Dissimilation in Gothic Without Thurneysen's Law
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Traditional accounts of Gothic phonology include an apparent generalization known as Thurneysen's Law, which states that voicing in fricatives after an unstressed vowel dissimilates with the voicing of the consonant immediately preceding the vowel (Chomsky and Halle, 1968:352):

\[
\begin{array}{ccc}
+\text{son} & \rightarrow & [\alpha \text{voice}] \\
+\text{cont} & & [\alpha \text{voice}] \\
-\alpha \text{cons} & & -\alpha \text{cons} \\
-\text{stress} & & -\text{stress}
\end{array}
\]

This rule has been cited as evidence for the claim (Chomsky and Halle, 1968:178) that phonological theory must permit rules of a type referred to here as polarity dissimilation, according to which one sound in a word reverses its value for some feature so as to disagree with that feature's value in another sound. In this paper, however, it will be shown that Thurneysen's Law is not motivated by the available evidence, and thus cannot be used to support the need for polarity dissimilation rules.

As formulated in (1), Thurneysen's Law clearly is a rule of polarity dissimilation, for it asserts that both voicing and devoicing of fricatives occurred in Gothic, as evidenced, it seems, by the relic suffix alternations in hat-iza 'hatred' vs. ag-iza 'fright' and fast-uhni 'position' vs. wald-uhni 'power'. In order to justify the [\(-\alpha \text{voice}\)] specification, however, it would have to be shown that the underlying representation for some suffix contained a voiced fricative, while some other suffix had an underlying voiceless fricative. But it would seem no demonstration of this kind is likely to be forthcoming because, as will be shown, every Gothic fricative which appears to obey Thurneysen's Law itself derives from a Germanic voiceless fricative (DF voiceless stop), and would therefore be subject only to the voicing subrule of the pair abbreviated by Thurneysen's Law.

Yet even this voicing half of Thurneysen's Law would have to be severely restricted morphologically, as a synchronic rule, because only a handful of all relevant suffixes exhibit the predicted voice alternations. In fact, given the limited evidence available, an exhaustive list of the forms supposed to have undergone Thurneysen's Law is not long, and serves to underline the limited applicability such a rule would have had in Gothic. In total, only five suffixes in Gothic...
show voice alternations among medial fricatives, and all five were used to form nouns, all but the last of them abstract. With the exception of the much more common *-iba* suffix, for which only representative words are cited here, all words containing these suffixes are given below. It should be noted that *-a* medially represent voiced bilabial and dental fricatives, respectively, while *-a* represent the voiceless counterparts of *-a*.

Table A

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<thead>
<tr>
<th>1. -ubni/-ufni</th>
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<tbody>
<tr>
<td>fantubni</td>
<td>’position’</td>
<td>walsufni</td>
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<td>fraistubni</td>
<td>’temptation’</td>
<td>wundufni</td>
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<td>mitubni</td>
<td>’knowledge’</td>
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<th>2. -odus/-obus</th>
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<tr>
<td>munniskodus</td>
<td>’humanity’</td>
<td>gabaurjopus</td>
</tr>
<tr>
<td>wratodus</td>
<td>’a journeying’</td>
<td>gaumopus</td>
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<tr>
<td>aubjodus</td>
<td>’noise’</td>
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<th>3. -iza/-isa</th>
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<td>hatiza</td>
<td>’hatred’</td>
<td>ayisna</td>
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<td>rigiza</td>
<td>’darkness’</td>
<td>giunisa</td>
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<tr>
<td>swartiza</td>
<td>’blackness’</td>
<td>rimisa</td>
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<td></td>
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<td>pewisa</td>
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<th>4. -iza/-iba</th>
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<tr>
<td>aupida</td>
<td>’desert’</td>
<td>airzipa</td>
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<td>wairpdba</td>
<td>’worth’</td>
<td>meripa</td>
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<td>weittwida</td>
<td>’witness’</td>
<td>weltwipa</td>
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<td></td>
<td></td>
<td>diupipa</td>
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<td></td>
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<td>pwastipa</td>
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<th>5. -aga/-asaga</th>
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<tr>
<td>atubaza</td>
<td>’arrow’</td>
<td>hlaivasnas</td>
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Table B

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In marked contrast to these alternations, the numerous other suffixes in Gothic which show medial fricatives do not vary. For example, the suffixes *-ba* (used to form adverbs of manner) and *-iza* (used to form the comparative of adjectives) never alternate with *-a* or *-iza*, respectively, e.g., *-una* ‘visibly’ and *-una* ‘hastily’, *-ada* ‘harder’ and *-ada* ‘sweeter’. The assumption is maintained that it is the consonant preceding the fricative which triggers the voice alternations seen in Table A, then the extremely limited applicability of Thurneysen’s Law is difficult to explain, as are the exceptions to that law even within the set of five alternating suffixes (e.g., *diupida* and *weittwida*). Thus, even the restricted version of Thurneysen’s Law (the voicing subrule of the pair abbreviated in rule (1)) is highly suspect. But it is also quite unnecessary, chronically, because can be shown instead Verner’s Law, which preceded by an unstr

Now, at the time a manic, stress obvious the initial syllable must have varied fricative and Greek, for reflexes at all of suffixes in Sanskrit immediately preceded have in Proto-Germanic fricatives only where they precede Ver form of suffixes will arise naturally due to sound law.

Moreover, taken to Verner’s Law in that voiceless fricative-Germanic voiced because Verner’s Law never one of voice can be shown to have any Germaine show any a Thurneysen’s Law th voice fricatives a unnecessary, but fe

To show that Verner’s account for the alternation necessary to trace morphs from Proto-Germanic fricative suffix until after Verner’s Law should appear in Gothic, since its underlying voiceless. (An allophonic is seen in this, however, there suffix with voiceless allomorphs of that etically with their s

ner’s Law, as argued restructuring of place, with recent fricative even affrication of suff for the alternation
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representative words
these suffixes are
at b,d medially
fricatives, res-
voiceless counter-
i 'power'
i 'wound'

jopus 'pleasure'
us 'mourning'

'fear'
'salvation'
'rest'
'servant'

'error'
'false'
'idipas 'witness'
'idipas 'depth'
'idipas 'safety'
asnos 'tomb'

also quite unnecessary, either synchronically or syn-
chronically, because the voice alternations cited above
can be shown instead to result from the more general
Verner's Law, which voiced all fricatives immediately
preceded by an unstressed vowel in Proto-Germanic.

Now, at the time Verner's Law applied in Proto-Sem-
amic, stress obviously must not yet have shifted to
the initial syllable; rather, the position of stress
must have varied from word to word as it did in Sans-
skrit and Greek, for otherwise there could have been no
reflexes at all of Verner's Law. That is, just as some
suffixes in Sanskrit appear with stress sometimes
immediately preceding, and sometimes not, so must they
have in Proto-Germanic. And since Verner's Law voiced
fricatives only where stress did not fall on the imme-
diately preceding vowel, alternations in the surface
form of suffixes with basic voiceless fricatives would
arise naturally due to the regular application of this
well-known sound law to words with varied stress place-
ment.

Moreover, taking these voice alternations to be due
to Verner's Law instead of Thurneysen's Law implies
that voiceless fricatives should never arise from Pro-
to-Germanic voiced fricatives (PIE voiced aspirates),
because Verner's Law was strictly a voicing process,
never one of devoicing. Since no Gothic suffixes that
can be shown to have had a voiced fricative in Proto-
Germanic show any alternations at all, the claim of
Thurneysen's Law that devoicing of etymologically
voiced fricatives should also have occurred is not only
unnecessary, but false.

To show that Verner's Law is itself sufficient to
account for the alternations cited, though, it will be
necessary to trace the development of the suffix allo-
morphs from Proto-Germanic to Gothic. In general, any
alternating suffix that remained derivationally active
until after Verner's Law was lost from Proto-Germanic
should appear in Gothic with a voiceless fricative,
since its underlying form presumably still remained
voiceless. (An analogous leveling in favor of voice-
lessness is seen in the Gothic strong verb paradigms.)
If, however, there were only a few words containing a
suffix with voicing alternations in Proto-Germanic, the
allophones of that suffix may well have fused semanti-
cally with their stems sometime before the loss of Ver-
ner's Law, as argued below. Then it is likely that
restructuring of the words containing this suffix took
place, with retention of voice alternations for the
fricative even after Verner's Law was lost. This lexi-
calization of suffix allomorphy will be seen to account
for the alternations cited above in at least four of
the five Gothic suffixes.

In contrast, an early Proto-Germanic suffix with a voiceless fricative that never appeared immediately after a stressed vowel would also have undergone restructuring, but without any resulting alternations, since, due to Verner’s Law, this kind of suffix would always have had a voiced fricative phonetically, without exception. Conversely, a suffix with a voiceless fricative which always appeared immediately following a stressed vowel would not have been modified by Verner’s Law at all, and would therefore have retained a voiceless fricative in all words, so again no alternations in voicing would have arisen. As elaborated below, relics of both of these events are also to be found in Gothic.

In order to show that Verner’s Law can explain the alternations cited in Table A, it must further be demonstrated, first, that the five suffixes in question did in fact have voiceless fricatives at an earlier stage, and second, that those suffixes appeared under conditions of varied stress placement in early Proto-Germanic. Evidence for both claims will be drawn from cognate suffixes in Sanskrit, which retains the “free stress” assumed for early Proto-Germanic.

As evidence for the first claim, that the relevant fricatives were once voiceless, Bopp (1885) gives the following Sanskrit cognates for four of the five Gothic suffixes seen in Table A (the cognate for the fourth, Sanskrit -*ma, is probably correct, though it escapes discussion by Bopp):

<table>
<thead>
<tr>
<th>Gothic</th>
<th>Sanskrit</th>
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<tbody>
<tr>
<td>-opus/-odusc</td>
<td>-tu</td>
</tr>
<tr>
<td>-isa/-iza</td>
<td>-as</td>
</tr>
<tr>
<td>-ipa/-ida</td>
<td>-ta</td>
</tr>
<tr>
<td>-asno/-azno</td>
<td>-sna</td>
</tr>
<tr>
<td>-ufni/-ubai</td>
<td>-sun</td>
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Regular application of Grimm’s Law will give the voiceless fricatives as basic in Proto-Germanic for the first four suffixes; the suffix *-man (PIE *-mən) does not submit to equally ready analysis, but it is plausible that the *m lost its nasality and voicing to give -*μn̥ as basic in Proto-Germanic.

As for the second claim, evidence regarding the appearance of these five suffixes together with varied stress placement is again found in Sanskrit. Whitney (1889) states for words with four of the five cognate Sanskrit suffixes (but not for *tg) that stress varied its position, so that some words containing these suffixes had root stress, while others had suffix stress. For example, Sanskrit showed root stress if

For example, Sanskrit showed root stress if cune (Whitney, 1889) stress pattern is sensitive, however, since -*ubehi are masculine. Still, it neuters like *ubehi if early Proto-Germanic nouns as it was

Sanskrit cognate vidmanational suffix stress.

In contrast to *tg almost a on the vowel immediately to Whitney, and Germanic cognate, the exceptionless *rha is nearly is exceptional which have this suffix always show *rida, as pare *uṣṭa-hi). These marginally alt

manic probably had * showed exceptional * with cognate *ts (e.g., 1889:476).

Having seen that had voiceless fricatives that four of the five remains only to be invocatively productive have taken place, while absence of data testing of this ass (1910:120), who claims records that survive in particular, were. This claim is also forms containing an by virtue of its green to differ from It would be so from Sanskrit with, showing stress with the analysis and from the clear cognate. Allegedly runs contrary other cognates like (1939) that provide analysis given. By
For example, Sanskrit nouns with suffix -man generally showed root stress if neuter, but suffix stress if masculine (Whitney, 1869:437). A comparison of this stress pattern with that in Proto-Germanic is inconclusive, however, since none of the five Gothic nouns with -afai/-ubni are masculine, but rather only neuter or feminine. Still, it is of interest to note that Gothic neuters like witiubna have predictable voiced fricative if early Proto-Germanic stress was on the root for neuter nouns as it was in Sanskrit, (even though the Sanskrit cognate vidam, also a neuter noun, has exceptional suffix stress (Whitney, 1869:438)).

In contrast to the other four suffixes, however, Sanskrit τγ almost always occurred with stress falling on the vowel immediately preceding the suffix, according to Whitney, and if the same were true of its Proto-Germanic cognate, the result should have been virtually exceptionless *tiba* in Gothic. In fact, *tiba* very nearly is exceptionless, for of the thirty-odd words which have this suffix, only two (ubipa, waihipa) always show *tiba*, and one (weithwida) shows both (compare waihwapka). The most plausible explanation for these marginally alternating forms is that Proto-Germanic probably had a few words with suffix *tiba* that showed exceptional stress too, just as did Sanskrit with cognate τγ (e.g., avirata, vs. devant (Whitney, 1869:476)).

Having seen that the five suffixes almost certainly had voiceless fricatives in early Proto-Germanic, and that four of the five influenced stress placement, it remains only to be argued that they were no longer derivationally productive, so that restructuring would have taken place before the loss of Werner's Law, while absence of data from native speakers precludes testing of this assumption, it is supported by Wright (1910:170), who claims that by the time of the Gothic records that survive, the suffixes used to form nouns, in particular, were no longer viewed as productive. This claim is also supported by the relative sparsity of forms containing any of the suffixes except *tiba*, which by virtue of its greater frequency has already been seen to differ from the other four.

It would be convenient if several cognate words from Sanskrit with the requisite suffixes were available, showing stress on the proper syllable in accordance with the analysis given here for Gothic. But aside from the clear cognate vidam cited above (which actually runs contrary to present assumptions), only two other cognates from Sanskrit are given by Pokorny (1959) that provide any evidence for or against the analysis given. Even here, only the stems are present
in Sanskrit, without the desired suffix:

<table>
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<tr>
<th>Gothic</th>
<th>Sanskrit</th>
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<tbody>
<tr>
<td>rigiza</td>
<td>'darkness'</td>
</tr>
<tr>
<td>riatsa</td>
<td>'rest'</td>
</tr>
<tr>
<td>rajani</td>
<td>'night'</td>
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<tr>
<td>ramå</td>
<td>'dear'</td>
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But if the Proto-Germanic cognate stems were stressed as the Sanskrit stems are, then the suffix would have been affected by Verner's Law to give the correct alternations seen as relics in the Gothic suffixes. Since no other cognate evidence seems to be available showing the interaction of stem and suffix in both Gothic and Sanskrit, the above data must remain only suggestive, though compatible with the analysis given.

One final, and more positive form of evidence that lends support to explaining the voice alternations in Gothic by reference to Verner's Law involves Sanskrit cognate suffixes for non-alternating suffixes in Gothic. The Gothic suffix *-iz*—(used to form comparative adjectives) has the cognate Sanskrit suffix

*(a)* *-az* (Feist 1936:83), about which Whitney (1899:173) remarks that stress always fell on the root syllable of words containing this suffix, without exception. Thus precisely the correct developments in Gothic are observed, in accord with the above analysis, for the *g* in Proto-Germanic would have been voiced by Verner's Law in every case, resulting in a restructuring of *g* to *z*, which is how it always appears in Gothic *-iz*.

In contrast, the Gothic suffix *-bro* (used to form locative adverbs) is closely related to Sanskrit *-bra* about which Whitney (1899:404) states that stress always fell on the vowel preceding the suffix. Thus the corresponding Proto-Germanic suffix *-bro* would never have had the *b* voiced due to Verner's Law, because the preceding stressed vowel prevented its application. So the uniform *-bro* in Gothic is exactly as it should be, given the analysis here (cf. e.g., *iupazbro* 'from above', *utazbro* 'from within', and also *innazbro* 'from within').

To summarize, then, it has been shown that only suffixes with etymologically voiceless fricatives show relic alternations in Gothic, so only voicing of certain fricatives occurred, never devolving. Second, Sanskrit cognates support the claim that these five suffixes appeared with varied stress in Proto-Germanic. Thus regular application of Verner's Law would itself produce the voice alternations in suffix fricatives that remain as relics in the Gothic words given in Table A.

Two distinct results follow from the foregoing analysis of Gothic suffix fricatives. First, Thurneysen's Law is fully unnecessary, and should be discarded (or repealed), since the rule is already captured by application of Verner's Law for all necessary cases. Hence nothing is lost by its abandonment. Second, the process of dissimilation argued by some scholars to explain Verner's Law, e.g., five suffixes that remained (and interjoined alone could have procured that appearance in Table A) is not necessary for Verner's Law. A second result is that the so-called 'pleasing rule' is actually a misnomer, since it is the result of dissimilation in voicing in the case that phonologically accurate, even if it is often not perceived phonetically. Therefore, the theory of dissimilation rules, the theory in consonant from natural language.

**Footnotes**

*Acknowledgements*

Andreas Koutsoudas, Greg Iverson for earlier drafts of this paper. Greg Iverson for earlier drafts of the responsibility for this content.

*This rule is a 1898 article in Whi given in *SGG*. The earlier by scholars though they too also was at work to see if scholars, such as Goethe, had alternated or not given here, based on the gothic alternations.*
\[ \text{"night"} \]
\[ \text{"ear"} \]

were stressed fix would have the correct suffixes. To be available in both it remain only analysis given. of evidence that alternations in `elves Sankrit suffixes in to form comparatory suffix

Litney (1869:173) root syllable of exception. Thus Gothic are lysis, for the g extend by verners structuring of g to alic ring. In to form locative sted, about tress always fell the corresd have never had use the preceding on. So the unihould be, given from above, uta from within').

own first that absence fricatives only voiceing of voiceing. Second, at these five in Proto-Germandic. Law would itself six fricatives words given in

the foregoing analyser, Thurneysen's be discarded (or

repealed), since the generalization it purports to capture is already captured, more adequately, by the regular application of Verner's Law. One slightly awkward but necessary consequence of reasoning Thurneysen's Law is that it must now be maintained that the few voiceing alternations that do appear to obey Thurneysen's Law are only accidental, and not the result of any regular process of dissimilation. Of course, it still might be argued that some minor version of Thurneysen's Law served to "even out any irregularities" in voice distribution that remained after regular application of Verner's Law, e.g., by voiceing any fricatives in these five suffixes that were preceded by a voiceless consonant (and intervening vowel). But since Verner's Law alone could have produced precisely the alternations that appear in Table 1, the burden carried by any version at all of Thurneysen's Law would be negligibly light.

A second result of the above analysis is that the only known plausible example of a polarity dissimilation rule is actually no example at all, for no dissimilation in voiceing took place in Gothic. As a result, the claim that phonological theory must be powerful enough to permit polarity dissimilation rules is in serious doubt. That no clear cases of such rules have been brought forth in fact suggests that phonological theory should be restricted to exclude polarity dissimilation rules, thus restricting the power of the theory in conformity with the evidence (or lack of it) from natural languages."

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Acknowledgements: I am grateful to Robert Falk, Andreas Houtsoulian, Catherine Bingen, and especially Greg Iverson for helpful criticisms and suggestions on an earlier draft of this paper. Of course, I bear sole responsibility for any shortcomings or errors the paper might contain.

This rule is named for R. Thurneysen, based on his 1898 article in which he proposed the generalization given in 382. The alternations in Gothic were noted earlier by scholars such as Brugmann and Struikberg, though they too assumed some process of dissimilation was at work to account for the alternations. Only a few scholars, such as Hirt (1931) and Woll (1899), have suggested an alternative analysis similar to the one given here, based on earlier application of Verner's Law, but none of these developed a careful analysis along this line. Indeed, Thurneysen explicitly denied the possibility that Verner's Law could account for the Gothic alternations (p.214).
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It is not clear that Thurneysen presented his Law as a synchronically valid generalization, as Chomsky and Halle interpret it. If only a diachronic rule, Thurneysen's Law would obviously provide no evidence for (or against) allowing polarity dissimilation rules in synchronic theory, even if this Law were a valid diachronic generalization about Gothic.

Stress was always on the initial syllable in Gothic, except in compound verbs (Wright 1910:15).

Virtually the only corpus of data from Gothic is from a translation of the New Testament from Greek into Gothic by Bishop Wulfila in the fourth century.

Analyses of Gothic pronunciation and spelling are given by Wright (1910:9ff.). The list of alternations in Table A is compiled from lists given by Braune (1889), Thurneysen (1898), Wood (1895), and de Tollenaere (1976). It is possible that words with the Gothic suffixes -gh/-ag- form a sixth set of alternations in voicing, but the presence of these suffixes and their origin are obscure in too many cases to permit a conclusive decision. They may have as cognate the Sanskrit suffix -agha. If so, they are in accord with the analysis given, because the Sanskrit suffix -agha appears with variable stress as well.

Analogous developments from nasal stop to non-nasal obstruent are found in other Germanic languages (Old English and Icelandic), though the stages involved in such sound changes are not well understood. Apparently no independent evidence is available to decide between either the voiced -uðni or the voiceless -uðni as basic, but -uðni is taken here to be the Proto-Germanic underlying form.

Chomsky and Halle offer only one other example of a polarity dissimilation rule, a dubious case involving the English Great Vowel Shift (1968:176), but even here they provide no evidence that their rule must be a polarity dissimilation rule in order to capture the desired generalization.

One way of effecting this restriction would be to adopt the Simplex Feature Hypothesis proposed by Sanders (1974), which, though presenting a more general challenge to the need for Greek letter variables, makes precisely the correct prediction here, viz., that polarity dissimilation rules like that of Thurneysen's Law do not represent processes occurring in natural languages.

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