Intermediate Phonology

Part 5: Feet and lexical stress

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Contents of the class

1. Prosodic hierarchy; Phonemes, segments, and distinctive features
2. Segmental allophonies
3. Syllables
4. Moras, weight and time slots

5. **Feet and lexical stress**
6. Prosodic words
7. Prosodic phrases
8. Tones and intonation

Prosodic hierarchy

Prosodic structure is crucial to understand phonology

<u>Prosody</u>		<u>Morphosyntax</u>
ι	Intonation phrase	Clause
φ	Prosodic Phrase	Syntactic phrase
ω	Prosodic word	Grammatical word
F	Foot	Stress unit
σ	Syllable	–
μ	Mora	–

F, σ and μ: rhythmical constituents
ι, φ and ω: interface constituents

Lexical stress

Difference between (lexical) stress and (pitch) accent:

Stress is abstract. 'Stress' refers to the position where a pitch accent can be realized.

Stress is assigned to different prosodic constituents: feet, prosodic words, prosodic phrases, etc, but is is always realized on (associated to) a syllable.

Lexical stress: One prominent syllable in a lexical word or a prosodic word carries primary stress, the position of which is regulated by rhythmic, quantitative and morphological factors.

Pitch accent refers to realized stress: it is an acoustically manifested f0 change, longer duration and/or higher amplitude of the accented syllable as compared to the unaccented ones. Segmental changes also take place: glottal stop insertion, aspiration, and change in the quality of a vowel towards a clearer articulation.

When the word is in an unstressed position, its lexical stress is often not realized and is thus not audible, see Presentation 7 for more.

Lexical stress in English and Greek

Differences between lexical stress in English and Greek

1.   a. The influence of phonology is larger in English than in Greek.
     b. The influence of morphology is larger in Greek than in English.

2.   a. English is a quantity-sensitive language: it uses moras for syllable weight. Some syllables are heavy, some are light. Heavy syllables attract stress.
     b. Greek is a quantity-insensitivity language: weight of a syllable does not play any role for the location of lexical stress. In most cases, stress is determined by morphological principles.

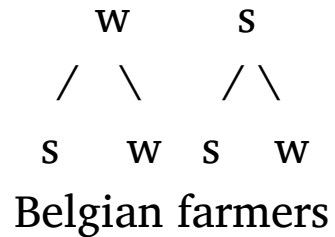3.   a. English uses metrical feet.
     b. Greek does not.

Universal inventory of feet (Hayes 1995)

(a)	*Syllabic trochee*	(σ̱σ)			(σ̱)
(b)	*Moraic trochee*	(ḺL)	(H̱)		(Ḻ)
(c)	*Iamb*	(LH̱)	(H̱)	(LḺ)	(Ḻ)

		licit forms			*degenerate forms*
(a)	Syllabic trochee	(* .) σ σ			(*) σ
(b)	Moraic trochee	(* .) σ σ | | μ μ	(*) σ ⋀ μ μ		(*) σ | μ
(c)	Iamb	(. *) σ σ | ⋀ μ μ μ	(*) σ ⋀ μ μ	(. *) σ σ | | μ μ	(*) σ | μ

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Metrical feet in English

Syllable trochees in a prosodic phrase:

```
              w        s
             / \     / \
            s   w   s   w
            Belgian farmers
```

Rhythm rule: a secondary stress can be moved to avoid a stress clash

```
              x                         x
       x         x               x         x
    x   x        x            x   x        x
    thirteen    men      →       thirteen men
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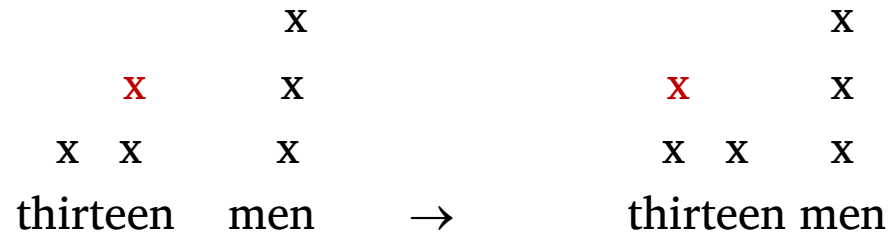
Properties of metrical feet

1. Dominance:

Feet are left or right dominant. A foot is strong on its dominant side. Due to this parameter the dominant side is labeled s and the recessive side w (weak). For binary feet this means that iambs and trochees are differentiated by which side is dominant.

2. Directionality:

Feet are assigned from left to right or from right to left. If all the words of a language begin with a stressed syllable followed by an unstressed syllable, then the directionality is from left to right. The assignment of feet is iterative.

3. Obligatory branching:

If a foot is obligatorily branching, it must have a heavy syllable on its dominant side. All obligatorily branching feet are thus quantity sensitive, but not vice versa.

4. Unboundedness:

Unbounded feet are as big as possible in a domain (e.g., the word). Bounded feet are maximally binary.

5. Extrametricality:

Some constituents, such as syllables or moras, can be extrametrical. That means that they are dealt with during foot assignment as if they were not there. Extrametrical elements are usually (word)final.

6. Culminativity:

One syllable has the primary stress in a word, regardless whether the word is morphologically simple (monomorphemic) or complex (consisting of more than one morpheme).

Lexical stress in English

Nouns are often stressed on the first syllable; verbs and adjectives are often stressed on the last syllable. Nouns and verbs sometimes produce minimal pairs based on the location of primary stress:

Nouns have initial stress	Verbs have final stress	Adjectives have final stress
'di‚gest	di'gest	ob'scene
'es‚cort	es'cort	di'vine
'sur‚vey	sur'vey	se'cure
'tor‚ment	tor'ment	se'rene
'con‚vict	con'vict	ab'surd
	o'bey	
	a'tone	
	‚bap'tise	
	‚inter'vene	
	‚super'sede	

Giegerich, Heinz J. 1992. *English Phonology*. Cambridge. Cambridge University Press.

Lexical stress in English

Consider the stress pattern of monomorphemic nouns.

Only minimally bimoraic syllables can be stressed. This implies that the single syllable of monosyllabic words always have a single 'heavy' syllable, i.e. it is at least bimoraic:

 sack, spot, bat, moat

Monosyllabic words cannot consist of a monomoraic syllable such as *[bɪ]   *[tɔ]

Disyllables are ordinarily/regularly initially stressed. More examples:
ˈketchup, ˈonion, ˈpickle, ˈbubble, ˈproton, ˈconcept

turnip	[ˈtɚnɪp]	*olive*	[ˈɑlɪv]	*filbert*	[ˈfɪlbɚt]
seraph	[ˈsɛrəf]	*table*	[ˈteɪbəl]	*tennis*	[ˈtɛnɪs]
Jerry	[ˈdʒɛɹi]	*tiger*	[ˈtaɪgɚ]	*duffel*	[ˈdʌfəl]
banner	[ˈbænɚ]	*possum*	[ˈpɑsəm]	*dollop*	[ˈdɑləp]

Giegerich, Heinz J. 1992. *English Phonology*. Cambridge. Cambridge University Press.
Hayes, Bruce. 2009. *Introductory Phonology*. Oxford. Blackwell Publishing.

Lexical stress stress in English: syllable weight

Some nouns have final stress, especially when the final syllable is heavy.

giraffe	[dʒəˈɹæf]	*baton*	[bəˈtɑn]
gazelle	[gəˈzɛl]	*canal*	[kəˈnæl]
lacrosse	[ləˈkɹɔs]	*cassette*	[kəˈsɛt]
guitar	[gəˈtɑɹ]	*hotel*	[hoʊˈtɛl]

a. caˈdet	b. Juˈly	c. baˈlloon	d. eˈllipse
caˈnal	deˈgree	briˈgade	laˈment
gaˈzette	caˈnoe	raˈvine	riˈposte
duˈress	ˌbamˈboo	ˌchamˈpagne	ˌauˈgust
ˌhoˈtel	ˌmarˈquee	ˌlamˈpoon	Penˈzance
ˌcatamaˈran	ˌbouˈquet	ˌarˈcade	ˌarˈtiste
ˌcourteˈsan	fricaˈssee	ˌcavalˈcade	ˌcommanˈdant
ˌmarziˈpan	ˌballyˈhoo	ˌmagaˈzine	ˌBucaˈrest

Hayes (2009: 285): The final stress in the normative pronunciations of these words date from when these words were borrowed from other languages. *Poˈlice* and *guiˈtar* are, in certain English dialects, pronounced with an initial stress.

Due to their feet structure, words such as *lemoˈnade* and *cigaˈrette* are often pronounced with a more regular antepenultimate stress: *(lémo)(nàde)* and *(cíga)(rètte)*.

Lexical stress in English

Trisyllables can be stressed on any syllable:

Initial stress	Penultimate stress		Final stress
	open long V	closed syllable	
ˈcamera	a. aˈroma	b. uˈtensil	kangaˈroo
ˈdiscipline	toˈmato	syˈnopsis	commanˈdant
ˈbadminton	anˈgina	aˈmalgam	chimpanˈzee
ˈvertebra	poˈtato	eˈnigma	cavalˈcade
ˈanagram	hoˈrizon	deˈcathlon	Tennesˈsee
ˈcapital	saˈlami	aˈgenda	marziˈpan
ˈnightingale	maˈrina	Beˈlinda	magaˈzine
ˈcalendar			

Antepenultimate stress in longer words: Aˈmerica

Hayes, Bruce. 1995. *Metrical stress theory: Principles and case studies*. Chicago & London: The University of Chicago Press

Giegerich, Heinz J. 1992. *English Phonology*. Cambridge. Cambridge University Press.

Stress in English: syllable weight

Penultimate stress:

When the penult is closed, i.e., when it contains a closing consonant, this syllable is heavy and it attracts the stress.

agenda	[ə'dʒɛndə]	*synopsis*	[sə'nɑpsɪs]	*jujitsu*	[dʒu'dʒɪtsu]
referendum	[ɹɛfə'ɹɛndəm]	*amalgam*	[ə'mælgəm]	*dialectal*	[daɪə'lɛktəl]
Columbus	[kə'lʌmbəs]	*fandango*	[fæn'dæŋgoʊ]	*contingent*	[kən'tɪndʒənt]
consensus	[kən'sɛnsəs]	*embargo*	[ɛm'bɑɹgoʊ]	*abysmal*	[ə'bɪzməl]

ap'pendix, ˌdia'lectal, Co'lumbus, ˌconso'nantal, e'jective, sus'pension
   [pɛn]   [lɛk]   [lʌm]   [næn]   [dʒɛk]   [pɛn]

Likewise, when the penult has a long vowel or diphthong, and is therefore heavy, it attracts the stress:

ˌOkla'homa, ˌArgen'tina, asˌsimi'lation, op'ponent, Al'toona
      [hoʊ]   [tiː]   [leɪ]   [poʊ]   [tuː]

Quantity-sensitivity is evident. There is a lot of evidence for a moraic trochee. Hayes (1995, 2009: 285)

Hayes, Bruce. 1995. *Metrical stress theory: Principles and case studies*. Chicago & London: The University of Chicago Press.

Lexical stress in English: syllable weight

In trisyllabic nouns, the influence of the quantity-sensitive Latin stress rule on English is massive: Stress is on the penultimate, except when the penultimate is light (lax vowel or schwa). In this case, stress is on the antepenultimate (and the final syllable is extrametrical). Stress is assigned from right to left.

σ → [+ stress] / __ ((̆) σ)]word

regiment	['ɹɛd͡ʒɪmənt]	Canada	['kænədə]	A'merica	[ə'mɛɹəkə]
accident	['æksɪdənt]	Los Angeles	[lɔs 'ænd͡ʒələs]	animal	['ænəməl]
capital	['kæpəɾəl]	Sheraton	['ʃɛɹəɾən]	cannibal	['kænəbəl]
halibut	['hæləbət]	therapy	['θɛɹəpi]	cholera	['kɑləɹə]

There are quite a number of exceptions. *Sa'vanna , Ala'bama , ma'donna, ab'scissa, va'nilla* all have light penults ([væ], [bæ], [sɪ]) but have penultimate stress, not antepenultimate stress. Ambisyllabicity can be used to explain these words.

Hayes, Bruce. 1995. *Metrical stress theory: Principles and case studies*. Chicago & London: The University of Chicago Press.

Quantity-sensitivity in OT

STRESS-TO-WEIGHT: stressed syllables are heavy (e.g. bimoraic)

NON-FINALITY: no stress on prosodic word-final moras.

Another proposal: The last mora of the last syllable of a ω-word is not associated with a grid mark (does not play any role in stress assignment). This constraint renders final bimoraic syllables monomoraic and thus unstressable.

Quantity-sensitivity Weight scale: $|\,\mu\,\mu\,\mu\,| > |\,\mu\,\mu\,| > |\,\mu\,|$.

a. *PEAK$/\sigma_\mu$
   Stress does not occur on a monomoraic syllable.
   *PEAK$/\sigma_{\mu\mu}$
   Stress does not occur on a bimoraic syllable.
   *PEAK$/\sigma_{\mu\mu\mu}$
   Stress does not occur on a trimoraic syllable.
b. *Universal ranking*
   *PEAK$/\sigma_\mu \gg$ *PEAK$/\sigma_{\mu\mu} \gg$ *PEAK$/\sigma_{\mu\mu\mu}$

Hyde, Brett. 2007. Non-finality and weight-sensitivity. *Phonology* 24: 287–334.

Moraic trochee and right-alignment in OT

PRWD-R: The right edge of every prosodic word is aligned with the right edge of a foot.

PRWD-L: The left edge of every prosodic word is aligned with the left edge of a foot

FOOT-BINARITY : Feet must be binary under syllabic or moraic analysis.

PARSE-σ : All syllables must be parsed by feet.

ALLFEET-L : The left edge of every foot is aligned with the left edge of some prosodic word.

ALLFEET-R: The right edge of every foot is aligned with the right edge of some prosodic word.

*CLASH : No adjacent grid mark from the foot level up.

Exceptions are regulated by HEAD-MATCH (McCarthy 1996): prespecified stress in the input is preserved in the output. (If α is in H'(ω-word) and αRβ, then β is in H'(ω-word).)

Summary for English lexical stress and foot

We only touch a tiny part of the data. Complex words (inflected, derived or compounds) may add complications, especially derived words.

Feet in English are moraic trochees, English is a quantity-sensitive language, with a penultimate stress preference in nouns if this syllable is heavy. Otherwise antepenultimate stress is preferred.

There are numerous exceptions due to borrowings from Latin and French.

Lexical stress in Greek

Greek is a quantity-insensitive language: the weight of syllables does not play any role for stress location.

Culminativity: One syllable in a word has primary stress

At the lexical level, here ω^{min}, there are no other stresses in addition to primary stress.

Stress is largely determined by morphological principles: according to Revithiadou 1999 stems come in three categories of stress and some affixes are stressed, some are not.

The primary stress always falls on one of the last three syllables of the word (Joseph and Philippaki-Warburton 1987; Malikouti-Drachman & Drachman 1989: Revithiadou 1999).

Lexical stress in nouns is within the three-syllable window

a. Final stress: αγορά aγorá 'market'

b. Penultimate stress: stafíða 'raisin',

c. Antepenultimate stress: θάλασσα θálasa 'sea'

Stress placement within this three-syllable window is in large part determined by morphological conditions and partly by phonological conditions.

Revithiadou, Anthi. 1999. Headmost Accent Wins: Head Dominance and Ideal Prosodic Form in Lexical Accent Systems. Doctoral dissertation. The Hague: Holland Academic Graphics.

Recursivity in prosodic hierarchy

Both Greek and English allow recursive structure of the prosodic word.
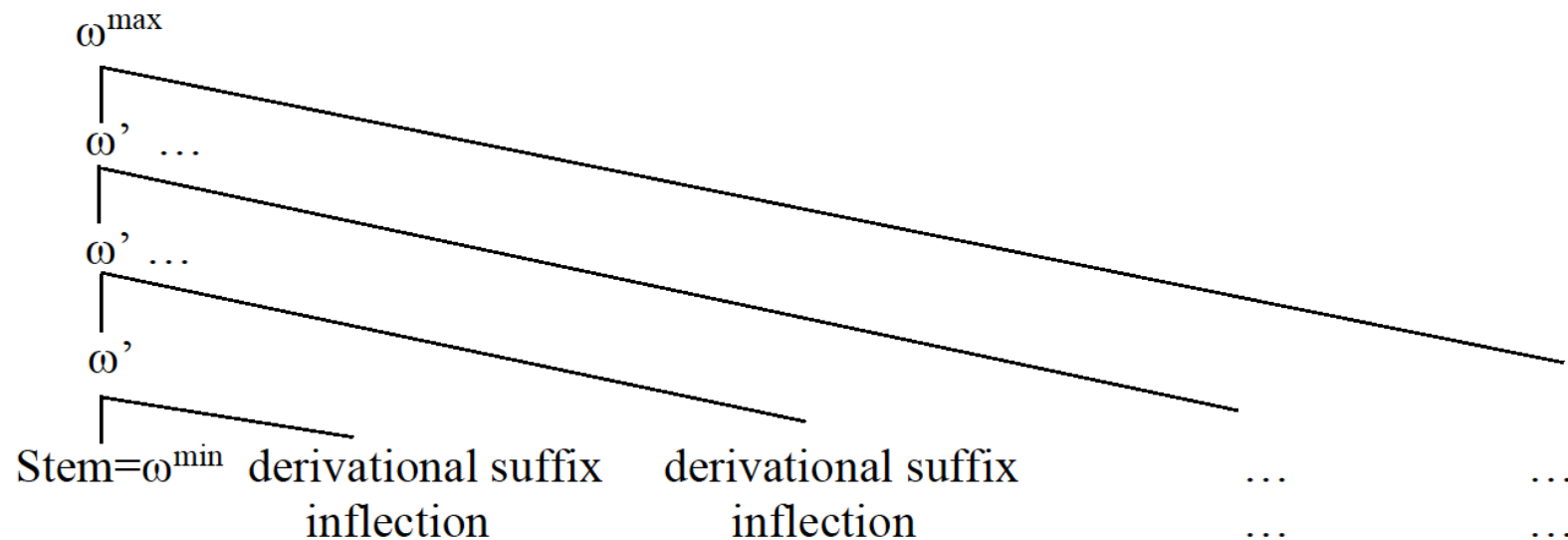
Maximal (projection of) $\alpha =_{\text{def}} \alpha$ is not dominated by α, $\omega^{[+\text{max}, -\text{min}]}$

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

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

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

Lexical stress in Greek

Among the words that inflect, the adjectives retain the stress on the same syllable in all their inflected forms.

In verbs, the stress is determined by morphology. Present and past tenses for instance have different stress locations:

σπουδάζω [spouδázo] 'I am studying' vs. imperfect σπούδαζα [spóuδaza] 'I was studying.'

έκανε ντους [ékane dus] 'showered' vs. κάνει ντους [káne dus] 'is showering'

When the inflectional ending creates three unstressed syllables at the end of the verb form, the stress moves one syllable to the right:

δέχομαι [δéxome] 'I accept' δεχόμαστε [δéxómaste] 'we accept'

Nouns minimally consist of a root and an inflectional ending: *ánθrop-os* 'man'

In some nouns the stress moves one or two syllables to the right, depending on the inflectional suffix

μάθημα [máθima] 'lesson-NOM.SG' μαθήματος [maθímatos] 'lesson-GEN.SG'

δάσκαλος [δáskalos] 'teacher.NOM.SG' δασκάλου [δaskálu] 'teacher-GEN.SG', δασκάλων [δaskálon] 'teacher-GEN.PL'

θάλασσα [θálasa] 'sea-NOM.SG' θαλασσών [θalasón] 'sea-GEN.PL'

Stress in Greek

Revithiadou (1999, 2007) assumes three categories of nominal roots:

a. Accentless roots, which lack a pre-assigned accent: /anθrop/ → antepenultimate stress
    (default according to AR)

| άνθρωπος | άnθropos | ανθρώπου | anθrópu | | 'man-NOM/GEN.SG' |
| θάλασσα | θálasa | θαλασσών | θalasón | | 'sea-NOM.SG/GEN.PL' |

b. Accented roots, which bear an accent on a prespecified syllable: /fantár-/

| φαντάρος | fantáros | φαντάρου | fantáru | | 'soldier-NOM/GEN.SG' |
| σταφίδα | stafída | σταφίδων | stafíðon | | 'raisin-NOM.SG/GEN.PL' |

c. Post-accenting roots, which carry an accent themselves but push it onto a following
    morpheme: /uranˆ-/, /aγorˆ-/

| ουρανός | uranós | ουρανού | uranú | | 'sky-NOM/GEN.SG' |
| αγορά | aγorá | αγορών | aγorón | | 'market-NOM.SG/GEN.PL' |

Revithiadou, Anthi. 1999. Headmost Accent Wins: Head Dominance and Ideal Prosodic Form in Lexical
    Accent Systems. Doctoral dissertation. The Hague: Holland Academic Graphics.

Stress in Greek

The same accentual typology applies to suffixes.

1. Accentless roots (a) get antepenultimate stress when combined with an equally accentless suffix: άνθρωπ-ος ánθropos 'man-NOM.SG' and θάλασσ-α θálasa 'sea-NOM.SG'

2. Inherently accented suffix are stressed

θαλασσών θalasón 'sea-GEN.PL' due to the accented status of the suffix/-ón/

3. pre-accenting affixes, which carry an accent themselves but push it onto a preceding syllable, such as /-ˆu/: ανθρώπου anθrópu   'man-GEN.SG'

In pre-accentuation, the accent of the suffix never docks further than the last syllable of the root: *ánθropu

Stress in Greek

Special case that respects the three-syllable-window:

fúrnaris (< /fúrnar-i(ð)-s/ 'baker-NOM.SG')

This word is accented on the initial syllable by default (category a) but when an extra syllable is added in the plural, *furnáriðon* 'baker-GEN.PL', the distance between the accent and the right edge of the word is not allowed to be increased. As a result, stress is displaced to the right by one syllable. In this case, the antepenultimate stress does not originate from the default because the suffix -*on* is pre-accenting, thus /-ˆon/.

Accents may also migrate when the accented vowel deletes or loses its vocalic status.

a. παιδί   /peð-í/   [pe.ðí]   'child-NOM.SG'

b. παιδιού /peð-iu/   [pe.ðʝú]   'child-GEN.SG'

The high front vowel [i] turns into a palatal fricative [ʝ] after [p] and before another vowel (glide strengthening): in the genitive singular of neuter nouns, [i] loses its vocalic status, In this case, the accent moves to another vocalic peak of the same morpheme, here [u].

Stress in Greek

Accent resolution tales place when two or more morphemes with inherent accentual properties meet in the same word.

In the accented roots (category 2), which bear an accent on a prespecified syllable: φαντάρ /fantár-/, the accent of the root prevails.

Φαντάρ-ος fantáros   φαντάρ-ου   fantáru   'soldier-NOM/GEN.SG'
ςταφίδ-α   stafíða   σταφίδ-ων   stafíðon   'raisin-NOM.SG/GEN.PL'

In the roots of category c (post-accenting roots, which carry an accent themselves but push it onto a following morpheme /aɣorˆ-/, /uranˆ-/)

αγορά   aɣorá   αγορών   aɣorón   'market-NOM.SG/GEN.PL'
ουρανός   uranós   ουρανού   uranú   'sky-NOM/GEN.SG'

In *aɣorón* (postaccenting root + accented suffix), both root and suffix accent yield final stress.

In *uranú* (post-accenting root + pre-accenting suffix), however, there is an accentual conflict, which is resolved in favor of the root accent.

Stress in Greek

Derivational morphology: the diminutive/pejorative suffix -*ák* combines with nominal roots of various accentual patterns.
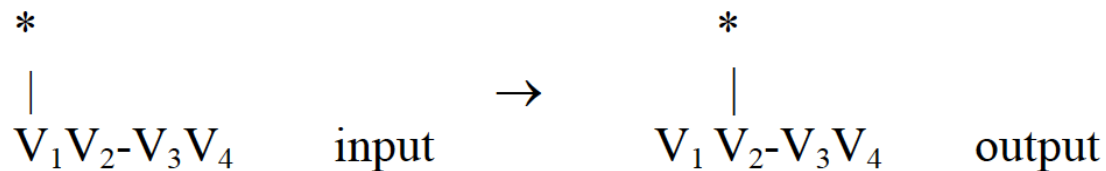
Stress is on the (accented) suffix regardless of the underlying accentual properties of the other morphemes:

a. αγγελάκου   ageláku   /agel-ák-ˆu/   'little angel-GEN.SG'
b. παπαγαλάκου   papaɣaláku   /papaɣál-ák-ˆu/   'little parrot-GEN.SG'
c. μισθάκου   misθáku   /misθˆ-ák-ˆu/   'small salary-GEN.SG'

Stress in Greek

Revithiadou's (2007) proposes an analysis of nominal stress in the Turpidity model of Goldrick, an OT containment model: all structural information present in the input remains visible in all candidates.
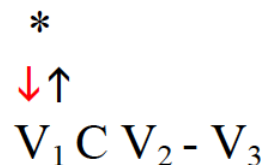
Stress is represented on a metrical grid:

$$*\qquad\qquad\qquad\qquad *$$
$$|\qquad\qquad\rightarrow\qquad |$$
$$V_1 V_2\text{-}V_3 V_4 \quad \text{input} \qquad\qquad V_1\, V_2\text{-}V_3 V_4 \qquad \text{output}$$

Distinction between projection and pronunciation:

- projection (up-arrow): an abstract, structural relationship holding between the vowel and the grid mark.

- pronunciation (down-arrow, here red): an output relation that holds between the grid mark and the vowel and thus accounts for the output realization of structure.

In Φαντάρ-ος fantáros and φαντάρ-ου fantáru 'soldier-NOM/GEN.SG', projection and pronunciation match:

$$*$$
$$\downarrow\uparrow$$
$$V_1\, C\, V_2 \text{-}\, V_3$$

Revithiadou, A., 2007. Colored turbid accents and containment: a case study from lexical stress. In: Blaho, S., Bye, P., Krämer, M. (Eds.) *Freedom of Analysis?* Berlin: Mouton De Gruyter. 149-174.

Stress in Greek: an OT account

Analysis is adapted from Revithiadou (2007)

Constraint HEAD-MATCH (already used for English) requires a prespecified stress in the input to be realized in the output. R is a correspondence relation.

HEAD-MATCH (McCarthy 1996)

If α is in H'(ω-word) and αRβ, then β is in H'(ω-word).

THREE-SYLLABLE-WINDOW: lexical stress in each ω^{min} is located in one of the three final syllable of the lexical word

ALIGN(stress-to-head): a shifted stress does not move further than one syllable (it is as close as possible to the original prespecified stress.

CULMINATIVITY: One primary stress in each ω^{min}

This last constraint is not always shown in the tableaux: in this case, it is fulfilled.

Stress in Greek

Post-/preaccentuation and various accent shift phenomena: Accent migration

Consider *furnáriðon* 'baker-GEN.PL' (from *fúrnaris* 'baker-NOM.SG') with stress shifts because of three-syllable window violation). Both root and suffix have default stress (categories 1. and a.), but stress is shifted because of the trisyllabic window (THREE-SYLLABLE-WINDOW). Head Match is lower ranking, and viiolated by the optimal candidate. ALIGN(Stress-to-Head) that limits the shift of stress to a minimum, requires antepenultimate stress.

fúrnar + i +ð+ on 'baker-GEN.PL'	THREE-SYLL-WIND	HEAD-MATCH	ALIGN(Stress-to-Head)
☞ a. furnáriðon		*	*
b. fúrnariðon	*!		
c. funaríðon		*	**!

In παιδιού [pe.ðjú] 'child-GEN.SG' (because of glide-formation), projection and pronunciation do not match.

Stress in Greek

In post- and pre-accenting, the accent is floating, hence not bound by projection to a specific syllable of its sponsor. In the example (a) the accent is sponsored by the root but is pronounced on the suffix, whereas in the example (b) the opposite holds.

a.   *

                 ↘

$V_1 \, C \, V_2 - V_3$

b.   *

               ↙

$V_1 \, C \, V_2 - V_3$

Stress in Greek: an OT account

Post-/preaccentuation and various accent shift phenomena: Accent migration

When an **inherently accented suffix** (b) is adjoined to a root with default (antepenultimate) stress (a), the affix decides the stress :

anθrópu (from */anθrop/*) due to the preaccenting status of the suffix /-ˆu/ and

θalasón due to the accented status of the suffix/-ón/.

Moreover, the constraint CULMINATIVITY ensures that there is a single primary stress in a word.

anθrop+ /-ˆu/ 'man-GEN.SG'	THREE-SYLL-WIND	CULMINATIVITY	HEAD-MATCH
☞ a. anθrópu			
b. ánθropu			*!
c. ánθrópu		*!	

Stress in Greek: an OT account

The conflicting stresses in *uranú* (category c. root, a post-accenting root /uranˆ-/) + pre-accenting suffix (category 3, /-ˆu/) is resolved in favour of the root accent.

ουρανός   uranós   ουρανού   uranú   'sky-NOM/GEN.SG'

In this case, a parametrization of HEAD-MATCH is needed: HEAD-MATCH (root) dominates HEAD-MATCH (affix)

/uranˆ-/ + /-ˆu/ 'sky-GEN.SG'	THREE-SYLL-WIND	CULMINATIVITY	HEAD-MATCH(ROOT)	HEAD-MATCH(AFF)
☞ a. uranú				*
b. uránu			*!	
c. uránú		*!		

Summary

Some striking differences between Greek and English lexical stress:

Despite a large amount of exceptions, stress assignment in English monomorphemes is largely "phonological." English is a quantity-sensitive language, it has moras reflecting syllable weight and syllables are organized in metrical feet according to their weight, i.e. moraic trochees.

Greek does not have moras: all vowels have the same weight, even though stressed vowels are phonetically more prominent. It is a quantity-insensitive language in which syllables weight plays no role. Stress assignment is "morphological", i.e. stems and affixes have an idiosyncratic culminative syllable that must be learned by heart.

High frequency of final stress in Greek also speak for quantity-insensitivity. According to Hyde (2007:288), "non-finality very naturally captures the appropriate relationship between syllable weight and stress."

When a final light syllable is stressed, syllable weight probably plays no role.