

English obstruents and laryngeal markedness

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Descriptions of English list four types of two-member obstruent clusters with regard to their laryngeal specification: fortis+fortis (eg *actor*), fortis+lenis (eg *anecdote*), lenis+fortis (eg *Aztec*), and lenis+lenis (eg *wisdom*). The first type, *ff*, is most frequent and free in its distribution, *lf* and *fl* are rare and only occur across a foot boundary (Harris 1994), *ll* is very rare word finally (eg *adze*) and fails to occur word initially. English is an aspirating language (Harris 1994, Iverson & Salmons 1995, Honeybone 2002, Beckman & al 2013), ie fortis obstruents are marked (by [spread glottis] or H, we'll use the latter symbol for the sake of brevity), lenis obstruents are not marked, ie they contain one less feature/element than their fortis counterpart. English does not use the feature/element [voice]/L (at least not in obstruents). Accordingly, the most common obstruent cluster type in English is HH, which at the same time is the most marked type (we here ignore the possibility that H is shared, the reason is explained below), H \emptyset and \emptyset H are rare and restricted in their distribution, and the least marked $\emptyset\emptyset$ is also limited in both its distribution and frequency. This situation requires an explanation.

We claim that the odd situation presented above follows from a wrong description of the obstruent system of English. A large set of phonetically voiceless obstruents are mistakenly identified as fortis. In an aspirating language, like English, there are no phonologically voiced segments at all. Voicing is always spontaneous phonetic voicing, the source of which can only be sonorants. The voicing of an obstruent is caused by an adjacent sonorant. The effect of H in an obstruent is an overspill of consonantalness on its environment. This is manifest in (i) the devoicing of the following or (ii) the shortening of the preceding segment(s) (ie “aspiration” and “pre-fortis clipping”), or (iii) resistance to the spontaneous voicing of adjacent segments. The spontaneous voicing of a sonorant may be suppressed by a preceding fortis obstruent (or, to put it differently, the fortisness of an obstruent may spill over onto the following sonorant): *play*, *prey*, *queen*, *cube*. Lenis obstruents, which are not spontaneously voiced, are also voiceless after a fortis obstruent as in *anecdote*, *Afghan*, *distill*. If the second obstruents in these clusters were fortis, we would expect them to be aspirated as in *Oct[h]ober*, *beefc[h]ake*, *mist[h]ime*. This means that *distill* is wrongly analysed as /dæstíl/ (*[dæsthíl]), it is in fact /dæsdíl/ ([dæstíl]). The misanalysis is partly caused by spelling (*cd*, *fgh* vs *st*), and it is partly pedagogical (more on which below). This reinterpretation of [s]+obstruent clusters is not new, it has been around since at least Twaddell 1935, later corroborated by Davidsen-Nielsen 1969, among others.

While fortisness is “excessive consonantalness”, lenisness enables an obstruent to accommodate some of the vocalicness (viz spontaneous voicing) of adjacent sonorants. That is, fortis obstruents devoice their environment, lenis obstruents may be voiced by their environment. This is phonetic voicing, not involving any feature/element change.

So the mere fact that an obstruent is voiceless does not entail that it contains H (ie that it is fortis). If so, *ff* clusters can all be reinterpreted so that there remain no such clusters in English. *Aztec* is *lf* (/áztek/) because the second obstruent in the cluster is aspirated, so the first one cannot be fortis, *Mixtec* is *fl* (/míjsték/) because the second obstruent in the cluster is not aspirated. There also occur *ll* clusters (eg *wisdom* /wízdəm/), which do not resist voicing when between sonorants. But two superficially adjacent fortis obstruents are always separated by a morpheme boundary: *beef#cake*, *mis#time* /mistájm/ (ie [místhájm]) vs *mistake* /mísdéjk/, [místéjk]).

A repercussion of the analysis is a reduction in the number of regular past and plural allomorphs: the past tense suffix is either /d/ (*raised* /réjzd/, *raced* /réjzd/, *blogged* /blógd/, *blocked* /blókd/) or /əd/ (*kitted*, *kidded*). The plural suffix is either /z/ (*kids* /kídz/, *kits* /kítz/) or /əz/

(*raises, races*). Note that the only reason for assuming that *raced, blocked, or kits* end in a fortis obstruent is that the suffix consonant is voiceless here. But that is no reason in English to conclude that it is fortis. A lenis obstruent preceded by a fortis obstruent is also phonetically voiceless. If these two suffixes were made fortis by the preceding stem final fortis obstruent, this would be the only regular case of laryngeal assimilation in the language, despite the fact that we do not see the sharing of laryngeal properties even within morphemes. Instead, we assume that there is no such assimilation at all: H does not spread and it is not shared. Obstruents containing H are always separated by a sonorant interlude or by a morpheme boundary as the /s/ and /k/ in *sick, silk, sink, or miscast*, respectively.

Word finally the contrast between *fl* and *lf* is neutralized: we assume that *tracked* /trakd/ is *fl*, and the homophonous *tract* /tragt/ is *lf*. This assumption is based on a requirement “don’t alternate”: *track* /trak/, the past morph /d/ remain unchanged. Similarly the aspiration of both of the first two /t/’s in *tractate* /tragtejt/ argues that *tract* ends in a fortis obstruent. In neither case is there a need to assume two adjacent fortis obstruents though. (The shortness of the /ag/ sequence in /tragt/ is caused by the final fortis /t/, just like in *trant* /trant/.)

The question undoubtedly arises: why do most descriptions of English wrongly analyse *fl* clusters as *ff*? We believe that this is caused by what we can call the “voicing bias”: especially speakers of voicing languages would interpret *fl* as *ll*: /disdíl/ as *[dizdíl], /trakd/ as *[tragd], etc. This misinterpretation is avoided by analysing (transcribing) these clusters as *ff*: /distíl/, /trakt/. The post-fortis lenis obstruent is voiceless anyway. So the transcription cheats a bit in order to get the pronunciation right. The price to pay is having to forge an explanation for why “fortis” plosives are not aspirated after fortis fricatives.

The view of obstruent clusters presented here dispenses with *ff* (HH) clusters in English, ie the most marked cluster not only ceases to be the most frequent one, it ceases to exist. Most obstruent clusters are now *fl* (H \emptyset) and *lf* (\emptyset H), *ll* ($\emptyset\emptyset$) being relatively rare. We suggest that this is because longer consonantal interludes (obstruent clusters) are more optimal if marked by H, which, as we have seen, is a strongly consonantal element. This tendency can be detected in consonant clusters at word edges, too: eg word-finally /lk/, /lp/, /mp/, /l θ /, /n θ / occur with a greater or smaller frequency, their lenis counterparts (/lg/, /lb/, /mb/, /l δ /, /n δ /) are nonexistent or very rare; word-initial /kw/ and /kj/ are quite common, but /gw/ and /gj/ are both very rare.

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