Geminates are triplets

Markus A. Pöchtrager (markus.poechtrager@univie.ac.at), University of Vienna

Estonian (Est.; Prince 1980; Tauli 1973 & references therein), with three degrees of length (short/long/over-long), seems to differ markedly from English (Engl.) or Italian (It.) with only two (1–2). But note that Est. (3), like It. (2), displays a trade-off: the more room is taken up by the consonant (C's), the less remains for the preceding vowel (V's) and vice versa. (Trade-offs in words longer than one syllable are more complex and also interact with morphology.) In fact, trade-offs can also be found in Engl.: *Pre-fortis clipping* (4), *cf. e.g.* pioneering work by Peterson & Lehiste (1960), though usually deemed phonologically irrelevant. Before fortis consonants (*bit*, *beat*) the vowel is shorter than before lenis ones (*bid*, *bead*). Such a seemingly arbitrary interaction suggests that the fortis/lenis contrast should not be seen as melodic (qualitative), but rather as structural (quantitative). That is, if *d* is treated as the short version of *t* (1 *vs.* 2 positions, *cf.* (5)), the trade-offs in all three languages become alike: The more room is taken up by the consonant, the less remains for the preceding vowel (and vice versa). Clear parallels between Engl., It., and Est., usually seen as very different, emerge. For example, the representations of Est. [li::v] 'sand (nom.sg.)' and Engl. *leave* [li::v] are identical, both with an over-long [i::], *cf.* (6) (space restrictions preclude discussion of the representational format here, *cf.* Pöchtrager 2006, 2014).

One difference lies in whether a language has geminates. Engl. *bit* ends in a consonant longer than the one at the end of *bid*, hence the trade-off with the length of the preceding vowel. Yet Engl. fortis consonants, though longer than lenis ones, have no effect on metrical structure/ stress assignment; unlike It./Est. geminates, which *do* have such an effect. This suggests that fortis consonants, though occupying 2 positions, are different from geminates. In fact, geminates, *e.g.* in It., are like over-long consonants in Est., *i.e.* they occupy 3 slots and are "triplets". This analysis allows for a unification across languages where distribution and behaviour of length degrees show (often striking) similarities.

(1) English short/long vowels: *fit* ≠ *feet*, *full* ≠ *fool*, *bet* ≠ *bait* etc.

(2) Italian: *fato* ['fa:to] 'fate' longer vowel + shorter consonant
fatto ['fat:o] 'done' shorter vowel + longer consonant

(3) Estonian:

i.	[ge::b] 'it boils'		[si::d] 'silk (nom.sg.)'	V V V C
ii.	[ge:b:] 'cape (nom.sg.)'		[gi:d:] 'thanks (nom.sg.)'	V V C C
iii.	[geb::] 'stick (nom.sg.)'		[jud::] 'story (nom.sg.)'	V C C C

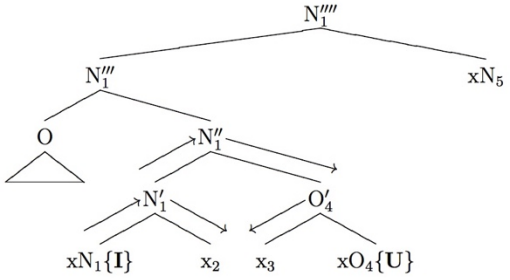
(4) English:

bid [bɪ:d]	*bead* [bi::d]
bit [bɪt]	*beat* [bi:t]

(5) English (reinterpreted):

bid [bɪ:d]	V V C	*bead* [bi::d]	V V V C
bit [bɪd:]	V C C	*beat* [bi:d:]	V V C C

(6)



Engl. *leave* & Est. *liiv* 'sand'
[li::v]

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