

Intermediate Phonology

Part 6: Prosodic words

Caroline Féry (caroline.fery@gmail.com)
Frankfurt

CreteLing23



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ω , φ and ι : interface constituents

Prosodic words

In both Greek and English, content words or lexical words (nouns, adjectives, adverbs and verbs) are ω -words.

In both languages larger ω -words are formed by inflection, derivational affixation, and compounding.

Suffixes and prefixes are morphologically integrated into independently existing ω -words, or they form larger ω -words together with their host.

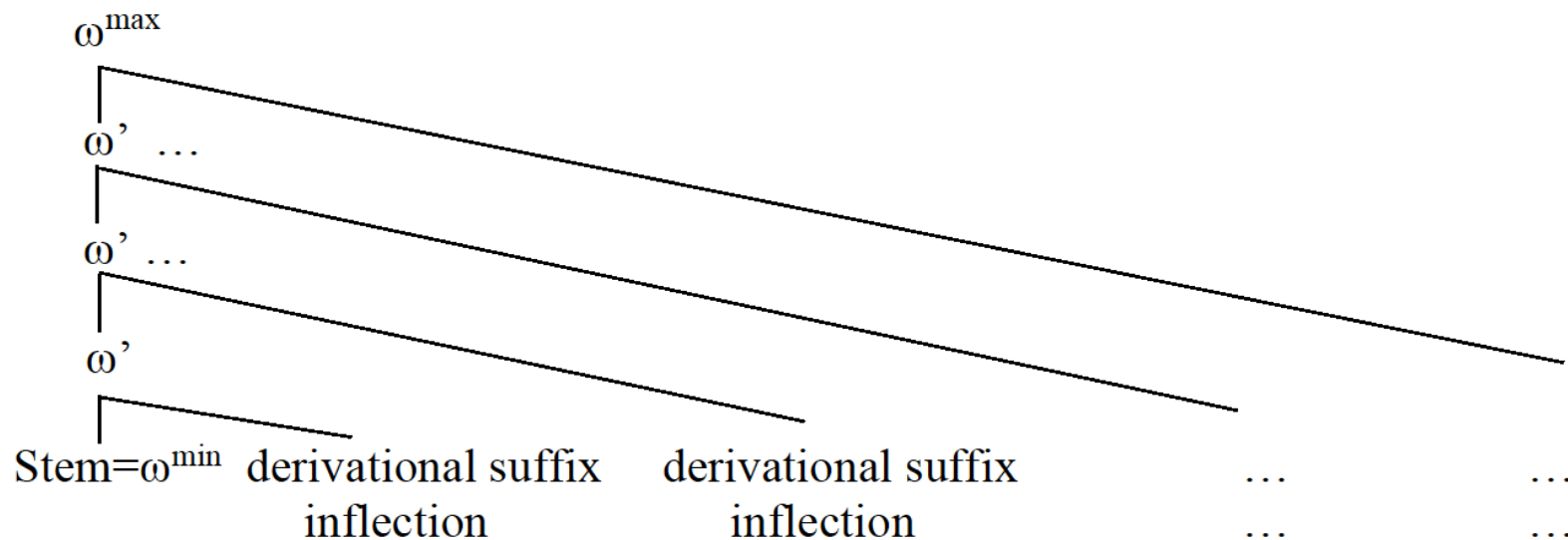
Function words (articles, pronouns, prepositions etc) are not ω -words, at least not by themselves when they are not focused. They can be prosodically cliticized to the preceding or following ω -words in Greek and English, inducing a recursive ω -word structure, and, in some cases, to the φ -phrase in English.

Moreover, both languages also have compounds that also induce a recursive ω -word structure. Culminativity is achieved in both languages.

Today, we examine under which conditions morphologically complex words are also prosodically complex ω -words.

Recursivity in prosodic hierarchy

Both Greek and English allow recursive structure of the prosodic word.



Maximal (projection of) $\alpha =_{\text{def}} \alpha$ is not dominated by α , $\omega^{[+ \max, - \min]}$

Minimal (projection of) $\alpha =_{\text{def}} \alpha$ is not dominating α , $\omega^{[+ \min, - \max]}$

Intermediate (projection of) $\alpha =_{\text{def}} \alpha$ is dominated by α , $\omega^{[+ \max, - \min]}$ and is dominating α , $\omega^{[- \max, - \min]}$

Ito, Junko & Armin Mester. 2013. Prosodic subcategories in Japanese. *Lingua* 124. 20–40.

Prosodic words in English

Inflectional affixes are too light to be ω -words, and are thus attached as appendical segments or syllables to the stem.

Both regular and irregular inflected words share the same inventory of allomorphs.

Inflectional affixes:

nominal: [z/s,/ɪz]: (boys) $_{\omega}$, tiger-s, rat-s, hors-es

verbal: [z/s,/ɪz]: run-s, laugh-s, pleas-es

[d/əd]: (screamed) $_{\omega}$, play-ed, vot-ed

[t]: jump-ed, furnish-ed

[ŋ]: beat-en

[ɪŋ]: laugh-ing, develop-ing

adjectival: [ə], [əst]: pretty-er, (prettyest) $_{\omega}$

Prosodic words in English

Criteria for ω -words have been proposed in the literature:

- Syllabification.
- A single primary lexical stress due to Culminativity.
- ω -words form bounding domains for different segmental processes.
- Edge-sensitive rules delimit ω -words, e.g. segmental allophonies.

Traditionally, since Lexical Phonology (LP) or even earlier, a distinction between level 1 and level 2 derivational affixes is made, see also the two boundary strengths between stem and affixes in Chomsky & Halle (1968), written # and ##:

level 1 suffixes are often vowel-initial and are syllabified with the stem. They are integrated into the ω -word of the stem, and are then part of the domain of foot formation. They may shift the stem's stress or they can bear main stress.

level 2 suffixes are often consonant-initial and they build a separate domain of syllabification. They are stress neutral, do not bear main stress in English and have no effect on the stem's stress.

Prosodic words in English

In Lexical Phonology (Kiparsky 1982), derivational affixation takes place on two levels of the interaction between morphology and phonology, on levels 1 and 2.

	Suffixes				Prefixes	
Level 1	-ity	r ápíd	rap í d + ity	ín-	pol í te	í m + polite
Level 2	-ness	géntle	géntle + ness	un-	cléar	un + cléar

Class 1 affixes

can attach to non-word bases

unproductive

stress-shifting

resyllabification takes place

underly phonological processes such as

Nasal Assimilation

Trisyllabic Laxing

Class 2 affixes

attach to words only

productive

stress-neutral

no resyllabification

No NA

No TL

Prosodic words in English

Prosodic properties of derivational suffixes

Consonantal suffixes like *-th* [θ] are too light to form a ω -word by themselves: they are integrated into the stem's ω -word: resyllabification takes place.

(growth) $_{\omega}$ – grow

warmth – warm

breadth – broad

width – wide

height – high

truth – true

depth – deep

length – long

strength – strong

flight – fly

Prosodic words in English

The vowel-initial suffixes like *-ize*, *-ical*, *-ity*, *-ation* or *-able* are integrated into the ω -words of the stem because they need an onset: resyllabification takes place. These are the so-called *cohering* affixes.

Some of them are stress-neutral:

-able wash-able
 think-able
 lov-able
 interpret-able

-ize parent-ize
 organ-ize

-ical (not productive, stress-shifting)

 alphabet-ical
 farc-ical
 quizz-ical
 paradox-ical

Prosodic words in English

Further stress-shifting vowel-initial suffixes:

<i>-ation</i>	prepaire	preparaition
<i>-al</i>	pairent	paraental
<i>-ic</i>	at6m	at6mic
<i>-ity</i>	universe	univers-ity, sol6mn-ity
	6bese	ob6s-ity, div6in-ity
<i>-ive</i>	s6bjeet	subje6tive
<i>-ian</i>	N6wton	Newt6nian

The second, outer affix *-ity* also affects the position of stress on its base:

<i>-ity</i>	s6bjeet	subje6tive	subject6ivity
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Some of the Level 1 stress-shifting derivational suffixes are stress-bearing themselves:

<i>-ee</i>	employ6e	<i>-ette</i>	maison6ette, launderette
<i>-esque</i>	pictur6esque, arab6esque.	<i>-ese</i>	Japan6ese, Sudan6ese

Prosodic words in English

Level 2 stress-neutral derivational suffixes

Consonant-initial stress-neutral derivational suffixes are ω -words themselves and attach to the stem to form a larger ω -word: no resyllabification takes place.

- ful* ((mind) $_{\omega}$ - (ful) $_{\omega}$) $_{\omega}$
- ness* (((mind) $_{\omega}$ - (ful) $_{\omega}$) $_{\omega}$ (ness) $_{\omega}$) $_{\omega}$ open-ness
- less* penni-less
- hood* nation-hood
- ly* solemn-ly
- ship* friend-ship
- like* (productive) molluskl-like, alphabet-like, koalalike

Prosodic words in English

Turning to prefixes, the segmental structure of words is a good indicator of their status. Compare the words in (1) that form one ω -word with those in (2) that form a recursive ω -word. Both have a first syllable written *be*, *re* (or *pre*).

In (1), the first unstressed syllable contains a reduced vowel.

(1)	[bənáɪn] _A , [bɪnáɪn] _A	(benígn) _ω	‘benign’
	[rəg’ætə] _N , [rɪg’ætə] _N	(regátta) _ω	‘regatta’
	[bəlú:gə] _N [bɪlú:gə] _N	(belúga) _ω	‘beluga’

In the words in (2) the first syllable is a secondarily stressed prefix with its own ω -word. It is a full vowel [i:].

(2)	[rì:bɜ́:θ] _N	(rè) _ω (birth) _ω	‘rebirth’
	[prì:kǽn ^t sərəs] _A	(prè) _ω (cáncerous) _ω	‘precancerous’
	[dì:m’ɪstɪfàɪ] _V	(dè) _ω (mýstify) _ω	‘demystify’

Raffelsiefen, Renate. 2007. Morphological Word Structure in English and Swedish: the Evidence from Prosody. *On-line Proceedings of the Fifth Mediterranean Morphology Meeting* (MMM5). University of Bologna.

Prosodic words in English

Minimal pairs (doublets)

One ω -word

(subordinate) $_{\omega}$

[sə.'bɔː.də.nət]

(enable) $_{\omega}$

[ə.'neɪbəl]

Two ω -words

((sub) $_{\omega}$ (optimal) $_{\omega}$) $_{\omega}$, submarine, sub.lease

[sʌb.'ɒp.tə.məl]

((un) $_{\omega}$.(able) $_{\omega}$) $_{\omega}$

[ʌn.'eɪbəl]

Different segmental assimilation processes are bounded by the ω -word (Hayes calls it “stem”).

Near minimal pairs for **Vowel Nasalization** (Hayes 2009) that takes place in the ω^{min} .

One ω -word

(Venus) $_{\omega}$

Venus ['vɪ̃nəs]

bonus ['bɔ̃ʊnəs]

Uranus [jʊ'ɪ̃ɪnəs]

Linus ['lɪ̃ɪnəs]

Two ω -words

((free) $_{\omega}$ (ness) $_{\omega}$) $_{\omega}$

freeness ['fɹĩnəs]

slowness ['sləʊnəs]

greyness ['gɹeɪnəs]

dryness ['dɹaɪnəs]

Prosodic words in English: conclusion

Compounding is productive, a compound has a primary stress. Each element of a compound has its own domain of syllabification, and is a separate prosodic word.

There is only one primary stress at every level of the recursive ω -word, here ω^{\max} .

Compounds

$((\text{ant})_{\omega} (\text{eater})_{\omega})_{\omega}$

$((\text{night})_{\omega} (\text{rate})_{\omega})_{\omega}$

$((\text{nap})_{\omega} (\text{lady})_{\omega})_{\omega}$

One word

$(\text{in.te.rest})_{\omega}$

$(\text{ni.trate})_{\omega}$

$(\text{apliance})_{\omega}$

Prosodic words in English: conclusion

The inflectional system is extremely simple, only a few **unstressed** morphemes: some can be syllabic if needed for syllabification, but except for *-ing*, no full vowel is ever present (observe that schwa is banned before [ŋ]). Inflectional morphemes are part of the ω^{\min} of the stem they attach to and have no effect on stress placement.

Derivational affixation is variable: affixes can be stress-shifting (and stressed or unstressed) or stress-neutral, the number of syllables is one or two, full vowels are the rule (but there are exceptions such as *-th*). Resyllabification is also variable. Derivational suffixes are sometimes prosodic words by themselves and sometimes integrated into the stem.

Compounding is productive, a compound has a primary stress. Each element of a compound has its own domain of syllabification, and is a separate prosodic word.

Inflection is always peripheral, derivational affixes are partly organized in levels. In general, recursive prosodic words play a role in explaining segmental processes, syllabification and stress location.

Culminativity: There is only one primary stress at every level of the recursive ω -word.

Prosodic words in Greek

The ω -word is recursive in Greek, as well.

According to Kabak & Revithiadou (2009) recursive phonological structures in Greek always depend on recursive morphosyntactic structures: phonological structure mirrors morphological structure as closely as possible.

The category of the whole construction is the same as at least one of its members.

The whole construction inherits the properties of its mother (head ω -word), and by being an new entity (recursive ω -word, ω^{\max}), it may develop properties of its own.

Kabak, Barış & Anthi Revithiadou. 2009. An interface approach to prosodic word recursion. In Kabak, Barış & Grijzenhout, Janet (eds.). *Phonological Domains: Universals and Derivations*, 105-132. The Hague: Mouton de Gruyter.

Prosodic words in Greek: inflection

Greek has a **fusional morphology**.

Greek content words are morphologically complex, formed from more than one morpheme. The relevant grammatical information is marked on inflectional suffixes on nouns, pronouns, adjectives, articles, and verbs. These suffixes often contain several morphological features: gender, case, number, tense, person... (synthetic morphology)

Final *-os* in *άνθρωπος* *ánthropos* ‘person’ indicates masculine gender, nominative case and singular number, and final *-on* in *ανθρώπων* *anθrópon* indicates masculine gender, genitive case and plural number.

Several suffixes are also possible in which case they are concatenated in a specific order:

αγαπ-ύς-α-με ‘love-PAST-CONT-1PL’

Inflected words form a single ω^{min} -word or ω' (not a ω^{max}).

Joseph, Brian D. & Georgios Tserdanelis. 2003. Modern Greek In: Roelcke, Thorsten (Ed.) *Variationstypologie. Ein sprachtypologisches Handbuch zu den europäischen Sprachen in Geschichte und Gegenwart*. De Gruyter.

Prosodic words in Greek: derivation

Derivation: Greek has a large number of **derivational suffixes** that form a **single minimal or intermediate ω-word with the stem**. These are consonant or vowel initial. They can be stressed or not.

Three examples (of many), see Holton et al. (2012:241ff):

-της: masculine nouns from verbs: the person or appliance that carries out the action of the verb

προπον-ώ	‘I train’	→	προπον-η-τής	‘trainer’
κλέβ-ω	‘I steal’	→	κλέφ-της	‘thief’

-μός: masculine nouns from verbs: the action of the verb and its result or effect

διστάζω	‘I hesitate’	→	δισταγμός	‘hesitation’
διώκω	‘I persecute’	→	διωγμός	‘persecution’

-είο: the place where an action or business is carried out

ταχυδρομείο	ταχυδρομίο	‘post office’
φαρμακείο	farmakío	‘pharmacy’

Prosodic words in Greek

Compounding is productive in Greek. It is usually binary, i.e. it contains two elements.

The head of the compound is the rightward element (endocentric)

χιονάνθρωπος ‘snowman’ χιον- (< χιόνι ‘snow’) + άνθρωπος ‘man’

/o/ appears between roots/stems when one ends and the next begins with consonants, but not when the second compound starts with a vowel.

αλατ**ο**πίπερο ‘salt and pepper’ αλατ- (< αλάτι ‘salt’) + πιπερ- (< πιπέρι ‘pepper’) + ο
(exocentric: the suffix does not belong to the second element)

ψαρόσουπα ‘fish soup’ ψαρ- (< ψάρι ‘fish’) + σούπα ‘soup’
(endocentric)

Many different semantic and syntactic forms of compounds, see Holton et al. (2012) for an overview.

Compounds form a single ω^{\max} out of two ω -words. The vast majority of them have one primary stress and no secondary stress, but some compounds have secondary stress, see slide 28.

Prosodic words in Greek

As far as ω -word formation is concerned, in a first step, both inflection and derivation form one ω^{\min} or ω' together, not a ω^{\max} .

In inflection and derivation, resyllabification is total.

- a. /pros-méno/ (pro.zméno) $_{\omega}$ ‘anticipate’
 PFX ‘PARTICIPLE’
- b. /γeras-ménos/ (ye.ra.zmé.nos) $_{\omega}$ ‘aged’
 old-ADJ
- c. /pros-eđaf-is-i/ (pro.seđáfi.si) $_{\omega}$ ‘landing’
 PFX-land-NMLZ-SG.NOM

Secondary stress is assigned in the ω^{\max} but not in the ω^{\min} :

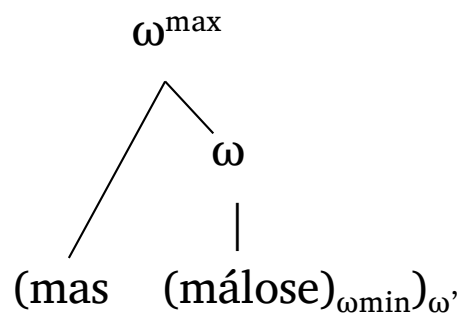
Clitics form a ω^{\max} with their host. The ω^{\max} comprises the head of the ω -word (the content word), that forms a ω' by itself and the dependent clitics.

Several phonological processes apply in the ω^{\min} but not or less so in the ω^{\max} : total resyllabification, s-voicing, primary stress.

ω-words in Greek: syllabification and s-voicing

The Greek pronominal system has a set of weak forms of proclitic pronouns which are prosodically dependent on a following host. Together they form a ω^{\max} .

Procliticization creates a recursive syntactic constituent that contains the clitic and the verb. These structures also form recursive ω-words.



/mas málose/ (maz (málose)_ω)_ω
 CLT-1PL.ACC scold-PAST.3SG.

‘(S)he scolded us.’

/mas đjavázi/ (maz (đjavázi)_ω)_ω^{max}
 CLT-1PL.GEN read-3SG

‘(S)he reads for us.’

s-voicing in the ω-word: (maz (málose)_ω)_ω similar (but not identical) to derivational (pro.zméno)_ω ‘anticipate’. In *maz.málose* [m] may be an onset, a coda or ambisyllabic.

Kabak, Barış & Anthi Revithiadou. 2009. An interface approach to prosodic word recursion. In Kabak, Barış & Grijzenhout, Janet (eds.). *Phonological Domains: Universals and Derivations*, 105-132. The Hague: Mouton de Gruyter.

ω-words in Greek: syllabification and s-voicing

In some proclitics, resyllabification (s-voicing) is blocked between the final consonant of the clitic and the first vowel of the following lexical word.

/t-is anasa-s/ → (tis.(a'nasas)_ω)_{ωmax} / (tis(a'nasas)_ω)_{ωmax}
the-F.SG.GEN breath-F.SG.GEN 'of the breath'

Kabak, Barış & Anthi Revithiadou. 2009. An interface approach to prosodic word recursion. In Kabak, Barış & Grijzenhout, Janet (eds.). *Phonological Domains: Universals and Derivations*, 105-132. The Hague: Mouton de Gruyter.

ω-words in Greek: syllabification and s-voicing

Enclitics

In the imperative, the same pronouns are post-verbal and thus **enclitics** and are (more tightly) incorporated into the ω-word of their verbal host:

málose mas ‘scold us’

Other enclitic elements are not tightly resyllabified despite s-voicing.

/o'jos mu/ o'jo.zmu → ((ojóz)_ω mu)_ω ‘my son’

Revithiadou, Anthi & Giorgos Markopoulos. 2021. A Gradient Harmonic Grammar Account of Nasals in Extended Phonological Words. *Catalan Journal of Linguistics* 20, 2021.57-75.

ω -words in Greek: no proclitic stress

According to Revithiadou & Markopoulos (2021), secondary stress in Greek is strictly prohibited within the ω -word (ω^{\min}), regardless of its length, see also Arvaniti & Baltazani (2005) for a similar view:

- a. trom-o-krat-ik-os → (tromokratikós) $_{\omega}$ ‘terrorist’
- b. markađor-os → (markađóros) $_{\omega}$ ‘marker’

Compare with proclitic disyllabic function words in Greek (prepositions), see c-f. These are part of the ω^{\min} of the following content word to which they are syntactically linked. They are usually unstressed. Some of these words contrast with stressed homophones, see f., an instance of ω^{\max} .

- c. apo norís (aponorís) $_{\omega}$ ‘(since) early’
- d. aná tin ifílio (anatinifílio) $_{\omega}$ ‘all-over the globe, everywhere’
- e. katá to spíti (katatospíti) $_{\omega}$ ‘towards the house’
- f. katá tu yámu (katá) $_{\omega}$ (tuyámu) $_{\omega}$ ‘against (the) marriage’

Arvaniti, Amalia & Mary Baltazani. 2005. Intonational analysis and prosodic annotation of Greek spoken corpora. In Jun, Sun-Ah. 2005. *Prosodic Typology*. Cambridge University Press. 84-117.

ω-words in Greek: enclitic stress

However, ‘enclitic stress’ is different. When one or two weak pronouns are suffixed/encliticized to a host, a second stress emerges in the ω^{\max} .

This happens if the primary stress is located more than 3 syllables from the end. In this case, the three-syllable window is not fulfilled.

As a repair an additional stress is added two syllables to the right of the primary stress.

Verb + weak object pronoun:

- a. κάλεσε + τον kálese ton → (kàleséton) $_{\omega^{\max}}$ ‘invite him’
- b. férnodas to mu → (fèrnodás tomu) $_{\omega^{\max}}$ bringing it to me’
- c. to tetrádio mu → (to tetràdiómu) $_{\omega^{\max}}$ ‘my notebook’

Noun or adjective + possessive pronoun:

- d. ο + δάσκαλος + μας ο δάσκαλος mas → ο δάσκαλός μας ο δάσκαλός μας ‘our teacher’

Adverb + weak pronoun(s):

- e. απέναντι + σας arénantí sas → απέναντί σας arèna(n)dísas ‘opposite you’

Holton et al. 2004. *Greek: an essential grammar of the modern language*. London: Routledge.

ω -words in Greek: secondary stress

Rhythmic stress in proclitics: a sequence of two proclitics provide enough material to host an accent of their own: again secondary stress is only possible in ω^{\max} .

- a. /mu to $\delta\acute{j}\acute{a}vase/$ $((m\grave{u} \text{ to}) (\delta\acute{j}\acute{a}vase)_{\omega})_{\omega^{\max}}$
CLT-1.SG.GEN CLT-3.NT.SG.ACC read-past.3.SG
'(S)he read it to me.'
- b. /mas tus $\delta\acute{j}\acute{a}lekse/$ $((m\grave{a}s \text{ tuz}) (\delta\acute{j}\acute{a}lekse)_{\omega})_{\omega^{\max}}$
CLT-1.PL.GEN CLT-3.M.SG.ACC choose-past.3.SG
'(S)he chose them for us.'
- c. /mas tus $ma\grave{y}ir\acute{e}vi/$ $((m\grave{a}s \text{ tuz}) (ma\grave{y}ir\acute{e}vi)_{\omega})_{\omega^{\max}}$
CLT-1.PL.GEN CLT-3.M.SG.ACC cook-past.3.SG
'(S)he cooked them for us.'

Kabak, Barış & Anthi Revithiadou. 2009. An interface approach to prosodic word recursion. In Kabak, Barış & Grijzenhout, Janet (eds.). *Phonological Domains: Universals and Derivations*, 105-132. The Hague: Mouton de Gruyter.

ω-words in Greek: stress in ω-max

Generalizations

Secondary stress is strictly avoided in the ω^{min}, but it is allowed within the ω^{max}

A further place where secondary stress is found is in some compound formations:

Coordinative compounds (Holton et al. 2012):

πλυντήριο-στεγνωτήριο ‘washer-dryer’

Combining two independent words into a compound:

λέξη-κλειδί ‘keyword’ (λέξη ‘word’ + κλειδί ‘key’)

Secondary stress may develop in stem-word compound formations (R&M)

((pàlo)_ω (markaðóros)_ω)_{ωmax} ‘lousy marker’

((pàra)_ω (vréxo)_ω)_{ω max} ‘pour down too much water-1SG’.

Holton, David, Peter Mackridge, Irene Philippaki-Warburton & Vassilios Spyropoulo. 2012. Greek: A Comprehensive Grammar. London: Routledge.

Revithiadou, Anthi & Giorgos Markopoulos. 2021. A Gradient Harmonic Grammar Account of Nasals in Extended Phonological Words. *Catalan Journal of Linguistics* 20, 2021.57-75.

Allophony in Greek: hiatus resolution

Vowel deletion: When a weak pronoun or particle ends in a vowel and the following verb begins with the same vowel, the vowel of the function word may be deleted.

θα αγοράσω [θααγοράσο] or θ' αγοράσω [θαγοράσο] 'I will buy'

A less sonorous vowel deletes when a vowel of greater sonority follows.

/i/ and /e/ may be deleted if they are next to an /o/, /u/ or /a/:

το είπα [τοίπα]	or το 'πα [τόπα]	'I said it'
το έδωσα [τοέδωσα]	or το 'δωσα [τόδωσα]	'I gave it'
σου έδωσα [σουέδωσα]	or σου 'δώσα [σúδωσα]	'I gave you'
θα έχω [θαέχο]	or θα 'χω [θάχο]	'I shall have'

/o/ and /u/ may be deleted if they are next to an /a/:

μου απάντησε [μουαπά(n)δισε] or μ' απάντησε [μαπά(n)δισε] '(s)he replied to me'.

The final /o/ or /a/ of the neuter definite article may be deleted before a word beginning with /a/:

το αγόρι [τοαγόρι]	or τ' αγόρι [ταγόρι]	'the boy'
τα αγόρια [τααγόρια]	or τ' αγόρια [ταγόρια]	'the boys'

Prosodic words in Greek: vowel deletion

Vowel deletion is almost obligatory in recursive ω^{\max} , at least in connected speech: but it is optional in the φ (prosodic phrase) domain.

(1) ω -word

- a. **mu** **to** **afíni** **(mutafíni)** $_{\omega^{\max}}$
 CLT-1.SG.GEN CLT-3.NT.SG.ACC leave-3
 ‘(S)he leaves it to me.’
- b. **me** **onomázi** **(monomázi)** $_{\omega^{\max}}$
 CLT-1.SG.ACC name-3.SG ‘(S)he names me.’
- c. **me** **elénxi** **(melénç̣i)** $_{\omega^{\max}}$
 CLT-1.SG.ACC control-3.SG. ‘(S)he controls me.’

(2) a. φ -phrase

- to** **ómorfo** **aγóri**
 the handsome-NOM.SG boy-NOM.SG ‘the handsome boy’
 Possible outputs (variation): *to ómorfo aγóri* (uttered in careful speech)
- b. (**tómorfo** **aγóri**) $_{\varphi}$ or (**tómorfa**aγóri) $_{\varphi}$ (uttered in normal to fast speech rate)

Kabak, Barış & Anthi Revithiadou. 2009. An interface approach to prosodic word recursion. In Kabak, Barış & Grijzenhout, Janet (eds.). *Phonological Domains: Universals and Derivations*, 105-132. The Hague: Mouton de Gruyter.

Allophony in Greek: vowel deletion

Final vowels can also be deleted before a consonant-initial word:

The final vowel of the prepositions σε /se/ ‘in, at’ (obligatorily) and από /apó/ ‘from’ is optionally deleted before a following consonant initial definite article:

σε + το Λονδίνο	→ στο Λονδίνο [stolonðino]	‘in London’
από + την Αθήνα	→ απ’ τήν Αθήνα [aptinaθína]	‘from Athens’

The final /e/ of a two-syllable singular perfective imperative may be deleted if followed by a neuter weak pronoun or a noun with a definite article:

φέρε το /fére to/	→ φέρ’ το [féрто]	‘bring it’
φέρε το βιβλίο /fére to vivlío/	→ φέρ’ το βιβλίο [fértovivlío]	‘bring the book’
κόψε τα /kópse ta/	→ κόψ’ τα [kópsta]	‘cut them’
δος-e το	→ (‘ðo.sto) _ω	‘give it’

Baltazani, Mary. 2006. Focusing, prosodic phrasing, and hiatus resolution in Greek. In Louis M. Goldstein, Douglas Whalen & Catherine T. Best (eds.) *Laboratory phonology* 8, 473-494. Berlin & New York: Mouton de Gruyter.

Allophony in Greek: [n] in function words

Nasal and (pre-nasalized) voiced stops

When enclitics incorporate into a single ω -word with their host, post-nasal voicing and nasal assimilation are compulsory.

Determiner _{SG.ACC} – *noun*

/t-on pist-o/ [to ^mbi'sto]

the-M.SG.ACC believer-M.SG.ACC

‘the (male) believer’

Imp. verb + pronoun

/pan-e ton/ [ˈpaⁿdon]_ω

take 2SG.IMP

‘take him’

Negation marker /ðen/ – *verb*

/ðen pist-ev-is/ [ðe ^mbi'stevis]

NEG believe-VBLZ-2SG

‘you do not believe’

[n] in function words

PNV/NASCOAL are blocked in the following cases (In the φ domain? Lexically specified?):

(a) when the nominal **genitive plural exponent /on/** is present

(b) when a noun in genitive plural form is followed by a possessive clitic.

(c) In a sequence Comp + verb

- a. *Determiner*_{PL.GEN} – *noun*
/t-on pist-on/ [ton pi'ston]
the-PL.GEN believer-PL.GEN
'of the believers'
- b. *Noun*_{PL.GEN} – *clitic constructions*
/pist-on tus/ [pi'ston tus]
believer-PL.GEN POSS.3PL
'of their believers'
- c. *Complementizer* – *verb*
/an pist-ev-is/ [an pi'stevis]
COMP believe-VBLZ-2SG
'if you believe'

[n] in function words: overview

		Deletion —C _[+cont]	PNV/NasCoal —C _[-cont]	Faithful realization —V
a.	NEG	ǰe 'θelo	ǰe m ^h bi'stevo	ǰen a'niyo ³
b.	NEG	ǰmi 'θelis	ǰmi m ^h bi'stevis / ǰmin p...	ǰmin a'nijis
c.	DET.M.SG.ACC	to 'θolo	to m ^h bi'sto	ton 'anemo
d.	CLITIC.F	ti 'θelo	ti m ^h bi'stevo	tin a'niyo
e.	CLITIC.M	ton 'θelo ⁴	to m ^h bi'stevo	ton a'niyo
f.	DET.M.PL.GEN	ton θi'ron	ton pi'ston	ton a'nemon
g.	COMP <i>an</i>	an 'θelis	an pi'stevis	an a'nijis

Glosses: a'niy-o 'open-1SG', *a'nij-is* 'open-2SG', *'anem-o* 'wind-SG.ACC', *a'nem-i* 'spinning wheel-SG.ACC', *a'nem-on* 'wind-PL.GEN', *'θel-o* 'want-1SG', *'θel-is* 'want-2SG', *'θol-o* 'dome-SG.ACC', *'θir-a* 'gate-SG.ACC'.

Revithiadou, Anthi & Giorgos Markopoulos. 2021. A Gradient Harmonic Grammar Account of Nasals in Extended Phonological Words. *Catalan Journal of Linguistics* 20, 2021.57-75.

[n] in function words

Revithiadou & Markopoulos propose a Gradient Harmonic Grammar account (Smolensky & Goldrick 2016), a weighted constraint system, for the different behaviour of the final nasal. Each morpheme has its own degree of strength for their final nasal, in some cases, when the behaviour of the nasal is variable, two different ones.

Each constraint also has a weight and in each case, such a calculation is needed.

(17) /t-on _{1PL.GEN} t ₁ .../	DEP-•	MAX-•	MAX [+nas]	MAX [+vd]	MAX [COR]	MAX [-vd]	*NC _◌	*•[F]•	UNIF	CRISP	H
	35	20	18	18	4	10	15	10	5	6	
a. [to [n ₁ d ₁ ...]]						-1			-1	-1	-21
b. [ton ₁ [t ₁ ...]]							-1				-15
c. [ton ₁ [d ₁ ...]]						-1		-1		-1	-26
d. [ton ₀ [t ₁ ...]]		-1	-1	-1	-1						-60
e. [ton ₀ [d ₁ ...]]		-1	-1	-1	-1	-1		-1		-1	-86

Glide strengthening in prosodic words

Glide strengthening

As mentioned before, glide /j/ undergoes fortition in some cases, i.e. it changes in manner of articulation from an approximant to a fricative: recall παιδιού /peð-iu/ [pe.ðjú] ‘child-GEN.SG’ (Presentation 5) and also [peðjá] ‘child-PL-NOM’. The process affects word-initial high front vowels at hiatus contexts:

- a. /iatr-os/ → (ja'tros)_ω ‘doctor-SG-NOM’,
 /ial-i/ → (ja'li)_ω ‘glass-SG-NOM’

The change of /j,i/ into a fricative is blocked between a determiner and the following noun, suggesting that the determiner falls outside the innermost ω :

- b. /i ana/ → (i (ána)_ω)_{ωmax} ~ (j (ána)_ω)_{ωmax} *(jána)_ω
 the.SG-NOM Anna.SG-NOM ‘the Anna’

Revithiadou, Anthi & Giorgos Markopoulos. 2021. A Gradient Harmonic Grammar Account of Nasals in Extended Phonological Words. *Catalan Journal of Linguistics* 20, 2021.57-75.

Prosodic words in Greek: conclusion

Inflectional and derivational suffixes are integrated into the ω -word of the stem. No such thing comparable to the levels of Lexical Phonology for English.

The larger and recursive prosodic structure of ω -words does exist in Greek as well, but rather with clitics.

Conclusion

In English, derivational affixes are divided into two groups:

Level 1 affixes form a single ω -word with the stem, as do inflectional suffixes.

Level 2 affixes form their own ω -word and combine with the stem into a larger ω^{\max} , as do elements of compounds.

In Greek, derivational affixes and Inflectional suffixes all form a single ω -word with the stem: no distinction between classes of derivational affixes

Only elements of compounds form their own ω -word and combine with the stem into a larger ω^{\max} .

Larger ω^{\max} in Greek are often the result of cliticization, especially if two clitics appear in a sequence.

In English clitics may adjoin to words with no syntactic affiliation, speaking for being attached at the prosodic phrase level.

Prosodic words in English

Pre-/l/ monophthongization: [o̘] ~ [o]/ — [l] takes place in the ω^{\min}

[o̘] before /l/: [o]

pole	[pɔl]	Coltrane	[kɔltɹeɪn]
hole	[hɔl]	told	[tɔld]
mole	[mɔl]	fold	[fɔld]
poultry	[pɔltɹi]	mold	[mɔld]

[o̘] before other consonants and in open syllables: [o̘]

Poe	[pɔ̘]	propane	[pɹɔ̘peɪn]
hope	[hɔ̘p]	toad	[tɔ̘d]
moat	[mɔ̘t]	phone	[fɔ̘n]
Oakley	[ɔ̘kli]	most	[mɔ̘st]

Hayes, Bruce (2009:22) *Introductory Phonology*. Oxford. Blackwell Publishing.

Prosodic words in English

Adding an l-initial suffix or a compound member to words with [oʊ]

slow	[sloʊ]	slow-ly	[ˈsloʊli]
low	[loʊ]	low-ly	[ˈloʊli] / Lowlands [loʊləndz]
toe	[toʊ]	toe-less	[ˈtoʊləs]

Adding a vowel-initial suffix to words with [o] before /l/

goal	[gɔl]	goal-ie	[ˈgɔli]
hole	[hɔl]	hole-y	[ˈhɔli]
role	[mɔl]	roll-ing	[ˈɹɔlɪŋ]
Pole	[pɔl]	Pol-ess	[ˈpɔləs] ‘a female Pole’

In both cases, nothing happens: the shape of the stem is what counts.

((slow)_ω ly)_ω but (goalie)_ω

Data from Hayes, Bruce (2009:22) *Introductory Phonology*. Oxford. Blackwell (not his analysis).