

The Phonology of Clitic Groups: Prosodic Recursivity Revisited

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1. Purpose

- Review arguments against the Clitic Group.
- Evaluate alternatives to this domain, namely recursive prosodic structures.
- Show that there is insufficient empirical evidence to motivate recursive Phonological Words. The arguments in favor of it are often theory-internal. Moreover, prosodic recursivity in its current form faces serious theoretical inconsistencies.
- Propose a modified version of the Prosodic Hierarchy using empirical evidence from Turkish and Greek.
- Our modified version assumes a distinct phonological constituent between the Phonological Word and the Phonological Phrase based on independent phonological evidence.

2. The Clitic Group in Prosodic Phonology

- ✓ The Clitic Group serves as a domain of application for phonological rules typically between a clitic and a host, or in compounds, among others.
- ✓ The crucial motivation for this domain relies on rules that apply to clitics and their hosts, but not within or across non-clitic words.

Hayes (1989), Nespors and Vogel (1986), Vogel (1988, et seq.), Nespors (1990, et seq.)

- ✓ Example from Italian: Intervocalic s-voicing applies within a Phonological Word (e.g., /kasa/ → [kaza] ‘house’, but not across the junction between a clitic and a word (1a) or between two clitics (1b), or across words in compounds (1c):

- (1) a. lo [s]aluto ‘(I) greet him’ *[z]
b. ci [s]i va insieme ‘We’ll go there together’ *[z]
(Nespors & Vogel 1986: 147-148)

3. Arguments against the Clitic Group

The need for this constituent has been put into question (e.g., Booij 1988, 1995; Zec 1988, 1993; Inkelas 1989; Zec and Inkelas 1991, Selkirk 1995, Peperkamp 1997).

☑ Arguments in a nutshell:

- (i) Representational economy
- (ii) Does not account for the asymmetry between proclitics and enclitics
- (iii) Clitics can be incorporated within Phonological Words (PW), adjoin to PWs or to even higher constituents, e.g., the Phonological Phrase (PhP), the Phonological Utterance (PU) (see Peperkamp 1997 for a review).
- (iv) Negative consequences of the *Strict Layer Hypothesis*:
No skipping of levels. Clitics being joined to a host must form independent PWs even though they are not stressed, thus escaping the minimality requirement that commonly holds for PW-hood. Clitics are not PWs on several grounds.

(2) CG
 / | \
 PW PW PW
 / | \
 [mu to éðose] ‘He gave it to me’
 me it gave Greek (Nespor and Vogel 1986: 155)

- Recursive Phonological Words used as an alternative for the Clitic Group (CG):

(3) PW
 / \
 / PW
 / / \
 [PW mu to [PW éðose]]

3.1. Evidence from compounds

- Two types of compounds in Italian:

(4) a. Non-familiar: r[é]ggi lúme ‘lamp-stand’
 b. Familiar: r[è]ggi séno ‘bra’ (P125)

- Low vowel raising applies in elements that bear secondary stress. So, in (4b), the first word bears primary stress, hence the vowel is not raised. This is not the case in (4a).

(5) *non-familiar* *familiar (lexicalized)*
 PW PW
 / \
 PW PW r[è]ggi PW
 | |
 r[é]ggi lúme séno

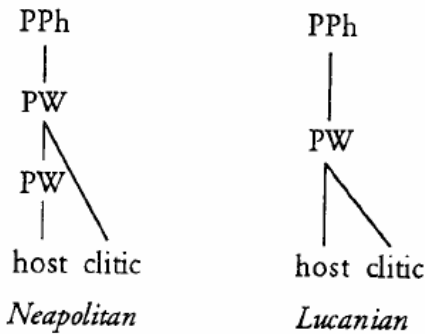
- ✓ EXPECTATION: Rules that apply within PWs (e.g., s-voicing) should also apply within the highest PW.

☑ Two problems: (i) no such rules are attested, (ii) PW vs. PhP is not motivated on any phonological grounds.

- b. Lucanian: clitics are incorporated into the PW
 vinnə ‘sell-IMP’ vinnəmíllə ‘sell-IMP me it’

(10) *Adjunction vs. incorporation* (Peperkamp 1997: 177)

- a. *PW-adjunction* b. *PW-incorporation*



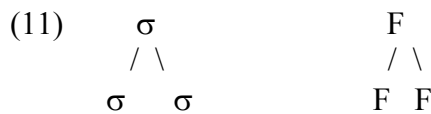
- Evidence for (10a) comes from the fact that clitic clusters also carry primary stress in addition to the lexical host. This can only happen if clitics are to the right of a PW since stress is computed from the right-edge of a PW and there is a three-syllable window in effect.

PROBLEM: While this account correctly predicts the occurrence of two primary stresses (one belonging to the innermost, the other to the outermost PW), it faces the following problem:

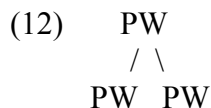
- An allomorphic rule of consonant doubling that applies to the outermost PW. In PWs, we do not have such a rule.
- So, the recursive PW has different properties than the innermost, which strongly suggests the necessity for a separate domain.

3.3. Theoretical problems with recursivity

- The following structures should be impossible:



- By extension, the following should also be ill-formed:



- Recursivity crucially involves the combination of a head with a smaller category.
- Why are such recursive structures only allowed, or at least discussed, at the PW level?
- Recursivity is not discussed explicitly in the prosodic phonology literature. It emerges via constraint violation (NONRECURSIVITY). No principled motivation for such construction. Results from theory-internal assumptions.

- The violation of NONRECURSIVITY is like opening Pandora's box. The constraint is negatively defined, therefore, what constitutes recursion is open to different interpretations.

4. Our proposal

4.1. Basic assumptions

- ✓ APPROACH: In order to support the existence of an independent prosodic constituent or justify the absence of it, one needs to refer to distinct PHONOLOGICAL processes that exclusively apply within this domain.
- Within the same language, if one shows that (i) post-lexical rules bound to the PW do not apply to, for example, the host+clitic sequences, suggesting that the sequence does not behave as a single PW, and (ii) there are rules that apply within PPh, but do not apply to such sequences, then one has solid evidence for the Clitic Group (Nespor 1999: 868).
- The *Strict Layer Hypothesis* must be relaxed. The *Weak Layer Hypothesis* does not necessarily allow for recursivity.

So, we allow for clitics to adjoin to different constituents. Therefore, not every clitic is bound to the CG, or the PW.

4.2. Phonological Cluster (PhC)

- We will show below that a prosodic constituent between the PW and the PPh is necessary (i) to account for the non-isomorphism between morphosyntax and phonology involving clitic clusters, (ii) to accommodate bound elements that are difficult to classify as either affixes or words, (iii) to explain the special phonological behavior of compound-like constructions.
- We refer to this prosodic constituent as the *Phonological Cluster* (PhC). It replaces part of what the Clitic Group intended to accommodate.
- PhC does not only provide a domain for certain types of cliticization, but also for all types of constructions mentioned above.

4.3. Evidence from cliticization

- Patras Greek (Peloponese) and Cargese (Corse) Greek (Blanken 1951)
- ✓ Intervocalic /t/ voicing applies only within clitic clusters and clitic + host sequences (13) but not within PWs (14a) or across PWs (14b):

(13) *Patras Greek clitic clusters*

a.	θa da púme (Patras)	θa ta púme (StGr)	'(we) will discuss them'
b.	na do ðjavásume	na to ðjavásume (StGr)	'(we) will study it'
c.	ta darázo	ta tarázo	'(I) stir up'

4.3. Evidence from compound-like constructions

☑ *Postpositive Constructions*

Auxiliaries in Verbal Compounds

- (21) a. telefon et-mek 'to phone'
 telephone do-INF
- b. tıraş ol-mak 'to shave'
 shave be-INF

Auxiliaries are PWs:

- (i) They do not harmonize with the preceding vowels; rather they initiate their own harmony domain.
- (ii) All are at least bimoraic.
- (iii) They can be reduplicated just like any other words:

- (22) a. hasta ol-du-m **mol-du-m** 'I was sick and such'
 b. kahvaltı et-ti **met-ti** '(s)he had breakfast and such'

- (iv) All can occur in isolation.

- (23) A: telefon et-ti-n-mi? 'Did you phone?'
 telephone Aux-PAST-2P-INTER
- B: et-ti-m 'I did'
 Aux-PAST-1S

- (v) They can get inflected (see all the examples above).

Auxiliaries are suffix-like:

- (24) CC resolution:

Compound Verbs:

- a. /haps ol-mEk/ **haps** olmak 'to be imprisoned'
 prison Aux-INF

Syntactic Phrases:

- b. /haps iste-mEk/ **hapis** istemek (*haps) 'to ask for imprisonment'
 prison want-INF

- (25) Degemination:

Compound Verbs:

- a. /zamm et-mEk/ **zamm** etmek 'to add'
 increase Aux-INF

Syntactic Phrases:

- b. /zamm iste-mEk/ zam istemek ‘to ask for a raise’
 increase want-INF

(26) Long Vowel Shortening:

Compound Verbs:

- a. /hara:m et-mEk/ hara:m etmek ‘to take the pleasure out of s.th.’
 forbidden Aux-Inf

Syntactic Phrases:

- b. /hara:m et/ haram (*hara:m) et ‘religiously forbidden meat’
 forbidden meat

☑ *Postpositions in Postpositional Phrases*Postpositions are PWs:

- At least bimoraic; have their own stress properties, receive inflectional morphemes, etc. (see Kabak 2006)

Postpositions are suffix-like:

- Closer look at frequent collocations reveal that they are much more prone to undergo re-syllabification with preceding words (this needs more work):

(27) Postposition

- a. keyf için ‘pleasure for’
 b. keyf ile ‘pleasure with’
 c. hatt ile ‘line with’
 d. hatt için ‘line for’

Other phrases (e.g., NP, VP)

- keyif ara-sı (*?keyf ara-sı)
 ‘pleasure break’
 hat iste-mek (*hatt iste-mek)
 ‘to ask for a line’

- In sum, the domain of (re-)syllabification is larger than the PW, encompassing quasi-words such as auxiliaries and postpositions in postpositive constructions (see Banguoğlu 1986: 76 who also suggests that re-syllabification applies across words in compounds).
- Crucially, this domain is NOT a Phonological Phrase!

☑ *Stress properties of syntactic phrases vs. compound-type constructions*(28) Compound (no sec. stress)Phrase (sec. stress)

- a. koş-úp dur-du ‘he continued to run.’ koş-úp dur-du ‘(s)he ran and stopped.’
 run-CNV Aux-PAST run-CONJ stop-PAST
- b. at-ı ver-di ‘(s)he suddenly threw it’ at-ı ver-di ‘(s)he gave the horse.’
 throw-CNV Aux-PAST horse-ACC give-PAST

- c. kír̥k ayak ‘catterpillar’ kír̥k ayaɛk ‘forty feet’
forty foot forty foot
- (29) Adj+N Compounds (Rightmost) Adj+N Phrases (Leftmost)
a. pirinikòs pòlemos ‘nuclear war’ irakinós pòlemos ‘Iraqi war’
b. Diplomatikò sóma ‘diplomatic body’ Diplomatikí apàndisi ‘diplomatic answer’
- ☑ *Reduplicated constructions* (leftmost element is promoted)
- (30) a. káp-kara ‘pitch black’
b. pés-pembe ‘very pink’
- (31) a. yaváš yavaş ‘slowly’
b. güzél güzel ‘beautifully’
c. koş-á koş-a ‘by running’

5. Conclusions

- Arguments against an independent constituent between PW and PPh are superfluous.
- Analyses that adopt recursive PWs instead lack independent phonological motivation.
- Furthermore, prosodic recursivity as posited in the prosodic phonology literature is not theoretically justified. We are by no means saying that recursivity should be abandoned. There is, however, a need to clearly define what recursive constituents in phonology can be and what they exclude.
- We have shown that a prosodic domain that is higher than the PW and lower than the PPh, which we refer to as the Phonological Cluster, is necessary to accommodate the following constructions:

- (32) a. [[stem-suffix]_{PW} -clitic-clitic-clitic]_{PhC} [[koş-acák]_{PW}-mɪ-ydɪ-nɪz]_{PhC}
b. [clitic-[stem-suffix]_{PW}]_{PhC} [na dɔ [ðjavásume]_{PW}]_{PhC}
c. [[stem]_{PW} + [Aux]_{PW}]_{PhC} [[koş-úp]_{PW} [dur-du]_{PW}]_{PhC}
d. [[stem]_{PW} + [PostP]_{PW}]_{PhC} [[háps]_{PW} [ol-mak]_{PW}]_{PhC}
e. [[stem]_{PW} + [stem]_{PW}]_{PhC} [[kír̥k]_{PW} [ayak]_{PW}]_{PhC}
f. [σ_{red} + [stem]_{PW}]_{PhC} [[káp+[kara]_{PW}]_{PhC}