The fortis-lenis distinction in Thurgovian
or
Where is the syllable in Swiss German?*

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Abstract
This paper argues that the Swiss German dialect of Thurgovian makes a fortis-
lenis distinction based on length, fortis consonants being long or geminates and lenis
consonants being short or singletons. With the illustration of relevant empirical data, it is
shown that obstruents (stops and fricatives) display a number of systematic differences
from sonorants (nasals and lateral liquid) with regard to (a) the surface variants of lenes,
(b) the syllabification of fortes, and (c) the anchoring mechanism of fortos to syllabic
structure. It is argued that the primary source of these differences are the segmental
representations, which are assumed to involve both the segmental tier (root node plus
dependents) and the syllable tier (terminal positions of syllables). The phrasal
syllabification domain of Thurgovian facilitates maintenance of fortis-lenis distinctions
not only within words, but also at word edges. The combination of geminate segments
plus the phrasal syllabification domain is responsible for non-crisp edges between
syllable and segment boundaries as well as between syllable and word boundaries.

I. Introduction

In most of the literature on Standard German phonology, the syllable as a unit is
recognized as a vital tool to explain the phonological system (e.g. Hall 1992, Giegerich
1985 and 1992, Vennemann 1982, 1988, and 1990). This is in stark contrast to the
literature on Swiss German dialects, where the syllable is often not even mentioned (e.g.
Moulton 1986, Schobinger 1984). Taking as an example of Swiss German the dialect of
Thurgovian, which is spoken in parts of north-eastern Switzerland, this paper will show
how the phonological system is connected with syllable structure and explains how it
differs from Standard German in terms of the realization of consonantal contrasts and the
syllabification domain.

Like Standard German, Thurgovian displays systematic consonantal strength
oppositions within the sound inventory. It is claimed here that this fortis-lenis distinction,
as it will be called henceforth, is based on consonant quantity or length. This means that
consonants contrast in terms of geminate versus singleton, where a geminate constitutes a
long segment occupying two positions at the syllabic level, while a singleton constitutes a
short segment occupying one position at the syllabic level. In contrast, the Standard
German fortis-lenis distinction is based on the segmental feature [voice] (or [spread

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Phonology Group for their many useful comments.
glottis), making fortis and lenis consonants indistinguishable at the syllabic level, for both are singletons. It is also proposed here that the domain of syllabification in Thurgovian is phrasal, as opposed to the morpheme in Standard German. As a consequence of the geminate singleton opposition in conjunction with the phrasal syllabification domain, syllable boundaries within and across words can be obscured in Thurgovian, since syllable and segment boundaries are not “crisp”, i.e. do not necessarily coincide. A further consequence is that degemination of fortis consonants is triggered by unavailability of a syllable position, particularly at domain boundaries and in (obstruent) consonant clusters.

After a brief explanation of the history of the terms “fortis” and “lenis”, I will present the inventory of the Thurgovian surface consonants and some relevant empirical data. The analysis focuses on four issues: 1. the representations of the underlying fortis and lenis segments; 2. the status of voiced obstruents; 3. the syllabification of fortis consonants; and 4. the different distributional pattern of obstruent and sonorant fortis segments word-initially.

II. THE FORTIS-LENIS CONCEPT

Before presenting the Thurgovian details, a general remark about the terms “fortis” and “lenis” is in order. Despite the fact that the fortis-lenis concept has been used by linguists for over a century, it has never been clearly defined. Generally, “fortis” and “lenis” are labels for consonants that are in systematic opposition in terms of their different consonantal strength properties. According to Goblirsch (1990:2), experimental research on finding the phonetic correlates of consonantal strength has not been able to isolate a single feature that serves as the universal basis of the fortis-lenis distinction. The features most often associated with the opposition are voice and aspiration, air pressure and muscle tension, and quantity or length. One of these features is usually most salient and constitutes the phonemic basis of the fortis-lenis difference. In Standard German (and English), for example, voice distinguishes between /p/ and /b/, whereas in Swiss German, as will be argued here, length distinguishes between /pp/ and /p/ Other features may phonetically correlate with the distinctive feature.¹ These will, however, not be the object of the present discussion.

¹ For example, aspiration (or [spread glottis]) with voicelessness, or tenseness with length.
III. THE SOUND SYSTEM OF THURGOVIAN

Thurgovian displays the following consonant sounds in surface representations:

(1) The Phonetic Inventory of the Thurgovian Consonants

<table>
<thead>
<tr>
<th></th>
<th>labio-</th>
<th>dental</th>
<th>palato-</th>
<th>velar</th>
<th>uvular</th>
<th>glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>bilial</td>
<td></td>
<td>arybal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>stops</td>
<td>F</td>
<td>pp</td>
<td>tt</td>
<td>kk</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>vl</td>
<td>p</td>
<td>t</td>
<td>k</td>
<td>y</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vd</td>
<td>b</td>
<td>d</td>
<td>g</td>
<td></td>
</tr>
<tr>
<td>affricates</td>
<td></td>
<td>pʰ</td>
<td>f̪</td>
<td>kʰ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fricative</td>
<td>F</td>
<td>ff</td>
<td>s̪</td>
<td>x̪</td>
<td></td>
<td>h̪</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>vl</td>
<td>f̪</td>
<td>s̪</td>
<td>x̪</td>
<td>h̪</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vd</td>
<td>v̪</td>
<td>z̪</td>
<td>3̪</td>
<td>v̪</td>
</tr>
<tr>
<td>nasals</td>
<td>F</td>
<td>mm</td>
<td>nn</td>
<td>m̃</td>
<td></td>
<td>ñ</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>m̅</td>
<td>m̃</td>
<td>ñ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>liquids</td>
<td>F</td>
<td>f̪</td>
<td>l̃</td>
<td></td>
<td></td>
<td>r̃</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>l̃</td>
<td>l̃</td>
<td></td>
<td></td>
<td>r̃</td>
</tr>
</tbody>
</table>

I will restrict the discussion to the sounds of Thurgovian that participate in a fortis-lenis opposition. Those are the sounds listed in (1) in the non-shaded areas, which include not only the simple obstruents, namely the stops and fricatives, but also a good portion of the sonorants: the nasals and the lateral liquid. Standard German, in contrast – as most other languages displaying a fortis-lenis distinction in the system – does not have fortis and lenis sonorants; only within the obstruents is there such a contrast. But considering that the Standard German contrast is based on voicing, one would not expect the inherently voiced category of sonorants to participate. The case looks different, though, for the Thurgovian sonorants. Since the fortis-lenis distinction is based on length, they could be and actually are potential participants like the obstruents. As the chart in (1) shows, there is, however, a systematic difference between obstruents and sonorants. The obstruents display two kinds of lenes – voiceless (vl) and voiced (vd) – at the phonetic level, while the sonorants have only one kind. As will become evident in the course of this discussion, this difference is due to the difference in segmental structure between obstruents and sonorants.

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2 The values of the symbols correspond to the ones defined by the IPA (e.g. [p] = bilabial voiceless stop; [b] = bilabial voiced stop); double symbols represent geminates (e.g. [pp] = bilabial stop geminate; [p] = bilabial stop singleton).

This division between fortis/lenis and voiceless/voiced in (1) is contrary to previous accounts of Swiss German (e.g. Moulton (1986), Kraehennann (1996)). They consider the entire class of obstruents to be voiceless. The sounds labeled “voiced lenis” in (1) are assumed to be (just) lenis in those accounts. Also, the sounds labeled “voiceless lenis” in (1) represent there the derived variants of fortes as well as lenes. They are labeled both “semi-forstis”, referring to their intermediate status between fortes and lenes, and “neutralized”, referring to their effect of eliminating the strength contrast in certain environments.
IV. DATA

The relationship between these fortis and lenis sounds can best be demonstrated by showing their varying behaviour in different phonological environments. The data\(^3\) in (2) reveal this distribution pattern. The sounds that are of particular interest here are highlighted. The vertical double bar \(\|\) is meant to indicate boundaries of the phrasal syllabification domain.\(^4\) Within the sets (a-d) the data are ordered according to the sounds’ environment as listed in the legend to the table. Sets 1-4 demonstrate stops, set 5 fricatives, and sets 6-8 nasals.

(2) Legend to data in table below:

| a | before or after a domain boundary (indicated by ||) |
| b | before and/or after an obstruent |
| c | before and/or after a sonorant |
| d | before and/or after a vowel |

(3) Thurgovian Data:

<table>
<thead>
<tr>
<th>phonetic; syllabification domain</th>
<th>English Translation:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>literal translation</td>
</tr>
<tr>
<td>[[ tɾʊmʌ ɣa n ɬʰ 300 ]</td>
<td></td>
</tr>
<tr>
<td>b [[ həʊər uuf tɾʊmʌ ]</td>
<td></td>
</tr>
<tr>
<td>c [[ lɑŋ tɾʊmʌ tʃɛɾʃ nʊɾɪt ]</td>
<td></td>
</tr>
<tr>
<td>d [[ tiə tʃɾʊmətt imnoɔ zo huut ]</td>
<td></td>
</tr>
<tr>
<td>2a [[ tɾùm ɣa n ɬʰ gʊ̃ ]</td>
<td></td>
</tr>
<tr>
<td>b [[ mə^3 zɪnt tɾʊm yʊ̃ ]</td>
<td></td>
</tr>
<tr>
<td>c [[ vɛn dɹʊm mə̃ ɡẽnt ]</td>
<td></td>
</tr>
<tr>
<td>d [[ si hɛt tiə dɹʊm kʰaʊfɪ ]</td>
<td></td>
</tr>
<tr>
<td>3a [[ pəaɾ ɣa m pʰaa^3 hɛnt s fɔ^3ɪ wafɪ ]</td>
<td></td>
</tr>
<tr>
<td>b [[ s plas paa^3 ɣãɦa ]</td>
<td></td>
</tr>
<tr>
<td>c [[ i hə nio fɪl pʰaa^3 khaa ]</td>
<td></td>
</tr>
<tr>
<td>d [[ tiə pʰaa^3 ʒɪəl zɪm miŋ ]</td>
<td></td>
</tr>
<tr>
<td>4a [[ pəaɾ i tʰ hɑnt tʰɑl i ]</td>
<td></td>
</tr>
<tr>
<td>b [[ tə i̯ s ʊ̈ mʃaʃpaa^3 ]</td>
<td></td>
</tr>
<tr>
<td>c [[ ɑ^3 zɪɾtʰ a dɔ hɒtɛl baa^3 ]</td>
<td></td>
</tr>
<tr>
<td>d [[ tɛe tʃɪʃ i̯ ʊ̈ sʊ̈tʃiɬbaa^3 ]</td>
<td></td>
</tr>
</tbody>
</table>

\(^3\) Transcribed raised [n] indicates a vocalized /n/ in syllable final position (cf. r-vocalization rule for Standard German as proposed by Hall (1992:58) The null element [n] is a linking element that occurs under certain conditions between two adjacent words, the first of which ends with a vowel and the second begins with one (see Baur (1939:15), Moulton (1986:390), Kraehenmann (1996:113-114) for further details) These details are not crucial to the discussion at hand.

\(^4\) Since I have not investigated prosodic constituents above the level of the syllable, I refrain from defining the term “phrasal” in more detail. Likely candidates are the phonological and the intonational phrase.
Three different patterns can be observed. First, within the same morpheme/word, there is an alternation between singleton versus geminate, which affects obstruents and sonorants alike (e.g. sets 1, 3, 5, and 7). Second, there is variation between a voiceless and a voiced singleton, but only for obstruents (e.g. sets 2 and 4). Third, some morphemes/words involving sonorants only display invariant surface forms (e.g. sets 6 and 8).

V. ANALYSIS

1. The segmental representation of fortis and lenis sounds

Prior accounts of Swiss German in general (e.g. Baur (1939:13)) have established that the fortis consonants are articulated with more “intensity” (i.e. tension or tenseness) and a longer duration than lenis ones. Rather than assuming a segmental feature [(+]long] (and/or [(+]tense]), I propose that fortis consonants are real geminates and as such occupy two slots on the syllable (or timing) tier,5 while lenis consonants are singletons and occupy one slot, as shown in (4). In accordance with the framework of segmental representations developed by Rice & Avery (1989), Rice (1993), and Avery (1996), the distinction between obstruents and sonorants is realized by the Sonorant Voice (SV) node, which is underlyingly present for sonorants, but is not part of the make-up of obstruents.

5 The syllable or timing tier is meant to be the plane where the terminal position of syllables are located.
(4) Proposed segmental representations (place structure omitted):

<table>
<thead>
<tr>
<th>Fortis</th>
<th>Syllable Tier</th>
<th>X _X</th>
<th>X _X</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Segmental Tier</td>
<td>R _</td>
<td>R _</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SV</td>
<td>SV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[pp tt kk]</td>
<td>[mm nn nn] ll</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ff ss jj xx]</td>
<td></td>
</tr>
<tr>
<td>Lenis</td>
<td>Syllable Tier</td>
<td>X _</td>
<td>X _</td>
</tr>
<tr>
<td></td>
<td>Segmental Tier</td>
<td>R _</td>
<td>R _</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SV</td>
<td>SV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[pt ks ss x]</td>
<td>[mn nn ll]</td>
</tr>
</tbody>
</table>

obstruents sonorants

Both the syllable and the segmental tiers are crucial for the representation of Thurgovian consonants, the first allowing differentiation in the strength dimension (fortis–lenis), the second allowing differentiation in the manner dimension (obstruent–sonorant). In comparison, the Standard German system realizes differentiation in the strength dimension by means of a feature within the segmental tier, so that fortis and lenis consonants look the same at the syllable level: both are singletons.

This account of fortis consonants as geminates has consequences for the syllabification of the sounds, because two syllabic positions need to be filled. The prediction is that, if for some reason only one position is available, degemination will occur. The result would be a surface structure identical to an underlying lenis consonant. As mentioned above, such alternations between long and short consonants are in fact evident in Thurgovian. A more detailed treatment of this degemination or shortening process will follow in §V 3.

2. Voiced obstruents

The proposed analysis above assumes that the superficial three-way distinction within the obstruents (see chart in (1)) stems from an underlying two-way distinction: fortis phonemes (e.g. /pp/) have two allophones (e.g. [pp] and [pl]), and lenis phonemes (e.g. /p/) have two allophones (e.g. [p] and [b]). Evidence for the derived status of the [b]-type obstruents comes from the fact that their occurrence is predictable: they only occur in an interconsonantal context, or more precisely, if adjacent, on both sides, to segments containing consonantal or vocalic SV nodes (cf. examples 2c+d and 4c+d in (3)). A contextual voicing (CV) process as proposed in Rice (1993) or Avery (1996) produces surface “sonorant obstruents” by spreading SV from surrounding segments, as shown in (5). Thurgovian CV is conditional on the presence of SV in the preceding as well as the

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6 For this reason the example sounds in (4) are given in square, as opposed to slant, brackets.
following environment. The post-lenis SV node can be said to have a licensing function without which SV-spreading from the pre-lenis segment\textsuperscript{7} does not take place.

(5) Contextual Voicing (CV) under SV licensing:

\[
\begin{array}{cccc}
\text{Syllable Tier} & X & X & X \\
\text{Segmental Tier} & R & R & L & R \\
\text{SV} & \quad & \quad & \quad & \text{SV} \\
\text{vowels, sonorants} & /p \, t \, k \, f \, s \, j \, x/ & \quad & \text{vowels, sonorants} \\
\end{array}
\]

As the examples in (3) testify, CV occurs regardless of any phrase and/or morpheme boundaries between the spreading source and the target lenis obstruent. It also is important to note that intersonorant geminate obstruents do not become sonorant (cf. examples 1c+d, 3c+d, 5c+d in (3)), even though their root nodes seem to be possible targets for spreading. This means that CV must be sensitive to the difference between fortis and lenis sounds, which has been argued to be the syllable level, i.e. the structure above the root node.\textsuperscript{8} Finally, CV only applies to underived non-geminates. Degemination occurs if a fortis segment is not in an intersonorant context (e.g. 1a+b, 3a+b, 5a+b,d in (3)), which is the exact same environment that disallows voicing (e.g. 2a+b, 4a+b in (3)).

3. The syllabification of geminates

It has already been observed in the previous paragraph that fortis obstruents surface as long if they are adjacent to sonorant segments. The fortis sonorants are a bit more restricted in that they need an intervocalic environment to surface as long (cf. set 7 in (3)). Both fortis types are realized as short at a syllabification domain boundary (cf. 1a, 3a, 5a+b, and 7a in (3)). In addition, obstruents will be short if adjacent to another obstruent (cf. 1b, 3b, and 5a+b,d in (3)), while sonorants will be short if adjacent to any consonant, obstruent or sonorant (cf. 7b+c in (3)). This patterning can be explained on the one hand by assuming that the fortis sounds are true geminates, which means that

\textsuperscript{7} In accordance with Rice (1993) and Avery (1996), the SV-spreading is assumed to be progressive. The authors present evidence from various languages in which CV is conditional on the pre-obstruent environment only.

\textsuperscript{8} An alternative account to SV-spread would be SV-copy, for SV dependents (e.g. [nasal]) do not become part of the structure of sonorant obstruents. For more detail see Rice & Avery (1991).

\textsuperscript{8} Another explanation – which is not fully developed yet – could be that a segmental [(+)tense] feature additionally marking geminates impedes SV spread. This account would keep the conditions confined to the segmental tier.
they occupy two consecutive heterosyllabic positions (Kenstowicz 1994:293), and on the other hand by requiring the left part of obstruents to be syllabified in the coda, as opposed to the nucleus for sonorants. These structural relationships are depicted in (6) below

(6) Proposed Fortis Syllabification:

\[
\begin{align*}
\sigma & \quad \text{obstruents} \\
\sigma & \quad \text{sonorants}
\end{align*}
\]

If the fortis consonants are mapped onto two different syllables, their behaviour at domain boundaries and in consonant clusters has a unified explanation: degemination occurs because one part of the geminate cannot be syllabified. The following sample syllabifications illustrate this point:

(7) Degemination at domain boundaries.\(^9\)

\[
\begin{align*}
1a & \quad /\text{trum\(m\)}/ \\
5b & \quad /\text{far\(f\)}/ \\
7a & \quad /\text{drum}/
\end{align*}
\]

The domain boundary indicated by \(\|\) coincides with a syllable boundary and makes it impossible for the length portion of a geminate to get syllabified: stray erasure results in degemination. The first two patternings shown in (7) could actually be explained as well

\(^9\) The numbers in the upper left-hand corner of the syllabification samples refer to the respective numbers of the examples in (3).
if fortis syllabification is assumed to be monosyllabic. Consider the basic syllable template of Thurgoonian proposed by Kraehenmann (1996:21) below:

(8) Basic syllable template of Thurgoonian

![Syllable Template Diagram]

The syllabification of /trx/ in (7.1a) in the syllable onset is not possible because only two positions are available. The surface form [tr] suggests degemination due to the unavailability of a third onset position. Under this assumption, however, one would expect that the fortis-lenis distinction of members in complex onsets will always be neutralized, regardless of the pre-onset context; i.e. /tr/ and /tx/, for example, will always be indistinguishable at the surface. As can be seen in sets 1 and 2 of (3), this expectation is not borne out: in an intersonorant context the fortis-lenis contrast is maintained even in complex onsets. Similarly, a monosyllabic fortis account could also explain the result of (7.5b): the surface form [th] is not possible because [f] is not one of the four coronal sounds [t f s j] allowed in the syllabic appendix $A_o$. The unavailability of a tautosyllabic position again seems to cause degemination. Yet, this treatment predicts that degemination would not occur exactly in those instances where the geminates consist of possible appendix segments. Nucleus-adjacent syllable-final /tt ss jj/\(^{10}\), therefore, should always surface as [tt ss jj], respectively. This is evidently not the case, as example 3b in (3) and (9) demonstrates. A monosyllabic fortis account in addition fails to explain degemination involving sonorants, as in (7.7a), as well as degemination in consonant clusters, as shown in (9) below.

\(^{10}\) See Kraehenmann (1996:90-91) for a discussion of the syllabic appendix consonants in Thurgoonian.

\(^{11}\) Recall that the affricates do not participate in a fortis-lenis opposition.
(9) Degemination in consonant clusters:

\[
\sigma \quad \sigma
\]

In all cases, the syllable template would have a tautosyllabic position available, but degemination applies anyway. If a heterosyllabic fortis analysis is assumed, both degemination at domain boundaries and in consonant clusters is triggered by the same mechanism, namely the unavailability of an appropriate heterosyllabic position. This account also supports the Sonority Sequencing Principle which requires the sonority curve to rise toward the nucleus and to fall away from the nucleus.

The other issue besides heterosyllabicity raised by the proposal of fortis syllabification in (6) is the difference between obstruents and sonorants. The empirical data presented in (10) reveal that there is a systematic occurrence restriction on fortis sonorants within words.

(10) Distribution of fortis obstruents (a) and sonorants (b) within words:

(a) Thurgovian | English
---|---
i [rap.pə] | Swiss penny
ii [rawp.pə] | caterpillar
iii [gra.bə] | ditch
i [bit te] | please
ii [niit.to] | ride (V)
iii [vi do] | willow
i [es.so] | eat
ii [p.pyas.so] | repent
iii [le za] | read

(b) Thurgovian | English
---|---
[am.mə] | wet nurse
--- | ---
[a.məl] | habitually
[in.no] | inside (stationary)
--- | ---
[i.nə] | inside (directional)
[gail.ə] | grill (V)
--- | ---
[gai.ə] | cricket

While fortis obstruents can follow either a non-branching or a branching nucleus, fortis sonorants can only follow a non-branching nucleus. Fortis sonorants, though, are not in complementary distribution with lenis ones, that is, lenis sonorants do not always follow a branching nucleus. This is documented with the examples in rows (iii) of column (10b) which build (near) minimal pairs with the examples in rows (i). Under the assumption that a fortis sonorant will always have its left part syllabified in the second nuclear position, as proposed in (6), the non-occurrence of long vowels, diphthongs, and vowel-sonorant sequences before fortis sonorants is explained. The left part of fortis obstruents,
on the other hand, cannot be syllabified in the nucleus by nature of their relative consonantal strength. This leaves the option for a preceding nucleus to be singly or doubly filled, as the evidence requires. The result is that the left part of fortis obstruents need to be syllabified in the coda. The syllabic appendix is out of the question in this function, because there are surface fortis sounds other than [t̠ s̠ s̠ ʃ̠], which are the only possible appendix segments (besides /t̠/).

Together with the requirement that geminates be heterosyllabic, the syllabification depicted in (6) is the only viable solution: obstruents need adjacent coda-onset positions, whereas sonorants need adjacent nucleus-onset positions. This means that the fortis-lenis contrast can be maintained in an intersonorant context for obstruents and in an intervocalic context for sonorants.

4. Word-initial fortis consonants

Another distributional fact about fortis sonorants is that they never occur word-initially (cf. sets 6-8 in (3)). In contrast, fortis obstruents are allowed both word-initially (cf. sets 1, 3, and 5 in (3)) and word-finally (cf. set 5 in (3)). Obviously, the different distribution is not due to the fortis-lenis split in the system, otherwise fortis obstruents should be as impossible initially as sonorants. Nor can it be due to the distinction in segmental structure between obstruents and sonorants, because all the lenis consonants occur both word-initially and finally. Therefore, it must have something to do with the way fortis consonants are syllabified and/or hooked up to the syllable plane. Although the proposed structures in (6) suggest that a geminate segment maps in equal parts onto the two syllabic positions, it is conceivable that such a segment may have a stronger "foothold" in one of these positions. The structures here in (11) depict such a scenario:

(11) Gemininate Anchor Condition (Krachennmann 1996): word level

\[ \sigma \]
\[ \sigma \]
\[ \sigma \]
\[ \sigma \]

\[ \text{Rh} \]
\[ \text{On} \]
\[ \text{Co} \]
\[ \text{Nu} \]
\[ \text{X} \]
\[ \text{X} \]
\[ \text{X} \]
\[ \text{X} \]
\[ \text{R} \]
\[ \text{SV} \]

obstruents
sonorants

What can be called the standing or pivot leg of a geminate is proposed to be anchored in the syllable onset for obstruents and in the syllable nucleus for sonorants, both at the
word level. The length leg, drawn by a dashed diagonal line, therefore, is on different sides for the two types of fortis consonants. This is equivalent to saying that a fortis obstruent is "primarily an onset consonant", while a fortis sonorant is "primarily a nuclear consonant".

Such a syllabification preference with respect to obstruents and sonorants in general has been proposed in other frameworks as well. In the theory of Government Phonology proposed by Kaye, Lowenstamm & Vergnaud (henceforth KLV) (1985, 1990), obstruents are considered prototypical governors and sonorants prototypical governees, due in large part to their sonority properties. KLV define the onset position as a prime location for segments that can govern, i.e. obstruents, and the second nuclear position (or second rhymeal; they don’t have a coda node) as one for segments that can be governed, i.e. sonorants.

Returning to the proposed Geminant Anchoring Condition (GAC) in (11), it seems to be an optional condition for obstruents, while obligatory for sonorants: word-final fortis obstruents are allowed, as can be seen in (12b), whereas word-initial fortis sonorants are never allowed, as illustrated in (12c). Word-initial obstruents (12a-b) and word-final sonorants (12d) pose no problems because in each case the pivot leg can be syllabified within the word in the initial or final syllable, respectively. Thus, in effect, the GAC for sonorants acts similar to a syllabification domain boundary for obstruents.

(12) Fortis consonants at word edges:

VI. CONCLUSION

In this paper, I have shown that the underlying difference between fortis and lenis consonants in Thurgovian is at the syllable level, fortis being geminates and lenes being singletons. At the segmental level, geminate and non-geminate consonants look structurally the same (disregarding place structure). Due to the phrasal syllabification domain, fortis consonants occur not only within words but also at word edges, with a restriction only on initial sonorants. With respect to the syllable as a unit, it can be said that the nature of the fortis-lenis opposition (i.e. length) and the phrasal syllabification domain work in tandem to obscure syllable boundaries, since non-crisp edges are

Alternatively, it could be argued that sonorants have nuclear anchoring, while obstruents have non-nuclear anchoring. In the latter case, the pivot leg can be either in the coda, allowing word-final fortis obstruents, or in the onset, allowing word-initial fortis obstruents.

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possible between syllable and segment boundaries (within words) and between syllable and word boundaries (at word edges). The availability of appropriate heterosyllabic positions determines whether a fortis consonant is realized as fortis or weakened to lenis: obstruents need adjacent coda-onset positions, thus requiring an intersonorant context, while sonorants need adjacent nucleus-onset positions, thus requiring an intervocalic context.

In comparison with the Standard German system, then, the crucial difference is how the fortis-lenis contrast is realized. In Standard German, all segment boundaries can (and mostly do) coincide with syllable boundaries, which makes the mapping between the two levels much more transparent than in the Thurgovanian system. Therefore, analyses of Standard German frequently refer to the syllable. The fact that Thurgovanian and Swiss German syllable structure in general is not as easily discernible by strictly looking at the segmental level may have been a reason why Swiss German phonology for so long has not been looked at from this point of view.

References


