

What's in a cluster?

Standard Government Phonology (Kaye, Lowenstamm & Vergnaud 1985, 1990) derived the phonotactics of coda-onset clusters (COs) from two principles: (P1) C2, the governor, is charmed (charm: inherent property of elements passed on to entire consonant) and C1, the governee, charmless, or (P2) C2 is at least as complex as C1 (complexity: number of elements). In English *winter* (negatively) charmed *t* governs charmless *n*, while in *helmet* *l* and *m* are uncharmed, but *m* is more complex than *l*.

Empirical problems. *Chapter* or *actor* require charmless *p/k* as governees. They differ from charmed *p/k* (*temper*, *tanker*) governing the nasal. No independent evidence for charmless *p/k* has been given and it is unclear why English lacks charmless *t* (why **tp/*tk* are out). Also, the lack of **chabder/*agdor* is unexplained.

Theoretical problems. Charm proved problematic and died a silent death in the 1990s, making (P1) useless. Moreover, the set of elements has been shrinking, making complexity and (P2) problematic. COs became a mystery.

Proposal. A successful theory of COs can be built around the element **A**, which acts as the glue keeping the members of COs together: Ignoring nasal-obstruent clusters and *sC* for now, every CO contains **A**: either in C1 (*rC*, *lC*), traditionally "sonorant-obstruent", or in C2 (*pt*, *kt*), traditionally "obstruent-obstruent" – a fact about melody usually unmentioned in the GP literature. I formalise this as follows:

- (1) C1 of a CO needs to be A-licensed.
- (2) C1 is A-licensed iff (2.1) it contains **A** in non-head position
or (2.2) is A-governed.
- (3) A-governing: C2 A-governs C1 iff C2 contains **A** in head position.

In English *helmet* C1 is *l*, which contains **A** (as a non-head), thus C1 is A-licensed, (1/2.1) are met. Note the prediction made: there should be no restrictions on C2, which is (nearly) 100% correct: *l* is followed by any consonant possible in that position of the foot (except *r*). In *actor*, C1 does not contain **A**, hence, by (2.2), C1 needs to be A-governed by C2, i.e. C2 needs to contain **A** (as head). Again, this fits the facts: *kt* is possible, but **kp* is not, as *p* does not contain **A** and hence cannot A-license C1. (The asymmetry head/non-head in 2.1/3 excludes *t*, *th* as C1 and *r*, *l* as C2 in COs.) One further assumption derives *pt/*bd* etc. (unaccounted before):

- (4) C2 can either be fortis or A-license (but not both).

In *chapter* C2 (*t*) needs to A-license C1, thus cannot be fortis, i.e. the *t* is really lenis here, independently argued for in the analysis of English length (Pöchtrager 2006). That C1 cannot vary between fortis/lenis seems to be universally true of COs.

Further issues. (F1) **A** creating "bigger structures" (like COs) can be seen independently of clusters. English has superheavy rhymes (*feast*, *paint*...) where the long vowel depends on both members of the cluster containing **A**: one **A** allows building a cluster, two **A**'s allow for even bigger structures (long V + CC). (F2) **L** (nasality) is the other kind of glue in clusters, making **A** dispensable, e.g. *mp*. An affinity of **A** and **L** has been shown before (Ploch 1996), but **L**'s cluster building properties differ slightly from **A**. (F3) Typological variation is formally expressible: Italian disallows A-governing by C2, hence no obstruent-obstruent clusters (*dottore*, **doctore*). Prince languages only allow **L** as glue, hence only nasal-obstruent clusters. (F4) GP assumes the mirror image of a branching onset (BO) to be a good CO (not the reverse). Indeed, **A** also plays a role in BOs: C2 usually contains (non-head) **A** (*br*, *dr*, *gl*, *pl*...). (F5) Glides have additional peculiar properties in COs, which follow from their internal structure. (F6) Kaye & Pöchtrager (2013) propose that **A** be replaced by structure. My proposal here can be translated in those terms and becomes even stronger: if **A** is structural, it can provide the room for other material to be plugged in.

References

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