

On the voicing system of Île de Groix Breton ✎ Daniel Currie Hall, University of Toronto

The phenomenon of word-final obstruent devoicing is a potentially ambiguous one. In the most transparent interpretation, devoicing occurs because word-final obstruents are prohibited, by some constraint(s) or rule(s), from being voiced. (See, e.g., Grijzenhout and Krämer's (1998: 13) *[+VOICE]_ω.) A more abstract interpretation exists, though, in which what is prohibited is not voicing *per se*, but rather voicing **contrasts**. (See, e.g., Steriade (1997), who attributes both devoicing and assimilation to constraints against maintaining voicing contrasts in auditorially unfavourable environments.) These two views are not necessarily distinct: for example, if voicing is represented by a monovalent feature [Voice], then a constraint or process that deletes [Voice] is equally compatible with both interpretations, there being no formal distinction in such a system between a voiceless obstruent and one that is unspecified for voicing (though cf. van Oostendorp (2006) on the possibility of distinguishing between absent [Voice] and unparsed [Voice]).

Final devoicing in Île de Groix Breton (as described by Ternes (1970)), and in particular its interaction with external sandhi, provides evidence that in this language, at least, the two interpretations are distinct, and both are necessary: word-final obstruents are constrained both to be voiceless and to lack independent specification for voicing. This paper offers an alternative analysis of devoicing and sandhi to the one presented by Krämer (2000), using a system of privative features adapted from Avery (1996), and employing featural anti-alignment (Hall 2007) to penalize independent voicing specifications word-finally.

Breton final devoicing is illustrated in (1) with data from Ternes (1970: 127), cited by Krämer (2000: 641):

- (1)
- | | | | |
|----|----------------------|-------------|---------------|
| a. | /poud/ 'pot': | sg. [pout], | pl. [poud+ew] |
| b. | /korv/ 'body': | sg. [korf], | pl. [korv+ew] |
| c. | /kurt/ 'heart': | sg. [kurt], | pl. [kurt+ew] |
| d. | /grek/ 'coffee pot': | sg. [grek], | pl. [grek+ew] |

Obstruents are voiceless in absolute final position, or before a word-initial voiceless obstruent. Before word-initial voiced segments (including sonorants and vowels), however, word-final obstruents (except /x/) are voiced, regardless of their underlying value for voicing. Data from Ternes (1970: 87, 79–80, 45):

- (2)
- | | | | | | |
|----|--------------------|---------------------|----|--------------------|-------------------------|
| a. | [ərɥirijɛs] | 'the virgin' | g. | [kas] | 'send' |
| b. | [ərɥirijɛz ɡouxan] | 'the eldest virgin' | h. | [kaz wel ərba:ɡew] | 'send all the boats' |
| c. | [ərɥirijɛz va:ri] | 'the Virgin Mary' | i. | [kas fətak+pa:ris] | 'send to Paris' |
| d. | [ɥenek] | 'eleven' | j. | [ʃuk+ed əzaj] | 'Sit down there!' (pl.) |
| e. | [ɥeneg li:w] | 'eleven francs' | k. | [ʃug əzaj] | 'Sit down there!' (sg.) |
| f. | [ɥeneg øyr] | 'eleven o'clock' | | | |

Thus far, the data suggest that final devoicing is elimination of contrast: word-final obstruents lose their underlying specification for voicing, and are thus subject to assimilation to a following segment, or, if no segment follows, are realized as voiceless by default. However, there are some word-initial voiced stops that, when preceded by a word-final obstruent, become devoiced, rather than triggering regressive assimilatory voicing. Data from Ternes (1970: 79, 193, 86, 87, 190):

- (3)
- | | | | | | |
|----|-----------------|---------------------|----|-----------------|-------------|
| a. | [peamzek] | 'fifteen' | h. | [peis] | 'peas' |
| b. | [daj] | 'day' | i. | [gri:s] | 'grey' |
| c. | [peamzek taj] | 'fifteen days' | j. | [peis kri:s] | 'grey peas' |
| d. | [beis] | 'finger' | k. | [ur+mi:s] | 'a month' |
| e. | [bəzidʒet] | 'fingers' | l. | [mi:z+jew] | 'months' |
| f. | [bijän] | 'little' | m. | [bənək] | 'any' |
| g. | [ər+beis pijän] | 'the little finger' | n. | [ur+mi:s pənək] | 'any month' |

This pattern of progressive devoicing, and especially the fact that it occurs even when the word-final consonant is underlyingly voiced (as in (3g) and (3n)), indicates that final devoicing in Breton involves not only the elimination of underlying voicing specifications, but also the imposition of voicelessness.

As Krämer (2000) argues, data such as those in (3) strongly suggest that there are three possible underlying voicing specifications for obstruents in Breton: voiced, voiceless, or unspecified. Krämer (2000: 660–661) further claims that the appropriate specifications involve ternary use of a binary feature [\pm voice], and that privative features would either be inadequate to account for the facts or else would predict too wide a

range of phonetic realizations. However, the data can be accounted for using a system of privative features adapted from what Avery (1996) terms a ‘laryngeal voice’ system: Obstruents that alternate even in word-initial position have no voicing features underlyingly; all other segments have [Laryngeal]. Among segments specified with [Laryngeal], voicing is marked by [Voice], a privative feature dependent on [Laryngeal]. Sonorants (including vowels) are distinguished from other voiced segments by the feature [Sonorant]. Although it is seemingly redundant to specify [Voice] in addition to [Sonorant], this set of representations is compatible with a version of contrastive specification based on the notion of a contrastive hierarchy (Dresher forthcoming) in which [Sonorant] is given unusually narrow scope. Given these representations, final devoicing and regressive and progressive assimilation can be accounted for by the following constraints, ranked in the order in which they are listed:

MAX[SON] – If a segment is associated with the feature [Sonorant] in the input, then the corresponding output segment (if any) is also associated with [Sonorant].

SONORANT VOICING – If an output segment is associated with [Sonorant], then it is also voiced (i.e., it is associated with a [Laryngeal] node bearing [Voice]).

MAX[LAR]/ONSET – If the input correspondent of an output segment in an syllable onset is associated with a [Laryngeal] node, then the output segment is associated with a featurally identical [Laryngeal] node. (I.e., if the input segment has a bare [Laryngeal] node, the output segment must also have a bare [Laryngeal] node; if the input segment has a [Laryngeal] node bearing [Voice], the output segment must also have a [Laryngeal] node bearing [Voice]; but if the input segment is not associated with a [Laryngeal] node, the constraint is satisfied vacuously.)

DISALIGN-R(ω , LAR) – The right edge of a word should not be aligned with the right edge of the scope of a [Laryngeal] node.

FINAL DEVOICING – A word-final segment should be associated with a bare [Laryngeal] node.

MAX[LAR] – If the input correspondent of an output segment is associated with a [Laryngeal] node, then the output segment is associated with a featurally identical [Laryngeal] node.

DEFAULT VOICING – Output segments should be voiced.

Assimilation in both directions is driven by DISALIGN-R(ω , LAR), which effectively penalizes any word-final segment with a voicing specification that it does not share with a segment to its right. However, the FINAL DEVOICING constraint is also necessary, to ensure that a word-final obstruent followed by an underlyingly underspecified segment does not end up voiced (in cases such as (3g) and (3n)).

The analysis presented here offers two empirical advantages over that of Krämer (2000). First, Krämer’s account depends on the assumption that in a form such as /trizek mi:z/ [trizeg mi:s] (‘thirteen months’), the [g] is syllabified in the onset of the following syllable. However, the comprehensive lists of word-internal and -initial consonant clusters given by Ternes (1970) offer no independent evidence that plosive–nasal sequences are possible onsets in Breton. The account presented here makes no such problematic assumptions about syllable structure. Second, the constraints proposed here more readily accommodate an account of the anomalous behaviour of the unpaired voiceless fricative /x/, which never becomes voiced. Forms such as [xwax beiw̃] ‘still alive’ (Ternes 1970: 89) can be accounted for simply by placing a constraint * γ above MAX[LAR]/ONSET in the ranking above; in Krämer’s constraint hierarchy, ranking * γ high enough to rule out *[xway beiw̃] would incorrectly predict /x/ to trigger progressive devoicing, yielding *[xwax peiw̃].

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