Long-Distance Compensatory Lengthening in Estonian

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Introduction: compensatory lengthening (CL) has traditionally been observed to be a purely local phenomenon, with the trigger and target segments being either adjacent to one another or separated by only one syllable boundary. In this talk, I present evidence from Estonian showing that CL can be long-distance (LD) as well, and provide an account that allows for LDCL while explaining its crosslinguistic rarity, as follows. If CL takes place, it is mediated by a constraint punishing the crossing of association lines (*CROSS), which enforces pure locality in CL. In Estonian, constraints forbidding unstressed long vowels (*VV) and geminates (μμμ → S) outrank *CROSS; morae are thus prohibited from landing in intermediate positions, and must travel longer distances to find a new home. LDCL is rare, then, because it only exists in languages that first enforce CL over mora deletion, and second, possess constraints that force LDCL over local CL.

Q3: Estonian contrasts three lengths in vowels and consonants, the longest of which is termed "Q3" (1). There is disagreement about the structure of Q3 syllables (Prince 1980, Bye 1996), but I will be assuming that they are trimoraic (Hayes 1989) and are always derived from bimoraic syllables via (LD)CL (*contra* Hayes 1989). They are thus my diagnostic for (LD)CL.

(1)

a.	[lina]	"sheets.NOM"
b.	[lin:a]	"city.GEN"
c.	[lin::a]	"city.PART"
d.	[vina]	"smoke.NOM"
e.	[vi:na]	"vodka.GEN"
f.	[vi::na]	"vodka.PART"

Evidence for LDCL can be found in the partitive case, which surfaces either as [-tt], or as [-Ø] plus Q3 on the first syllable. I argue that its underlying form is /ta/. If its /t/ is unparsed, it will be deleted (2a,b); else, it will be preserved (2c,d) (cf. Anttila 2012:86). A more general process of apocope will then delete the final /a/ while preserving its mora. If the partitive-initial /t/ is still present, it may act as a landing site for that mora, and will lengthen to [-t:] (2c,d); else, another site must be chosen. The second-syllable vowel is ineligible—Estonian forbids long vowels outside primary-stressed syllables (4d). The only option, then, is the first syllable, which becomes trimoraic and thus Q3. It is not yet obvious from these forms that LDCL has taken place: /vi:na-ta/ "vodka-PART" could undergo coalescence to /vi:na:/ before becoming /vi::na/ via purely local CL. For the forms listed in (3), however, no such analysis is possible: the intervening consonants (t, m) are preserved, indicating that the morae of the deleted or shortened final vowels really are crossing multiple syllable boundaries, and have undergone long-distance rather than local CL.

(2)

	UR	PARSE	SR	GLOSS
a.	/vi:na-ta/	(vii.na).ta	[vi::na-**Ø**]	"vodka-PART"
b.	/lin:a-ta/	(lin.na).ta	[lin::a-**Ø**]	"city-PART"
c.	/vikuri-ta/	(vi.ku).(ri.ta)	[vikuri-**t:**]	"figure-PART"
d.	/kahuri-ta/	(ka.hu).(ri.ta)	[kahuri-**t:**]	"cannon-PART"

(3)

a.	/hampa-i-ta/	→	[ham::pait]	"tooth-PL-PART"
b.	/varka-i-ta/	→	[var::kait]	"thief-PL-PART"
c.	/kopra-i-ta/	→	[kop::rait]	"beaver-PL-PART"
d.	/õp:i-ma:/	→	[õp::ima]	"study-INF"
e.	/ka:lu-ma:/	→	[ka::luma]	"weigh-INF"

What drives CL?: Under a mora-preservation view (Hayes 1989), CL can be viewed as the result of the following constraints. First, some faithfulness constraint(s) must prohibit the outright deletion of morae (4a-c) (proposed but rejected in Kavitskaya 2002). Second, some markedness constraint must remove morae from their original positions (for Estonian, 4d, among others not listed here). Finally, something must limit the possible landing sites for those morae (4f,g). (4e will be necessary below).

(4)
a. ***MAX-μ(σ)***: do not delete morae from syllables.
b. ***MAX-μ(φ)***: do not delete morae from feet.
c. ***MAX-μ(ω)***: do not delete morae from words.
d. ****VV***: do not have long vowels.
e. ****Gem***: do not have geminates.
f. ****CROSS***: do not cross association lines.
g. ***DEP-μ***: do not add morae (specifically, to segments).

With these constraints, we can explain the cross-linguistic typology of CL shown in (5).

(5)
a. **No CL**
(e.g. English)
DEP-μ *undominated*

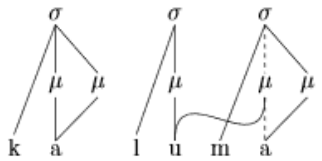
b. **Tautosyllabic CL only**
(Colloquial Finnish)
/makea/ → [make:] "sweet"
/yksi/ → [yks, *y:ksi] "one"
MAX-μ(σ) >> DEP-μ ;
*CROSS >> MAX-μ(φ/ω)

c. **Tautopedal CL only**
(Friulian; Hualde 1990)
/(ru.do)/ → [ru:t] "pure.MASC" (cf. feminine [rude])
/(u.mi).do/ → [umit], [*u:mit] "humid"
MAX-μ(φ) >> *CROSS >> MAX-μ(ω)

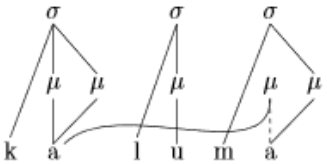
d. **Transpedal CL, local only**
(Czech; Kavitskaya 2002; Estonian, below)
/(je.ze).(rŭ.ko)/ → [jezi:rko], [*ji:zerko] "lake.DIM"
MAX-μ(ω) >> *CROSS

What allows for LDCL?: The existence of *CROSS guarantees (ceteris paribus) that local CL will always be preferred over LDCL: the candidate in (6) will only violate *CROSS once, while that in (7) will violate it three times. How, then, is LDCL possible? In Estonian, the constraints in (4c-e) dominate, and force additional violations of, *CROSS, ruling out local CL: (8a,b) contain long vowels in unstressed syllables (stressed-syllable long vowels are protected by other faithfulness constraints not shown here), and (8c) is ruled out because it creates a geminate /l/ that is not present in the input. (8e), meanwhile, deletes a mora, and thus violates MAX-μ(ω). The only option remaining is to violate *CROSS multiple times, and carry CL out across a longer distance. LDCL is only possible in such a configuration: a high ranking of MAX-μ(ω) must force mora preservation, and a low ranking of *CROSS must allow morae to travel longer distances than normal.

(6)



(7)



(8)	/ka:luma:/	*GEM	*VV	MAX-μ(ω)	*CROSS
a.	ka:luma:		**!		
b.	ka:lu:ma		**!		*
c.	ka:l:uma	*!	*		**
☞ d.	ka::luma		*		***
e.	ka:luma		*	*!	

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