

Variable prosodic domains and violations of PIC
Evidence for non-cyclic (phRase based) phonology

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Using observations from Turkish, we argue against the cyclic prosodic constituency formation hypothesis (CPC) of phonology (cf. Kahnemuyipour 2009, D'Alessandro & Scheer 2015). We argue that prosodic constituents are formed (i) non-cyclically, (ii) top-down, and (iii) with sensitivity to phonological category types. As such, our research supports the prosodic structure theory, and limited phonological encoding of syntax (i.e. *indirect access* (IA) accounts – Nespors & Vogel 1986, Selkirk 1986, Cheng & Downing 2016, a. o.).

Background and aim: According to the *Phase Impenetrability Condition* (PIC) (Chomsky 2001), phases such as ν P and CP are *opaque* to further syntactic operations. If prosodic constituents are mapped directly from phases, the same opacity (i.e. the absence of ‘reprosodification’) is expected, and is allegedly observed (cf. Newell 2008, Kahnemuyipour 2009, D'Alessandro & Scheer 2015). Because observations from Turkish have been used to support this CPC hypothesis (Üntak-Tarhan 2006, Newell 2008), we utilize Turkish to **oppose the CPC**. We argue instead that the prosodic parse is not merely a reflection of syntactic cycles, and that PIC may be violated in phonology (Cheng & Downing 2007; 2016, Bonet & Mascaró 2016). This conclusion supports IA approaches to prosody. We provide a number of arguments against CPC, three of which are listed below. (Each argument assumes that CP, ν P, and NP are phases in Turkish, cf. Bošković & Şener 2012)

I. ν P domain - same cycle, different parse: In (1), the content of the ν P cycle is parsed as a separate prosodic word (ω). Newell (2005) takes this as evidence for CPC. (T- marks phonological phrase edges (ϕ), T% marks intonational phrase edges (t) H marks ω s, and SMALL CAPITALS mark prominent prosodic constituents)

- (1) A: Had the visitors seen Aynur? (ν P = prosodic unit)
H L L% H L%
a. B: [((GÖR-MÜŞ) $_{\omega/\nu$ P} (-ler-Ø-di) $_{\omega/CP}$) $_{\phi}$] $_{t}$ -verb-foc. b. * [(((GÖR-MÜŞ) $_{\nu$ P-LER-Ø-Dİ) $_{\omega/CP}$) $_{\phi}$] $_{t}$
see-PERF -3PL-COP-PST
Lit: ‘Had seen.’

However, we show that (1a) is possible only when the verb is focused (hence the only item in ν P, Şener 2010). When ν P contains other items, i.e. when it branches to multiple exponents (e.g. in all-new context), then the verbal domain of the ν P does not bear prosodic boundaries (2). Such prosodic consequences of the branching structures of syntax are easily accommodated in IA but not in CPC, since the inconsistent prosodic phrasing of the verbal domain of the ν P in (1a) vs. (2) violates the phonological PIC.

- (2) H- L H L L% (ν P \neq prosodic unit)
(2) [(ZİYARETÇİLER) $_{\phi}$ ((AYNUR-U) $_{\omega}$ (gör-müş) $_{\nu$ P-ler-di) $_{\omega}$) $_{\phi}$] $_{t}$ -all-new
visitors Aynur-ACC see-EVD-3PL-PST
‘The visitors had seen Aynur.’

II. NP and CP domain – optional variable parse: If prosodic boundaries and prominence domains in Turkish mark syntactic cycles, then once a prosodic boundary is generated for each cycle, PIC should ban optional prosodic rephrasing operations that affect these boundaries. The following examples (to be presented with annotated pitch tracks) show that

this is not borne out, in which relative clauses are contained within the same φ as their heads, and may receive alternative parses at the ω -level.

(3) *A relative clause (underlined) + its head with alternative parses*

- a. [((UZUN) ω (pelerin_{NP} giyen_{CP} kadın) ω) φ ((ARABAYI) ω (sordu.) ω) ι]
b. [((UZUN PELEİRİN) ω /NP (giyen_{CP} kadın) ω) φ ((ARABAYI) ω (sordu.) ω) ι]
c. [((UZUN PELEİRİN_{NP} GİYEN) ω /CP (kadın) ω) φ ((ARABAYI) ω (sordu.) ω) ι]
d. [((UZUN PELEİRİN_{NP} GİYEN_{CP} KADIN) ω) φ ((ARABAYI) ω (sordu.) ω) ι]
[CP[TP[NP[CP...[VP[NP[AP uzun] [N⁰ pelerin]] [v⁰ giyen]]] [N⁰ kadın]] [VP[NP arabayı]... [v⁰ sordu]]]]
long cape wear.NOM woman car.ACC ask.PST
‘The woman who is wearing a long cape asked about the car.’

Assuming the traditional *adjunction* analysis of Turkish relative clauses (Kornfilt 2001), the relative clause and its NP head belong to different syntactic cycles. The absence of a prosodic boundary between the relative clause CP and its NP head in (3a,b, and d) shows that the CP cycle does not induce a prosodic boundary. No boundary is observed on the right edge of the relative clause object, which is derived from an NP cycle, in (3a, c, and d), either. Additionally, the variability in (3a-d) violates PIC and therefore disfavors the CPC. (3a-d) are naturally accommodated in IA, however, which denies that PIC has prosodic import.

III. Clausal tunes and the absence of ι -internal parse: We also show that tunes (a fixed set of tones with certain pragmatic meaning) that span across an entire ι (targeting both edges of ι s) bleed prosodic constituent formation within those ι s. The first conjuncts in (4) and (5) illustrate the syntactic and prosodic constituency of all-new declarative clauses, where the former, unlike its counterpart in (5), bears ι -internal constituency.

(4) The first conjunct *bears ι -internal parse* at the ω and φ level (*discourse non-final*)

- Tonal organization:* H- L H H% L H- L H L%
Prosodic constituency: [(AYNUR) φ ((KAPIYI) ω araladı) φ] ι [(KEDILER) φ ((DIŞARI) φ kaçtı) φ] ι
Syntax: [CP[NP Aynur] [VP[NP kapıyı] araladı]] [CP[NP kediler][VP[NP dışarı] escaped]]
Aynur door opened cats outside escaped
‘Aynur opened the door, (and) the cats escaped.’

(5) The first conjunct *lacks ι -internal parse* at any level (*ι -level tune*)

- Tonal organization:* %HL ————— LH% L H- L H L%
Prosodic constituency: [Aynur kapıyı araladı] ι [(KEDILER) φ ((DIŞARI) φ kaçtı) φ] ι
Syntax: [CP[NP Aynur] [VP[NP kapıyı] araladı]] [CP[NP kediler][VP[NP dışarı] escaped]]
Aynur door opened cats outside escaped
‘Aynur opened the door, (and at that second) the cats escaped.’

These data show that (a) phonological PIC does not hold in Turkish, because clause-internal cycles are not mapped in the context of clausal tunes, and (b) ι s are formed *before* the formation of ι -internal prosodic constituents (i.e. before φ s and ω s are formed).

Outcome: In our talk, refuting PIC based CPC theories (with additional arguments), we will offer a unified IA account for each case in (I-III), which appeals to cross-linguistic aspects of prosodic grammars such as the sensitivity to syntactic branching, and eurythmic grouping. We conclude that although phase-based cycles affect syntax, phonological operations in Turkish are sensitive *not* to phases but to syntactic phRases. As such, syntactic phrases match with prosodic constituents (Selkirk 2011). Yet, *contra* PIC, phRase-to-phonological constituent correspondence is not impenetrable, and is likely to be modified to satisfy prosodic well-formedness conditions, not only in Turkish, but universally.