

Morphological re-activation and phonological alternations: Evidence for voiceless restructuring in German

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1. Yesterday's syntax, tomorrow's morphology, and today's phonology

As words descend from major word classes to lesser ones, especially that of uninflecting particles, not a far cry from affixhood, and as they more closely attach themselves to neighbouring words, you by now know what to expect of them: they will become part of single phonological or even morphological words and they will lose weight. Typically, as yesterday's syntax prepares to be tomorrow's morphology, nothing much happens that would excite the phonologist. And what happens phonologically will generally be found rather dull by the retrospective syntactician and prospective morphologist. Sometimes, though, words caught in the routine of shrinking and uniting give tell-tale, and rather more subtle, evidence that phonology matters for grammaticalisation, and vice versa.

When lexical words turn into grammatical forms, the ancestral word often survives, co-existing with its grammaticalised offspring. Despite the appearances of a continuing family resemblance between parent and offspring, phonology may reveal that in reality a split has occurred that is deep and irreparable. That is, when words are severed from near morphological relations in the process of grammaticalisation (or also of becoming morphologically inert for other reasons), and with them lose crucial phonological alternations, they are liable to be restructured. Should they, against the odds, manage to re-acquire relations, restructured phonological representations may become audible.

Final Devoicing (or "Auslautverhärtung") in German is implicated in such a scenario.

2. A parting of the ways

The German adverb *weg* [vɛk] 'away, off', as in (1), is grammaticalised from (the ancestor of) the noun *Weg* [ve:k] 'way', or more precisely from a syntactic construction including this noun.

- (1) a. *Geh weg!*
 'Go away!'
 b. *Das Geld ist weg.*
 'The money is gone.'
 c. *Er war so weg von ihr, dass er sie vom Fleck weg heiratete.*
 'He was so off (i.e., in raptures) about her that he married her from the spot off (i.e., on the spot).'

The way *weg* got dissociated from its lexical parent is instructive, though in most respects none too unusual. The following account is summarised from the *Deutsches Wörterbuch* (as usual referred to by the names of its initiators, Grimm and Grimm 1922), s.v. WEG (subst.) and WEG (adv.).¹

Much like in the case of English *away* (< *ā-weg* < *on-weg* < *on weg*), the point of departure was the Old High German directional adverbial expression *in wëg* 'on (the) way', accompanying verbs of autolocomotion such as 'go' and 'come'.² Semantically, what happened was that the meaning of literally getting going and thereby leaving a place was generalised to those of directed movement, separation, and mere absence, also licensing more idiomatic uses of *weg* as in (1c). With the preposition and noun never interrupted by modifiers or determiners, and thus always representing just one phonological word, they underwent univerbation; a syntactic construction thus turned into a morphological one. The attendant formal changes were a weakening of the unstressed initial vowel in the mid-twelfth century (*enwëc*), and the subsequent assimilation or omission of the following nasal consonant (*ewëc*). Eventually, as first attested in the fourteenth century, what had remained of the former local preposition was dropped entirely, yielding *wëc*, a morphologically non-complex item.

Also, though in no connection whatsoever to grammaticalisation, syllable-final obstruents underwent devoicing since late Old or early

Middle High German, as quite faithfully reflected in the spelling (*enwëg* > *enwēc*). This final voiceless obstruent did not distinguish the adverb from the basic, nominative singular form of the noun. What did make the adverb more dissimilar from the noun was something that did *not* happen to it. Also in Middle High German (like elsewhere in West Germanic; see Lahiri and Dresher 1999), stressed open syllables inclined to be lengthened. If this introduced nonuniformity into inflectional paradigms, where some forms met the conditions for lengthening while others did not, there tended to be subsequent analogical levelling one way or the other. The adverb (*en*)*wēc* was not affected by such lengthening (except in a few dialects given to lengthening vowels in syllables of almost all kinds), since its closed syllable was never opened by anything that would have followed it within the same word: it was an adverb of the kind that could not be inflected, and is therefore perhaps more appropriately referred to as a particle. The noun, however, took inflectional endings with an initial vowel, and its stem vowel accordingly lengthened in such forms: *Weg* [vɛk] NOM/ACC.SG—*Weg-es* ['vɛɪ.gəs] GEN.SG, *Weg-e* ['vɛɪ.gə] DAT.SG/NOM/ACC/GEN.PL, *Weg-en* ['vɛɪ.gən] DAT.PL. Owing to levelling, in the direction that seems generally preferred in Standard German, its stem vowel ended up long even in the nominative singular, where the syllable was closed: [vɛ:k].

Thus, the rather incidental net result of the adverb's immunity to sound change and analogy was that, with a short (or lax, or abruptly cut) stem vowel, its phonetic substance was less than that of the noun with its long (or tense, or smoothly cut) stem vowel—thus confirming the expectation that grammatical forms and items in minor word classes will generally have less volume than nouns, verbs, and adjectives.

3. Voice going unheard

With these grammaticalisation developments over and done with, the adverb *weg* joined a set of items—to be detailed below (Section 6)—which pose a delicate problem for German phonology (and attentive phonologists): what is the underlying, lexical, basic form of the final obstruent of *weg* and other such words (or word-parts)? One might of course also ask what is the basic form of the stem vowel; but since

regular quantity alternations are no longer part of the synchronic grammar, even though they remain intimately tied up with the nature of the following consonant, the answer here seems comparatively straightforward: what is heard at the surface—a short (or lax) vowel—will also be basic. By contrast, contrasts between voiceless and voiced obstruents depending on whether or not they are syllable-final have lost none of their vigour, at least in the case of plosives.³

There are essentially two answers that can be given (and indeed have been given, somewhere or other) to the question about the final obstruent of *weg*.

- (A) It is—or, diachronically speaking, has remained—basically voiced (or lenis, or media), just like that of the noun *Weg*.

To be sure, the adverb *weg*, being inflectionally invariable, is not involved in alternations like the noun *Weg*, which takes suffixes with an initial vowel such that its stem-final obstruent syllabifies as the onset of the next syllable, in which position it is voiced. Even when it combines with a following stem in a compound and maximised onsets would be permissible, its final obstruent never resyllabifies across a morphological boundary (e.g., *weg-laufen* ['vɛk.laʊfən], *['vɛ.glaʊfən] 'run away', *weg-arbeiten* ['vɛk.ʔaʁ.baɪ.tən], *['vɛ.gaʁ.baɪ.tən] 'work off'). Although there is thus no overt evidence of the final obstruent's voicedness, assuming that it *is* voiced in its basic, lexical form, does not complicate the phonological machinery in the slightest. Provisions need to be made for basic voiced obstruents to be voiceless when syllable-final anyhow—and the adverb *weg*, lexically represented as /vɛg/ (or, even more abstractly, /vɛ:g/), would get a free ride on these provisions which are responsible, e.g., for the noun *Weg*, basically /vɛ:g/, ending up as [vɛ:k].

- (B) It is—or, diachronically speaking, has been reanalysed as—basically voiceless (or fortis, or tenuis), in contradistinction to the final obstruent of the noun *Weg*.

Owing to the morphological inertness of such adverbs, the stem-final obstruent in *weg* is always syllable-final, hence gets no chance of ever

being voiced. So, why not take it at its face value, which is voiceless?

Of course, with Final Devoicing in general (or Final Fortition, to translate “Auslautverhärtung” more closely), it seems that appearances could hardly be more deceptive, for no conceivable aspect of its phonology and phonetics is uncontroversial. And the differences of opinion are radical not only on ephemera but on major issues—e.g., as to whether voicedness or voicelessness is unmarked, or whether voice is really the relevant laryngeal property, or whether Devoicing/Fortition is really strengthening rather than weakening. Brockhaus (1995) gives an interim summary of the state of debate, plus a highly theory-bound proposal of her own.

However, for present purposes, essentially all that matters, and this is probably beyond controversy, is that there is some basic representation of words (or word-parts) with final obstruents where a distinction is made between those obstruents which are under all circumstances voiceless (or fortis or tenuis) and those which are voiceless when syllable-final and voiced (or lenis or media) when syllable-initial, like in *Rat* [ʁa:t] NOM.SG of ‘advice’—*Rat-es* [ˈʁa:təs] GEN.SG and *Rad* [ʁa:t] NOM.SG of ‘wheel’—*Rad-es* [ˈʁa:dəs] GEN.SG, respectively. While syllable-finally the voicing opposition is neutralised in favour of voicelessness (to be considered unmarked at least on these grounds), owing to a rule or a constraint to this effect, there must be some way of distinguishing obstruents which are voiceless in non-neutralising positions from those which are voiced when this is a positional option.

Thus, on analysis (A), both the noun *Weg* and the adverb *weg* are represented with a velar obstruent participating in the regular (de-)voicing alternation (marked for voicedness, assuming that voicelessness is unmarked), even though with the adverb the voicedness potential is never realised. On analysis (B), the grammaticalised word is represented with a voiceless final obstruent (left unmarked for voicedness), just like *Rat* ‘advice’.

Empirically speaking it might seem an academic question in which of these two ways the final obstruent is represented in the adverb *weg*. Accordingly, it was on purely theoretical grounds, to do with the permissible extent of abstractness of basic representations, that analyses in the spirit of (A) or (B) have been argued to be superior in phonological descriptions of German where such subtleties were paid attention

to. Abstract, free-ride analyses à la (A) would typically be found congenial in the early generative literature (including Vennemann 1968: 171–173, 181, 391, where at least some such underlying voiced obstruents are assumed to be geminates, in a variation of theme (A)). But abstractness got reined in soon, most prominently by the Alternation Condition, as first suggested by Kiparsky (1968) and often refined afterwards. Its upshot is that learners will not posit basic forms different from surface forms unless they have good reasons, the best being alternations of a form itself. With invariable *weg* there are no such reasons, hence the theory dictates analysis (B).

That it is not facts but plausibility which decides in such cases is also the message of a popular early textbook, King (1969: Ch. 3.3). The illustration fittingly comes from Final Devoicing in German, or more precisely its remains in Standard Yiddish. In Yiddish (like in some other dialects of German), Final Devoicing has generally been lost, but there are a handful of words which look like they would continue to have their final obstruents devoiced; one of them happens to be *avek* [a.'vek] 'away'. King suggests that such relics rather result from a restructuring of underlying representations as voiceless, hence as impervious to the loss of the rule of devoicing, though he sees no way of knowing for sure what is going on in the lexicon of a speaker of Yiddish.

Actually, there *is* empirical evidence, so far apparently disregarded, which directly bears on this question in the case of speakers of German. It proves that lexical representations are indeed being restructured under such circumstances, along the lines of (B). It is the Alternation Condition at its bluntest that is thereby revealed to be effective. What needs refining, though, is the notion of alternations which are relevant for that condition.

4. Voice heard to be lost

The assumption so far was that *weg* and similar problematic words (or word-parts) are morphologically inert. In particular, there are assumed to be no morphologically related forms where a stem-final obstruent would be resyllabified as the onset of a following syllable.

This, however, is to ignore the possibility of function words being re-activated as members of major lexical classes, of words with a limited syntactic and morphological potential extending, or indeed re-extending, their range. Insofar as the direction of the more familiar transitions of words from major into minor word classes is reversed, this can be considered a kind of degrammaticalisation. This type of degrammaticalisation, which might be termed RE-CATEGORISATION, is abrupt, and is to be distinguished from the gradual reanalysis of function words as members of major word classes.⁴ While it is more common for lexical words to be re-categorised in another lexical word class (especially nouns as verbs or vice versa), it is also possible for grammatical words to be upgraded to lexical ones.

The crucial kind of upgrading, encountered in German since the nineteenth century and characteristic of colloquial speech (see e.g. Küpper 1982: 30, 115; 1984: 3065), is the re-categorisation of adverbs, particles, or quasi-adjectives, originally all uninflecting and confined to predicative position, as full-fledged adjectives, admitted to attributive position and capable of inflecting for agreement. If there is any accompanying semantic change at all, it is to do with the general meanings of attribution and predication.

The one example which is sure to be quoted in this connection is the particle *zu* 'shut', as in (2), and it serves well to illustrate a phonological peculiarity attendant on such re-categorisations:

- (2) a. *Die Tür ist zu.*
 the door is shut
 b. *die zu(-n)-e* *Tür*
 the shut(-n)-NOM.SG.FEM.WEAK door

When words which end in a full vowel (stressed or unstressed) and which are not basic attributive adjectives are used attributively, they usually require, or at least permit, an epenthetic /n/ before a vowel-initial suffix. For impeccably basic adjectives of similar shape, avoiding hiatus by epenthetic /n/ is unheard of (*froh-el*/**froh-n-e* 'glad', *nah-el*/**nah-n-e* 'close', *frei-el*/**frei-n-e* 'free'). In (3) some further examples with optional or obligatory epenthesis are given, some very colloquial

despite the highfalutin words,⁵ while (4) illustrates another option for some such upgraded attributive adjectives (especially non-basic colour terms), viz. to continue to resist inflection.

- (3) a. *eine so-n-e* *Couch*
 a such-*n*-NOM.SG.FEM.STRONG couch
 (almost equivalently: *so ein-e Couch* 'such a-NOM.SG.FEM couch')
 b. *rosa-n-e* 'pink', *lila-n-e* 'lilac', *chichi-n-e* 'chichi', *tabu(-n)-e* 'tabu', *solo-n-e* 'solo', *extra-n-e* 'extra', *solala(-n)-e* 'so-so', *anderswo-n-e* 'elsewhere', *entzwei(-n)-e* 'asunder', *anbei(-n)-e* 'enclosed', *k.o.(-n)-e* [ka.'ʔoɪ.(n)ə] 'knocked-out', *o.k.(-n)-e* [ʔoɪ.'keɪ.(n)ə] 'okay'
- (4) *eine rosa/lila/sepia/prima Couch* (**sepia(-n)-e*, **prima(-n)e*)
 a pink/lilac/sepia/swell couch

Returning from final vowels to final obstruents, the adverb or particle *weg* is among the items that can be re-categorised as fully inflecting attributive adjectives. Corresponding to (1b), there is (5):

- (5) *das weg-e* *Geld*
 the gone-NOM.SG.NEUT.WEAK money

In a way, *weg*'s grammaticalisation is thus reversed: though not reverting to its original nounhood, as an adjective it has also reclaimed lexical status. In particular, it can inflect again, and inflectional suffixes begin with vowels. The stem-final obstruent which was confined to the syllable coda as long as there were no inflections now also appears in syllable onsets (or actually, ambisyllabically, indicated by under- or over-dotting in transcriptions). And this contrast is the litmus test for voice: if it were basically voice-alternating (marked for voicedness), as it was before the noun got grammaticalised as an adverb and as it still is in the noun, it would naturally come out voiced in inflected forms as in (5). But it doesn't: the stem-final obstruent does not revert to voicing but stays voiceless (and the stem vowel short, but then open syllable lengthening is no longer productive), ['vɛkə].

In dialects where voiceless velars are spirants, the surface form of the adverb is [vɛç]. Assuming basic /vɛg/, this could result from spirantisation of the final obstruent (/vɛj/), followed by devoicing.⁶ The inflected upgraded form would then have to be ['vɛjə], with the no longer final obstruent undevoiced, as in the plural of the noun; but it is ['vɛçə], proving that the form with the final obstruent both spirantised and devoiced has become basic.

5. *Ab* upgraded—and why not others, too?

Another telling item is *ab*. Its story is not one of grammaticalisation, but the phonological lesson it teaches is the same. Though always a local particle in its known past, meaning '(away, down) from, down' (and related to English *of*), it had an alternative form *abe* up to Middle High German times and perhaps later, and would therefore have had a voicing alternation and also one of vowel quantity, [ʔap]–[ʔaɪ.bə]. If the stem-final obstruent had remained basically voice-alternating (marked for voicedness) after the overt alternation had been lost with the disappearance of *abe*,⁷ the upgrading of the particle to an inflecting attributive adjective, as in (6), would bring it to light again.

- (6) *der ab-e* *Knopf*
the off-NOM.SG.MASC.WEAK button

Again, as with *weg-e*, it doesn't: non-syllable-finally, the obstruent remains voiceless (and the vowel short): [ʔapə]. Modelled on upgraded adjectives with a final full vowel, forms with a more elaborate inflection including an epenthetic /n/ are also attested, such as *ab-ene* (Küpper 1982: 30); but the stem-final obstruent likewise remains voiceless.

Such upgraded forms are too colloquial to be used much in writing; when they are, their spelling causes discomfort. While there is never any hesitation about spelling devoiced obstruents with the letters normally expressing voiced variants as long as they are syllable-final, this seems odd when they are syllable-initial, as in *wege* ['vɛçə] and *abe* [ʔapə]. No matter how transparent the morphological relation between uninflected and inflected forms, there is a temptation to resort to varying

the spelling of the latter, to something like *wegge* or *wecke* and *abbe* or *appe* (cf. Küpper 1982: 30).⁸

Due to the limited productivity of upgrading and to the scarcity of adverbs and other particles with a final obstruent whose voicelessness could conceivably be due to devoicing, words comparable in relevant respects to *weg* and *ab* are rare. At any rate, regardless of whether or not they were ever involved in a voicing alternation, should particle-like words ending in an overtly voiceless obstruent ever be upgraded on the models of *zu*, *weg*, and *ab*, their inflected forms will never show voicing—which implies that their basic form is perforce voiceless. Thus, more adventurous speakers might upgrade the adverb *aus* ‘over, finished’ (< MHG *ūz*, also a preposition meaning ‘from’, and no longer transparently related to *aussen* ‘outside’ and *ausser* ‘except’, both with voiceless [s]), but they would never consider its [s] to be represented as /z/.⁹

- (7) a. *Das Spiel ist aus* [ʔaus].
 the game is over
 b. *Erst ein auses* [ʔau.səs] *Spiel ist gewonnen*.
 only an over game is won

Further non-conjectural confirmation of even more radical restructuring is obtained from one of the Southern dialects that have given up Final Devoicing. In Bavarian, the final, non-devoiced obstruent of the particle *ab* is overtly deleted (and the vowel is raised and rounded), [ʔɔɪ]. There are distantly related forms, such as the directional adverb *abe* ‘downwards’, where the obstruent is syllable-initial and comes out as a voiced spirant, [ʔɔɪ.ve], pointing to /b/ in its basic representation. Yet when the particle itself acquires inflections owing to upgrading—as in (8), the Bavarian translation of (6)—no consonant at all surfaces stem-finally, proving that there no longer is one, underlyingly.

- (8) [dɐ ʔɔɪ.ə gnoɪbv]

Another adverbial and prepositional particle that permits upgrading is *an* ‘on’ (Küpper 1982: 115), continuing Old and Middle High German *ana* and *ane* essentially unchanged as to category and meaning.

While nothing happens to its final nasal in Standard German, it overtly deletes in Bavarian, giving [ʔo:], or in some varieties also [ʔõ:], with nasalisation as a trace of the segment. The continuing underlying presence of a final nasal is revealed in words where vowel-initial suffixes can be added to the stem: e.g., [mo:]—['maɪ.nə] NOM.SG and NOM.PL of 'man' (Standard German *Mann*—*Männ-er*). Being morphologically inert, the particle *an* lacks such alternations. When it re-acquires them through upgrading, no nasal re-surfaces, proving once more that in such circumstances lexical representations are restructured:

- (9) a. *das an(n)-e* *Licht* (Standard German)
 the on-NOM.SG.NEUT.WEAK light
 b. [(ɐ)s 'ʔoɪ.ə lɪxɪd] (Bavarian)

6. Inert and finally voiceless

In sum, as the two adverbs or particles *weg* and *ab* and eventual analogues are upgraded, their stem-final obstruents alternate as little in voicedness as in pairs such as those in (10), where stem-final obstruents are clearly basically voiceless.

- (10) a. *dick-dick-e* 'thick', *fett-fett-e* 'fat', *schlapp-schlapp-e* 'slack'
 b. upgrading re-categorisations:
 tiptop-tiptopp-e 'tip-top', *ruckzuck-ruckzuck-e* 'instantaneous',
 fit-fitt-e 'fit'¹⁰

The only possible conclusion is that this is because, like these, they *are* basically voiceless. They do not need to hitch a free ride to become voiceless because this is what they are to begin with (synchronically). After the earlier voicing alternation had been lost, with only the voiceless alternant surviving, which used to be accounted for by final devoicing, these words were reanalysed as ending in a basically voiceless obstruent. Therefore, when they acquired morphological relations owing to their re-categorisation, the voicing alternation could not be revived, no matter how superficially conducive the environments.

(Mutatis mutandis, the same conclusion holds for alternations of present and absent final consonants in Bavarian.)

Now, if final obstruents even of such words as once showed a voicing alternation are demonstrably reanalysed as basically voiceless after they ceased to alternate, this clearly justifies the assumption of basic voicelessness for other relevant words or word-parts even when it is not revealed through upgrading and concomitant morphological re-activation.

These alternation-free words include uninflecting conjunctions like *und* /ʔunt/ 'and', *ob* /ʔɔp/ 'whether', and *als* /ʔals/ 'when', prepositions like *bis* 'until' and *aus* 'from', pronouns like *was* 'what', *das* 'that' and *es* 'it', adverbs like *weiland* 'once',¹¹ and many major-class words, native or nativised, consisting of or containing closed syllables with or without morphemic status, such as *Band* 'music band' ([bent], as opposed to [bant] 'band, ribbon', same spelling), *Smog* 'smog' (another loan without vowel-initial, or indeed any, inflectional or derivational suffixes), *Ad.miral* 'admiral' (borrowed via Old French from Arabic *amīr ar-raḥl* 'emir of the fleet'), *Ag.fa*, *Ed.gar*, *Eg.mont*, *Ib.sen*, *Ud.murt* (all proper names), *Molyb.dän* 'molybdenum', *Wod.ka* 'vodka', *Rug.by*, *Sub.jekt* 'subject', *As.best* 'asbestos', *Sand.wich*, *kid.nappen* 'kidnap', *ad.justieren* 'adjust', *wid.men* 'dedicate', *sub.altern* 'subaltern', or *ab.surd* 'absurd'. These words or word-parts have no morphological relations which would allow syllable-final, hence perforce voiceless, [p, t, k, s] to alternate with syllable-initial voiced [b, d, g, z].

Final Devoicing is not always strictly final, but also applies to obstruents immediately followed by other voiceless obstruents in the syllable coda: e.g., *frag-st* [fʁa:kst] ask-2SG.¹² This example is one where basic voicing, /fʁa:gst/, though undone by regressive assimilation, is licensed by other inflected forms of this stem (e.g., the infinitive *fragen* ['fʁa:ɡən]). With other words of such shape there may have been historical forms with a vowel breaking up the sequence of final obstruents, but now there are no alternations where the first obstruent of the cluster would be syllable-initial and voiced, and the logic inspired by the evidence of *wege* and *abe* suggests that the voicelessness of these obstruents is, or has become, basic too rather than being due to assimilation (sometimes contrary to their standard spelling, reflecting earlier voicing before a now elided vowel): e.g., *Abt* /apt/ 'abbot' (MHG

abbet), *Papst* /papst/ 'pope' (MHG *bābes(t)*), *Obst* /ɔpst/ 'fruit' (MHG *ob(e)z*), *hübsch* /hypf/ 'pretty' (MHG *hüb(e)sch*).

7. Not with one voice

On the direct evidence of *wege* and *abe*, which is not ample but cogent, the conclusion was that if an overtly voiceless obstruent does not actually alternate with a voiced counterpart, its basic form will not be voiced or voice-alternating in a language with Final Devoicing of the kind found in German. What is not self-evident, however, is what counts as a relevant alternation.

Sometimes, it is only an alternative syllabification of the same word, regardless of morphological relations, which keeps alternations like those of voicing alive. Thus, if the only possible syllabifications of words like *Adler* 'eagle', *red-lich* 'honest' (which, despite the clearly identifiable adjectival suffix *-lich*, is for semantic reasons not synchronically relatable to forms of the same origin such as *red-en* 'to speak' or *gerade* 'even-numbered'), or *Dogma* 'dogma' were ['ʔaɪ.t.lə], ['xɛɪ.t.lɪç], ['dɔk.ma], the syllable-final obstruents could be expected to be basically voiceless. But they can also be syllabified differently by different speakers or also the same speakers, sometimes in violation of sonority constraints on syllables: ['ʔaɪ.dlə], ['xɛɪ.dliç], ['dɔ.gma], which reaffirms basic voicedness.

Alternations in inflectional paradigms, as in *Weg* [veɪk]–*Weg-e* ['veɪ.gə] etc., are clearly the most potent inducements to have and to retain basic forms distinct from surface forms.

Alternations in words which are derivationally related should have the same effect. For example, the loanword *Snob* takes at least one productive derivational suffix, *-ismus* '-ism', which provides an alternation, [snɔp]—[snoɪ.'bɪs.mus], and this presumably justifies basic /snɔb/, while *Smog*, another loan (listed above, along *Band* etc.), is derivationally rather inactive, and positing a basic form different from overt [smɔk] therefore seems unwarranted. In a possible resultative participle *ver-smog-t* 'affected by smog' the stem-final obstruent is not in an alternating position either and comes out voiceless; this participle is not part of a regular inflectional paradigm, and if other verbal forms

are created, by a kind of back-formation, it is at least possible, and possibly preferred, for the obstruent to stay voiceless also syllable-initially (actually, ambisyllabically), as in the imperative *ver-smog(g)-e* [fɛɐ̯.'smɔkə]/[fɛɐ̯.'smɔgə].

Now, relations in word-formation are not always so regular as in *Snob–Snob-ismus*. For example, both semantically and formally *flug-s* 'instantly' is only tenuously related to the verb *flieg-en* 'to fly' or the deverbal noun *Flug* 'flight' (plural *Flüg-e*), with the adverbial suffix *-s* being unproductive and with the ablaut alternation not being very regular either; so, positing anything other than /fluks/ as the lexical representation of the adverb would seem to be exaggerating the influence of words which are etymologically related but in time have become rather distant. Sometimes spellings confirm such suspicions, as when *schupsen* competes with *schubsen* 'to nudge' ['ʃʊp.sən], as if in indecision about the strength of the link with *schieb-en* 'to shove', with its stem-final obstruent basically voiceless, or when *Stöv-chen* ['stø:v.f.çən] 'little stove (for keeping plates and kettles warm when on the table)' is (mis-)spelt *Stöfchen*, where the diminutive suffix is productive but the base does not occur independently and is not transparently relatable to *stoven* 'to warm' (Low German) or *Stube* '(warm) chamber'.

Thus, presumably, the more opaque derivational relations are, the weaker the support underlying forms distinct from surface forms can draw from alternations. Significantly, differing from even the opaquest derivational relations, there is no such support left at all once a relationship has been severed in the course of a word being grammaticalised or becoming morphologically inert otherwise.

Consider the case of *genug* 'enough', which could seem reminiscent of *weg* and *ab*, but really is not: here, a derivational relation audibly reasserts itself after upon upgrading. Like *weg* and *ab*, *genug* is primarily used in adverbial or predicative function (11a), hence is not itself inflecting. However, unlike those, it possesses a live derivational relation in the verb *genügen* 'to suffice', whose stem-final obstruent is syllable-initial and voiced with many inflectional endings. That this suffices to keep the obstruent of *genug* basically voiced (and the vowel potentially long) is showing when this word is upgraded to membership in an attributive phrase, roughly in the manner of *weg* and *ab*, with its final constituent attracting agreement inflections, as in (11b).

- (11) a. *Das Schnitzel ist teuer genug* [gə.'nu:k, gə.'nʊk].
 the schnitzel is expensive enough
 b. *Das teuer genug-e* [gə.'nu:ɪ.gə] *Schnitzel*
 the expensive enough-NOM.SG.NEUT.WEAK schnitzel

Other ostensible analogues of *weg* and *ab* are *feind* 'hostile, inimical' and also its less common positive companion, *freund* 'friendly'. Although here matters are even more intricate, synchronically and diachronically (see Grimm and Grimm 1862, s.v. FEIND), they go to show how remarkably sensitive obstruent voicedness is to structural distinctions, whenever it gets a fair hearing. As adjectives, *feind* and (less commonly) *freund* are typically predicative, with the stem-final obstruent syllable-final and voiceless as there are no inflections (12a). That this is an instance of a syllable-final obstruent devoiced, rather than of one basically voiceless, shows when inflections are added in less typical attributive uses, of which an intensifying compound of *feind*, *spinne-feind* 'extremely hostile' (literally 'spider-inimical'), admits most readily (12b).

- (12) a. *Sein Nachbar war ihm spinnefeind* [ʃpiŋə.'faɪnt].
 his neighbour was towards.him spider.hostile
 b. *sein ihm spinnefeind-er* [ʃpiŋə.'faɪn.də]
 his towards.him spider.hostile-NOM.SG.MASC.STRONG
 Nachbar
 neighbour

The retained underlying voicedness of the final obstruent of *feind* and *freund* is obviously due to their nominal relations, *Feind* 'enemy' (its English cognate is *fiend*) and *Freund* 'friend', which show the voicing alternation in their regular inflection for case and number (*Feind-e*, *Freund-e* NOM.PL, etc.).¹³ Actually, such relations between nouns and zero-marked corresponding adjectives are rather uncommon in German, and certainly do not represent a productive derivational pattern. (Also, the compositionally intensified adjective *spinnefeind* cannot be used as a noun at all.) Ultimately, this relation can be traced back to the Germanic origin of these words in active participles in *-nd-*, which split up into formally identical nouns and adjectives, and in the latter func-

Now, grammaticalisations, consisting of perhaps complex sequences of individual changes, are liable to be gradual, and so do not necessarily effect discontinuity at one fell swoop. The relevance of alternations accordingly should not be categorical, either. As an example, consider the adjective *los(e)* ‘loose, not firm, not tightly fitting’, which occurs predicatively as well as attributively (13a/b) and has the stem-final obstruent devoiced when it is syllable-final owing to the omission of the optional stem extension.

There are one or two strongly grammaticalised versions of *los*, namely as an invariable particle meaning '[going] on', as in *Was ist los?* 'What is (going) on? What is the matter?', and as a command to get going, as in *Auf die Plätze, Fertig, Los!* 'On your mark, Get set, Go!'. As these items are morphologically inert, they do not themselves show voicing alternations. And there is no direct empirical evidence that their final obstruent has indeed been restructured as voiceless, now that the link with the parent adjective, which would have provided alternations in support of basic /z/, has presumably been severed with grammaticalisation completed. However, there is a stage in between full lexicality and completed grammaticalisation, and this is suggestive of voice being (about to be) lost in this case, too. With the meaning 'unfastened', *los* is only comfortable in predicative position (14a). A further indicator of its ongoing grammaticalisation is the loss of the otherwise optional

stem extension *-e*. Still, the specialised new meaning is probably not far enough removed from the original one for a strict line to be drawn between the two, like that between the adjective and the particle(s). Reflecting its uncertain status, most speakers balk at using it attributively (14b), and when they do, they feel equally uneasy about having the obstruent voiced or keeping it devoiced.

- (14) a. *Der Hund ist los(*-e)* [lo:s].
 the dog is loose
 b. *der los-e* ['lo:zə?, 'lo:sə?] *Hund*
 the loose-NOM.SG.MASC.WEAK dog

There is a postposition *halb* [halp] 'for, because of' which coalesces with pronominals, as in *des-halb* and *wes-halb* 'for that/what, therefore/wherefore'. It is grammaticalised from the Middle High German noun *halp* or *halbe* 'side', derived from the adjective *halb* 'half'. It seems semantically distant enough from its parent word no longer to be under its influence concerning the underlying voicing status of the final obstruent. However, there are alternative forms of the postposition itself, viz. *halber* and *halben*, used with nominal and certain pronominal complements (e.g., *des Friedens halber* 'in the interest of peace', *meinet-halben* 'for my sake, as far as I am concerned') and going back to fossilised case forms of the noun *halp/halbe*; presumably, they provide alternations in support of basic voiced /b/. But *halb* is also used in combination with local elements to form adverbs and prepositions, such as *ober-halb* 'above' and *ausser-halb* 'outside'. The historical source is again the noun *halp/halbe*, in prepositional phrases like *zuo oberhalbe* 'at (the) upper side'. In this sense, *-halb* hardly links up with the inflecting adjective *halb* 'half' any longer; and it is itself invariable in its customary uses, as in (15a). So, if it could be inflectionally re-activated one way or another, one would expect its final obstruent to come out voiceless, owing to its isolation from salient alternations.

- (15) a. *das Haus oberhalb* ['ʔo: bə.halp]
 the house above
 b. *das oberhalb-e* ['ʔo: bə.hal.bə] *Haus*
 the above-NOM.SG.NEUT.WEAK house

The attempt in (15b) thwarts this expectation. The likeliest reason, however, is not that the expectation was fundamentally misguided, but that there is a phonological factor interfering: arguably, the sonorant preceding the obstruent prevents it from devoicing.

To wind up this brief phenomenology of alternations, in our paradigm case the adverb *weg* /vɛk/ too has potential alternations owing to words or word-forms with a corresponding voiced obstruent, namely *zuwege* [tsu:.'vɛ:ɡə] (as in *zuwege bringen* 'to get done'), unverbated from the Middle High German prepositional phrase *ze wēge* 'on the (right) way' but surviving unmaimed at the edges, and of course the nominative plural etc. of the noun *Weg*, *Weg-e* ['vɛ:ɡə]. However, with *weg* fully grammaticalised, these links seem to have been severed for good: on the evidence of the stem-final obstruent staying devoiced even when not syllable-final, they have not mattered ever after. Thus, the lesson of *weg* is that parent words and their grammaticalised offspring indeed do not count as morphologically closely enough related to supply alternations on whose basis the Alternation Condition would license abstract representations different from surface forms.

Whether this is confirmed by all grammaticalisations of words with stem-final obstruents where voicelessness used to alternate with voicing will remain a matter for conjecture. It is not that such forms are rare; some are sketched in (16), also illustrating several variations on the theme of grammaticalisation:

- (16) a. preposition and conjunction *während* 'during', grammaticalised from the present participle of *währen* 'to last' (itself still an existing and regularly inflecting non-finite form), with inflected forms of the participle reanalysed as preposition (governing genitive or dative) + definite article:
- | | | |
|---------------------------|----------------------------|---------------------|
| <i>währ-end-es</i> | <i>Krieg-es</i> | >> |
| last-PTCPL-GEN.SG.MASC | war-GEN.SG | |
| <i>während d-es</i> | <i>Krieg-es</i> | |
| during | the-GEN.SG.MASC war-GEN.SG | (absolute genitive) |
| <i>in währ-end-em</i> | <i>Krieg</i> | >> |
| in last-PTCPL-DAT.SG.MASC | war-DAT.SG | |
| <i>während d-em</i> | <i>Krieg</i> | |
| during | the-DAT.SG.MASC war-DAT.SG | |

- b. preposition *entsprechend* 'corresponding to', semi-grammaticalised from the present participle of *entsprechen* 'to correspond' (again, itself a form which continues to exist and to inflect)
- c. prepositions *anhand* 'by means of' and *aufgrund* 'on grounds of', semi-grammaticalised from the unverbated prepositional phrases *an Hand* 'at hand' and *auf Grund* 'on ground'
- d. adverb and interjection *gottlob* 'thank God', grammaticalised by unverbating a whole optative sentence, OHG *gote sī lob* 'to God be praise!'

But these a-morphological words are unlikely to be upgraded to inflectable words, à la *weg* and *ab*, and there is no other direct evidence for the retention or loss of basic voicedness of stem-final obstruents.

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Notes

1. Another source, here and subsequently, is the *Etymologisches Wörterbuch der deutschen Sprache* (Kluge 1995).
2. Static verbs such as 'be, remain' could also be accompanied by such a prepositional phrase, though with *in* plus the dative: *in wëge* '(be) under way'.
3. Especially with labial fricatives, voicelessness is prone to be generalised in many varieties of contemporary German, as in *doof* 'dotty' [dɔɪf]—*doof-e* ['dɔɪ.fə], where the northern standard is ['dɔɪ.və]
4. E.g., of local or comitative prepositions as transitive possessive verbs, as often seen in Afroasiatic and in other languages of North Africa; cf. Plank (1999).
5. Even re-categorised adjectives with final schwa seem tempted to take epenthetic /n/: *die Mannschaft ist spitze* 'the team is top'—*eine spitze*([?]-n-e) *Mannschaft*. With *so* (3a) and perhaps a few words in (3b), the source of epenthetic /n/ may be the reduced enclitic indefinite article (*so=ne* < *so (ei)ne* 'such a'), although a

- further preposed indefinite article is permissible (*eine so (ei)ne bequeme Couch* 'a such a comfortable couch').
6. The reverse order would counterfeed spirantisation, which does not affect voiceless velars.
 7. Though possibly etymologically related, the conjunction and modal particle *aber* ['ʔaɪ.bə] 'but' is certainly not close enough to support basic voicing.
 8. Another temptation, sometimes yielded to upon reflection but rarely in spontaneous speech, are spelling pronunciations: ['vɛgə], ['ʔaβə].
 9. Upgraded to a noun, *das Aus* 'the out' remains inflectionally inert.
 10. Notice that with loans and other not-so-conventional words, it is in inflected forms—where the phonological contrasts of voicing and of vowel quantity are not neutralised—that spelling geminates tend to be used first. See Eisenberg (1991) on orthographic "Silbengelenksgemination".
 11. Historically, this is an old instrumental plural of the noun for 'while', MHG *wīlen/wīlan*, with an epenthetic *-d* added, just like *jeman-d* 'someone' and *nieman-d* 'no-one', except that these latter words take further vowel-initial inflections.
 12. A general phonological factor conducive to voicing, and possibly overriding morphological considerations (see below), is the neighbourhood of a sonorant.
 13. Other such pairs of nouns and identical (predominantly predicative) adjectives where final obstruents can on a similar logic be assumed to be basically voiced include *schuld* 'guilt-guilty', *leid* 'sorrow-sorry', *Huld/Hold-hold* 'grace-gracious'.

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