

Root strength as (under)specification: Evidence from root allomorphy in Greek

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Linguistic analyses often rely on some concept of grammatical strength in order to account for various asymmetrical behaviors attested in grammar. Strength has been construed either as an inherent/lexical property that assigns an eminent status to a certain grammatical element (e.g., Mascaró 2007, Bonet et al. 2007, Vaxman 2016, Inkelas 2015, a.o.) or as a property that emanates from the special representational configuration and/or the structural position of a grammatical entity (see, e.g. Dresher & van der Hulst 1998; McCarthy & Prince 1995, Beckman 1998, a.o. on prominence-based constraints). In this paper we provide evidence from verb root allomorphy in Greek in support of the view that the notion ‘strength’ in grammar falls out as an epiphenomenon from phonological underspecification.

Greek morphology is predominantly concatenative. As shown in (1a), morphosyntactic features are usually realized as overt suffixes, e.g. *-s* (active perfective) and *-θ* (passive perfective), or as empty elements, e.g. \emptyset (active imperfective) that are attached to the root without triggering substantial segmental changes (besides consonant dis-/assimilations) (1b). Nonetheless, there is a handful of roots and verbalizers that exhibit vowel alternations in certain environments (2a-d). Although not completely systematic (2b-d), these alternations suggest a distinct association between specific morphological environments and phonological realizations, namely, imperfective: /e...n/, active perfective: /i/, passive perfective: /a/, and nominalizer: /o/. Thus, certain roots (1), as opposed to others (2a-d), appear to be ‘stronger’ in the sense that they are invariant in all contexts (à la Inkelas 2015). Instead of assuming that the susceptibility to change of the latter roots is due to the reduced strength feature values on their vocalic segment (as a reflection of the frequency and/or the regularity with which a given phonological entity is produced/perceived, see Inkelas’s 2015 *confidence scale*), we propose that their behavior should be sought in the representation of the root per se. In particular, we argue that, although most roots (/verbalizers) are fully-specified (3a), there exists a set of ‘defective’ roots (/verbalizers) with a totally empty V slot (3b) or with an unlinked floating vowel *i* or *a*. Furthermore, we claim that the elements *e...n*, *i*, *a*, *o* that appear in the formations of defective roots like (2a) are Voice/Aspect and *n* exponents that involve floating vowels (i.e., /e -n/ ↔ [-pfv]; /i/ ↔ [-pass, +pfv]; /a/ ↔ [+pass, +pfv]; /o/ ↔ *n*). The root vowel changes depending on which affixal floating vowel is licensed in the available V-slot of the root (4). Roots (/verbalizers) carrying a floating vowel themselves (3c) show only partial vowel alternation: the unlinked root vowel is forced to link only in [+pfv] environments where no segmental affix/affixal floating vowel is available (for these verbs [+pfv] has no phonological realization). In all other environments (e.g., [-pfv], *n*) the segmental affix/affixal floating vowel is realized instead.

One of the merits of our approach is that it does not need to postulate multiple root/stem allomorphs (e.g., *stel-*, *stil-*, *stal-*, *stol-*) as separate stored entries (see various *stem-listing/spanning* analyses, e.g., Bermúdez-Otero 2013, Siddiqi 2009, Merchant 2015). More importantly, it invites us to revisit an important dimension of strength, namely the root-affix asymmetry, which has been argued to play a pivotal role in grammar, as suggested by the special prominence-based constraints and the well-known metaconstraint ROOTFAITH >> AFFIXFAITH (McCarthy & Prince 1995, Urbanczyk 2001, a.o.). The Greek data reveal that it is not enough for an element to be labeled a ‘root’ in order to enjoy a special status (see also Ussishkin & Wedel 2002). What seems to be important instead is whether a root complies to certain phonological criteria on segmental specification (as in Greek), on size and canonical form (as in English, Ancient Greek, Lushootsheed, see Golston 1991, Downing 2006), and so on, so that it can be manipulated by phonology in the best possible way.

(1)	ACT IMPFV NONPAST	ACT PFV NONPAST	PASS PFV NONPAST	DERIVED NOUN
a.	yráf-o 'I write'	yráp-s-o 'I write'	yráf-θ-ó 'I am written'	yráf-í 'writing'

b. *yrápso* 'I write': $\sqrt{\text{raf}} \text{ } \text{-}\emptyset_{\text{v}} \text{ } \text{-s}_{\text{Voice/Asp}} \text{ } \text{-}\emptyset_{\text{T}} \text{ } \text{-o}_{\text{Agr}} \text{ } \rightarrow / \sqrt{\text{raf-s-o}} / \rightarrow \textit{yrápso}$
($f \rightarrow p$ / $__ \text{-s}$ by manner dissimilation)

(2)	ACT IMPFV NONPAST	ACT PFV NONPAST	PASS PFV NONPAST	DERIVED NOUN
a.	stél-n-o 'I send'	stíl-o 'I send'	stal-(θ)-ó 'I am sent'	apo- stol-í 'dispatch'
b.	yðér-n-o 'I skin'	yðár-o 'I skin'	yðar-θ-ó 'I am skinned'	- yðor-á 'scratch'
c.	sér-n-o 'I drag'	sír-o 'I drag'	sir-θ-ó 'I am dragged'	sír-t-is 'latch'
d.	elafr- én-o 'I lighten'	elafr- ín-o 'I lighten'	elafr- in-θ-ó 'I am lightened'	elafr- in-s-i 'relief'

(3)	a. $\sqrt{\text{raf}}$	b. $\sqrt{\text{stVI}}$	c. $\sqrt{\text{sVr}} \quad \sqrt{\text{yðVr}}$ i a
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(4) *stilo* 'I sent' vs. *staló* 'I am sent': $\sqrt{\text{root}} \text{ } \text{-}\emptyset_{\text{v}} \text{ } /i/ \sim /a/_{\text{Voice/Asp}} \text{ } \text{-}\emptyset_{\text{T}} \text{ } \text{-o}_{\text{Agr}}$

	Root	Affix		Root-PFV
a.	s t V l		→	s t V l stil-
		i		⋮
		[+pfv, -pass]		i
b.	s t V l		→	s t V l stal-
		a		⋮
		[+pfv, +pass]		a

References

- Beckman, J. 1998. Positional Faithfulness. PhD thesis, University of Massachusetts.
- Bermúdez-Otero, R. 2013. The Spanish lexicon stores stems with theme vowels, not roots with inflectional class features. *Probus* 25: 3–103.
- Bonet, E., M.-R. Lloret & J. Mascaró. 2007. Allomorph selection and lexical preferences: Two case studies. *Lingua* 117: 903–927.
- Downing, L. J. 2006. *Canonical Forms in Prosodic Morphology*. Oxford: OUP.
- Dresher, B. E. & H. van der Hulst. 1998. Head-dependent asymmetries in phonology: Complexity and visibility. *Phonology* 15: 317–352.
- Golston, C. 1991. Minimal word, minimal affix. *NELS* 21: 95–110.
- Inkelas, S. 2015. Confidence scales: A new approach to derived environment effects. In Y. E. Hsiao & L.-H. Wee (eds.), *Capturing Phonological Shades Within and Across Languages*. 45–75. Newcastle upon Tyne: Cambridge Scholars Publishing.
- Mascaró, J. 2007. External allomorphy and lexical representation. *Linguistic Inquiry* 38: 715–735.
- McCarthy, J. J. & A. S. Prince. 1995. Faithfulness and reduplicative identity. *UMOPL 18: Papers in Optimality Theory*. 249–384.
- Merchant, J. 2015. How much context is enough? Two cases of span-conditioned stem allomorphy. *Linguistic Inquiry* 46: 273–303.
- Siddiqi, D. 2009. *Syntax within the Word: Economy, Allomorphy, and Argument Selection in Distributed Morphology*. Amsterdam: John Benjamins.
- Ussishkin, A. & A. Wedel. 2002. Neighborhood density and the root-affix distinction. In M. Hirotani (ed.), *Proceedings of NELS 32*: 539–549. Amherst: GLSA.
- Vaxman, A. 2016. How to Beat without Feet: Weight Scales and Parameter Dependencies in the Computation of Word Accent. PhD thesis, University of Connecticut.