise-fall-rise, whereas the latter ends with rise-fall (both of which follow the compressed pitch). Since the first fragment is present in a variety of response seeking constructions and is not present in declaratives, they propose that this fragment expresses the pragmatic function "prompt for a response" (ibid.). Furthermore they propose that the suprasegmental features expressing prompt for a response have the syntactic function of clause-typing in Turkish, where T-to-C movement is not observed.

One problematic aspect of the studies in the vein of Göksel et al. (ibid), which attribute intonation a unique status in clause-typing, is that they base their assumptions on root-level phenomena and they fail to account for the absence of such intonational clause-typers, in, for instance, complementation structures, which do carry their own clause type information. Consider the example in (29a) below. The onset of the embedded question neither carries compressed pitch, nor does the

clause end with rise-fall-rise. Nevertheless the complement CP has its own clause type specification, which is obviously not achieved with a designated tune. If suprasegmental properties are taken to be clause-typers in languages without T-to-C movement (as argued in Göksel et al. ibid.), why do not we observe such clause-typers in embedded questions as well?

(29) a. [Ayşe [Ali dün akşam ne yap-tı] merak ed-iyor].
Ayşe Ali yesterday evening what do-Past wonder light verb-Prog
'Ayşe wonders what Ali did yesterday evening.'

b. Sen bu kutu-lar-ı çöp-e at-acak-sın./?
you these box-Pl-Acc waste-Dat throw-Future-2Sg
'You will throw these boxes away.'
'You will throw these boxes away?'

c. *[[Sen bu kutu-lar-ı çöp-e at-acak-sın] merak ed-iyor-um.]
you these box-Pl-Acc waste-Dat throw-Future-2Sg wonder light verb-Impf-1Sg
Intended meaning: 'I wonder whether you will throw these boxes away.'

d. [[Sen bu kutu-lar-ı çöp-e at-acak-sın] san-ıyor-du-m.]
you these box-Pl-Acc waste-Dat throw-Future-2Sg think-Impf-1Sg
'I was thinking that you were going to throw these boxes away.'

e. [[Sen bu kutu-lar-ı çöp-e at-acak mı-sın] merak ed-iyor-um.]
you these box-Pl-Acc waste-Dat throw-Future Q-2Sg wonder light verb-Impf-1Sg

'I wonder whether you will throw these boxes away.'

Now consider (29b). It can be a "question" or a "declarative", as cued by distinct intonational patterns. If intonation is envisaged as a clause-typer, the "declarative" and "question" interpretations have to be assumed to be achieved with the distinct suprasegmental properties of the clauses. If this is the case, the question form can also be expected to be embedded under a predicate such as *merak et-* 'wonder', which selects a question as its internal argument. However, (29c) shows that this is not the case. The question version of (29b) cannot act as an embedded question. If we want to embed it, we can do so by inserting a Q-particle into the structure, as in (29e). On the other hand, the declarative version of (29b) can act as an embedded declarative, as in (29d).

What do these examples show us? They show the syntactic reality of the distinction between sentential force and illocutionary force. They show that we can talk about a grammatical process which specifies how the content of a clause is conventionally presented. The fact that the declarative version of (29b) can be an embedded declarative, whereas the question version cannot be an embedded question indicates that (29b) is a declarative in its clause-type specification, which makes (29d) possible and (29c) impossible.

As for the possible question interpretation of (29b), it is merely a result of the mismatch between sentential force and illocutionary force. In this respect, the distinct suprasegmental patterns in (29b) cannot be assumed partake in clause-typing/ sentential force per se. Rather, they reflect illocutionary force. The different interpretations and tunes in (29b) are thus rooted in the distinction between the acts of asking and asserting.

Let us now evaluate the main points, we have so far covered:

i. Root clauses and supplemental expressions induce intonational phrasing.

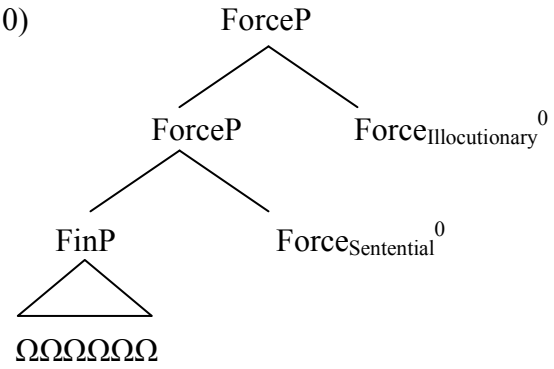
ii. They carry their own illocutionary force.

iii. Sentential force-illocutionary force mismatches are often cued by intonation.

iv. Sentential force, i.e. clause-typing, cannot be correlated with intonation.

In the light of our findings and the relevant discussion, we argue that both intonational phrasing facts and the so-called clausal tunes are reflexes of illocutionary force. We assume a two-way partitioned representation of ForceP in the CP domain and argue that both root clauses and supplemental *ki*-clauses have the upper layer headed by $Force_{Illocutionary}^{0}$ in their syntax.

(30)

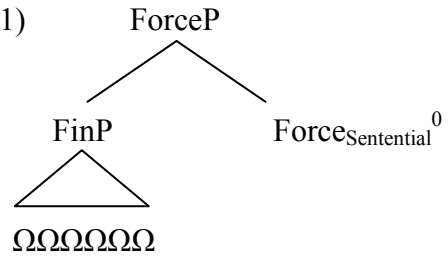


In this model, clause-typing operates at $Force_{Sentential}^{0}$, a grammatical process which specifies how the content of a clause is conventionally presented, whereas $Force_{Illocutionary}^{0}$ specifies speaker intentional meaning (cf. Grice 1957; Searle 1965). The proposed model not only captures the phonological similarity between root clauses and *ki*-relatives (+ *ki*-parentheticals) and their speech act nature, but also why the so-called clausal tunes are restricted to structures with distinct illocutionary

force(s) rather than all clausal structures.[110] Mismatches between illocutionary force and sentential force are mismatches between the contents of the functional heads.

As for non-IP-inducing clauses, we analyze them as truncated structures. We argue that prerelatives, i.e. in our analysis integrated relative clauses, finite complement clauses and *ki*-headed finite complement clauses are phonologically integrated into their superordinate clause as a result of the fact that they are truncated from the $\text{Force}_{\text{Sentential}}$P layer, i.e. what is left is the domain of the clause starting from $\text{Force}_{\text{Sentential}}$P. This predicts that they do not trigger intonational phrasing and they do not carry the so-called clausal tunes despite carrying sentential force.[111]

(31)



In this section, we argued against the unification of root clauses and supplemental expressions as [+comma]-marked phrases (cf. Selkirk 2005) due to its empirical inadequacies. We proposed a new account of intonational phrasing and the distribution of "clausal tunes", which centers on the notion of illocutionary force.

However, in what way(s) the IP is mapped from syntax in the interface phonological representation is still a remaining question, which we will address in the subsequent section.

[110] Note that supplemental *ki*-clauses can still be considered as [+comma]-marked expressions in the sense of Potts (ibid.).
[111] The embedded clauses in (29d) and (29e) are also envisaged as truncated structures without the $\text{Force}_{\text{Illocutionary}}$P layer.

5.6.2 The Mapping

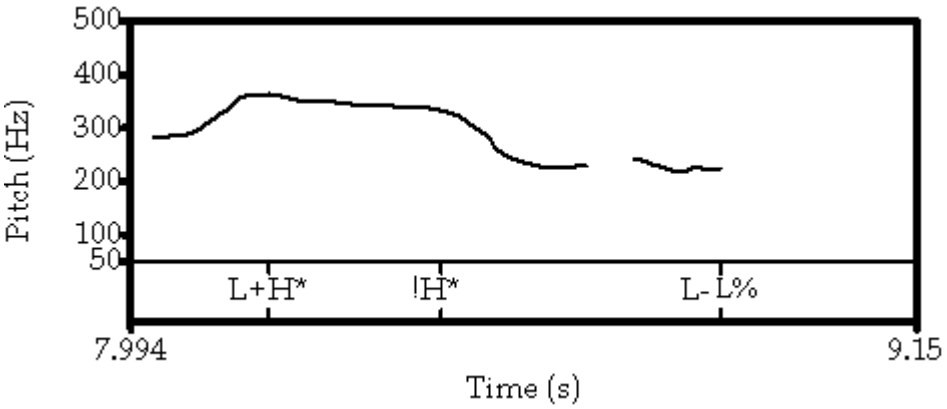
In this section, we propose that the IP is parsed from the syntactic structure through a syntax-phonology interface constraint which follows linearization and is sensitive to constituent edges.

In accounting for the derivation of the IP, one could initially opt to pursue the hypothesis below due to its simplicity:

(32) During Spell-out, a $Force_{Illoc}P$ is mapped onto an IP. [112]

This rule dictates that a $Force_{Illoc}P$ be phrased as a separate IP at the syntax-prosody mapping. At first, the hypothesis seems plausible for the prosodic structure of simple declaratives, which are root clauses, in the data; because such a structure is typically flanked with IP edges as illustrated in (33) below:

(33)



[112] This hypothesis is in the vein of a growing number of works in the literature that employ some version of the Phase Theory (cf. Chomsky 2000, et seq., Fox and Pesetsky 2005; among others) and some definition of phase in modelling the derivation of some level of phonological phrasing (e.g. Dobashi 2003; Ishihara 2007; Kratzer and Selkirk 2007). Intonational phrasing, which is understudied when contrasted with the studies on the PPh in the literature, has not received a phase-based-phrasing account. One could hypothesize that a CP phase which is [$+Force_{Illoc}$] is parsed as an IP at PF. However, we will see that such an approach is not plausible, since it faces an overgeneration problem.

L+H* !H* L- L%

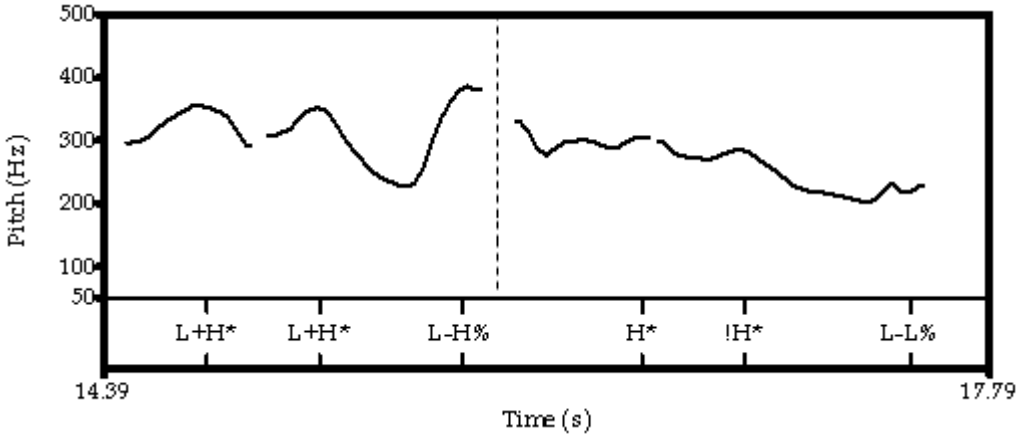
[[An*ne-m*]$_{PPh}$ [i*yi* yemek yap-ar]$_{PPh}$]$_{IP}$

mother-1Sg.Poss good meal make-Aor

'My mother cooks well.' *Speaker G*

However, we see that the mapping is not as straightforward as it seems. Consider (34) and (35) below. In (34), the *ki*-relative and its CP type anchor, which are both Force$_{Illoc}$Ps, each form distinct IPs in harmony with (32). Their edges correspond to IP edges:

(34) a. '*ki*-relative' in apposition to a CP



L+H* L+H* L- H%

[[Ana*ne-m*]$_{PPh}$ [e*v-i* yenile-di]$_{PPh}$]$_{IP}$

grandmother-Acc-1Sg.Poss house- Acc renew-Past

H* !H* L- L%

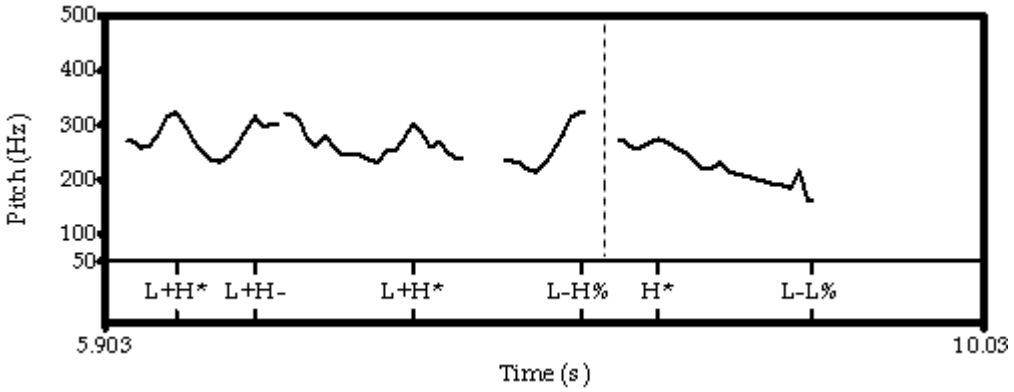
[[ki bu o*n-a*]$_{PPh}$ [pahalı-*ya* mal ol-du]$_{PPh}$]$_{IP}$

Comp this she-Dat expensive-Dat cost Copula-Past

'My grandmother renewed the house, which cost (her) a lot.' *Speaker A*

Now consider (35). This time the *ki*-relative has a DP type anchor. Prosodically the *ki*-relative and the DP, which is also the subject of the root clause, reside in one IP; whereas the rest of the root clause, i.e. the object and the verbal complex, reside in another IP. If the initial hypothesis were on the right track, the ultimate structure would be (36) instead of (35), which would result in the full flanking of the *ki*-relative with IP edges. Nevertheless, this is not the case. (32) overgenerates in that it predicts more IP edges, specifically left edges, than those that are observed in the data.

(35) '*ki*-relative' in apposition to a DP



L+H* L+H- L+H* L- H% H*

[[A*lan*yalı-lar]$_{PPh}$ [ki genelde *muz* yetiştir-ir-ler]$_{PPh}$]$_{IP}$ [[*man*go-yu

Alanyalı-Pl Comp generally banana grow-Aor-3Pl mango-Acc

L- L%

deni-yo-lar-mış]$_{PPh}$]$_{IP}$

try-Prog-3Pl-Evid *Speaker EA*

'The people of Alanya, who generally grow bananas, are trying (growing) mangos now.'

(36) [Alanyalılar]$_{IP}$ [ki genelde muz yetiştirirler]$_{IP}$ [mangoyu deniyolarmış]$_{IP}$[113]

Considering the examples above, we are left with an asymmetry in intonational phrasing patterns. As Force$_{Illoc}$Ps, root clauses and *ki*-relatives that stand in apposition to (root) CPs are flanked with IP edges, whereas *ki*-relatives that stand in apposition to DPs display the symptoms of intonational phrasing only at their right edges.

We propose that the surface asymmetry follows from the fact that the IP is derived from the Force$_{Illoc}$Ps through an edge-alignment constraint that operates with reference to constituent edges subsequent to linearization. Thus, we pursue an End-based approach to syntax-prosody mapping (cf. Selkirk 1986; 1996; 2000; 2005; Selkirk and Tateishi 1988, 1991; Selkirk and Shen 1990; McCarthy and Prince 1993). A general constraint for edge-alignment is given in (37).[114]

(37) Align R/L ($\sum_i$, $\pi_{\sum i}$)

> Align the R/L edge of a constituent type $\sum_i$ in syntactic (PF) representation with the R/L edge of a corresponding constituent of type $\boldsymbol{\pi_{\sum i}}$ in phonological (PR) representation. (Selkirk 2005, p. 6)

In (38), we spell-out the specific constraint for intonational phrasing in Turkish:

[113] This pattern of prosodic organizations is actually attested in some examples in the data, but the flanking of the subject with IP edges has a stylistic flavor. In the following section, we will dwell upon this issue.

[114] For the Wrap XP constraint that operates in tandem with the End-based Align XP constraint, see Truckenbrodt (1995, 1999), Selkirk (2000, 2005), among others.

(38) Align R ($Force_{Illoc}P$, IP)

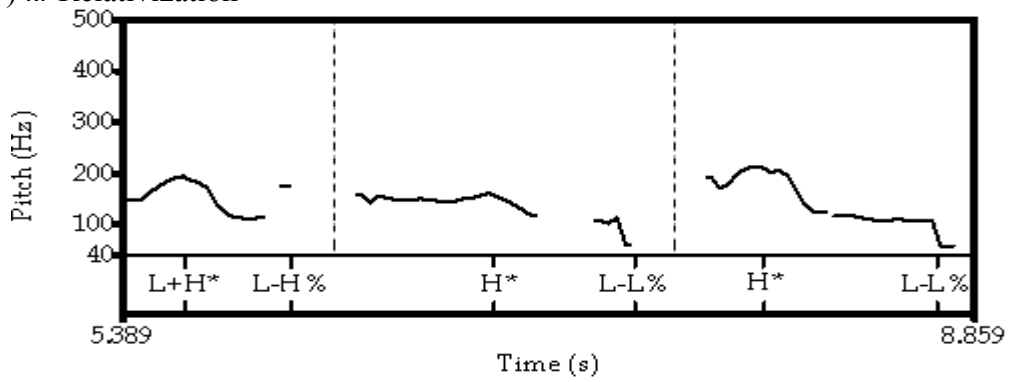
Align the right edge of a constituent type Comma Phrase in syntactic (PF) representation with the right edge of a corresponding constituent type $\pi FORCE_{Illoc}P$ (=Intonational Phrase) in phonological representation (PR).

Now we can account for the attested asymmetry in intonational phrasing in Turkish. In CP modification, since the root-level CP is a $Force_{Illoc}P$; its right edge is matched with the right edge of an IP. Thus, it is not due to the full phrasing of the *ki*-relative as an IP that it is fully detached from the root clause prosodically, as in (34). It actually follows from the fact that the root clause is segregated from the *ki*-relative with a right IP-edge. Being a $Force_{Illoc}P$, the right edge of a *ki*-relative is also aligned with a right IP-edge. As for left IP-edges, we assume that they are inserted subsequent to a preceding IP-edge as in (34) or they come free to close the phonological structure.

Align R ($Force_{Illoc}P$, IP) captures not only why particular structures, i.e. root clauses and supplemental expressions, induce intonational phrasing, but also why a surface asymmetry arises from IP patterns.

In the previous lines, we stated that when a DP is modified by a *ki*-relative, it is parsed into the same IP with the relative. However, we have also noted in footnote 112 that there are some instances in the data, where the DP and the *ki*-relative are each surrounded with IP edges as shown in the hypothetical structure in (36). We illustrate a real instance of (36) from our data:

(39) *ki*-Relativization



L+H* L-H% H* L- L% H*

[[A*lan*yalı-lar]$_{PPh]IP}$ [[ki genelde *muz* yetiştir-ir-ler]$_{PPh}$]$_{IP}$ [[*man*go-yu

Alanyalı-Pl Comp generally banana grow-Aor-3Pl mango-Acc

L- L%

deni-yo-lar-mış]$_{PPh}$]$_{IP}$

try-Prog-3Pl-Evid *Speaker K*

'The people of Alanya, who generally grow bananas, are trying (growing) mangos now.'

In (39), there is an IP-level disjuncture between the argument DP and the *ki*-relative. However, we would like to maintain that there occurs a stylistic effect in such an instance: the argument DP becomes highlighted/emphasized by the speaker, though it does not carry narrow focus. In this respect, (35) and (39) diverge both prosodically and pragmatically. How can we formulate such variability in phrasing and its interpretational import?

5.6.3 Stylistic Promotion of PPhs into IPs

In the literature three effects have been discussed that play a role in IP formation in addition to the syntax-prosody mapping rules. The mapping rules might be assumed to create a partial phonological representation, since the output is open to further phonological well-formedness constraints, or interface constraints resulting from narrow focus or Givenness (Kratzer and Selkirk 2007).

In focus-neutral contexts, constituents higher than the Foot and lower than the Utterance display correspondence to designated syntactic constituents (Selkirk 2005). In this respect, one can reason that the only context in which the syntax-determined prosodic phrasing and the actual output are similar is focus-neutral (wide focus) contexts. This shows us that one of the effects on prosodic structure is focus: the same sentence might have different focus structures and different prosodies. IP is merely one of the constituents that show variability in its organization due to focus marking strategies in particular languages (see Selkirk ibid. for examples and discussion).

The second type of effect on the syntax-determined output is prosodic length (cf. Nespor and Vogel 1986; D'Imperio et al. 2005; Selkirk 2000, 2005; among others). The phonology of a specific language might impose length restrictions on prosodic constituents. For instance, in a given language, a particular XP might be observed to correspond to IP under focus-neutrality. Let's assume that an IP can dominate at most three PPhs in the same language. When the relevant XP is linearized dominating four PPhs, the resulting structure would be expected to

restructure into two IPs in order to satisfy the prosodic length constraint. In (41), we provide a hypothetical context:[115]

(41) a. Initial Parse

XP → $[[\delta]_{PPh}\ [\alpha]_{PPh}\ [\beta]_{PPh}\ [\zeta]_{PPh}\ ]_{IP}$

b. Length-Induced Restructuring

i. $[[\delta]_{PPh}\ [\alpha]_{PPh}]_{IP}\ [[\beta]_{PPh}\ [\zeta]_{PPh}\ ]_{IP}$ or

ii. $[[\delta]_{PPh}]_{IP}\ [[\alpha]_{PPh}\ [\beta]_{PPh}\ [\zeta]_{PPh}\ ]_{IP}$ or

iii. $[[\delta]_{PPh}\ [\alpha]_{PPh}\ [\beta]_{PPh}]_{IP}\ [[\zeta]_{PPh}\ ]_{IP}$

The third effect is independent from focus or length. It is linked to stylistics or genre (Selkirk 2005). The stylistic promotion of Phonological Phrases to Intonational Phrases has been discussed in the literature before (cf. Nespor and Vogel 1986; Selkirk 2005). Nespor and Vogel (ibid.) note that PPhs can be optionally promoted to IPs in phonology. Selkirk (ibid.) states that "the version of the sentence with more than the minimally required intonational phrases may seem ponderous, admirably clear, or generally emphatic, depending on the circumstances" (p. 30).

It is clear that the variability in intonational phrasing between (35) and (39) is not due to narrow focus; since narrow focus interpretation is not available in (39). It cannot be due to length, either; because, in a given language, length-induced restructurings do not have a semantic or pragmatic import; they exist for the sake of phonological structure. On the other hand; in our data, when a modified DP is parsed as a separate IP from the *ki*-relative, it renders an emphatic reading. Conversely, in

[115] Note that length restrictions are not limited to the IP domain cross-linguistically.

examples like (35) the DP does not carry an extra emphasis as such. Thus we evaluate this pragmatic effect of highlighting of the subject in (39) as a consequence of a stylistic rule operating on default phrasing patterns. Considering that the DP flanked with IP-edges does not carry illocutionary force per se, that (39) is an instance of stylistic promotion is clear. In this account, Align R ($Force_{Illoc}P$, IP) initially operates on the syntactic structure inserting right IP-edges. Next, the stylistic rule applies and promotes the PPh, which corresponds to the DP anchor, into an IP. This transformation has a particular pragmatic import wherein the promoted PPh is highlighted by the speaker.

CHAPTER 6

THE PROSODY OF ARGUMENTS: LIMITS AND VARIATIONS

6.1 Preliminaries

In this chapter, we focus on the phrasing properties of arguments in Turkish. In contrast with the assumptions of impressionistic approaches to prosodic organization and stress, we show that the prosody of arguments is not as rigid as it is assumed to be. We argue that some of the variable phrasing patterns yield distinct classes of meanings, while some of them are semantically vacuous structures.

In addition to variable phrasing patterns, we underscore particular rigidities encountered in a variety of structures. We discuss the implications of both cases for the architecture of grammar.

6.2 Argument Structure and Referentiality

In this section, we first focus on the prosody of arguments and simple manner/measure adverbs in transitive structures. Next, we move onto the discussion of intransitives.

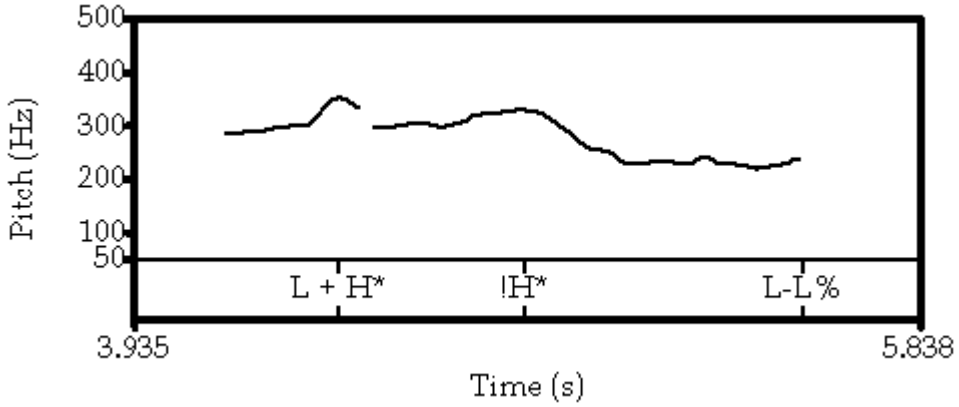
6.2.1 Transitives

Regarding the prosodic structure of declaratives with transitive verbs, our sole finding that does not have an exception in the data is:

(i) In transitive structures, a referential external argument is phrased into a distinct PPh separate from other constituents, regardless of whether it is definite or not.

We illustrate two examples for (i) below. In (1) and (2), both external arguments are referential. In (1), the definite DP is parsed into a distinct PPh leaving out the internal argument and the verbal complex. In (2), the indefinite DP displays an identical phrasing pattern.[116] Thus, for the case of referential external arguments, definiteness does not seem to play a role in prosodic phrasing patterns.

(1) Definite Referential External Argument + Definite Referential Internal Argument



L+H* !H* L- L%

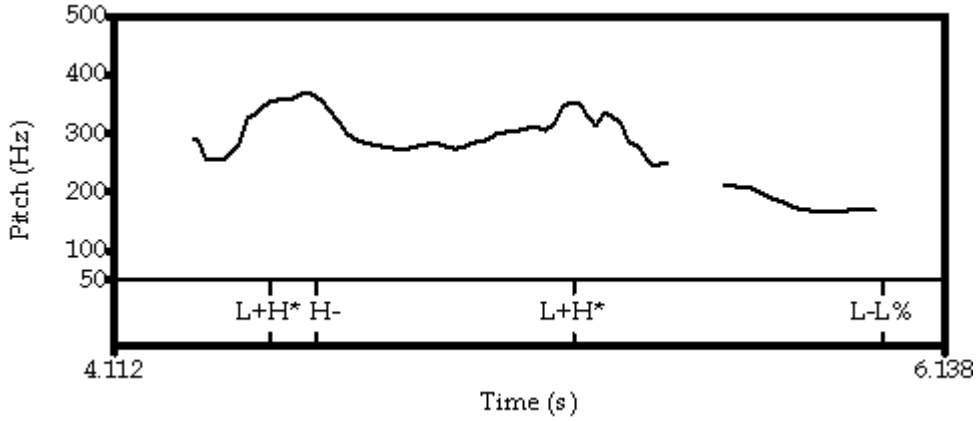
[[Ay*la*]$_{PPh}$ [Al*man*ya-yı özle-miş]$_{PPh}$]$_{IP}$

Ayla Germany-Acc miss-Evid

'Ayla missed Germany.' *Speaker A*

[116] What we refer to as the verbal complex involves the Verb+T(ense)A(spect)M(odality) and agreement suffix(es).

(2) Indefinite Referential External Argument + Definite Referential Internal Argument



L+H* H- L+H* L- L%

[[Bi *la*ma]$_{PPh}$ [yavru-lar-ı*n*-ı besli-yo]$_{PPh}$]$_{IP}$

a llama baby-Pl-3Sg.Poss-Acc feed-Prog

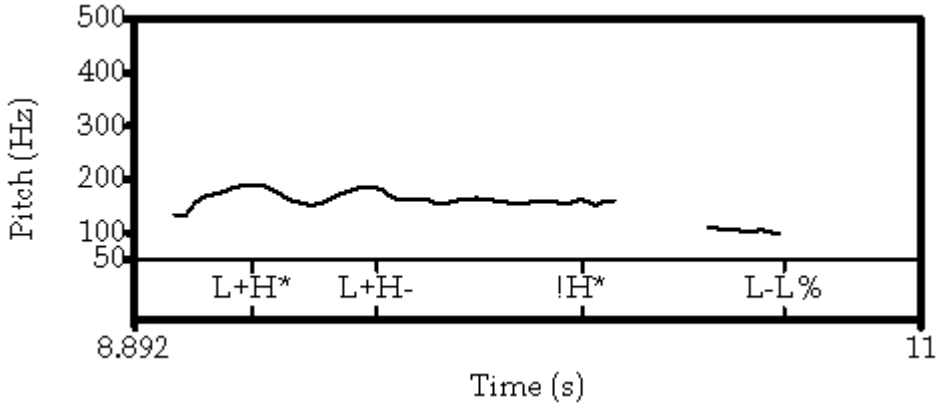
'A llama is feeding her babies.' *Speaker Ş*

In (ii), we spell-out our finding pertinent to the prosody of internal arguments in transitive structures:

(ii) In a transitive structure, an internal argument is phrased into the same PPh with the verbal complex, regardless of its referentiality or definiteness.

As revealed in (1) and (2), a (referential) definite object is typically parsed into the same PPh with the verbal complex. Furthermore, the (referential) indefinite object in (3) and the non-referential object NP in (4) display a uniform phrasing pattern with the objects in (1) and (2) indicating that definiteness or referentiality features of internal arguments do not influence their prosodic organization.

(3) Definite Referential External Argument + Indefinite Referential Internal Argument

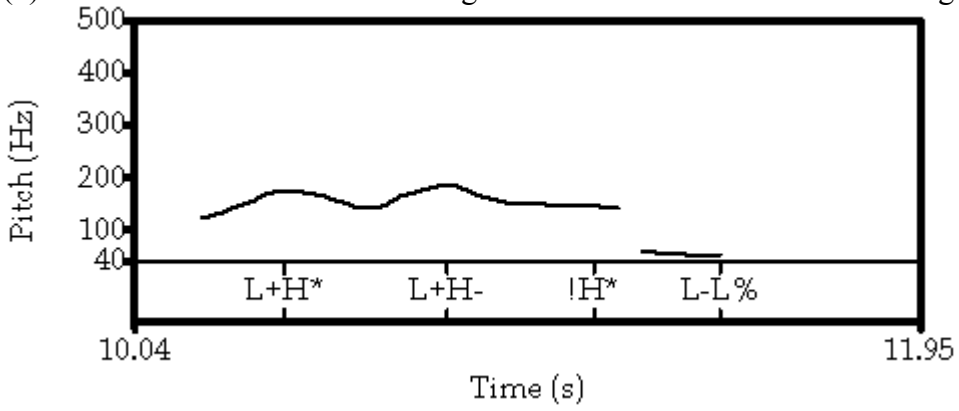


L+H* L+!H- !H* L- L%
| | | | |
[[A*na*murlu-lar]$_{PPh}$ [bi maymu*n-u* kurtar-mış]$_{PPh}$]$_{IP}$

Alanyalı-Pl a monkey-Acc save-Evid

'The people of Anamur have saved a monkey.' *Speaker K*

(4) Definite Referential External Argument + Non-referential Internal Argument



L+H* L+H- !H* L- L%
| | | | |
[[Al*man*yalı-lar]$_{PPh}$ [mene*men* yi-yo]$_{PPh}$]$_{IP}$

Almanyalı-Pl menemen eat-Prog

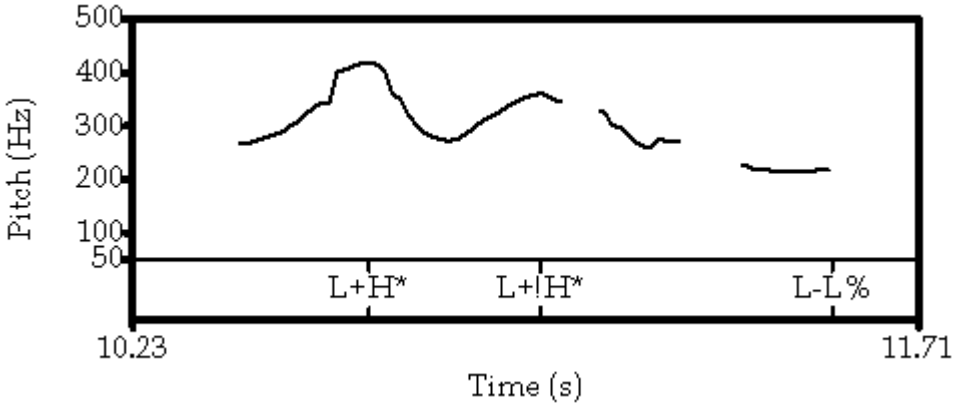
'The people from Germany are eating menemen.' *Speaker K*

Despite the fact that the referentiality of internal arguments does not influence their phrasing in transitive structures, this observation does not apply to external arguments:

(iii) In transitive structures, a non-referential external argument is phrased into the same PPh with the verbal complex leaving out the object.[117]

Hence, an asymmetry arises between external arguments when the referentiality parameter comes into play. Referential external arguments are invariably phrased separately in transitive contexts, which can be seen in all examples we have hitherto covered. On the contrary, a non-referential external argument is always parsed into the same PPh with the verbal complex leaving out the object, as in (5). This is, thus, one of the syntactic configurations which pose a counterexample to the finding in (ii) that an internal argument is parsed into the same PPh with the verbal complex (and contra the generalization in Hartmann (2007) and the references therein).

(5) a. Definite Referential Internal Argument + Non-referential External Argument



[117] In focus-neutral episodic contexts, transitive structures that involve a non-referential agent have the following word order: Object+Non-referential Agent+Verb.

L+H* L+!H* L- L%

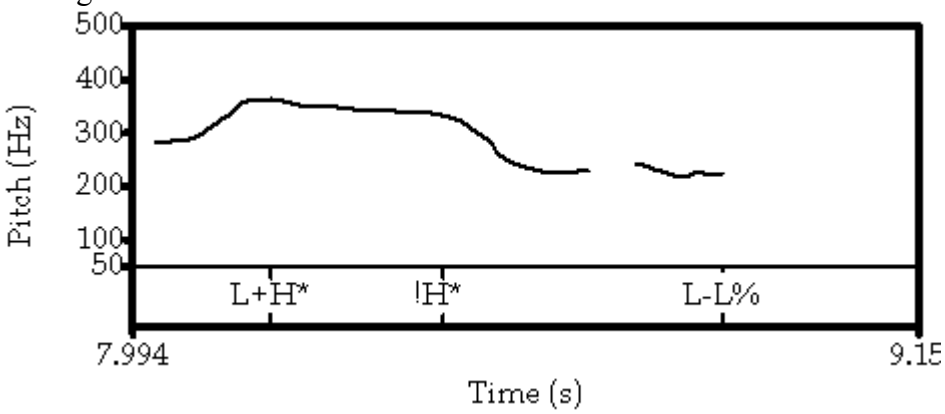
[[Ayla-*yı*]$_{PPh}$ [yı*lan* sok-tu]$_{PPh}$]$_{IP}$

Ayla-Acc snake bite-Past

'Ayla got snake-bitten' *Speaker G*

The finding in (iii) further demonstrates that whether a constituent is phrased into the same PPh with its verb or not does not merely follow from being an internal or external argument. At this point our data reveal that the very question seems to be related to whether a constituent is immediately preverbal in focus-neutral contexts or not. Alternatively, one might hypothesize that 'the object DP + the non-referential agent + the verbal complex' are parsed into the same PPh in the initial parse, but due to length restrictions, the whole structure restructures into two PPhs. However, such a length restriction cannot be assumed to hold in Turkish, because a PPh can actually dominate three PWds as revealed by the second PPh in (6). In this respect, the restructuring hypothesis is not pursuable in examples such as (5).

(6) Definite Referential External Argument + SMA + Non-referential Internal Argument



L+H* !H* L- L%

[[An*ne-m*]$_{PPh}$ [i*yi* yemek yap-ar]$_{PPh}$]$_{IP}$

mother-1Sg.Poss good meal make-Aor

'My mother cooks well.' *Speaker G*

6.2.2 Adverbial Modification

Following up on the structure in (6) above, which involves a simple manner adverb; let us spell-out our finding relating to the prosody of simple manner/measure adverbs:[118]

(iv) In transitive structures, a simple manner or measure adverb is phrased into the same PPh with the verbal complex. In such configurations, if there is an intervening non-referential internal argument, it is parsed into the same PPh residing between the adverb and the verbal complex. If the internal argument is referential, it is not parsed as a part of the PPh but as a distinct PPh, which is also a counterexample to (ii).

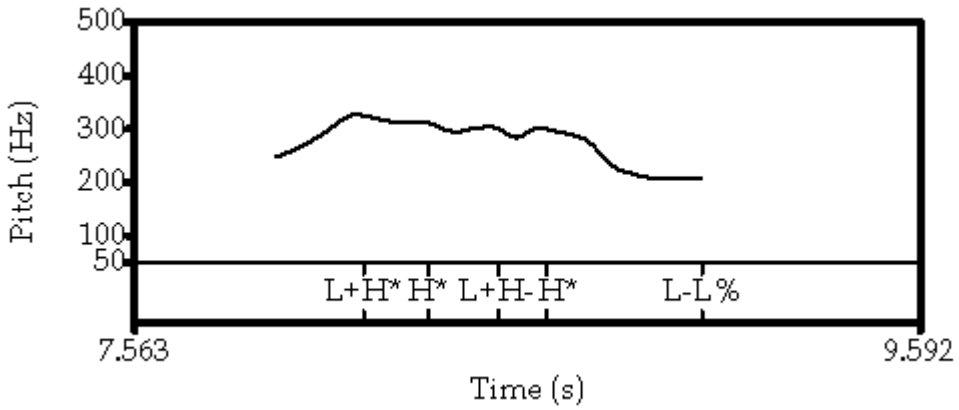
The grammatical context depicted in the second sentence of (iv) is instantiated in example (6), where the simple manner adverb resides in the same PPh with the intervening non-referential object and the verbal complex. Another implication of (6) is that an adjunct and an argument can actually reside in the same PPh; whereas more than one argument cannot be parsed into a single PPh, an observation which does not have an exception in the data.

Besides example (5), example (7) below constitutes another configuration where an object is parsed separately from the verbal complex. As stated in Chapter 3,

[118] See §3.3.1.3 for the morphological structure of simple manner adverbs.

simple measure/manner adverbs occur in the immediately preverbal position when the object is referential implicating that referential objects are located at a higher position than these adverbs in the phrase marker (as discussed in Öztürk 2004, 2005; among others). In (7), the adverb and the verbal complex are phrased together, whereby the object and the subject are each parsed into distinct PPhs:

(7) Definite Referential External Argument + Definite Referential Internal Argument + SMA



L+H* H* L+H- H* L- L%

[[Ay*la*]$_{PPh}$ [Ya*lo*va-yı]$_{PPh}$ [*zor* bul-muş]$_{PPh}$]$_{IP}$

Ayla Yalova-Acc hard find-Evid

'Ayla had difficulty in finding Yalova.' *Speaker S*

Based on the examples with simple manner/measure adverbs, we can confer that argument structural relations do not determine where a syntactic constituent is located in the prosodic organization of a sentence. On the other hand, being immediately preverbal does not suffice to predict whether a constituent can be parsed into the same PPh with the verbal complex either. In configurations such as (6), the

SMA is not immediately preverbal; however, it is obligatorily phrased into the same PPh with the verbal complex.[119]

If it is assumed, as pursued in recent works in the literature (cf. Dobashi 2003; Kratzer and Selkirk 2007; Ishihara 2007), that phonological phrases are the prosodic instantiations of some level of syntactic cycles, the question arises as to why it is possible for the same cycle to involve a referential internal argument and its verb (e.g. 1, 2, 3), but exclude the same type of internal argument in the environment of a non-referential external argument (e.g. 6) or a SMA (e.g.7)?[120] Do cycles, if any,

[119] It seems that SMAs, which are homophonous with adjectives, receive their adverbial function under strict prosodic locality with V^0(+TAM^0). For instance, circumstantial adverbials are exempt from this locality condition; they are syntactically (and prosodically) quite mobile (i), and so are complex manner adverbs, which are derived from adjectives via a variety of morphological operations (cf. Chapter 3) (ii):

(i) a. Ben dün anne-m-i ara-dı-m.
I yesterday mother-1sg.Poss-Acc call-Past-1Sg
'I called my mother yesterday.'
b. Dün ben annemi aradım.
c. Ben annemi dün aradım.
d. Ben annemi aradım dün.

(ii) a. Ayla hızlıca/ hızlı hızlı ekmeği doğra-dı.
Ayla fast / fast bread slice-Past-1Sg
'Ayla sliced the bread fast.'
b. Hızlıca/ hızlı hızlı Ayla ekmeği doğradı.
c. Ayla ekmeği hızlıca/ hızlı hızlı doğradı.
d. Ayla ekmeği doğradı hızlıca/ hızlı hızlı.

On the other hand, SMAs do not display the same type of mobility whatever the information structural status of the sentence is:

(iii) a. Ayla ekmeğ-i çok / hızlı dilimle-di.
Ayla bread-Acc much fast slice-Past
'Ayla sliced the bread very much/fast.'
b. * Çok / hızlı Ayla ekmeği dilimledi.
c. * Ayla çok / hızlı ekmeği dilimledi.
d. *Ayla ekmeğ-i dilimle-di çok / hızlı.

At this point, we cannot state for sure whether there is a PPh boundary between the verb and the postverbal SMA or whether they are parsed into the same PPh. We do not have an instrumental analysis of such structures. If they are, then this implies that not only prosodic locality but also the existence of phrase stress is required for these constituents to function as adverbs (when they are postverbal they do not carry phrase stress).

[120] Note that we do not attribute these cycles any special status. One might opt to envisage them as the complements of phase heads (Chomsky 2000, et seq.), prolific domains (cf. Grohmann 2003), or phases themselves (cf. Fox and Pesetsky 2005), etc.

allow such optionality in their composition? Or is it optionality at all? The investigation of these questions delves into the realm of the nature of cycles in syntax and the mapping of the PPh from the syntactic structure, which falls outside the scope of this work.

6.2.3 Intransitives

What is striking about sentences with intransitive verbs is that in bare intransitives, i.e. Subject+Intransitive verb structures, when the sole argument of the intransitive is referential, both inter-speaker and intra-speaker variation is observed in prosodic organization patterns. In such configurations the subject and the verbal complex are either parsed into a single PPh yielding a single phrase stress and pitch accent, which is on the subject, or the subject and the verbal complex are parsed into distinct PPhs yielding distinct phrase stresses and pitch accents.

Considering that the target sentences were elicited under wide focus, a question arises as to whether our criteria for focus-neutrality were really successful in restricting other possible focus structures. Remember that we controlled the focus structure of the stimuli in order to avoid deaccenting or narrow focus. In doing this, we assumed that a discourse entity is given if it has a salient antecedent in the immediate linguistic context (cf. Neeleman and Reinhart 1998; Schwarzschild 1999; Birner and Ward 2004; Féry and Samek-Lodovici 2006; among many others).

When this situation is explored in detail, however, it can be noticed that the issue is not rooted in whether focus-neutrality could be achieved in the

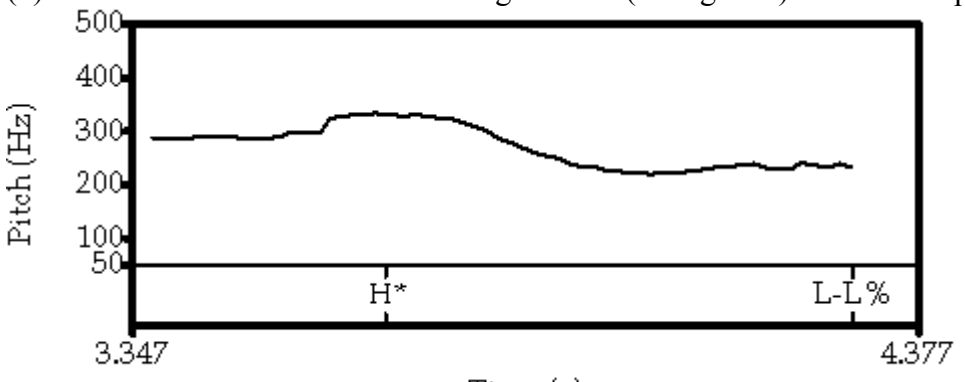
data elicitation process. In these intransitive structures, we do not observe deaccenting or narrow focus effects on either the subject or the verbal complex.

At this point a significant remark is in order. Deaccenting does not refer to not being the locus of IP-stress/"sentential stress". Deaccenting refers to a phonological process in which an anticipated metrical prominence and/or pitch accent on some linguistic expression is missing due to discourse-pragmatic factors. A deaccented expression is the locus of a flat pitch contour and/or compressed pitch range in the intonational representation. In this respect, a linguistic expression might not be the locus of IP-stress/"sentential stress", but it might still be the head of its own domain and carry a pitch accent, thus may not be unaccented or deaccented.

6.2.3.1 Unergatives

(8) illustrates the F_0 curves of sample sentences from the stimuli arranged as 'Definite Subject DP + (Unergative) Verbal Complex'. In both sentences, there is single phrasing in which the agentive DP subject and the verb are parsed into the same PPh. In both F_0 curves, the prominent syllables of the leftmost PWds, *Ablan* and *Miray*, carry phrase stress plus a bitonal L+H* pitch accent. Contrary to transitive structures with DP subjects, where the subject is phrased separately, we can see that the DP subject of an unergative can be parsed into the same PPh with the verbal complex.

(8) a. Definite Referential External Argument + (Unergative) Verbal Complex

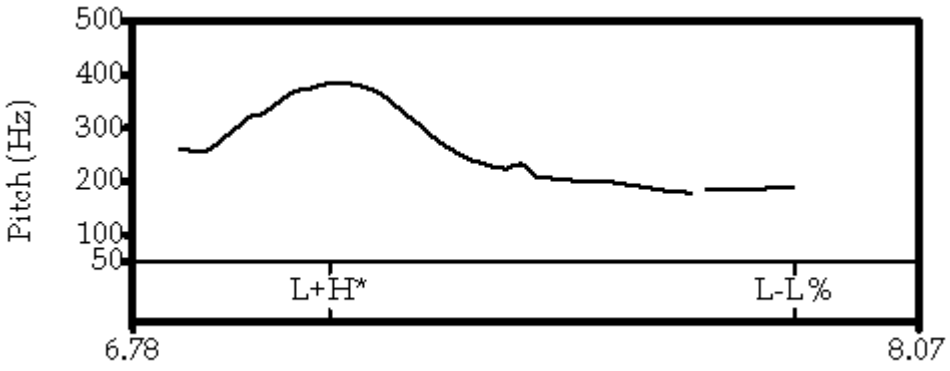


H* L- L%
| . | |
[[Ab*la-n* uyu-yo]$_{PPh}$]$_{IP}$

sister-2Sg.Poss sleep-Prog

'Your sister is sleeping.' *Speaker A*

b. Definite Referential External Argument + (Unergative) Verbal Complex



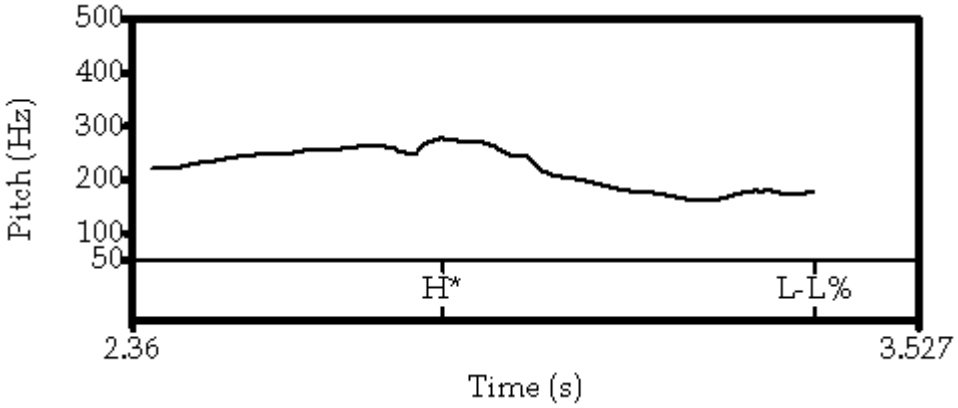
L+ H* L- L%
| . | |
[[Mi*ray* ağlı-yo]$_{PPh}$]$_{IP}$

Miray cry-prog

'Miray is crying.' *Speaker Ş*

The same phrasing is also attested when the subject DP is indefinite (9):

(9) a. Indefinite Referential External Argument + (Unergative) Verbal Complex



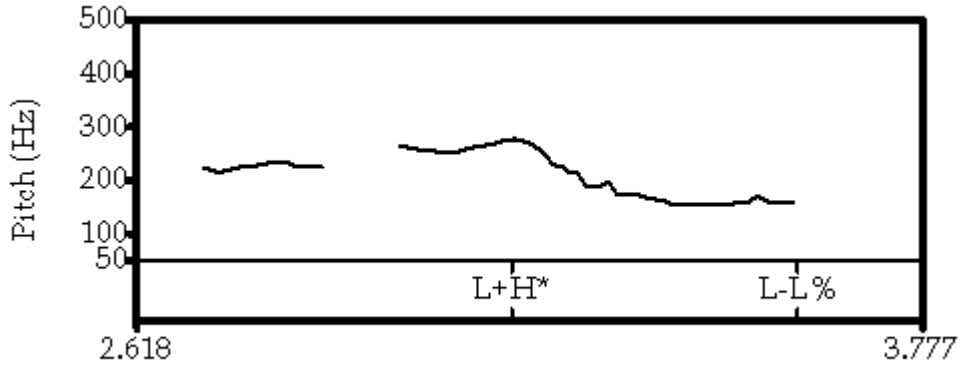
H* L- L%

[[Bi öğren*ci-m* bağır-dı]$_{PPh}$]$_{IP}$

a student-1Sg.Poss scream-Past

'A student of mine screamed.' *Speaker T*

b. Indefinite Referential External Argument + (Unergative) Verbal Complex



L+H* L- L%

[[Bi müşte*ri-m* gid-iyo]$_{PPh}$]$_{IP}$

a client-1Sg.Poss go-Prog

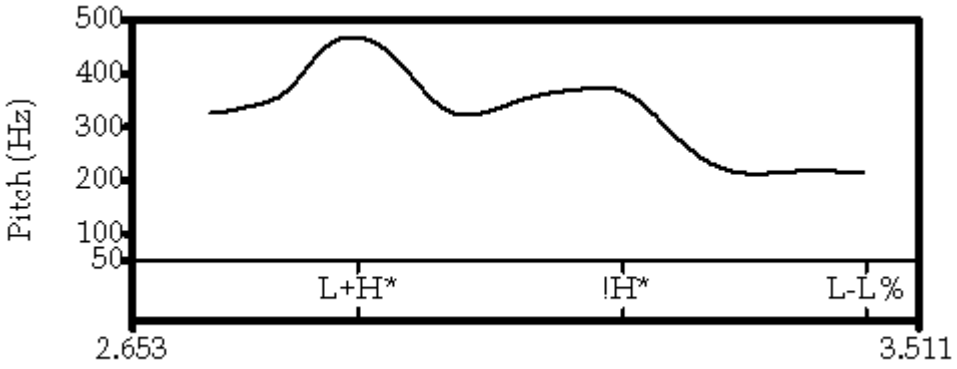
'A client of mine is going.' *Speaker T*

Note that in our discussion of non-referential NP agents and their phrasing, the reader might have entertained the idea that the referentiality of the agent plays a role

in prosodic phrasing: when the agent is referential, i.e. headed by D^0 (cf. Longobardi 1994), it is phrased separately; when it is non-referential, i.e. lacking the DP projection, it is phrased with the verbal complex. However, the example above indicates that such an assumption cannot be valid. Despite being referential, the subject resides in the same PPh with the verbal complex.

The examples in (10) and (11) below illustrate the same sentences with different prosodic and intonational structures. The difference is that they encompass multiple phrasing in which the subject DP and the verbal complex are parsed into distinct PPhs. The natural consequence of this partitioning is that two phrase stresses and two pitch accents are observed in the relevant structures.

(10) a. Definite Referential External Argument + (Unergative) Verbal Complex



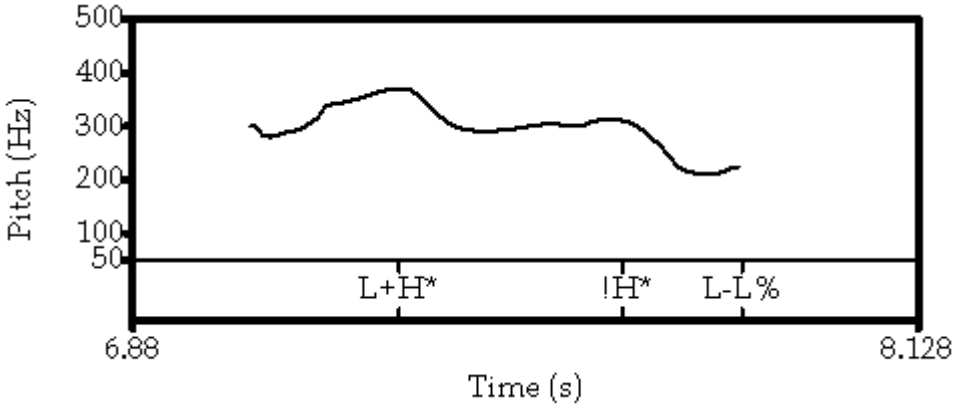
L+H* !H* L- L%

[[Ab*lan*]$_{PPh}$ [u*yu*-yor]$_{PPh}$]$_{IP}$

sister-2Sg.Poss sleep-Prog

Your sister is sleeping.' *Speaker G*

b. Definite Referential External Argument + (Unergative) Verbal Complex

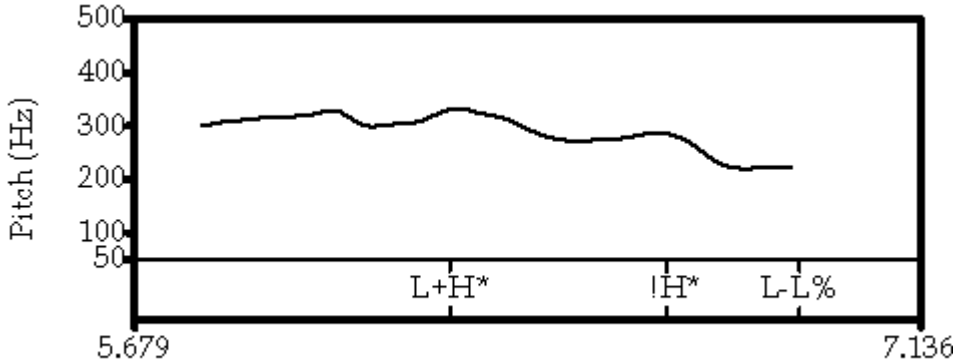


L+H* !H* L- L%
| | | |
[[Mi*ray*]$_{PPh}$ ağ*lı*-yo]$_{PPh}$]$_{IP}$

Miray cry-prog

'Miray is crying.' Speaker G

(11) Indefinite Referential External Argument + (Unergative) Verbal Complex



L+ H* !H* L- L%
| | | |
[[Bi arkada*ş-ım*]$_{PPh}$ [ağ*lı*-yor]$_{PPh}$]$_{IP}$

a friend-1Sg.Poss cry-prog

'A friend of mine is crying.' *Speaker E*

In the tables in (12a) and (13a) below, we illustrate an exhaustive list of the instances of variation in phrasal partitioning in simple declaratives with unergative verbs. In the leftmost column, the initial letters of the participants' names are given.

At the top of the tables, each sentence is given one by one. ‘1’ corresponds to the single phonological phrasing of the subject and the verbal complex, and ‘2’ refers to the distinct phonological phrasing of the subject and the verbal complex. In (12b) and (13b), the relevant sentence lists from the stimuli are provided.

Out of 40 sentences with definite subjects and unergative verbs, the number of instances with single phrasing is 18; while the number of instances with multiple phrasing is 22.

(12) a. ‘Definite Subject + (Unergative) Verbal Complex’

	1. Ablan uyuyor.	2. Ali horladı.	3. Miray ağlıyor.	4. Ali bağırdı.	5. Yeğenim yürüdü.
A	1	2	2	2	1
E	2	2	2	2	2
EA	1	2	2	2	2
G	2	1	2	1	1
K	1	2	2	2	2
S	1	2	1	1	2
Ş	1	2	1	1	1
T	1	1	2	1	1

b. Sentence List

1. Abla-n uyu-yor.
   sister-2Sg.Poss sleep-Prog
   ‘Your sister is sleeping.’
2. Ali horla-dı.
   Ali snore-Past
   ‘Ali snored.’
3. Miray ağlı-yor.

Miray cry-Prog.

'Miray is crying.'

4. Ali bağır-dı.

Ali scream-Past

'Ali screamed.'

5. Yeğeni-m yürü-dü.

nephew/niece-1Sg.Poss walk-Past

'My nephew/niece started to walk.'

On the other hand, in 40 sentences with indefinite subjects and unergative verbs, the number of instances that display single phrasing is 23; while the number of instances that display multiple phrasing is 17.

(13) a. 'Indefinite Subject + (Unergative) Verbal Complex'

	1. Bir arkadaşım ağlıyor.	2. Bir arkadaşım uyuyacak.	3. Bir öğrencim bağırıyor.	4. Bir müşterim öksürüyor.	5. Bir müşterim gidiyor.
A	1	1	1	1	1
E	2	2	2	2	1
EA	2	2	2	2	2
G	1	1	1	1	2
K	2	2	2	2	1
S	2	1	2	2	1
Ş	1	1	1	1	1
T	1	1	1	1	1

b. Sentence List

1. Bir arkadaş-ım ağlı-yor.

a friend-1Sg.Poss cry-Prog

'A friend of mine is crying.'

2. Bir arkadaş-ım uyu-yacak.

a friend-1Sg.Poss sleep-Future

'A friend of mine is going to sleep.'

3. Bir öğrenci-m bağır-ıyor.

a student-1Sg.Poss scream-Prog.

'A student of mine is screaming.'

4. Bir müşteri-m öksür-üyor.

a customer-1Sg.Poss cough-Prog.

'A customer of mine is coughing.'

5. Bir müşteri-m gid-iyor.

a customer-1Sg.Poss go-Prog.

'A customer of mine is going.'

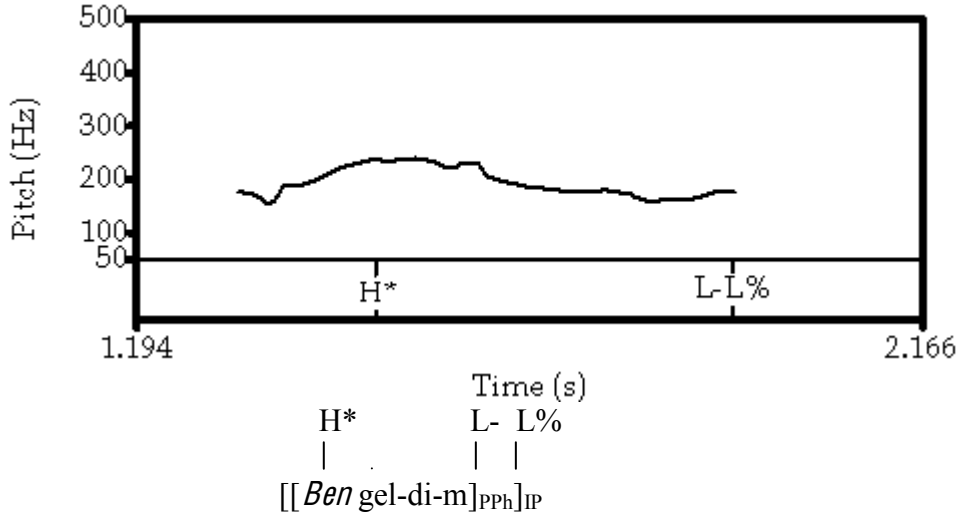
These phrasing patterns indicate that, contra Üntak-Tarhan's (2006) judgements it is not always the "verb" that carries "sentential stress" in "Subject+ Unergative verb" constructions in focus-neutral contexts. Our results show that in 80 sentences with this syntactic pattern, 41 of them carry the relevant metrical prominence on the subject rather than the "verb" (= our verbal complex) as a result of single phrasing.

6.2.3.2 Unaccusatives

When we consider simple declaratives with unaccusatives, instances of single phrasing outweigh those of multiple phrasing. In 'Definite Subject DP + (Unaccusative) Verbal Complex' configurations, all speakers have produced single phrasing without exception.

In (14), there are two examples from the stimuli. In each example, the PWd that corresponds to the definite subject NP is in the same PPh with the verbal complex. Moreover the same PWd is also the head of the PPh whereby its prominent syllable carries phrase stress and a pitch accent.

(14) a. Definite Referential Internal Argument + (Unaccusative) Verbal Complex [121]



H* L- L%

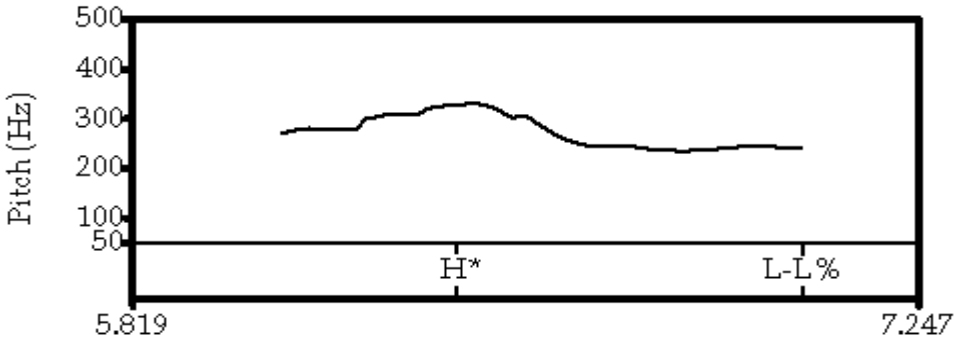
[[*Ben* gel-di-m]$_{PPh}$]$_{IP}$

I arrive-Past

'I arrived.' Speaker T

[121] Unlike languages such as English, Dutch or Italian, Turkish personal pronouns can bear stress and pitch accents in wide focus contexts. Hence, they are not unaccented categories. This observation provides an independent support for Öztürk's (2005) claim that personal pronouns are of N^0 type rather than D^0 type in Turkish. In languages where pronouns are claimed to be determiners (cf. Longobardi 1994), they are also unaccented as a phonological consequence of being function words (cf. Selkirk 1996).

b. Definite Referential Internal Argument + (Unaccusative) Verbal Complex



H* L- L%

[[El-ler-*im* don-du]$_{PPh}$]$_{IP}$

hand-Pl-1Sg.Poss freeze-Past

'My hands are cold.' *Speaker A*

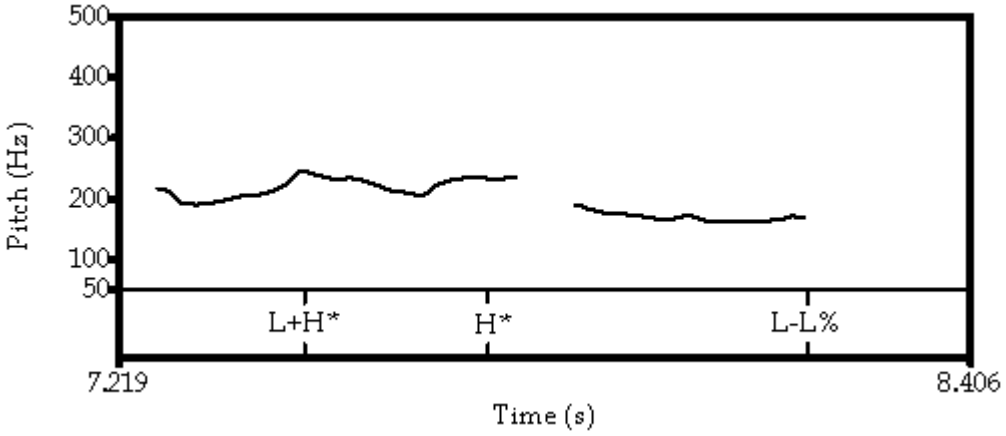
On the other hand, with indefinite subjects, there are only two instances of multiple phrasing as opposed to 38 instances of single phrasing in unaccusative structures.

An explanation of the differences between the rates of inter- and intra-speaker variation in phonological phrasing patterns in unergative constructions and unaccusatives is outside the scope of our work. However, we would like to note that both structures display variation; therefore the difference cannot be directly related to argument structure. On the other hand, all these patterns equally denote wide focus, where none of the constituents is deaccented or contrastively focused. Thus the variability of phrasing patterns cannot be attributed to focus structure. Notice that the only structure where arguments display a variable prosodic pattern in the data corresponds to bare intransitives, i.e. subject+intransitive verb constructions. In this respect, it seems that there is something special about the structure of bare intransitives that license such variability. However, investigating the roots of this

variability would take us too far afield. Thus, we leave such an endeavour to future inquiry.

Before ending this section, we would like to indicate that all non-referential arguments of intransitives are phrased into the same PPh with the verbal complex thus departing from the referential subjects of bare intransitives, which may or may not do so. In (15) and (16), the circumstantial adverbials are phrased separately, whereas the non-referential agent and the unergative VC, and the non-referential theme and the unaccusative VC are phrased together:

(15) Circumstantial Adverbial + Non-Referential External Argument



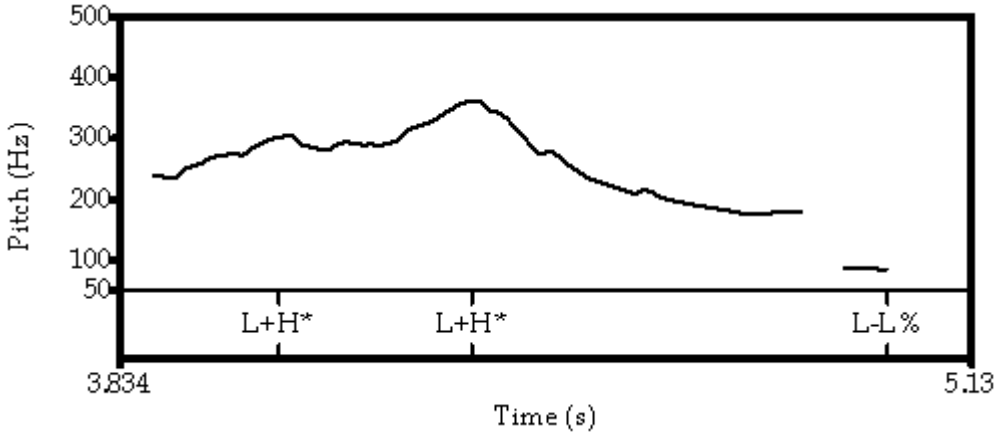
L+H* H* L- L%

[[Yan-*da*]$_{PPh}$ [be*bek* ağlı-yo]$_{PPh}$]$_{IP}$

next-Loc baby cry-Prog

'There is baby-crying next door.' *Speaker T*

(16) Circumstantial Adverbial + Non-Referential Internal Argument



L+H* L+H* L- L%

[[Ye*r-e*]$_{PPh}$ [li*mon* damla-dɪ]$_{PPh}$]$_{IP}$

floor-Dat lemon drip-past

'Some lemon juice dripped on the floor' *Speaker Ş*

In the following section we center on the prosody of argument modification, particularly adjectival and numeral modification.

6.3 Argument Modification

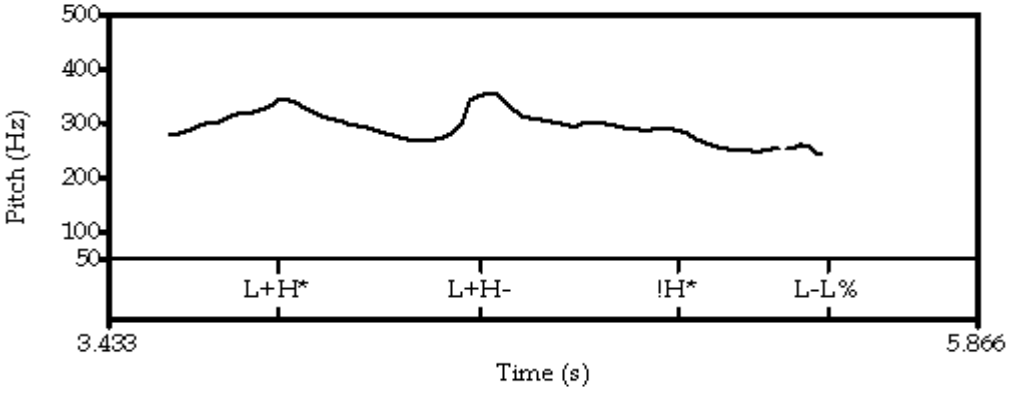
In this section we discuss the prosodic reflexes of adjectival and numeral modification. In §6.3.1, we investigate the phonology of adjectives in our data, which are all attributive. Focusing on the varying phrasing behaviours of these adjectives, we first illustrate that each pattern leads to distinct classes of meaning when the anchor is a definite description. In §6.3.2, we discuss the prosodic properties of numerals and provide a picture of the asymmetries between the prosody of subject and object modification with respect to numerals and raise a number of questions and hypotheses for future inquiry.

6.3.1 Severing the Adjective from Its Noun: the Prosody of Adjectival Modification

The most remarkable aspect of the prosody of adjectival modification in Turkish is the variable phrasing patterns: an adjective is not parsed with the same PPh with its anchor all the time (contra the examples in Kabak and Vogel (2001)). When the anchor is a [+definite] DP, the adjective is either phrased into the same PPh with the anchor (17), or it is phrased separately both in subject and object positions (18):

We would like to draw attention to the fact we have provided different translations for sentences containing single phrasing and multiple phrasing structures. This is because one can infer different meanings in each pair, although the sentences are segmentally identical. We argue that what lies at the heart of the semantic distinction between single phrasing and multiple phrasing structures is restrictive versus non-restrictive modification.

(17) Adjectival Modification: Subject Position



L+H* L+H- !H* L- L%

[[Yaralı Yalovalı-lar]$_{PPh}$ [anı-lar-ın-ı yaz-mış]$_{PPh}$]$_{IP}$

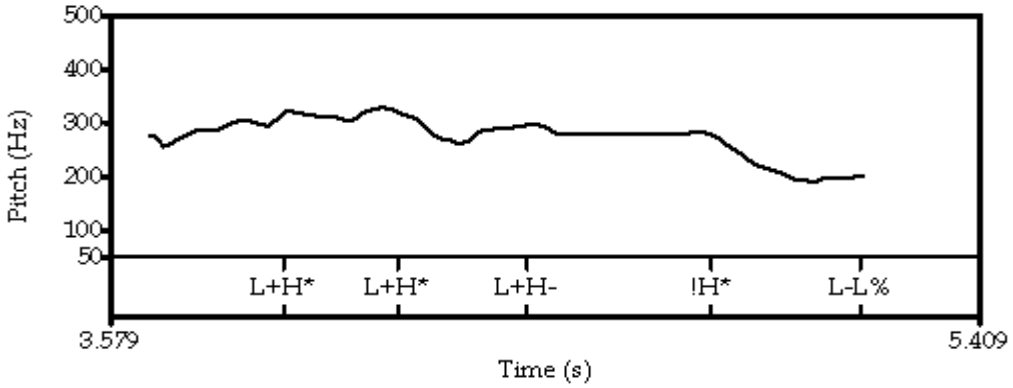
injured Yalovalı-Pl memoir-Pl-3Sg.Poss-Acc write-Evid

'The people of Yalova who are injured have written down their memoirs.'

'The injured people of Yalova have written down their memoirs.' *Speaker A*

In (17), the adjective is interpreted as a restrictive one, which results in the intersection of the denotations of the adjective and the N/NP. [Yaral<u>ı</u> Yalovalılar]$_{PPh}$ refers to a unique set of individuals from Yalova that are injured.[122] In (18), on the other hand, the adjective has a non-restrictive reading.

(18) Adjectival Modification: Subject Position



L+H* L+H* L+H- !H* L- L%

[[Yara*lı*]$_{PPh}$ [Ya*l*o*v*alı-lar]$_{PPh}$ [anı-lar-ı*n*-ı yaz-mış]$_{PPh}$]$_{IP}$

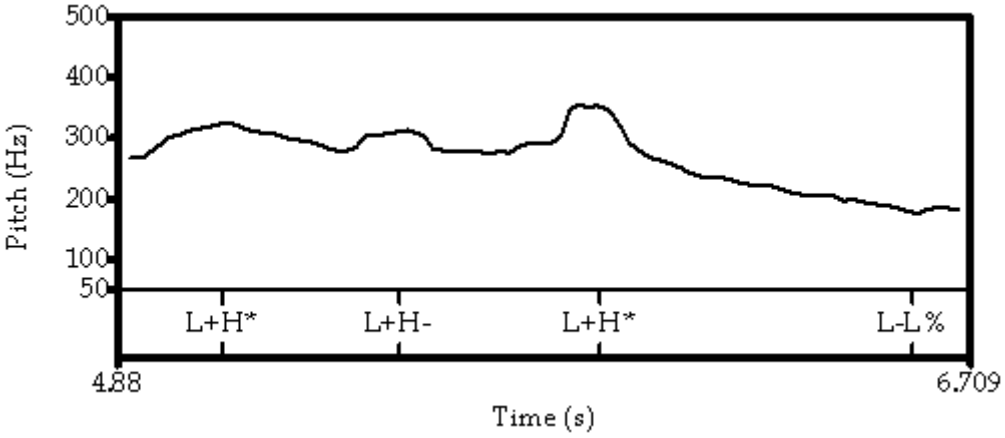
injured Yalovalı-Pl memoir-Pl-3Sg.Poss-Acc write-Evid

'The people of Yalova, who are injured, have written down their memoirs.' *Speaker S*

We illustrate a similar variability in phrasing in object positions in (19) and (20). Akin to the previous examples, single phrasing cues restrictive reading, whereas multiple phrasing cues non-restrictive reading:

[122] Here the position of phrase stress is underlined.

(19) Adjectival Modification: Object Position



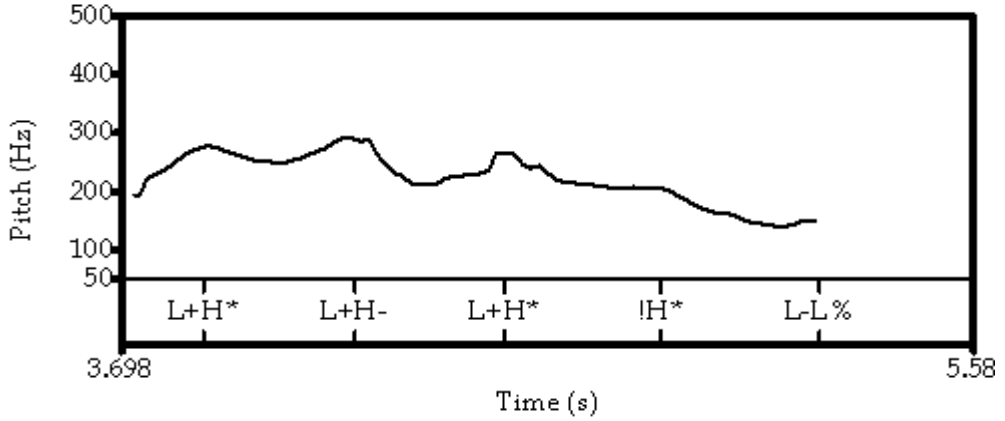
L+H* L+H- L+H* L- L%

[[A/*an*yalı-lar]$_{PPh}$ [yara*lı* maymun-u arı-yo-muş]$_{PPh}$]$_{IP}$

Alanyalı-Pl injured monkey-Acc look for-Prog-Evid

'The people of Alanya have been looking for the injured monkey.' *Speaker Ş*

(20) Adjectival Modification: Object Position



L+H* L+H- L+H* !H* L- L%

[[A/*an*yalı-lar]$_{PPh}$ [yara*lı*]$_{PPh}$ [maymu*n-u* arı-yo-muş]$_{PPh}$]$_{IP}$

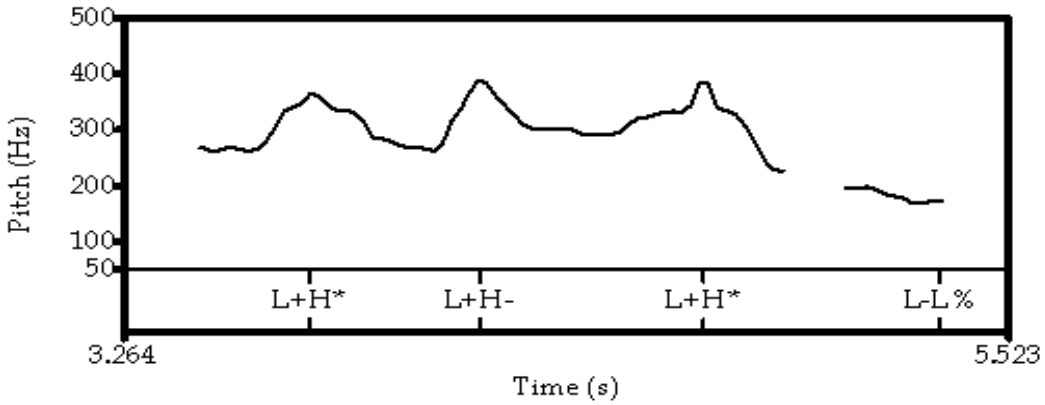
Alanyalı-Pl injured monkey-Acc look for-Prog-Evid

'The people of Alanya have been looking for the monkey, which is injured.'

Speaker T

On the other hand, we have observed no such variability with indefinite anchors in subject positions in the data. All of them are parsed into the same PPh with their adjectives yielding restrictive interpretation at the same time:

(21) Adjectival Modification: Subject Position



L+H* L+H- L+H* L- L%

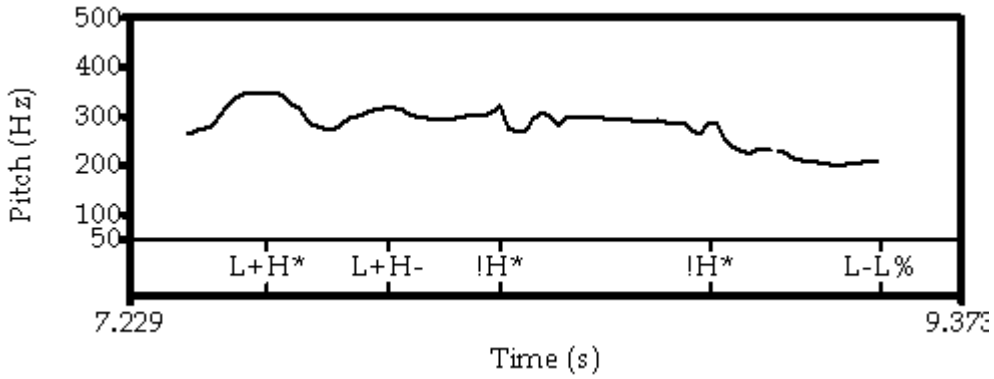
[[U*zun* bi lama]$_{PPh}$ [yavru-lar-ı*n*-ı besli-yo]$_{PPh}$]$_{IP}$

tall a llama baby-Pl-3Sg.Poss-Acc feed-Prog

'A tall llama is feeding her babies.' *Speaker Ş*

Contrasting with the abovementioned observation, when an adjective modifies an indefinite object, it is always parsed separately, whereby the indefinite object and the verbal complex are phrased together as in (22). And unlike the previous instances, the prosodic pattern is semantically underspecified; both restrictive and non-restrictive interpretations are compatible with this structure. This implies that there is a structural constraint at play which forces the separate parsing of the adjective and the anchor, and this constraint overrides the instantiation of two distinct patterns which reflect a semantic (and possibly syntactic) distinction in terms of restriction.

(22) Adjectival Modification: Object Position



L+H* L+H- !H* !H* L- L%

[[A*lan*yalı-lar]$_{PPh}$ [yara*lı*]$_{PPh}$ [bi maymu*n-u* kurtar-mış]$_{PPh}$]$_{IP}$

Alanyalı-Pl injured monkey-Acc save-Evid

'The people of Alanya have saved an injured monkey.' *Speaker S*

'The people of Alanya have saved a monkey, which was injured.'

The alternative phrasing patterns of adjectives which have a semantic import could be attributed to their distinct syntactic positions. Taking into account the hypothesis that restrictive modifiers attach at the NP level, but non-restrictives attach at the DP level (cf. Jackendoff 1977; among others) a similar analysis could be pursued in the DP syntax of Turkish. Then such a positional difference could be assumed to result in distinct phonological phrasing patterns.

Conversely, one could depart from the minimalist approach to the architecture of grammar, and argue for a direct communication between semantics and phonology, where each interpretation could be assumed to be encoded in phonology, specifically in phonological phrasing patterns rather than a positional difference in syntax. However, this scenario would fall into problems when the prosody of indefinite objects is considered. As we have seen, indefinite objects are always detached from their adjectives where prosody alone cannot distinguish

whether the reference of the object is restricted or not. Which mechanism forces the separate parsing of the adjective and the indefinite object, thus, overriding the very semantic distinction remains as a valid question requiring further investigation.

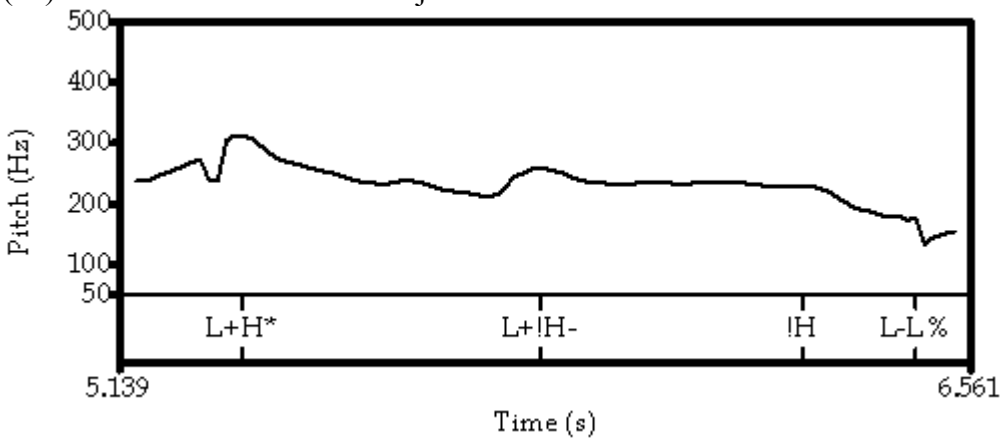
We would also like to note that attributive adjectives display an interesting contrast with relative clauses in that restrictive and non-restrictive prerelatives do not have particular phrasing properties in terms of phonological phrasing, or intonational phrasing, as we discussed in Chapter 5. Both being prenominal modifiers, the two categories therefore diverge in their phonological structure.

6.3.2 Numerals: Where Are They Located?

Numeral modification gives way to alternative phrasing patterns similar to adjectival modification. However, it is different from adjectival modification in that distinct phrasing patterns do not express distinct classes of meanings.

Consider (23) and (24) below. In (23) the quantified subject has been parsed into the same PPh with the numeral. There is single phrase stress (+ a pitch accent), which is on the leftmost PWd, namely the numeral *Yedi*. On the other hand, in (24) the quantified NP *Alanyalı* is parsed into a distinct PPh, and so is the numeral, whereby each element carries its own phase stress and pitch accent. In *Alanyalı* phrase stress is on the prominent syllable *–lan-*.

(23) Numeral Modification: Subject Position



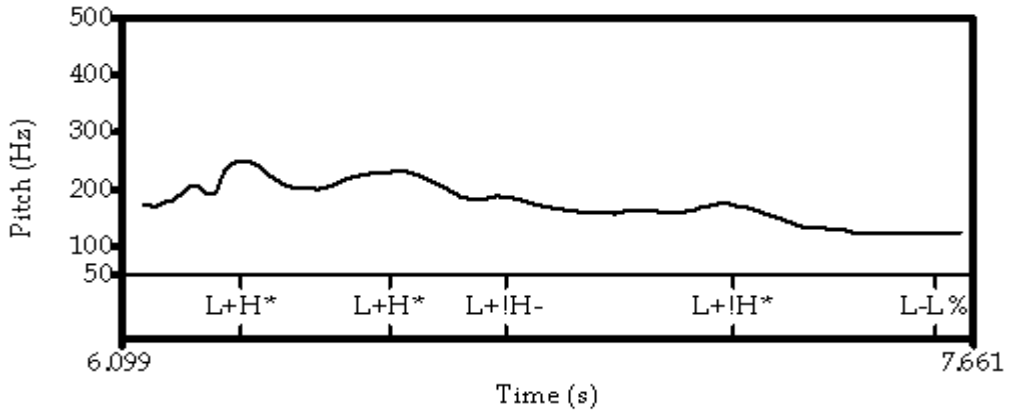
L+H* L+!H- !H* L- L%

[[Ye*di* Alanyalı]$_{PPh}$ [ev-leri*n-i* arı-yo-muş]$_{PPh}$]$_{IP}$

seven Alanyalı house-3Pl.Poss-Acc look for-Prog-Evid

'Seven people from Alanya have been looking for their house.' *Speaker EA*

(24) Numeral Modification: Subject Position



L+H* L+H* L+!H- L+!H* L- L%

[[Ye*di*]$_{PPh}$ [A*lan*yalı]$_{PPh}$ [ev-leri*n-i* arı-yo-muş]$_{PPh}$]$_{IP}$

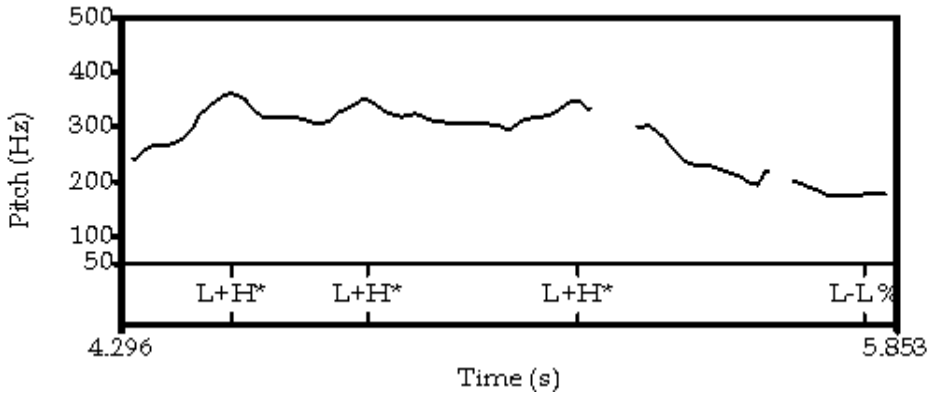
seven Alanyalı house-3Pl.Poss-Acc look for-Prog-Evid

'Seven people from Alanya have been looking for their house.' *Speaker E*

Conversely, in object positions the numeral is always parsed into a distinct PPh separate from the quantified object. Consider (25a) and (25b), where each accusative

marked object has undergone numeral quantification. In both examples the numeral is parsed into its own phonological phrase, whereas the object plus the verbal complex are phrased together. These examples contrast with the prosody of the subject in (23) where the numeral and the quantified NP are parsed into a single PPh.

(25) a. Numeral Modification: Object Position



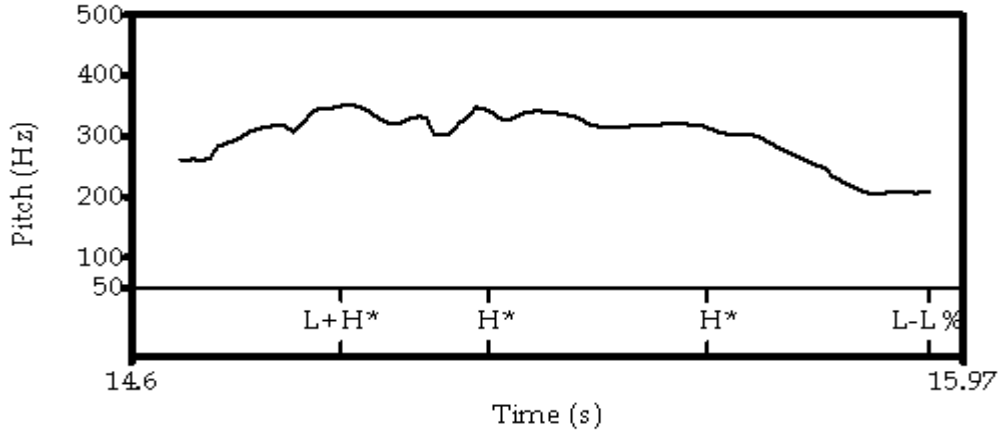
L+H* L+H* L+H* L- L%

[[Mi*ne*]$_{PPh}$ [yir*mi*]$_{PPh}$ [lale-*yi* suli-cak]$_{PPh}$]$_{IP}$

Mine twenty tulip-Acc water-Future

'Mine will water twenty tulips.' *Speaker Ş*

b. Numeral Modification: Object Position



L+H* H* H* L- L%

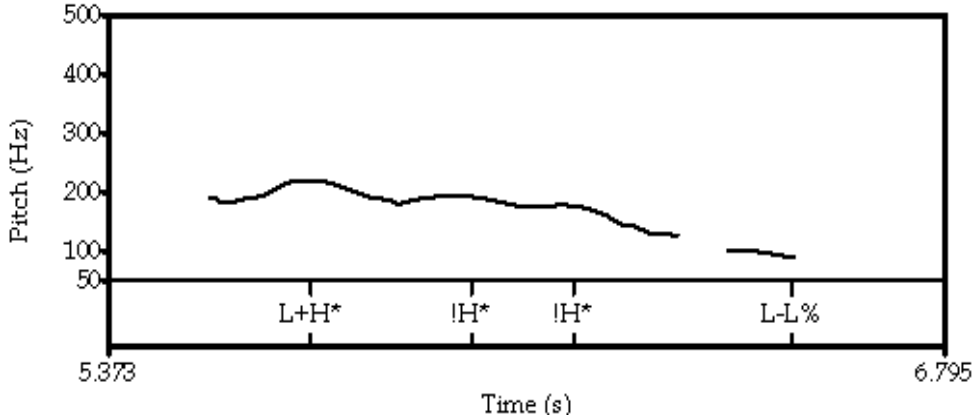
[[Ley*la*]$_{PPh}$ [i*kli*]$_{PPh}$ [rüya-sı*n-ı* anlat-ıyo]$_{PPh}$]$_{IP}$

Leyla two dream-3Sg.Poss-Acc tell-Prog

'Leyla is telling two dreams of hers.' *Speaker S*

Likewise, non-referential objects of transitives are parsed distinctly from the numeral in the same environment as illustrated in (26a) and (26b) below:

(26) a. Numeral Modification: Object Position



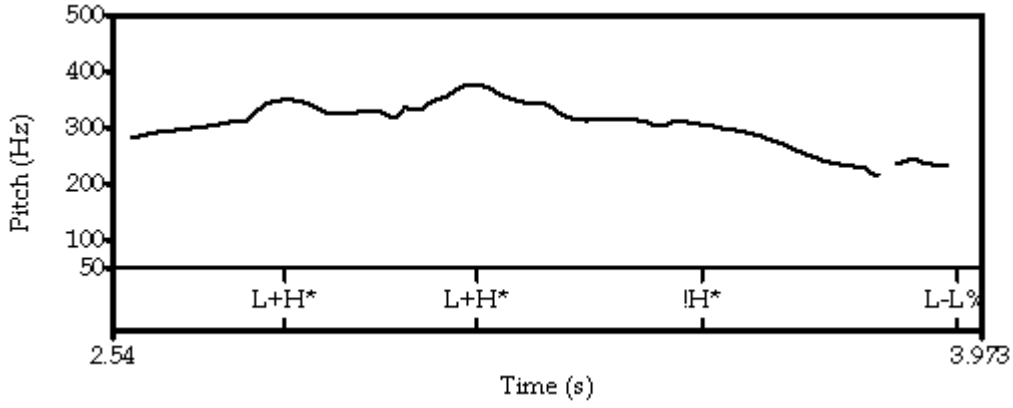
L+H* !H* !H* L- L%

[[Mi*ne*]$_{PPh}$ [yir*mi*]$_{PPh}$ [*mum* yak-mış]$_{PPh}$]$_{IP}$

Mine twenty candle light-Evid

'Mine lit twenty candles.' *Speaker Ş*

b. Numeral Modification: Object Position



L+H* L+H* !H* L- L%

[[Ay*la*]$_{PPh}$ [yir*mi*]$_{PPh}$ [manda*lı*na ye-di]$_{PPh}$]$_{IP}$

Ayla twenty tangerine eat-Past

'Ayla ate twenty tangerines.' *Speaker Ş*

We are now left with an asymmetry between the prosody of numeral modification in subjects and objects. While a subject may or may not be parsed into the same PPh with its numeral (e.g. (23) versus (24)), an object is always parsed together with the verbal complex separate from the numeral. Furthermore, the variability in the parsing pattern of subjects with numerals does not cue or mark a semantic distinction between the alternating patterns unlike the case in adjectival modification.

Regarding the prosodic variation in numerally quantified subjects, a number of alternative explanations are pursuable. If all phonological phrasing patterns are assumed as a direct reflection of syntactic patterns, it could be sustained that the attachment sites of the numeral are flexible within the DP, thus generating semantically vacuous phrasing patterns in the phonological component. Or it can be argued that the late attachment of numerals is a possibility in grammar, and the distinct phrasing of the numeral is a direct consequence of late attachment, whereas the other pattern is the result of early attachment. Alternatively, if only one of the phrasing patterns is assumed to be the syntax-grounded one, it could be argued that the other pattern is a pure product of the phonological component, which allows such flexibilities so long as the resulting structure does not violate a grammatical dependency.[123]

[123] The hypothesis that the phonological component allows flexibilities in phrasing patterns so long as the resulting structure does not violate a grammatical dependency (henceforth, Hypothesis A) can be verified in a number of other structures. For instance, if we pursue the hypothesis (henceforth, Hypothesis B) that a simple manner/measure adverb (SMA), which is ambiguous with an adjective, receives its adverbial function under strict prosodic locality with the verb(al complex), we should never find flexible phrasing patterns in the case of SMAs. This is actually borne out in Turkish. For

Considering the obligatory phrasing of the numeral distinct from the numerally quantified Acc-marked or non-case-marked NP objects, one could hypothesize that such numerals are actually adverbs which quantify the *v*P/VP rather than the object itself and, thus, they are phrased separately. Of course this proposal would lead us to the question of why subjects are numerally quantified (cf. the previous paragraph) but objects are not. Then one could hypothesize that the instances which we considered as the numeral modification of subjects are instances of adverbial modification as well, whereby the numeral adjoins to TP (rather than the subject DP/NP) and quantifies the whole structure. Of course, treating both instances of numeral modification as adverbial modification takes us to the very beginning: Why is there an asymmetry in the phrasing behaviours of numerals in TP modification, which yield two different patterns, and those in *v*P/VP modification, which display a single phrasing pattern? Are syntactic positions the source of this variability? At this point, we leave the thorough investigation of this question, which delves into the realms of the syntax and semantics of numerals, to future inquiry.

Let us now consider the simultaneous application of numeral and adjectival modification and its reflexes in phonology. What is common to all such structures is that the numeral, adjective and the subject or object DP/NP are never parsed into the same PPh. The adjective is either parsed into the same PPh with the preceding

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instance, the PPh in (a), which includes a 'SMA + Non-referential Theme+ Verbal Complex' sequence, can never be promoted into two PPhs such as (b):

a. $[[\text{zor}]_{\text{PPh}}\ [\text{kitap okudum}]_{\text{PPh}}]_{\text{IP}}$
hard book read-Past

b. $[[\text{zor kitap}]_{\text{PPh}}\ [\text{okudum}]_{\text{PPh}}]_{\text{IP}}$

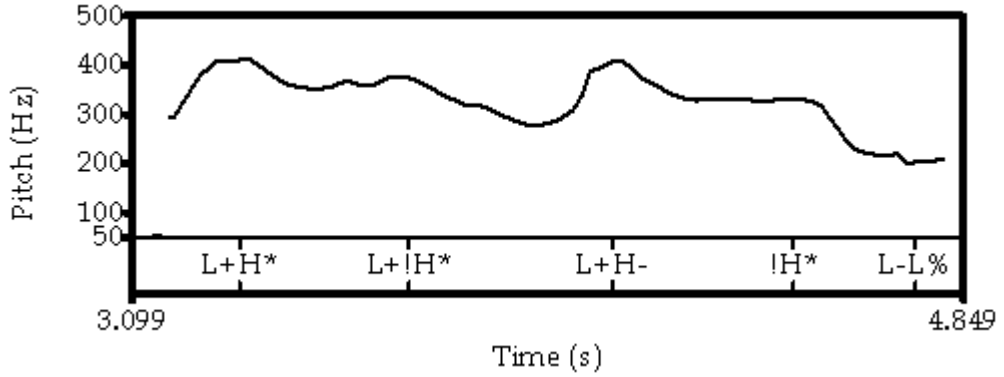
'I hardly read books'.

In the light of Hypothesis A, it can be argued that this flexibility is not allowed, because it would suspend the grammatical dependency between the SMA and the verb(al complex).

numeral leaving out the anchor, or it is parsed into the same PPh with its anchor whereby the numeral is parsed on its own. This observation holds both in subject and object positions.

Recall that in the previous section we associated each phrasing pattern in adjectival modification with a distinct semantic status. We specifically pointed out that in modified definites (i) when the adjective and its anchor are parsed into the same PPh, where the adjective carries phrase stress, the adjective is interpreted as a restrictive one, and (ii) if the adjective and the anchor are parsed into distinct PPhs, the adjective is interpreted non-restrictively. Consistent with this observation, when the adjective is parsed with its anchor leaving out the numeral, it is interpreted restrictively as in (27):

(27) Numeral + Adjective Modification



L+H* L+!H* L+!H L+!H* L- L%

[[*On*]$_{PPh}$ [yara*lı* Yalovalı]$_{PPh}$ [anı-lar-ı*n-ı* yaz-mış]$_{PPh}$]$_{IP}$

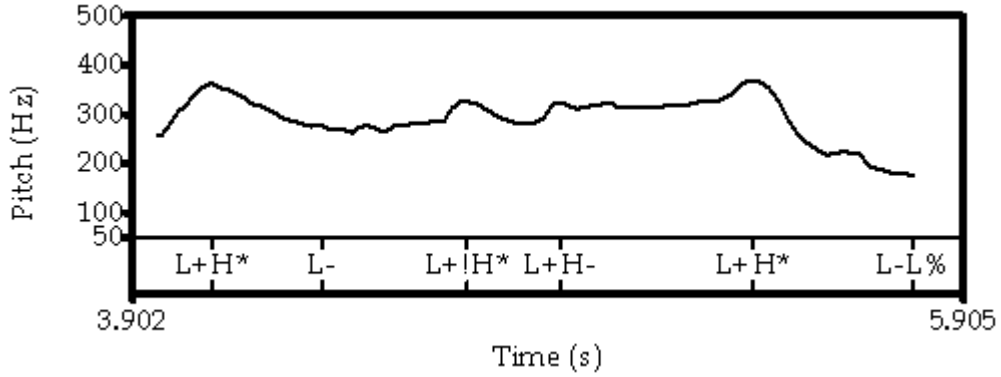
ten injured Yalovalı memoir-Pl-3Sg.Poss-Acc write down-Evid

'Ten injured people of Yalova have written down their memoirs.' *Speaker G*

In (28), the adjective resides in the same PPh with the numeral. The numeral carries phrase stress and the low phrase accent stretches upon the adjective, which does not

carry phrase stress or pitch accent as a consequence of not being parsed in a prosodically prominent position unlike (26). Parsed distinct from its anchor, the adjective is interpreted as a non-restrictive one:

(28) Numeral + Adjective Modification



L+H* L- L+!H* L+H- L+H* L- L%

[[*On* yaralı]$_{PPh}$ [Ya/*o*valı]$_{PPh}$ [anı-lar-ı*n*-ı yaz-mış]$_{PPh}$]$_{IP}$

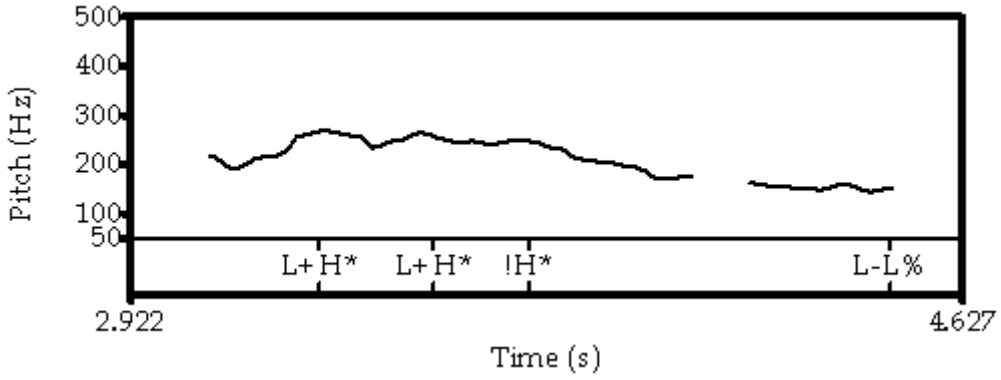
ten injured Yalovalı memoir-Pl-3Sg.Poss-Acc write down-Evid

'Ten people of Yalova, who are injured, have written down their memoirs.'

Speaker Ş

Similarly, in (29) the adjective and the object are phrased together and the resulting pattern yields a restrictive interpretation of the object:

(29) Numeral + Adjective Modification



L+H* L+H* !H* L- L%

[[Mi*ne*]$_{PPh}$ [yir*mi*]$_{PPh}$ [*mor* lale-yi suli-cak]$_{PPh}$]$_{IP}$

Mine twenty purple tulip-Acc water-Future

'Mine will water twenty purple tulips.' *Speaker T*

In this chapter we investigated how alternations in argument structure, argument referentiality and argument modification affect prosodic organization. Providing a thorough description of the prosody of arguments and adjuncts, we raised both component-specific and interface-related questions, which await future inquiry.

We would like to underscore that our findings, which derive from the domain of experimental phonology, often led to varying streams of hypotheses. This clearly indicates that investigating the structure of speech broadens the way we approach to syntactic and semantic phenomena.

CHAPTER 7

CONCLUSION

In this study, which delves into the realms of experimental prosody, we investigated the phonetics and phonology of phrasal domainhood in Turkish prosodic structure, and its implications for the syntax-prosody mapping. Our research questions were the following:

i. Can we identify another level of phrasing above the Phonological Phrase (PPh), which is the highest/largest prosodic domain hitherto explored in Turkish phonology (cf. Kabak and Vogel 2001)?
ii. If yes, how many levels of phrasing above the PPh does Turkish prosodic structure involve?
iii. What are the modes of mapping between syntax and phonology at the level of the domain(s) higher than the PPh?
iv. In what ways, if ever, do alternations in argument structure, argument referentiality, argument modification or clausal complexity affect prosodic organization?

In Chapter 4 we argued that Turkish prosody governs a separate and single level of phrasing above the PPh, namely the Intonational Phrase (IP). Our evidence is based on boundary tone placement, linguistic pause distribution, the position of head-prominence, and phrase final lengthening of vowels at IP-final positions. On average, the vowel duration at IP-final positions (M = .1714, SE = .006), is

significantly higher than the vowel duration at PPh-final positions (M = .0471, SE = .002), $t(6)$ =, $p < .001$, r = .98.[124]

For head-prominence, we focused on structures with single and multiple sentential stresses. Thereby we revisited the notion of sentential stress and showed that the phenomenon is not sentential or clausal, but rather a reflex of prosodic structure, in particular, intonational phrasing.

Aside from sentential stress, we revisited the phonological specification of the postverbal domain in Turkish. Contra Özge (2003), we showed that the postverbal domain does not invariably exhibit pitch flooring, and contra Göksel and Özsoy (2000), we showed that the same domain can actually act as the locus of focus. We therefore argued that the notions "preverbal" and "postverbal" do not suffice to explain the distribution of focus and pitch flooring. An exhaustive account of their distribution has to make reference to syntax-grounded prosodic constituency rather than surface linearity.

In Chapter 5 we focused on the syntactic environments where intonational phrasing is and is not induced. In view of the data where root clauses and *ki*-relatives exhibit a strong affinity to the IP, we first inquired whether a syntactic clause is essentially parsed as an IP or whether it can start an "intonational unit" (cf. Scheer 2008, 2009) at PF. Based on the prosodic organization of finite complementation structures, we illustrated that syntactic clausehood does not have a unique prosodic reflex. Following this fact, we addressed the question of whether the non-restrictive nature of the post-head *ki*-relative could be correlated with its disintegrated prosody akin to the case in languages where non-restrictive/appositive relatives are observed to trigger intonational phrasing.

[124] The values are indicated in terms of seconds.

In order to investigate this question, we contrasted the prosody of non-restrictive prerelatives and *ki*-relatives. We showed that the former RC type does not prompt IP-formation in contrast to the latter. We further displayed that non-restrictive prerelatives are prosodically similar to restrictive prerelatives; both RC types do not exhibit detachment at the IP-level from the elements of the root clause. Contra the general assumption in the literature that the restrictive/non-restrictive taxonomy also divides the RCs into two classes regarding their phonological structure (e.g. Emonds 1979; Bing 1979; Nespor and Vogel 1986; among many others), we thus showed that the relevant taxonomy does not correctly capture the phrasing behaviors of relative clauses. Non-restrictiveness does not entail prosodic disintegration at the IP-level.

Seeking an explanation for the special status of *ki*-relatives regarding prosody, we further delved into the semantic/pragmatic disparities between non-restrictive prerelatives and *ki*-relatives. We showed that the two clause types also differ in terms of their anchors, how they behave in indirect quotation environments, their degree of restriction and their discourse-pragmatic functions.

Based on a variety of differences between the two types of non-restrictives, we argued that *ki*-relatives and another class of *ki*-clauses that only function as parentheticals carry the typical properties of supplements (cf. Potts 2003, 2005). Consequently we unified both clause types under the supplement category, and we analyzed them under two classes: supplementary *ki*-relatives and *ki*-parentheticals. With this taxonomy, we proposed a novel analysis of these clauses, which did not receive much attention in the literature.

Our analysis of *ki*-relatives as supplementary relatives was also the source of another proposal regarding the typology of relativization in Turkish. We argued

that prerelatives are integrated relative clauses in the sense of Potts (2003, 2005) based on the facts that they are potentially restrictive and prosodically integrated structures along with their non-strictly-speaker-oriented nature as revealed by their embeddability into indirect quotations.

Next, we returned to the question of why root clauses and *ki*-relatives behave uniformly in prosody. We evaluated Selkirk's (2005) unification of supplements and root/matrix level clauses as [+comma] constituents (cf. Potts 2003, 2005), namely Comma Phrases. We argued against this unification because it loses the secondary entailment nature of supplemental expressions by treating them on a par with root clauses, and it also disregards the empirical coverage in Potts (ibid.) that clearly distinguishes between at-issue content and Conventional Implicature content.

In what follows, we proposed a new account of intonational phrasing which centers on the notion of illocutionary force. We started our discussion by pointing out that the studies which attribute intonation a unique role in clause-typing base their assumptions on root-level phenomena and they fail to account for the absence of intonational cues, more specifically the so-called clausal tunes, in complementation structures, which do carry their own clause type information. We also showed that they cannot explain why certain forms of "questions" cannot undergo embedding.

Considering that intonational phrasing and the so-called "clausal tunes" are restricted to structures with illocutionary force specification, we claim that both phenomena are the reflexes of illocutionary force, as defined in Chierchia and McConnell-Ginet (1990), whereas clause-typing is strictly intertwined with sentential force, as defined in (ibid.). We argue for a two-way partitioned

representation of ForceP in the CP domain: an outer $Force_{Illocutionary}P$ layer, which dominates an inner $Force_{Sentential}P$ layer.

In this model, clause-typing operates at $Force_{Sentential}^{0}$, a grammatical process which specifies how the content of a clause is conventionally presented, whereas $Force_{Illocutionary}^{0}$ specifies speaker intentional meaning (cf. Grice 1957; Searle 1965). The proposed model captures not only the phonological similarity between root clauses and *ki*-relatives (+ *ki*-parentheticals) and their speech act nature, but also why the so-called clausal tunes are observed in structures with distinct illocutionary force(s) rather than all clausal structures.

As for non-IP-inducing clauses, we analyzed them as truncated structures. We argued that prerelatives, i.e. in our analysis integrated relative clauses, finite complement clauses and *ki*-headed finite complement clauses are phonologically integrated into their superordinate clause due to the fact that they are truncated from the $Force_{Sentential}P$ layer, i.e. what is left is the domain of the clause starting from $Force_{Sentential}P$. This predicts that they do not trigger intonational phrasing and they do not carry the so-called clausal tunes despite carrying sentential force.

Regarding the nature of the mapping, we adopted an End-based approach (cf. Selkirk 1986; 1996; 2000; 2005; Selkirk and Tateishi 1988, 1991; Selkirk and Shen 1990; McCarthy and Prince 1993). We argued that the IP is derived through a right-edge-alignment constraint which matches the right edge of a $Force_{Illoc}P$ with the right edge of an IP in the interface phonological representation, which captures the surface asymmetries in intonational phrasing in Turkish. We also pointed out the obvious shortcoming of an alternative phase-based approach: it generates more IP-edges than we actually observe.

In Chapter 6, we provided a detailed picture of the prosody of arguments in Turkish. In contrast with the assumptions of impressionistic approaches to prosodic organization (e.g. Kabak and Vogel 2001) or stress (e.g. Üntak-Tarhan 2006), we showed that the prosody of arguments displays variable phrasing patterns. We discussed that some of the patterns yield distinct classes of meanings, while some of them are semantically vacuous structures. Aside from the variable phrasing patterns, we also underscored particular rigidities such as the obligatory phrasing of numerals separate from the noun phrase in object positions. For both cases, we raised a number of hypotheses and research questions pertinent to the nature of syntactic derivations and the organization of interfaces, which await future inquiry.

APPENDIX A

Participant Profile

PARTICIPANT	AGE AT THE TIME OF DATA COLLECTION	SEX	OCCUPATION
A	24	F	Student
E	22	M	Student
EA	45	F	Medical Doctor
G	24	F	Student
K	25	M	Teacher
S	22	F	Student
Ş	49	F	Retired
T	25	M	Student

APPENDIX B

Target Sentences

1) Ayla anılarını yazıyor.
'Ayla is writing her memoirs.'

2) Memurlar Anamuru anlatıyor.
'The officers are talking about Anamur.'

3) Leyla rüyalarını anlatıyor.
'Leyla is telling her dreams.'

4) Ayla Almanyayı özlemiş.
'Ayla has missed Almanya.'

5) Alanyalılar evlerini arıyormuş.
'People from Alanya have been looking for their houses.'

6) Ayla bir mimarı bekliyor.
'Ayla is waiting for an architect.'

7) Aynur bir memuru arıyordu.
'Aynur was looking for an officer.'

8) Lale bir leyleği yaralamış.
'Leyla has injured a stork.'

9) Gazeteciler bir adamı bekliyormuş.
'Journalists have been waiting for a man.'

10) Anamurlular bir maymunu kurtarmış.
'The people of Anamur have saved a monkey's life.'

11) Ayla yemek yiyor.
'Ayla is eating her meal.'

12) Annem enginar yıkıyor.
'My mother is washing some artichoke.'

13) Almanyalılar menemen yiyor.
'People from Almanya are eating menemen.'

14) Alanyalılar ayran içiyor.
'People from Alanya are drinking ayran.'

15) Mine mum yakmış.
'Mine has lit a candle.'

16) Bir öğrencim ödevini unutmuş.
'A student of mine has forgotten about her/his homework.'

17) Bir maymun muzunu arıyor.
'A monkey is looking for its banana.'

18) Bir lama yavrularını besliyor.
'A lama is feeding her babies.'

19) Bir adam Aylayı bekliyor.
'A man is waiting for Ayla.'

20) Bir bayan Numanı aradı.
'A woman called Numan.'

21) Aylayı yılan soktu.
'Ayla has been snake-bitten.'

22) Ablamı arı soktu.
'My elder sister has been bee-bitten.'

23) Lemanı maymun ısırdı.
'Leman has been monkey-bitten.'

24) Maymunumu minibüs ezmiş.
'A minibus has smashed my monkey.'

25) Anamuru yağmur basmış.
'Anamur has been flooded due to rain.'

26) Ablan uyuyor.
'Your elder sister is sleeping.'

27) Ali horladı.
'Ali snored.'

28) Miray ağlıyor.
'Miray is crying.'

29) Ali bağırdı.
'Ali screamed.'

30) Yeğenim yürü-dü.
'My nephew/niece has started to walk.'

31) Bir arkadaşım ağlıyor.
One of my friends is crying.'

32) Bir arkadaşım uyuyacak.
'One of my friends is going to sleep.'

33) Bir öğrencim bağırdı.
'One of my students has screamed.'

34) Bir müşterim öksürüyor.
'One of my customers is coughing.'
35) Bir müşterim gidiyor.
'One of my costumers is going.'
36) Yerde yılan yürüyor.
'A snake is creeping on the ground.'
37) Yanda bebek ağlıyor.
'A baby is crying in the next room.'
38) Banyoda arı uçuyor.
'A bee is flying in the bathroom.'
39) Odada bebek uyuyor.
'A baby is sleeping in the room.'
40) Ben geldim.
'I have arrived.'
41) Maymunum ölmüş.
'My monkey has died.'
42) Ayla geldi.
'Ayla has arrived.'
43) Dondurmam eridi.
'My ice-cream has melted. '
44) Ellerim dondu.
'My hands feel very cold.'
45) Bir arkadaşın geldi.
'One of your friends has arrived.'
46) Bir yakınım öldü.
'An acquaintance of mine has passed away.'
47) Bir yakınım döndü.
'An acquaintance of mine has returned.'
48) Bir öğrencim yaralanmış.
'One of my students has been injured.'
49) Bir öğrencim düştü.
'One of my students has fallen off.'
50) Banyoda lamba patladı.
'A lamp has gone wrong in the bathroom.'
51) Yere limon damladı.
'Some lemon juice has dripped on the ground.'

52) Alanya'dan mum geldi.
'We received some candles from Alanya.'

53) Yanağına arı kondu.
'A bee has landed on your cheek. '

54) Ayla Yalova'yı zor bulmuş.
'Ayla has had difficult time in finding Yalova.'

55) Leyla yemeğini yavaş yedi.
'Leyla has eaten her food slowly.'

56) Yalovalılar odalarını zor beğendiler.
'People from Yalova hardly liked their room.'

57) Ablam az uyuyor.
'My elder sister does not sleep much.'

58) Numan iyi yüzüyor.
'Numan swims well.'

59) Ayla yavaş yürüyor.
'Ayla is walks slowly.'

60) Ela zor arkadaş buldu.
'Ela had a difficult time in finding a friend.'

61) Yalovalılar zor oda beğendiler.
'People from Yalova have barely liked the rooms.'

62) Annem iyi yemek yapar.
'My mother cooks well.'

63) Memur aynayı siliyor.
'The officer is wiping the mirror.'

64) Öğrencim evini özlemiş.
'My student has missed home.'

65) Yalovalılar anılarını yazmış.
'People from Yalova have written down their memoirs.'

66) Yeni memurlar Anamur'u anlatıyorlar.
'The new officers are talking about Anamur.'

67) Mülayim Alanyalılar evlerini arıyormuş.
'Mild people from Alanya have been looking for their houses.'

68) Minyon memur aynayı siliyor.
'The poppet officer is wiping the mirror.'

69) Alman öğrencim evini özlemiş.
'My German student has missed home.'

70) Yaralı Yalovalılar anılarını yazmış.
'The injured people from Yalova have written their memoirs. '

71) Yedi memur Anamur'u anlatıyor.
'Seven officers are talking about Anamur.'

72) Yedi Alanyalı evlerini arıyormuş.
'Seven people from Alanya have been looking for their houses.'

73) Iki memur aynayı siliyor.
'Two officers are wiping the mirror.'

74) Yirmi öğrenci evini özlemiş.
'Twenty students have missed home.'

75) On Yalovalı anılarını yazmış.
'Ten people from Yalova have written their memoirs.'

76) Yedi yeni memur Anamur'u anlatıyor.
'Seven new officers are talking abour Anamur.'

77) Yedi mülayim Alanyalı evlerini arıyormuş.
'Seven mild people from Alanya have been looking for their houses.'

78) Iki minyon memur aynayı siliyor.
'Two poppet officers are wiping the mirror.'

79) Yirmi Alman öğrenci evini özlemiş.
'Twenty German students have missed home.'

80) On yaralı Yalovalı anılarını yazmış.
'Ten injured people from Yalova have written their memoirs.'

81) Iyi bir öğrencim ödevini unutmuş.
'A good student of mine has forgotten about her/his homework.'

82) Iri bir maymun muzunu arıyor.
'A big monkey is looking for its banana.'

83) Uzun bir lama yavrularını besliyor.
'A tall lama is feeding her babies.'

84) Alanyalılar maymunu arıyormuş.
'People from Alanya have been looking for the monkey.'

85) Ayla arabasını getirecekmiş.
'Ayla is going to bring her car.'

86) Mine laleleri sulayacak.
'Mine is going to water the tulips.'

87) Ayla aynayı getirecek.
'Ayla is going to bring the mirror.'

88) Leyla yeni rüyalarını anlatıyor.
'Leyla is talking about her new dreams.'

89) Alanyalılar yaralı maymunu arıyormuş.
'People from Alanya have been looking for the injured monkey.'

90) Ayla yeni arabasını getirecekmiş.
'Ayla is going to bring her new car.'

91) Mine mor laleleri sulayacak.
'Mine is going to water the purple tulips.'

92) Ayla büyülü aynayı getirecek.
'Ayla is going to bring the magical mirror.'

93) Leyla iki rüyasını anlatıyor.
'Leyla is talking about two dreams of hers.'

94) Alanyalılar altı maymunu arıyormuş.
'People from Alanya have been looking for six monkeys.'

95) Ayla iki arabasını getirecekmiş.
'Ayla is going to bring two of her cars.'

96) Mine yirmi laleyi sulayacak.
'Mine is going to water twenty tulips.'

97) Ayla iki aynayı getirecek.
'Ayla is going to bring two mirrors.'

98) Leyla iki yeni rüyasını anlatıyor.
'Leyla is talking about two of her new dreams.'

99) Alanyalılar altı yaralı maymunu arıyormuş.
'People from Alanya have been looking for six injured monkeys.'

100) Ayla iki yeni arabasını getirecekmiş.
'Ayla is going to bring her two new cars.'

101) Mine yirmi mor laleyi sulayacak.
'Mine is going to water twenty purple tulips.'

102) Ayla iki büyülü aynayı getirecek.
'Ayla is going to bring two magical mirrors.'

103) Ayla alımlı bir mimarı bekliyor.
'Ayla is waiting for an attractive architect.'

104) Anamurlular/ Alanyalılar yaralı bir maymunu kurtarmış.
'People from Anamur/Alanya have saved an injured monkey.'

105) Ayla mandalina yedi.
'Ayla has eaten tangerines.'

106) Ayla yirmi mandalina yedi.
'Ayla has eaten twenty tangerines.'

107) Annem on enginar yıkadı.
'My mother has washed twenty artichokes.'

108) Mine yirmi mum yakmış.
'Mine has lit twenty candles.'

109) Numan annesini buldu, Leman ablasını aradı, Ayla abisini bekledi.
'Numan has found her mother, Leman has called her elder sister, and Ayla waited for her elder brother. '

110) Ayla yerleri siliyor, Numan odayı düzenliyor, Yalın evi süpürüyor.
'Ayla is cleaning the floor, Numan is tidying up the room, and Yalın is sweeping the house.'

111) Ayla muzları soyuyor, Numan elmaları yıkıyor, Miray ayvaları dilimliyor.
'Ayla is peeling the bananas, Numan is washing the apples, and Miray is slicing the quinces.'

112) Anamurlu lamayı beğendi, Alanyalı maymunu istedi, Yalovalı leyleği sevdi.
'The person from Anamur liked the lama, the person from Alanya wanted the monkey, and the person from Yalova loved the stork.'

113) Ayla Almanya'yı özlüyor, Numan Alanya'yı arıyor, Miray Anamur'u sayıklıyor.
'Ayla is missing Germany, Numan is looking for Alanya, and Miray is being delirious about Anamur. '

114) Almanyalılar enginar yiyor, Alanyalılar ayran içiyor, Anamurlular muhallebi istiyor.
'The German are eating artichoke, people from Alanya are drinking some ayran, and people from Anamur want some pudding.'

115) Ayla midye istedi, Numan enginar yedi, Leyla menemen ısmarladı.
'Ayla asked for some mussels, Numan ate some artichoke, and Leyla ordered some menemen.'

116) Numan ayna sildi, Ayla lamba taktı, Leyla yemek yaptı.
'Numan wiped the mirror, Ayla fixed the lamp, and Leyla cooked the meal.'

117) Ayla limon sıkıyor, Leyla maydonoz yıkıyor, Numan ayran yapıyor.
'Ayla is squeezing a lemon, Leyla is washing some parsley, and Numan is preparing some ayran.'

118) Leman örgü ördü, Ayla dergi okudu, Numan oyun oynadı.
'Leman knitted something, Ayla read a newspaper, and Numan played a game.'

119) Zor bulduğum Alanyalı görevi bırakmış.
'The person from Alanya whom I barely found has given up the task.'

120) Alanyalıların yolladığı elmalar midemi bozdu.
'The apples which the people of Alanya sent has upset my stomach.'

121) Evini arayan bir Anamurlu yolunu kaybetmiş.
'A person from Anamur who was looking for her/his house has lost her/his way.'

122) Bulduğum Anamurlu'yu minibüs ezmiş.
'The person from Anamur whom I found has been smashed by a minibus.'

123) Anamurluların aradığı adamı minibüs ezmiş.
'The man for whom the people of Anamur have been looking for has been smashed by a minibus.'

124) Alanyalıların ağırladığı Bayülgen okulları gezdi.
'Bayülgen, who has been hosted by the people of Alanya, has visited the schools.'

125) Bayanların ilgilendiği Yalın eserlerini seslendirdi.
'Yalın, whom women are interested in, has performed his works.'

126) Evini yenileyen Bayülgen arabasını sattı.
'Bayülgen, who has been restoring his house, has sold his car.'

127) Yalova'yı gezen Erdoğan evleri dolaştı.
'Erdoğan, who has been looking around Yalova, has visited the houses.'

128) Alanyalıların ağırladığı Bayülgen'i yılan soktu.
'Bayülgen, who has been hosted by the people of Alanya, has been snake-bitten.'

129) Ayla, ki liseyi yeni bitirdi, üniversiteyi kazanmış.
'Ayla, who has just finished high school, entered the university.'

130) Leyla, ki kendisi biyolojiyi sever, okulu bırakmış.
'Leyla, who likes biology, left school.'

131) Mine, ki öğrenciler kendisini sever, mesleğini bırakmış.
'Mine, whom her students like, has given up her job. '

132) Ayla, ki kendisi vücudunu beğenir, burnunu yaptırmış.
'Ayla, who likes her body, has had an operation for her nose.'

133) Alanyalılar, ki genelde muz yetiştirirler, mangoyu deniyorlarmış.
'The people of Alanya, who generally grow banana, have been trying mangos (now).'

134) Ayla'yı, ki kendisi vücudunu korur, arı sokmuş.
'Ayla, who (always) protects her body, has been bee-bitten.'

135) Alanya'yı, ki annem orayı bayağı sever, yağmur basmış.
'Alanya, which my mother likes very much, has been flooded due to rain.'

136) Miray'ı, ki maymun beslerdi, alerji sarmış.
'Miray, who used to keep a monkey, has caught some allegy.'

137) Anneannem evi yeniledi, ki bu ona pahalıya mal oldu.
'My grandmother renewed the house, which cost her lot.'

138) Evde yemek yiyorum, ki bu harcamaları bayağı azaltıyor.
'I eat at home, which quite reduces my expenses.'

139) Dolmuş olabilir, ki o da bayağı düşük bir ihtimal.
'There could be a minus, which is a low possibility.'

140) Evraklara şimdiden bakabiliriz, ki bu bize zaman kazandırır.
'We can look at the documents this very moment, which will save us some time.'

141) Numan ben arabayı yeniledim sanıyor.
'Numan thinks that I renewed the car.'

142) Mine biz yemeğe gidiyoruz sanıyor.
'Mine thinks that we are going to go eating.'

143) Ayla ben evi aradım sanıyor.
'Ayla thinks that I have called home.'

144) Leman sen uyudun sanmış.
'Leman thought that you went asleep.'

145) Dün anneannemden duydum ki Numan bu ay evleniyormuş.
'I heard from my grandmother that Numan was getting married this month. '

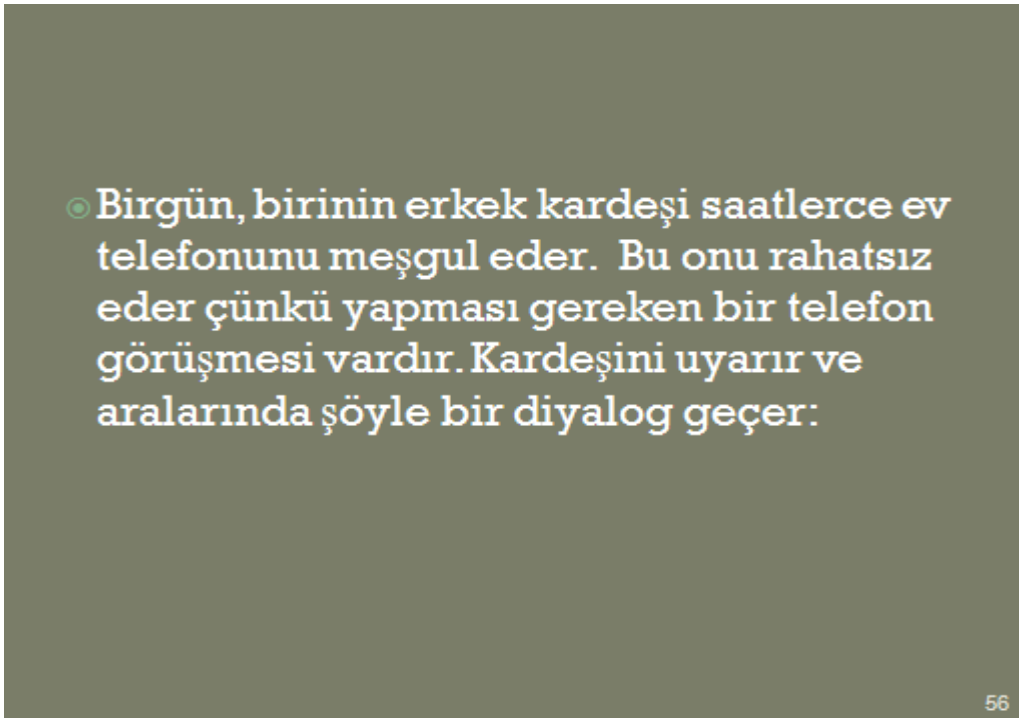
146) Duyduk ki Numanlar Almanya'ya yerleşiyormuş.
'I heard that Numan's are settling in Germany.

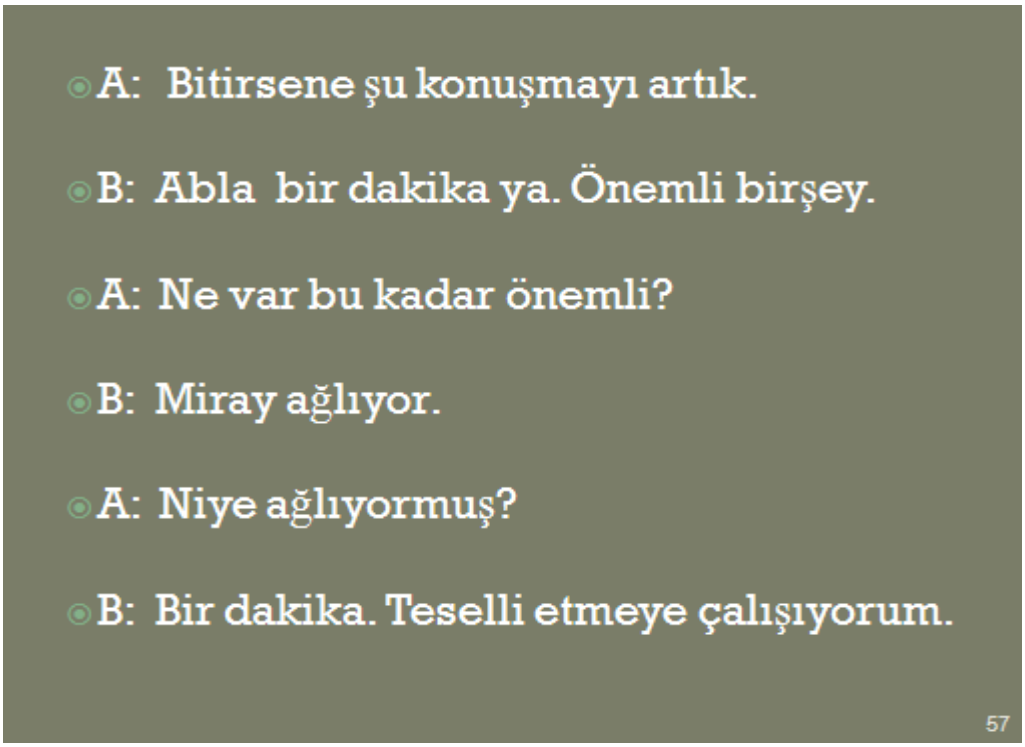
147) Gördüm ki Ayla'nın evi minicik.
'I saw that Ayla's house is very small.'

148) Bu yıl sanıyorum ki yağmur yağmayacak.
'I think that it won't rain this year.'

APPENDIX C

Sample Context and Dialogue





APPENDIX D

Non-restrictive Prerelatives in Turkish: A Reply to Aygen (2003)

As stated in Chapter 3, the native pattern of relativization involves prerelatives in Turkish, where the modifier clause is nominalized. When relativizing a subject, the suffix –(y)An is used as in (1), whereas when relativizing a non-subject, the suffix –DIK is used, which requires genitive/possessive agreement between the subject and the predicate as in (2). Based on a variety of phenomena such as subjacency effects, binding, sentential adverb attachment and EPP effects, recent studies argue that these nominalized modifiers involve full clausal structures (cf. Kornfilt 2000; 2008; Çağrı 2005; Ulutaş 2006; Öztürk 2007).

(1) [$_{\text{Rel CL}}$ e_i Kitap oku-yan] çocuk$_i$

book read-*yAn* child

'The child that is reading a book.'

(2) [$_{\text{Rel CL}}$ Otobüs-te e_i gör-düğ-üm] çocuk$_i$

bus-Loc see-*DIK*-1Sg.Poss child

'The child that I saw in the bus.'

–DIK and -(y)An prerelatives can be semantically restrictive or non-restrictive. Examples of non-restrictive subject and object relativization are exemplified in (3) and (4):

(3) [$_{\text{Rel CL}}$ e_i Geçen kış konser ver-en] Yalın$_i$ şehr-i gez-di.
last winter concert give-*(y)An* Yalın city-Acc walk around-Past
'Yalın, who gave a concert last winter, walked around the city.'

(4) [$_{\text{Rel CL}}$ Geçen kış e_i izle-diğ-imiz] Yalın$_i$ bu sene yeni bir konser
last winter watch-*DIK*-1Pl.Poss Yalın this year new a concert
ver-ecek.
give-Future
'Yalın, who we watched last winter, is going to give a new concert this year.'

In the literature, the only study that focuses on the structure of non-restrictive prerelatives is Aygen (2003). Aygen mainly argues that in contrast with restrictive prerelatives, non-restrictive prerelatives are not relative clauses, but they are absolute constructions in the sense of Stump (1985).

At this point let us take a look at the source of absolute constructions, i.e. Stump (1985), consider their original definition, and then move into the question of whether non-restrictive prerelatives really serve as absolute constructions in Turkish.

Under the heading of absolute constructions, different structures are subsumed such as free adjuncts (5a), nominative absolute constructions (5b) and augmented absolute constructions (5c) (Stump 1985, italics ours):

(5) a. *Walking home*, he found a dollar.

d. *His father being a sailor*, John knows all about boats.

e. *With the children asleep*, Mary watched TV.

A free adjunct is a nonfinite predicative phrase with the function of an adverbial subordinate clause; it is typically set off from the clause to which it is subordinate by a pause or a fall in intonation (sometimes—though not consistently—represented in writing with commas) […] The nominative absolute construction consists of a 'subject' noun phrase combined with a nonfinite predicative expression, the whole functioning as an adverbial unit subordinate to an associated main clause; like free adjuncts, nominative absolutes are normally set apart intonationally (ibid., p.4).[125]

On the other hand, augmented absolutes are those that that are introduced by prepositions as in (5c). According to Stump (ibid.), absolute constructions behave like subordinate adverbial clauses syntactically, yet they are peculiar in the sense that their logical connection to the clause they modify is not overtly specified (for instance with a subordinating conjunction).

Despite the lack of any overt cue indicating their logical function, absolute constructions have a variety of roles where they occur and these roles are easily picked up by users of English (ibid.). Consider the examples in (6) and (7) from Stump (ibid., italics ours). According to Stump, the free adjunct in (6) functions as an adverb of causation or explanation such as "Because s/he is experienced in such things"; the free adjunct in (7) serves more like a temporal adverbial meaning "After he grabbed the newspaper": [126]

(6) The school is determined to avoid a scandal. The father is equally determined to find somebody to blame. The reader, *being more experienced in such things*, knows the truth: it was murder.

(NY 9/1/80, 92)

[125] Stump's observation, thus, indicates that free adjuncts and nominative absolutes involve comma intonation (IP-edges).
[126] We refer the reader to Stump (ibid.) for other varieties of logical roles.

(7) *Grabbing a newspaper from a guard*, Tom went back out, wiped up the dog shit and deposited it and the day's news in a refuse can.

(OSI, 245)

What is at the heart of the semantics of absolute constructions is that they are inferred as a part of what is asserted (ibid.).

According to Quirk et al. (1972, as cited in Stump ibid.), the semantic variability of absolute constructions, i.e. free adjuncts and absolutes, is due to "the chameleon-like semantic quality of adapting to context". They argue that this property is shared by other constructions in English such as non-restrictive RCs and clauses introduced by the conjunction operator 'and'. In (8), the non-restrictive RC, initial clause of the coordinate structure, and the free adjunct all behave like reason clauses:

(8) a. The girl, *who was upset by the activities of the ghost*, decided to leave.

b. *The girl was upset by the activities of the ghost*, and decided to leave.

c. The girl, *upset by the activities of the ghost*, decided to leave.

(Quirk et al. 1972, as cited in Stump ibid., italics ours)

However, Stump states that he has reservations about the nature of dependence between the constructions at stake and the main clauses in (8). For him, it is not clear whether the inferences that we derive from (8a), (8b), and (8c) are exactly the same. For instance, someone uttering the sentences below might be trying to build a causal connection between the fact that John is an Englishman, and the fact that he is brave (Stump ibid.):

(9) a. John, who is an Englishman, is brave.

b. John is an Englishman, and he is brave.

c. John, being an Englishman, is brave.

According to Stump, in (9a) and (9b) such a causal relation is merely suggested as one can reply with either of the sentences with (10) but not (11):

(10) Are you implying that John brave *because* he is an Englishman?

(11) No, that is not why he is brave.

On the other hand, for (9c) the response would be (11) rather than (10) indicating that the interpretation of the sentence involves an obligatory logical connection between the free adjunct and the matrix clause.

Aygen (2003), which focuses on non-restrictive prerelatives in Turkish, applies some of the tests in Stump (1985) on Turkish data, and she claims that these structures are actually absolute constructions, i.e. either free adjuncts or absolutes depending on their structure. Let us now look into her examples and how she incorporates the tests into Turkish data. Consider the sentences in (12)-(14), on which Aygen applies the test in (10)-(11) above:

(12) Ankara-da otur-an Hasan Başbakan-la görüş-tü.

Ankara-Loc live-*An* Hasan prime minister-Commit meet-Past

'Hasan, who lives in Ankara, met the Prime Minister.'

(13) Hasan Ankara-da otur-uyor ve Başbakan-la görüş-tü.
Hasan Ankara-Loc live-Prog and prime minister-Commit meet-Past
'Hasan lives in Ankara, and he met the Prime Minister.'

(14) Ankara-da otur-duğ-un-dan Hasan Başbakan-la görüş-tü.
Ankara-Loc live-Nom-3Sg.Poss-Abl Hasan prime minister-Commit meet-Past
'Because he lives in Ankara, Hasan met the Prime Minister.'

In (12) there is "the so-called non-restrictive prerelative" (Aygen 2003, p.3). In (13) there is two-way clausal coordination, and in (14) there is a reason-clause modifying the matrix clause. If a logical connection were suggested the response would be (15) but not (16):

(15) 'Are you implying that Hasan met the Prime Minister because he lives in Ankara?'
(16) 'No, this is not the reason why Hasan met the Prime Minister.'

Although Aygen provides possible responses to (12)-(14) in (15) and (16), she does not discuss which reply would go with which example. She states that in the environment of a modal in the superordinate clause as in (17), which is the same sentence with (12) except for the extra modal operator, (16) is a felicitous response to it rather than (15). Thus Aygen aims to illustrate that the non-restrictive prerelative serves as a free adjunct similar to Stump's example in (9c), because according to her, in both examples the logical relation is not suggested; it is obligatory.

(17) Ankara-da otur-an Hasan Başbakan-la görüş-ebil-di.

Ankara-Loc live-*(y)An* Hasan prime minister-Commit meet-Mod_{Abil}-Past

'Hasan, who lives in Ankara, could meet the Prime Minister.'

At this point we would like to draw attention to the examples that Stump exploits in this test:

(18) a. John, who is an Englishman, is brave.

b. John is an Englishman, and he is brave.

c. John, being an Englishman, is brave.

(19) Are you implying that John brave *because* he is an Englishman?

(20) No, that is not why he is brave.

As far as Stump's examples are concerned, the causal relation between the free adjunct and the superordinate clause does not necessitate an extra operator such as a modal in the superordinate clause. The sentence in (18c) suffices to yield an obligatory logical connection between the two.

If we start afresh and apply Stump's test on Turkish data by sticking to its original version, we observe that Turkish native speakers do not necessarily infer a causal connection between the non-restrictive prerelative and the matrix clause in Aygen's example, which we re-illustrate in (21):

(21) Ankara-da otur-an Hasan Başbakan-la görüş-tü.

Ankara-Loc live-*(y)An* Hasan prime minister-Commit meet-Past

'Hasan, who lives in Ankara, met the Prime Minister.'

(21) does not obligatorily yield a reading such as 'Because Hasan lives in Ankara, he met the Prime Minister'. In this respect, it is (15) rather than (16) which qualifies as a better reply to (21), where (21) is taken merely to suggest such a logical relation:

Following up on the example in (21), let us provide another example where there is no obligatory logical connection between the matrix clause and the non-restrictive prerelative. Suppose that a reporter provides some information about Yalın, the famous pop singer in Turkey:

(22) Lisans derece-sin-i 2005 yıl-ın-da Mimar Sinan
BA degree-3Sg.Poss-Acc 2005 year-3Sg.Poss-Loc Mimar Sinan
üniversite-sin-den al-an Yalın müzik otorite-ler-i
university-3Sg.Poss-Abl get-*(y)AN* Yalın music authority-Pl-3Sg.Poss
tarafından son zaman-lar-ın en başarılı pop yorumcu-su ol-arak
by last time-Pl-Gen most successful pop singer-3Sg.Poss Cop-Particip
nitelendir-il-iyor.
consider-Passive-Prog
'Yalın, who got his BA degree from Mimar Sinan University in 2005, is considered to be the most successful pop singer of recent times by music authorities.

Here, there is not an obligatory logical relation, for ex. a causal one, between Yalın's getting his BA degree from Mimar Sinan University in 2005 and his being considered as the most successful pop singer of recent times by music authorities.

With a closer look, it becomes obvious that Aygen tries to establish a causal relation between the non-restrictive clause and the matrix clause by inserting special operators into the structure, as she does in (17), which Stump does not use in his own examples. As a matter of fact, even if one introduces a modal operator into the structure, such a causal reading might still not be inferred from the sentence. Suppose that a reporter gives some information about Yalın so that his fans can learn where he is and what he has been doing:

(30) a. Izmir-de yaşa-yan Yalın yeni albüm-ün-ü geçen kış
Izmir-Loc live-*yAn* Yalın new album-3Sg.Poss-Acc last winter
tamamla-yabil-di.
complete-Mod_{Abil}-Past
'Yalın, who lives in Izmir, could complete his new album last winter.
*'Living in Izmir, Yalın could complete his album last winter.'

In (30) we cannot infer a fundamental logical connection between the non-restrictive prerelative and the matrix clause.[127] In effect, (30) shows that the existence of a modal operator might not even suffice to trigger an essential logical dependency between the prerelative and the matrix clause.

Aygen also argues that the non-restrictive prerelative below acts as a genuine absolute, more specifically as a strong absolute, which is derived from individual-level predicates; because the sentence entails its truth value (cf. Stump 1985):

[127] Accordingly, the second translation above, which involves a free adjunct, is not a proper translation of (30).

(31) Anne-si doktor ol-an Hasan hastane-nin yol-un-u
mother-3Sg.Poss doctor Cop-*(y)An* Hasan hospital-Gen road-3Sg.Poss-Acc
bil-ebil-ir.
know-Mod$_{\text{Epistemic}}$-Aor
'Hasan, whose mother is a doctor, may know the directions to the hospital.'
(Aygen ibid.)

Notice that the translation above does not involve an absolute. It would otherwise correspond to the sentence in (32b), which would entail the truth value of the absolute. At this point, we would like to draw attention to the fact that the actual translation, which involves an RC, i.e. 'whose mother is a doctor', also suggests a truth-conditional relation between matrix clause and the RC. Let us apply Stump's test on the constructions in (32c) and (32d) as well:

(32) a. Hasan, whose mother is a doctor, may know the directions to the hospital.
b. His mother being a doctor, Hasan may know the directions to the hospital.
c. Are you implying that John may know the directions to the hospital because his mother is a doctor?
d. No, that cannot be the reason why he may know the directions to the hospital.

(32c) is a felicitous response to (32a); whereas (32d) is a felicitous response to (32b). This clearly illustrates that (32b) yields an obligatory entailment of the truth value of the absolute; while (32a) merely suggests a truth conditional link between the main clause and the RC.

In the light of the test in (32), we would like to argue that the example in (31) suggests a truth conditional link between the non-restrictive prerelative and the matrix clause; it does not entail the truth value of the prerelative contra what Aygen claims. To illustrate, while (33a) is a felicitous reply to (31), (33b) is not. This essentially indicates that the non-restrictive prerelative does not act as an absolute:

(33) a. Hasan'ın annesi doktor olduğu için mi hastanenin yolunu bilebileceğini ima ediyorsun?
'Are you implying that Hasan may know the directions to the hospital because his mother his a doctor?

b. Hayır, hastanenin yolunu bilebilme sebebi bu olamaz.
'No, that cannot be the reason why he may know the directions to the hospital.'

Furthermore, there are instances where such a truth conditional link might even not be suggested. Consider the sentence in (34). The sentence does not entail the truth value of the prerelative, nor is a truth conditional link suggested. The fact that $Hasan_i$ might think high school education is sufficient for him_i does not require the truth of the prerelative. This verifies that what is at stake is not an absolute, but rather a non-restrictive prerelative.

(34) Anne-si üniversite mezunu ol-an Hasan, lise eğitimi-nin
mother-3Sg.Poss university graduate Cop-*(y)An* Hasan high school education-Gen
kendisi için yeterli ol-duğ-un-u düşün-ebil-ir.
himself for sufficient Cop-Nom-3Sg.Poss-Acc think-$Mod_{Epistemic}$-Aor

'Hasan$_i$, whose mother is a university graduate, might think that high school education is sufficient for him$_i$.'

*'His$_i$ mother being a university graduate, Hasan$_i$ might think that high school education is sufficient for him$_i$.'

Aygen also claims that in modal sentences non-restrictive prerelatives function as weak free adjuncts, which are derived from stage-level predicates (Stump 1985); because similar to weak free adjuncts they act as conditional clauses in such contexts. However, none of the native speakers who shared his/her judgements with us infers the *if*-clause reading that Aygen argues for in (35):

(35) Yurtdışın-dan gel-en Ecevit ulus-a seslen-ir-di.
abroad-Abl come-(*y*)*An* Ecevit nation-Dat address-Aor-Past
'If Ecevit came from abroad, he would address the nation.' (Aygen's translation)

To conclude, we have argued that the non-restrictive prerelative does not act as a conditional clause in (35). The example of a weak free adjunct behaving like a conditional clause in English is given in (36) below. Stump indicates that (36a) and (36b) are semantically identical:

(36) a. Wearing that outfit, Bill would fool everyone.
b. If he wore that outfit, Bill would fool everyone.

As in (36), the interpretation of a weak free adjunct involves an *if*-clause reading in modal contexts in English; however the non-restrictive prerelative in (35) is

obviously not interpreted as a conditional clause. In this respect it does not serve as a weak free adjunct in the sense of Stump (1985) contra Aygen's judgements.

The examples we have hitherto covered illustrate significant points on the nature of non-restrictive RCs and absolute constructions: An absolute construction is invariably logically connected to its superordinate clause, thus it cannot be inferred to convey irrelevant information about the superordinate clause. On the other hand, a non-restrictive relative clause might not necessarily be inferred to be logically connected to the superordinate clause. When it is inferred to be logically connected, the relevant logical relation is merely a suggested one, and it is based on contextual inferences[128] (e.g. the possible inference in (21) that Hasan lives in Ankara, Ankara is the capital city of Turkey, most of the bureaucrats, including the Prime Minister, also live in Ankara, thus Hasan met the Prime Minister because he lives in Ankara; or the inference in (31) that Hasan's mother is a doctor, doctors work at hospitals, so Hasan may know the directions to the hospital).

To sum up the discussion so far, the proper application of Stump's tests, wider range of examples and further judgements point out that Aygen's claims cannot be verified on Turkish data. Consequently, we argue that non-restrictive prerelatives are not "pseudo-relatives" but are relative clauses akin to their restrictive counterparts. As a final comment, we would like to recapitulate our finding that non-restrictive prerelatives are prosodically identical to their restrictive counterparts in Turkish, a point which we discuss in Chapter 5. This contrasts with Stump's (1985) observation that absolute constructions are set off from the superordinate clause material with comma intonation, i.e. intonational phrasing, and supports our proposal that non-restrictive prerelatives are not absolute constructions.

[128] As it is also shown by Quirk et al. (1972, as cited in Stump ibid.). See (9-11).

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