Syllable Onsets in Germanic: Three Case Studies

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1. Introduction

Green (2003) proposes that the composition of syllable onsets is regulated by a "universally and intrinsically ranked set of Onset-Well-Formedness (OWF) constraints," according to which syllable onsets with steep-rising sonority (e.g, stop – glide onsets) are preferred to syllable onsets with shallow-rising sonority (e.g, stop – fricative onsets), which are in turn preferred to syllable onsets with falling sonority (e.g, fricative – stop onsets). In Green's view, "[e]xactly which onsets a particular language tolerates will be determined by the ranking of the OWF constraints with respect to faithfulness constraints, or to a constraint against syllable codas, or to a constraint against rising sonority across a syllable boundary" (Green 2003: 239).

In this paper, I investigate the status of Green's OWF constraints in three Germanic languages: Gothic, Faroese, and German. Before doing so, the limits of this work must be established. First, Green's paper is couched within Optimality Theory (OT), but the formalism in this paper is extremely limited. Secondly, the discussion here is restricted to word-internal syllable onsets, as word-initial onsets have a somewhat different status in all of the languages discussed here. It is clear that most languages permit a wider range of onsets word-initially than word-internally. For instance, in English, as Hammond (1999) points out, [pw] and [bw] onsets are only permitted word-initially, and then only in loan words like *pueblo* and *bwana*, and this type of phenomenon is by no means rare. Such onsets can generally be handled by means of various FAITHFULNESS constraints, i.e, constraints regulating the relationship between the input and the output. The constraints I have in mind here ban deleting, inserting, and reordering segments, and must outrank any constraints banning various types of onsets. Since deleting a segment, inserting a segment, and reordering segments are blocked, these onsets must be maintained. Word-internally, of course, there is another way to eliminate dispreferred syllable onsets, namely by moving segments into the coda of the preceding syllable. Hence, in my view, word-internal onsets lend more insight into the phonology of a language, and I therefore focus on them here, although I return briefly to word-initial onsets at the end of the paper.

2. Gothic

I begin my discussion of Gothic by briefly describing the data.[1] It has traditionally been assumed that word breaks in the Gothic manuscripts correspond to syllable boundaries. According to this idea, when the Gothic scribes reached the end of a line, and did not have enough room to fit the entire word on the line, they divided the words at syllable

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[1] A number of philological details are not treated here; see Pierce (2007a) for a recent discussion of some of them.

boundaries. I follow the traditional interpretation here, although some challenges to it are also briefly discussed. In Gothic, only stop (or *þ*) + liquid onsets (*muta cum liquida* clusters) are permitted word-internally, as in forms like *wiþra* 'against', *parakletus* 'comforter', and *Andraias* 'Andrew' (although there is some variation here, as such clusters are sometimes tautosyllabified and sometimes heterosyllabified, on which see Vennemann, 1987 or Pierce, 2006).

The immediate problem is that a type of syllable onset that is less preferred according to Green's OWF constraints is allowed (muta cum liquida, where the sonority rise is not as steep as in stop – glide onsets), while a type of onset that is more preferred according to Green's OWF constraints is banned (stop – glide onsets). In Green's view, this type of problem can be handled by bringing other types of constraints into the mix, as follows. FAITHFULNESS constraints are not very helpful, because there is no really good way to tell what sort of role they play word-internally. That is, any effects that could be attributed to FAITHFULNESS constraints could also be the result of other constraints, e.g, that syllables must have onsets, that stressed syllables must be heavy, that coda consonants must be moraic, and so on. As to constraints on syllable codas, these are also not helpful, as Gothic seems to be happy with a rich variety of syllable codas. Gothic syllable codas can contain up to four consonants, as in *waurstwa* 'work', and there are no readily apparent constraints on the types of consonants that can go in syllable codas. This leaves syllable contact as a possibility, specifically the CONTACT constraints proposed by Ham (1998), which are designed to integrate the Syllable Contact Law of Vennemann (1988 and elsewhere) into OT. The core of Ham's proposal is the following: there is a set of constraints banning various types of syllable contact; the greater the difference in sonority, the higher-ranked the constraint banning it (the constraints are ranked in the order in which they are listed). Thus, *Voiceless stop]$_\sigma$[Glide bans contacts involving voiceless stops (the least sonorous consonants) and glides (the most sonorous consonants). Furthermore, *Voiceless stop]$_\sigma$[Glide outranks *Voiceless stop]$_\sigma$[Liquid (say), because the sonority discrepancy is greater.

Unfortunately, both of these families of constraints predict that stop – glide onsets should be permitted if muta cum liquida clusters are allowed. Stop –glide onsets are more preferred than muta cum liquida onsets according to Green's OWF constraints, because the rise in sonority is steeper for stop – glide onsets than for muta cum liquida onsets. Moreover, according to Ham's CONTACT constraints, stop – glide contacts are less preferred than muta cum liquida contacts, again because of the greater difference in sonority. Tautosyllabifying stop –glide clusters would solve both of these problems, but this is not the situation found in Gothic, which tautosyllabifies muta cum liquida clusters in some conditions, but never tautosyllabifies stop – glide clusters.

The situation could be saved by manipulating the ranking of Green's OWF constraints (or Ham's CONTACT constraints, for that matter), such that in Gothic, muta cum liquida onsets are more preferred than stop – glide onsets. However, Green himself would clearly reject this solution out of hand, as his OWF constraints are "universally and intrinsically ranked." Another possible solution is to reinterpret the Gothic data. There is ample precedent for this, both with the consonant – glide clusters and the muta cum liquida clusters. The literature on this is enormous, so I will only summarize very briefly and give minimal references. The following ideas recur fairly often in the literature. First, one could reinterpret the evidence from word breaks in the Gothic

manuscripts. For instance, Hermann (1923) argued that the muta cum liquida clusters were really heterosyllabified, and that their apparent tautosyllabification in the Gothic manuscripts is an imitation of Greek scribal practice. Another perspective was offered by Barrack (1998), namely that the consonant – glide clusters were really tautosyllabified and that their apparent heterosyllabification in the Gothic manuscripts is attributable to other, non-phonological, factors. Secondly, if the traditional interpretation of the evidence from word breaks in the Gothic manuscripts is to be retained, the exact pronunciation of some of the letters in the Gothic alphabet could be reassessed. For instance, Frey (1989) argues that the letters transliterated as <j> and <w> actually represent fricatives, and not glides, as has traditionally been argued (see Barrack, 1998 or Pierce, 2007b for some recent counterarguments). Another possible claim along these lines is that perhaps <j> and <w> represent palatalization and/or labialization, not separate sounds.

In my view, such claims must be rejected for two major reasons (see Pierce, 2007a for more extensive discussion). First, none of the attempts at reinterpretation have presented a wholly convincing case as to why just this one type of consonant cluster should be treated differently. For example, Barrack (1998) argues that consonant – glide clusters are treated according to morphological, rather than phonological, criteria in the Gothic manuscripts, as most of these clusters contain a morpheme boundary. However, not all such clusters contain a morpheme boundary, and there does not seem to be any real reason for just these clusters to be treated according to morphological criteria. Second, on a closely related note, it is inconsistent to accept the traditional philological interpretation for some clusters but to reject it for others, at least in the absence of compelling evidence for this step.

The end result is that Green's constraints do not indicate why some syllable onsets with steep-rising sonority are acceptable while others, with even steeper-rising sonority, are not, it does not seem possible to save his proposal by integrating any of the three types of constraints that he mentions into the analysis, and it is not feasible to reinterpret the Gothic data.

3. Faroese

I now turn to Faroese. The data source is somewhat different here, in that I have relied on the handbook descriptions of vowel lengthening and extrapolated from that to syllable structure.[2] That is, vowel lengthening occurs before a handful of consonant clusters, and, given that vowel lengthening is the result of syllable structure (a claim that seems uncontroversial at the moment), it can safely be assumed that the clusters which trigger vowel lengthening are tautosyllabified, while all other clusters are heterosyllabified. In Faroese, according to the standard handbooks (Lockwood, 1977 and Thrainsson et al, 2004), only voiceless stop + liquid onsets (except for [tl]) are permitted word-internally, although the situation is really a touch more complicated, as will become clear momentarily. There is also some dispute over the exact list of consonant clusters that trigger vowel lengthening, as Lindberg and Hylin (1984: 21) add [kj] and [tj], and Thráinsson et al. (2004: 18) [kj], [tj] and [sj] to the list provided by Lockwood. However,

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[2] I have unfortunately not yet been able to check the data with a native speaker of Faroese.

Thráinsson et al (2004: 18 fn 3) make it clear that the three clusters they add to Lockwood's list are only apparent exceptions, as <tj> and <kj> represent the affricate [tʃ], and <sj> represents [ʃ], and "vowel lengthening before them is not in fact an exception to the rule … although it seems to be on paper." The interpretation in Lindberg and Hylin (1984: 21), on the other hand, is somewhat less clear. They explicitly state that long vowels are found before [kj] and [tj] and cite a form *átjan* 'eighteen', which putatively shows a long vowel in this context. However, they transcribe the allegedly long vowel with two symbols that represent "a rising diphthong."[3] In light of this confusion, and as their handbook is the only one of those consulted to defend the view that vowel lengthening also occurs before [kj] and [tj], I follow the other handbooks here.

Having said this, I now apply Green's OWF constraints to the Faroese data. Faroese does not present the same problem that Gothic did, namely allowing a less preferred type of onset while banning a more preferred type of onset, but other complications arise. Again, it seems that the other type of constraints that should be integrated with the OWF constraints are those dealing with syllable contact, and here the only problem that arises is how to handle [tl]. That is, according to both OWF and CONTACT, such clusters should be tautosyllabified; however, such clusters are invariably heterosyllabified. This is of course not surprising, as these clusters are generally heterosyllabified in Germanic.[4] For instance, such onsets do not occur in English (barring a few loan words, e.g, *Tlinglit*), and even then not all speakers use them (e.g, some speakers pronounce *Tlinglit* with an initial [kl]), and they are also not found in Dutch, while they are permitted in some, but not all, dialects of German (some speakers heterosyllabify the relevant cluster in words like *Atlas* 'atlas' while others tautosyllabify it; my impression is that the heterosyllabified pronunciation is more common). Unsurprising as the heterosyllabification of such clusters may be, it cannot be accounted for by means of the CONTACT constraints alone, the OWF constraints alone, or by both of them together, for that matter.

Two diachronic issues should also be considered. First, if stop – glide onsets are so preferred, why were they eliminated in the history of Faroese? Old Norse [tj] sequences were affricated to [tʃ], as in forms like *hetja* 'hero', from Old Norse *hetja* (Lockwood, 1977:21). This suggests that they must have in some way been dispreferred, which is exactly the opposite of what Green predicts. Another relevant diachronic issue is the emergence of a new syllabification pattern. Thráinsson et al. (2004: 30-31 fn. 6) point out that vowel lengthening sometimes occurs before [bl] and [dr] clusters, as in *møblar* 'furniture' and *fedrar* 'fathers', but not before [gr] clusters. This again is problematic for the OWF constraints, since if [bl] and [dr] onsets are allowed, then [gr] onsets really should also be permitted. In fairness to Green, though, it should be noted that these clusters will be tricky for any analysis. My own current assessment of the situation is that this is a case of sound change in progress, but whether it will spread through the lexicon remains to be seen.

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[3] "mycket kort *å* … + bakre *a*; stigande diftong."
[4] See Blevins (2007) for a somewhat different perspective on these clusters in Germanic.

In sum, the OWF constraints alone cannot account for the heterosyllabification of [tl] clusters, or for the new syllabification pattern just mentioned, or for the affrication of stop – glide clusters. Thus, their value for Faroese can be called into question.

4. German

The final language considered here is German. The data considered here was extracted from Hall (1992), and then checked with a native speaker, who agreed with Hall's proposed syllabification in every case. In German, stop + liquid onsets are permitted (except for [tl] and [dl], as are [gn], [gm], [kn], [kv], [fl], and [fr]. At this point, the problems with Green's proposal are hopefully clear, and I therefore summarize them only briefly, to wit: it is unclear as to why some stop – nasal onsets are permitted, while others are not -- if [kn] is acceptable, as in words like *Acne*, then why wouldn't [km] also be acceptable, for instance? Moreover, if certain types of fricative – liquid onsets are acceptable, why are others not? Finally, the problem of [tl] and [dl] onsets remains: both CONTACT and OWF predict that they should be allowed, but they do not seem to be.[5]

5. Word-initial onsets and some alternatives to Green's proposal

I would also note that word-initial onsets in these languages are also troublesome for Green's arguments. All three of these languages permit a much richer set of syllable onsets word-initially than word-internally, which, as mentioned earlier, would presumably be handled within Green's framework by means of high-ranking FAITHFULNESS constraints banning the deletion and insertion of segments. With deletion and epenthesis both banned, such syllable onsets would therefore be retained. On the other hand, all of these languages allow deletion and/or epenthesis under certain conditions, suggesting that the ranking of Green's OWF constraints vis-a-vis FAITHFULNESS may be problematic.

   Having said all this, I now review several alternatives to Green's proposal. Hall (2005) also proposes a constraint called OWF, although his constraint takes a very different form. Hall's version of OWF, designed to account for certain German data, reads "certain O[bstruent] S[onorant] sequences are ungrammatical in the onset (for example, *$_\sigma$[tl, *$_\sigma$[dl, and *$_\sigma$[tm)" (Hall, 2005: 205). At first glance, Hall's proposed constraint may seem overly stipulative, and I readily concede that it is much less "explanatory" than Green's (in the sense that any formalism can be said to be "explanatory"). However, there is much about language that is indeed stipulative, e.g, extrametricality, where final consonants (say) are either extrametrical or not, and Hall's constraint fits nicely into this mold. But it does not cover all cases; it reveals what is not allowed, but does not predict what is in fact allowed.

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[5] At least [dl] is not, the status of [tl] is slightly less clear, since, as mentioned above, they are acceptable onsets in some dialects, and there seems to be an ongoing change of [kl] to [tl] in the Leipzig area, as reported by Blevins (2007). In any event, nobody is happy with [dl] onsets, and many speakers are not happy with [tl] onsets either.

A second proposal is that of Duanmu (2002), who argues that a sonority-based theory like Green's is inadequate for delineating acceptable syllable onsets from unacceptable ones. For instance, as already mentioned, any sonority-based theory that allows [pl] onsets should also allow [tl] onsets, as the sonority is identical. Duanmu further notes that the lack of onsets like [tl] is normally accounted for in such theories with additional formalism, like a constraint banning onsets with the same place of articulation. But this claim cannot account for [tr] and [dr] onsets in languages like English, where they are both acceptable onsets even though both of the sounds in both clusters share a place of articulation. Duanmu therefore argues that permissible onsets are not the result of sonority, as in Green's view, but instead are in fact complex single sounds. Syllables only have one onset slot, and any cluster that only uses a given articulator or feature once is really a complex single sound and can fill the single onset slot. Duanmu argues that his proposal yields a simpler analysis, as, instead of using sonority constraints to account for most possible onsets, and then ruling out bad onsets with additional formalism, his proposal only requires one step: if the putative onset cluster can instead be interpreted as a complex single sound, then it is a licit onset. On the other hand, Duanmu states that [tl] can in fact be a complex single sound, and is therefore a permissible onset. If I am interpreting his arguments correctly, its absence in languages like Faroese is therefore an accidental gap. However, in light of the general cross-linguistic rarity of [tl] onsets, it seems that it cannot be an accidental gap, which would then entail adding additional machinery to Duanmu's proposal, which in turn nullifies its advantages over other proposals.

Finally, I made a proposal very similar to Green's in my own work on Gothic (Pierce, 2006). The differences between my proposal and Green's are: (1) I essentially blew all the OWF constraints up (i.e, suggested that there were constraints like $*_\sigma$[t l, $*_\sigma$[dl, and $*_\sigma$[tm, etc.) and then lumped them together again, as in constraints like *Consonant-Glide onsets, and (2) I allowed for language-specific rankings. Thus, in Faroese and Gothic, for example, the constraint banning stop – glide onsets outranks the constraint banning stop – liquid onsets, thus accounting for the absence of the one but the presence of the other. Although this proposal is not as elegant conceptually as Green's, its empirical advantages seem to outweigh its conceptual disadvantages, although further research on the remaining Germanic languages must be completed before any definitive conclusions can be drawn.

References
Barrack, Charles (1998). *Sievers' Law in Germanic*. Peter Lang, New York.
Blevins, Juliette (2007). Implications of velar to coronal shifts in Germanic *kl clusters. Plenary talk, Germanic Linguistics Annual Conference 13, Pennsylvania State University, April.
Duanmu, San (2002). Two theories of onset clusters. *Chinese Phonology* 11: 97-120.
Frey, Evelyn (1989). Worttrennung und Silbenstruktur des Gotischen mit besonderer Berücksichtigung der Skeireins. *Indogermanische Forschungen* 94: 272-293.

Green, Antony Dubach (2003). Extrasyllabic consonants and Onset Well-Formedness. In Caroline Féry and Ruben van de Vijver (eds.), *The Syllable in Optimality Theory*. Cambridge University Press, Cambridge, UK. 238-253.

Hall, Tracy Alan (1992). *Syllable structure and syllable-related processes in German*. Max Niemeyer Verlag, Tübingen.

_____. 2005. Paradigm uniformity effects in German phonology. *Journal of Germanic Linguistics* 17: 225-264.

Ham, William H. (1998). A new approach to an old problem: Gemination and constraint reranking in West Germanic. Journal of Comparative Germanic Linguistics 1: 225-262.

Hammond, Michael (1999). *The phonology of English. A prosodic Optimality-Theoretic approach*. Oxford University Press, Oxford, UK.

Hermann, Eduard (1923). *Silbenbildung im Griechischen und in den anderen indogermanischen Sprachen*. Vandenhoeck & Ruprecht, Göttingen..

Lindberg, Ebba, and Birgitta Hylin (1984). *Färöord*. Samfundet Sverige- Färöarna, Stockholm, Sweden.

Lockwood, W.B. (1977). *An introduction to Modern Faroese*. 3d printing. Føroya Skúlabókagrunnur, Tórshavn, Faroe Islands.

Pierce, Marc. (2006). Syllable structure and Sievers' Law in Gothic. *Journal of Germanic Linguistics* 18: 275-319.

_____ (2007a). Word breaks and syllable structure in Gothic: A methodological perspective. Paper presented at 18th International Conference on Historical Linguistics, University of Quebec at Montreal, August.

_____ (2007b). Die Rolle linguistischer Theorien in der historischen Sprachwissenschaft: Eine Fallstudie aus dem Gotischen. *Indogermanische Forschungen* 112: 236-243.

Thráinsson, Höskuldur, Hjalmar P. Petersen, Jógvan í Lon Jacobsen, and Zakaris Svabo Hansen (2004). *Faroese. An overview and reference grammar*. Føroya Fróðskaparfelag, Tórshavn, Faroe Islands.

Vennemann, Theo (1987). Muta cum Liquida: Worttrennung und Syllabierung im Gotischen: Mit einem Anhang zur Worttrennung in der Pariser Handschrift der althochdeutschen Isidor-Übersetzung. *Zeitschrift für deutsches Altertum und deutsche Literatur* 116: 165-204.

_____ (1988). *Preference laws for syllable structure*. de Gruyter, Berlin, Germany.

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