

Final devoicing is not phonological

Background. A crucial ingredient of all (phonological) analyses of final obstruent devoicing (henceforth called final devoicing) is the coda status of the word-final consonants at hand. This also applies to those analyses that consider word-final consonants to be onsets of empty nuclei: in Strict CV the coda or non-coda status of C# is determined by the lateral abilities of final empty nuclei (Scheer & Ziková 2010) and C# will always have coda status in final devoicing systems. Finally, coda status of consonants that undergo final devoicing also holds for cases where the devoiced item looks like a branching onset: in Polish the d of *kadra* "staff Nsg" devoices when the -dr becomes word-final in Gpl *ka[t]r* although it is not word-final. On Rubach & Booij's (1990) analysis, the -dr is unsyllabifiable word-finally and the -r therefore extrasyllabic: Gpl /kad<r>/. Being a coda in that structure, d regularly undergoes final devoicing (before the -r is reintegrated into the syllabic/prosodic structure).

Argument. There does not seem to be any case on record where final devoicing applies to a word-final consonant that has intervocalic status. This of course would make no sense since, if anything, intervocalic consonants undergo voicing but not devoicing. The presentation shows that Proto-French (unattested, the language spoken in the North of France that was already distinct from Late Latin and also from other Gallo-Romance varieties, i.e. Occitan and Franco-Provençal) and Old French (9th -13th century) precisely illustrate this pattern: relevant diagnostics show that word-final consonants have intervocalic status in the phonology, but still the language features final devoicing. At the same time, word-internal intervocalic consonants (of course) do not devoice. The only conclusion that appears to make sense of this situation is that final devoicing is not phonological in kind. That is, final consonants are intervocalic phonologically and show all relevant intervocalic effects (see below). Final devoicing then applies independently of the phonology in phonetic implementation, i.e. in complete disregard of syllable structure. If this is true for Proto-/Old French final devoicing, so it should be for all other final devoicing systems: else one would need to be prepared to acknowledge different types of final devoicing with different causalities (phonetic in Proto- and Old French, phonological elsewhere). This appears to be unwarranted and improbable: there is only one kind of final devoicing.

What are final non-codas? The typological split between languages where word-final consonants behave as codas and others where they do not is well known. The classical analysis is in terms of extrasyllabicity: when final consonants do not behave like codas they are extrasyllabic. That is, they have no syllabic properties at all: they are neither codas nor onsets (the same goes the appendix in older analyses). Alternatively, final consonants that do not behave as codas are analyzed as onsets of a following empty nucleus (typically in Government Phonology: Kaye 1990, Piggott 1999, Gussmann & Harris 2002, but also elsewhere: Dell 1995, Burzio 1994, Kiparsky 1991, van Oostendorp 2005). This option is thus committed to the onset status of these consonants, but the fact of being an onset does not identify *which* kind of onset we are facing: onsets can be strong (word-initial and post-coda) or weak (intervocalic). As far as I can see the literature does not contain any evidence or argument (or attempt for that matter) allowing us to determine the precise phonological identity of word-final non-codas. The Proto-/Old French pattern described does provide such evidence: in this language word-final non-codas are intervocalic. Only this pattern allows us to draw the above conclusion: final devoicing cannot be phonological because it could not (and word-internally does not) occur in intervocalic position. Note that no claim is made to the end that word-final non-codas are intervocalic in all languages. But they are in Proto-/Old

French, providing a window on the nature of final devoicing.

Incomplete devoicing (Port & Crawford 1989 followed by a significant body of literature, see van Oostendorp 2008 for a survey) shows that in final devoicing languages the underlying contrast between final voiced and voiceless obstruents is present in the phonetic signal. In German for example, vowels preceding underlyingly voiced obstruents are significantly longer than when they are followed by an underlyingly voiceless obstruent. Since phonetic lengthening before voiced consonants is a (near) universal phonetic process (Chen 1970, Maddieson 1996: 164f), the phonetic computation must have had access to the underlying voiced identity of the devoiced final obstruent. Hence whatever phonological computation occurs, it does not modify the phonological voice specification: otherwise ensuing phonetic computation would not be able to see it. Objections against a purely phonetic account of final devoicing (interaction with truly phonological processes, van Oostendorp 2008: 1364) will be addressed and relevant data will be reanalyzed.

Proto- and Old French evidence #1. [Conventions: Latin to the left, Old French to the right of ">", Modern French spelling in brackets (if distinct from Old French). Vowels in brackets are lost during Proto-French. Stressed vowels are underscored. Only labials and dentals are shown since velars also undergo palatalization, which complicates their evolution.] In the evolution from Latin to Old French (through Proto-French), labials and dentals in pre-consonantal position (coda) are lost: ad-venīre > avenir (advenir), rupta > route, cub(i)tu > coude, rot(u)lu > rolle (rôle), rad(ī)cīna > racine. They spirantize (and devoice) when they are word-final (either already in Latin or through further evolution), though: et > eθ (et), quid > queiθ, cap(u) > chief (chef), 1sg bīb(ō) > beif (je bois), nov(u) > neuf (neuf), grāt(u) > greθ (gré), fide > feiθ (foi, engl. faith). The same spirantized result (but of course without final devoicing) is also observed in word-internal intervocalic position: rīpa > rive, fāba > feve (fève), lavāre > laver, vīta > viðe (vie), laudāre > lauðer (louer). Finally in strong position (i.e. word-initially and after codas), the same consonants remain unmodified: #__ porta > porte, bene > bien, tela > toile, dente > dent, C.__ talpa > taupe, herba > herbe, cantare > chanter, ardore > ardeur. The overall situation is thus no damage in strong position (p,b,t,d > p,b,t,d), loss in word-internal codas (p,b,t,d > zero), spirantization both in word-internal intervocalic position and in word-final position, the latter with, the former without devoicing (p,b > v/f; t,d > ð/θ). Clearly, thus, word-final consonants obey phonological intervocalic rule, which is distinct from the evolution both in codas and in strong position onsets.

Proto- and Old French evidence #2. An additional piece of evidence is this: the spirantized result for t,d in word-internal intervocalic and word-final position is attested in early Old French, but ð/θ will be lost in both positions between the 10th and the 11th century (depending on dialect). Hence vīta appears as vide = viðe (vithe in Anglo-Norman) in the Alexis (poem of the 11th century), but as vie in Roland (12th century). Word-final loss of -θ is exactly synchronous. The only explanation for this synchronized evolution is that it occurred in intervocalic position in both cases. Hence it cannot be argued that all relevant changes where V__V = V__# that are reported in *evidence #1* occurred in Proto-French where no final devoicing was active yet, final devoicing only entering the scene in Old French. The synchronous loss of ð/θ in word-internal intervocalic and word-final position *during* Old French shows that the equation V__V = V__# was still active in Old French and hence cohabited with synchronically active final devoicing in that language.

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