

Open Syllable Shortening in Bernese German

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0. Introduction

In Middle High German (MHG, approx. 11th–13th centuries) both long and short vowels occurred in stressed open syllables. In Modern Standard German (like in most West Germanic languages/dialects) only long vowels are permitted in stressed open syllables, as a result of Open Syllable Lengthening (OSL, see e.g. Lahiri and Dresher 1999):¹

(1)	MHG		Modern Standard German	
	'V _i ≠ 'V _s		'V _i , *'V _s	
	[bla:.sən]	→	[bla:.zən], [ra:.zən]	'blow'
	[ra.sə]	→		'lawn'
	[le:.rən]	→	[le:.rən], [fa:.rən]	'teach'
	[fa.rən]	→		'travel, drive'

However, Bernese German (Switzerland) has innovated in the opposite direction. MHG long vowels in open syllables show up as Bernese short vowels:²

(2)	MHG	Bernese	
	[jæ:.rək]	[jæ.rɪġ]	'a year old'
	[hy:.sər]	[hy.zər]	'houses'
	[bli:.bən]	[bli.bə]	'stay'
	[sti:.gən]	[sti.ġə]	'rise'
	[gna:.dən]	[gnd.də]	'graces'

I will call the change from MHG to Bernese “Open Syllable Shortening” (OSS). OSS is marked in at least three respects. First, it is typologically marked since it is

¹ If not otherwise noted, all examples bear stress on the first syllable.

² All Bernese examples are taken from Bratschi and Trüb (1991), Marti (1985), von Greyerz and Bietenhard (1981).

contrary to the preference for stressed syllables to be bimoraic in a stress-accent language (Kager 1999:268, Vennemann 1988:30); OSS changes a more preferred syllable structure into a less preferred one. Second, OSS is marked w.r.t. its distribution within Bernese since shortening applies only to long vowels in open syllables followed by a singleton, as in (3a), whereas long vowels in syllables closed by a geminate are retained, as in (3b):³

- | | | | |
|-----|-------------|-----------|----------|
| (3) | MHG | Bernese | |
| | a. [vi:sən] | [vi.zə] | ‘direct’ |
| | b. [bi:sən] | [bi:s.sə] | ‘bite’ |

Third, OSS leads to quantity alternations within morphological paradigms (all corresponding MHG forms had long vowels throughout the paradigm):

- | | | | |
|-----|------------|-------------------------------|-------------------------------|
| (4) | MHG | Bernese | |
| | [hu:s] | [hu:z̥], [hy.zər], [hy.z̥li] | ‘house, houses, house (dim.)’ |
| | [vi:p] | [vi:p̥], [vi.p̥ər], [vi.p̥li] | ‘woman, women, woman (dim.)’ |
| | [mu:l] | [mu:l̥], [mʏ.lər], [mʏ.li] | ‘mouth, mouths, mouth (dim.)’ |
| | [bu:r] | [bu:r̥], [bu.rə] | ‘farmer, farmers’ |
| | [gə.na:də] | [ḡna:d̥], [ḡna.də] | ‘grace, graces’ |
| | [ho:x] | [hœ:x], [hœ.xər] | ‘high, higher’ |

Nonetheless, I will argue that OSS can be explained as a markedness reduction – though not on the level of output forms, but on the level of lexical representations. I will analyze OSS as a removal of length specifications from lexical representations rather than a change in the phonological grammar. In section 1 it will be shown that OSS is a lexically diffusing change. If it is right that lexical diffusion is analogical change in its nature, it must be possible to identify a pattern on which the analogy is to be based. Section 2 argues that the triggering factor for OSS is found in a quantity alternation that is already present in Bernese on independent grounds. The proposal predicts that OSS does not occur in dialects where the alternation is absent, which is in accordance with comparative observations made in section 3.

Bernese is an Alemannic (Southwest German) dialect spoken in the city of Bern (Switzerland) and its surroundings. Vowel quantity is contrastive in Bernese, viz. [tri:bə] ‘drive’ ≠ [tri.bə] ‘driven’. Singleton consonants (traditionally transcribed as devoiced segments) contrast with geminates, viz. [ʃa.d̥ə] ‘damage’ ≠ [ʃat.tə] ‘shadow’. Bernese does not have any voiced obstruents (Marti 1985:25).⁴

³ The examples in (3) demonstrate that the position of the vowel relative to a syllable boundary is a necessary ingredient of a description of Bernese shortening. The phenomenon cannot be accounted for as disyllabic shortening.

⁴ Ham (2001:42) postulates a ternary distinction between devoiced singletons, voiceless singletons and geminates. The evidence for a devoiced–voiceless distinction is highly questionable. In the following I will assume a binary distinction as it is proposed by Marti (1985:25). Note that Marti

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1. Lexical Diffusion, Analogy, and Underspecification

OSS operates on a lexeme-by-lexeme basis, with different extents in different varieties. Words with a particular sound structure may undergo OSS, though need not to. Possible candidates for OSS are MHG disyllabic words containing a long vowel in the first syllable which is followed by an intervocalic singleton ('lenis') consonant. The examples in (5) demonstrate that more instances of OSS can be found in the dialect of the Simmental valley (Bernese Highlands, Bratschi & Trüb 1991) than in the city dialect (Marti 1985, von Greyerz & Bietenhard 1981):

(5)	MHG Long stressed vowels followed by an intervocalic singleton ('lenis') conso- nant	Bernese (city dialect)	Bernese Highlands (Simmental valley)
a.	[hy:.sər] 'houses' [su:.gən] 'suck'	[hʏ:.zər] [zʊ:.gə]	[hʏ:.zər] [zʊ:.gə]
b.	[ru:.mən] 'remove' [gə.'li:.xən] 'resemble' [gru:.sən] 'disgust' [ʃi:.nən] 'shine'	[ru:.mə] [g̊li:.xə] [g̊ru:.zə] [ʃi:.nə]	[ru:.mə] [g̊li:.xə] [g̊ru:.zə] [ʃi:.nə]
c.	[tu:.sənt] 'thousand' [blɑ:.sən] 'blow' [ki:.bən] 'scold'	[tu:.zɪ̯g̊] [b̥lɑ:.zə] [xi:.bə]	[tu:.zɪ̯g̊] [b̥lɑ:.zə] [xi:.bə]

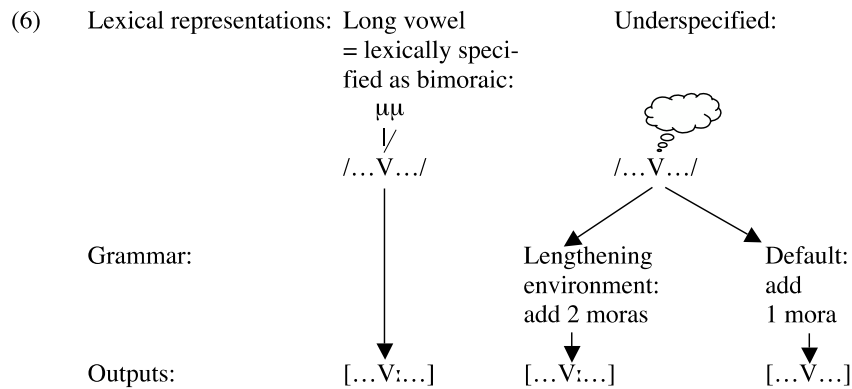
Obviously, OSS is not a regular (exceptionless) sound change in the Neogrammarian sense. Rather, displaying a short instead of an etymologically long vowel is a property of individual lexical items. OSS thus shares the characteristics of lexically diffusing changes.

According to Kiparsky (1995), lexical diffusion can be understood as a process of analogical grammar simplification, if our theory of analogy incorporates the notion of underspecification. As Kiparsky (1995:644) points out, lexical diffusion is (i) the generalization of a lexical phonological rule to new (i.e. less specific) contexts, and (ii) the item-by-item simplification of lexical representations in each context. An important ingredient of the theory is the idea of (radical) underspecification: "A feature is only specified in a lexical entry if that is necessary to defeat a rule which otherwise would assign the 'wrong' value to it" (Kiparsky 1995:645). Unmarked features are filled by default rules. It follows that, despite its at first glance irregular characteristics, lexical diffusion (like analogy) is a regularization process since "when idiosyncratic feature specifications are eliminated from lexical entries, the feature automatically defaults to the values as-

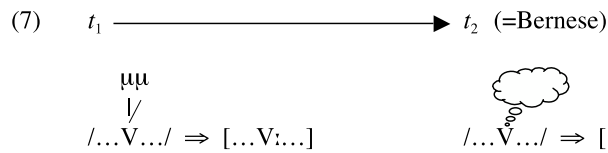
calls 'lenis' vs. 'fortis' what I refer to as 'singleton' vs. 'geminate'. The terminological problem is extensively discussed by Kraehenmann (2003) and Würth (2002), who argue for the single-
ton/geminate analysis.

signed by the rule system” (Kiparsky 1995:644). In other words, if a marked feature value is removed from a lexical item, the feature becomes underspecified, such that lexical information may not override the default any more.

How can Kiparsky’s theory of lexical diffusion as analogical simplification be applied to Bernese OSS (and, more generally, to vowel quantities)? I assume that only length of vowels is prespecified lexically, but not shortness (Seiler, in press). Quantity-underspecified vowels are assigned one mora by default. The default may be overridden by two mechanisms: Either other principles of the grammar require the vowel to be assigned a second mora (i.e. the vowel is in a lengthening environment), or the vowel is lexically prespecified as bimoraic. The division of labor between lexically idiosyncratic information and the application of the rules of grammar is sketched in (6); the piece of fog on top of one of the vowels means that the vowel is moraicly underspecified on the level of lexical representations:



In Bernese, stressed open syllables are not a lengthening environment (there is no OSL in Bernese). Vowels that are not lexically specified as bimoraic are realized as short (by default). The simplest way of understanding Bernese OSS is that OSS is a removal of marked length specifications from lexical items. Consequently, the vowels may no longer override any more the default assignment of a single mora:



If this view is on the right track, it is not necessary to postulate a lexical-phonological shortening rule which is extended to new contexts (the default rule is sufficient to determine the direction of change – there is no reason for assuming that a shortening rule ever has been part of Bernese or Pre-Bernese grammar).

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Only the second part of Kiparsky's (1995) definition of lexical diffusion – removal of lexical idiosyncrasy – is required. To put it in other words, OSS does not change the phonological grammar, but it changes (i.e. simplifies) lexical representations. In that sense, OSS is not much different from classical cases of morphological analogy such as the regularization of the plural *kine* to *cows* (Kiparsky 1995:641), in which the grammar – understood as the rule system – does not change at all, but only idiosyncratic lexical information is lost.

However, the account so far does not answer the question of how length removal gets started at all, and why exactly in those environments. If OSS is a lexically diffusing change and if the mechanism behind lexical diffusion is analogical extension, the question is raised: analogical to what? Which is the pattern that is generalized? It must be possible to identify a core environment from which length removal originates, and which at the same time defines the set of possible OSS candidates. The crucial cases on which to base the analogy must involve Bernese short stressed vowels followed by an intervocalic singleton (and not, e.g., followed by a geminate).

In the next section, I will propose that the desired clarification is brought in by micro-comparative evidence: Bernese must be compared with very similar, closely related languages where – under otherwise comparable conditions – OSS *has not* emerged, i.e. with other Alemannic (Southwestern) dialects.

2. A Historical Explanation

A historical explanation of the emergence of OSS depends on the right interpretation of the quantity alternations illustrated in (4). A representative example is repeated here as (8):

- (8) MHG [hu:s], [hy:.sər], [hy:.slim] ‘house, houses, house (dim.)’
Bernese [hu:z̥], [hy.z̥ər], [hy.z̥li]

Whereas in MHG all three forms contain a long vowel, Bernese retained vowel length only in the monosyllabic uninflected form where the vowel occurs in a closed syllable, but displays a short vowel in open syllables (i.e. in the disyllabic inflected forms). Driven by our knowledge of the history, we would like to describe the Bernese state of affairs as follows: From MHG to Bernese, the grammar has been supplemented a shortening process which is active in those forms where the vowel precedes a syllable boundary. The Bernese lexical representations simply conserve the MHG lexical representations, as in (9a). However, alternations always present us with a choice: Which alternant is basic, and which one is derived? Although the vowels in the Bernese disyllabic forms are shortened in comparison to the MHG vowels, this observation does not necessarily lead us to the right analysis of the synchronic Bernese grammar. Indeed, there is evidence for the alternative analysis being correct, as in (9b): Synchronically, the alternation is not due to shortening in the disyllabic forms, but rather due to lengthening in the monosyllabic form. If this is right, the vowel in Bernese is not lexically

specified as bimoraic any more (thus the lexical representation is changed, i.e. simplified, from MHG to Bernese):

- (9) a. Preserved lexical representation, shortening process active in the disyllabic form:
- | | |
|----------------------|---------------------|
| MHG | Bernese |
| /hu:s/ ⇒ [hu:s] | /hu:z/ ⇒ [hu:z] |
| /hy:sər/ ⇒ [hy:.sər] | /hy:z_r/ ⇒ [hy.zər] |
- b. Simplified lexical representation, lengthening process active in the monosyllabic form:
- | | |
|----------------------|--------------------|
| MHG | Bernese |
| /hu:s/ ⇒ [hu:s] | /huz/ ⇒ [hu:z] |
| /hy:sər/ ⇒ [hy:.sər] | /hyzər/ ⇒ [hy.zər] |

Why is (9b) more likely to be the correct analysis of the synchronic Bernese grammar? Alternations of the [hu:z]–[hy.zər] *type* have emerged independently from the *items* that are subject to OSS: They also occur in closely related dialects where OSS is absent, and they are due to a different source. In most Alemannic dialects (including Bernese), an etymologically and underlyingly short (non-long) vowel is lengthened in monosyllabic words if it precedes a simple coda filled with a singleton (“lenis”) consonant. The vowel is not lengthened in polysyllabic words (Ham 2001, Kraehenmann 2003, Spaelti 1994, Weber 1923, Weber 1987, Würth 2002). The explanation proposed by Spaelti (1994; Glarus German) and Würth (2002; Zurich German) can be summarized as follows. In most Alemannic dialects,

- the minimal word is bimoraic, i.e. a branching foot;
- the minimal stressed syllable is monomoraic (there is no OSL);
- a singleton (‘lenis’) consonant at right edge is extrametrical;
- geminates are underlyingly moraic (Hayes 1989), non-final singletons are positionally moraic.

In consequence, the vowel of a monosyllabic word is lengthened if the word otherwise counts only one mora (Monosyllabic Lengthening, MSL), as in (10). Monosyllabic forms ending on geminates or clusters are not lengthened, as in (11):

- (10) MHG
- | | | |
|--------------------|---|----------|
| | MSL in Bernese, Zurich German,
Glarus German etc.: | |
| /rad/ ⇒ [rat] | /rad/ ⇒ [ra ^μ ⟨d⟩], *[ra⟨d⟩ ^μ] | ‘wheel’ |
| /redər/ ⇒ [re.dər] | /redər/ ⇒ [re.d ^μ ər] | ‘wheels’ |

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(11) No MSL in words ending on geminates (a.) and clusters (b.):

- a. $\begin{array}{c} \mu \quad \mu \mu \\ /b\text{r}\ddot{a}t\text{t}/ \Rightarrow [b\text{r}\ddot{a}t\text{t}] \quad \text{'board'}$
 $\begin{array}{c} \mu \quad \mu \mu \mu \\ /b\text{r}\ddot{a}t\text{t}\ddot{a}r/ \Rightarrow [b\text{r}\ddot{a}t.\text{t}\ddot{a}r] \quad \text{'boards'}$
- b. $\begin{array}{c} \mu \mu \\ /l\text{a}n\text{d}/ \Rightarrow [l\text{a}n\text{<d>}] \quad \text{'country'}$
 $\begin{array}{c} \mu \mu \mu \\ /l\text{a}n\text{d}\ddot{a}r/ \Rightarrow [l\text{a}n.\text{d}\ddot{a}r] \quad \text{'countries'}$

In dialects with MSL, surface forms such as [hu:z], [vi:b], etc. are ambiguous. Regardless of whether the vowel is long or short underlyingly (and etymologically), it must be long at the surface, due to foot-binarity. That is, for the learner two possible analyses of such forms are available, one with a vowel lexically specified as bimoraic, and one with a quantity-underspecified vowel:

- (12) a. $\begin{array}{c} \mu\mu \\ | \\ [hu:z] \leftarrow /hu\text{z}/ \end{array}$ or b. $\begin{array}{c} \text{cloud} \\ | \\ [hu:z] \leftarrow /h\ddot{u}z/ + \text{foot-binarity} \end{array}$

The ambiguity of such forms provides the occasion for lexical length removal to get started. The etymologically long vowel in [hu:z] easily can be reanalyzed as a *lengthened* vowel. It therefore became possible to remove the marked lexical specification of length from the underlying form; the learner reconstructs the vowel as quantity-underspecified, which is a simplification of the lexical representation, a loss of lexical idiosyncrasy. If lexical length is removed, the (quantity-underspecified) vowel is realized as long if foot-binarity requires a second mora (as it is the case in the monosyllabic form) but short elsewhere (disyllabic form). The result is the alternating pattern in (9b). Thus lexical length removal becomes visible (only) in the disyllabic form. The result of lexical length removal in alternating cases such as [hu:z] can be expressed as a proportional analogical extension of the MSL alternation:

- (13) $[r\text{a:d}] : [r\text{e.d}\ddot{a}r] = [hu:z] : x$
 $\Rightarrow x = [h\text{y.z}\ddot{a}r]$ (which replaces MHG [hy:.s\ddot{a}r])

Note that the visible result of reanalytic length removal is restricted to forms whose vowel is followed by one intervocalic singleton consonant – exactly the environment that defines the set of possible candidates for OSS, cf. (5) above. Once length removal has started, it may spread through the lexicon and thus be extended to any word of that phonological shape. Although the item-by-item spread of length removal to similar cases cannot be illustrated by a proportion, it is still an analogical change in the sense of Kiparsky (1995), namely if analogy is

defined as the removal of lexical idiosyncrasy/complexity, or, more specifically, as the loss of a lexically specified marked property, which has the consequence that the property is left underspecified in the lexical representation; it now gets its specification by default.

With the above proposed scenario for the emergence of OSS as lexical length removal in mind, we are now better equipped to understand the typologically, distributionally and morphologically marked characteristics of OSS mentioned in section 0 above:

- Analogy to the MSL alternation defines the right contexts for OSS (disyllabic forms with an intervocalic singleton).
- It provides a plausible occasion for length removal to get started at all (reanalysis of long vowels as lengthened vowels).
- It motivates OSS as a markedness reduction (removal of lexical length specifications in favor of quantity-underspecified vowels whose quantity is assigned by default).
- No new morphological alternation is introduced in cases such as [hu:z]–[hy.zəɾ], but an already existing alternation is spread over new items.

However, the story so far at best offers a plausible scenario for the emergence of OSS, but is it more than mere historical speculation? Is there independent empirical evidence? In our case, philological evidence is difficult to deal with since (i) the German spelling conventions notoriously obscure vocalic and consonantal quantities, and (ii) the vernacular dialects are attested only relatively recently (i.e. since approx. 1800). However, comparative evidence will turn out to be an attractive test field for the scenario.

3. A Brief Typology of Alemannic Quantities

If it is right that the MSL alternation played a crucial role in the emergence of OSS, a prediction on the typology of Alemannic dialects can be derived. The scenario predicts that OSS had a chance to emerge only in those dialects where the alternation exists on independent grounds – i.e., in dialects that participate in MSL but not in OSL. In dialects where the alternation is absent we expect OSS not to occur.

Like Bernese, the dialect of the province of Basel (North-Western Switzerland) participates in MSL. Unlike Bernese, Basel German participates in OSL, too. Consequently, there is no quantity alternation in words ending on a simple singleton coda. The vowels are long in monosyllabic as well as in disyllabic forms:

(14)	MHG	Basel German (province; Muster & Bürkli Flaig 2001)
	[rat]	[ra:ɖ] (MSL) 'wheel'
	[re.dəɾ]	[re:ɖəɾ] (OSL) 'wheels'

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In Basel German no OSS is attested (each of the examples in (15) is shortened in Bernese).⁵

(15)	MHG	Basel German (province)	
	[hy:.sər]	[hy:.zər]	‘houses’
	[bli:.bən]	[bli:.bə]	‘stay’
	[hu:.sən]	[hu:.zə]	‘live’
	[sti:.gən]	[ti:.gə]	‘rise’

Obwalden German (Central Switzerland) retained MHG short vowels in all positions since it underwent neither MSL nor OSL. The dialect thus is very different from Basel German w.r.t. the absolute quantities showing up in words; however, quantity *alternations* are absent like in Basel German:

(16)	MHG	Obwalden German (Imfeld 2001)	
	[rat]	[raɖ] (no MSL)	‘wheel’
	[re.dər]	[re.ɖær] (no OSL)	‘wheels’

In Obwalden German no OSS is attested (again, the Bernese cognates of all examples in (17) display a short vowel):

(17)	MHG	Obwalden German	
	[hy:.sər]	[hi:.zər]	‘houses’
	[bli:.bən]	[bli:.bə]	‘stay’
	[hu:.sən]	[hui:.zə]	‘live’
	[sti:.gən]	[ti:.gə]	‘rise’

The remaining combination of quantity-affecting processes, OSL but no MSL, is found in the dialect of Uri (Reusstal valley, Central Switzerland). Stressed vowels in open syllables always are lengthened (Clauss 1929:89). However, MHG short vowels in monosyllabic words are retained (Clauss 1929:88). Thus, Uri German does show quantity alternations in inflectional paradigms, but the alternation is exactly reversed if compared with the Bernese pattern.⁶

⁵ Of course, the theory of reanalytic length removal could be applied to Basel German, too. However, since Basel German exhibits both MSL and OSL, loss of lexical length in the crucial cases would never have a chance to become visible at the surface.

⁶ It must be mentioned that Clauss (1929:163) notes the disyllabic form without a lengthened vowel (*redər*). The chapter from where the example is taken focuses on other aspects than vowel quantity; perhaps signals of vowel length are therefore just omitted. I justify my transcription in (18) with reference to Clauss’s (1929:89) explicit description of OSL as a totally regular process in Uri German: “In der Mundart des Reußtals [...] ist jeder haupttonige Vokal in offener Silbe gedehnt” [in the dialect of Reusstal valley, every stressed vowel in an open syllable is lengthened].

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|------|----------|-----------------------------|
| (18) | MHG | Uri German (Claus 1929:163) |
| | [rat] | [raɔ̯] (no MSL) ‘wheel’ |
| | [re.dər] | [re:ɔ̯ər] (OSL) ‘wheels’ |

If we try to apply the hypothesis of reanalytic lexical length removal to Uri German, we expect shortening not to occur in disyllabic forms/open syllables, but rather in monosyllabic forms/closed syllables. In Uri German it is an option to analogically extend the alternating pattern (18) to words with an etymologically long vowel (in that case, the long vowel of the plural form would have been reanalyzed as a lengthened vowel). We then might hypothesize that, as a consequence of presumed reanalytic length removal, instances of “monosyllabic shortening” (the logical counterpart to Bernese OSS) can be found in Uri German. In fact, such examples do exist. The examples in (19) contain etymologically long vowels which are shortened in Uri German, but only in the monosyllabic form ending in a simple coda:

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|------|--------|----------------------------|
| (19) | MHG | Uri German (Claus 1929:93) |
| | [vi:p] | [vip] ‘woman, wife’ |
| | [li:p] | [lip] ‘life, body’ |

Many dialects (e.g. Zurich German) participate in MSL but not in OSL. In those dialects the circumstances are comparable to Bernese, and they show the MSL alternation in inflectional paradigms. Indeed, instances of OSS can be found in Zurich German, too. However, Zurich German has shortened considerably less frequently than Bernese. Weber (1929:85) mentions that in isolated cases (“in vereinzeltten Fällen”) open syllables are shortened, and reports some twenty instances of OSS in Zurich German, all of which involve high vowels, e.g.:

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|------|-----------|-------------------------------|
| (20) | MHG | Zurich German (Weber 1929:85) |
| | [si:də] | [zi:də] ‘silk’ |
| | [svi:gən] | [ʒvi:ḡə] ‘be silent’ |

The findings can be summarized as follows: In dialects where the MSL alternation is absent no cases of OSS are attested. This is true for dialects such as Basel German (both MSL and OSL) as well as Obwalden German (neither MSL nor OSL). Uri German shows a different type of alternation with different consequences (which are entirely expected in the light of the present theory). Only in dialects that participate in MSL but not in OSL did OSS have a chance to arise. I conclude from these facts that the MSL alternation is a *necessary* condition for the emergence of OSS. The theory outlined here determines the conditions under which instances of OSS may show up. The conditions are equal in Bernese and Zurich German. However, the two dialects differ in their extents of lexical diffusion, i.e., how extensively length removal has spread through the lexicon.

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Abbreviations

MHG Middle High German
MSL Monosyllabic Lengthening
OSL Open Syllable Lengthening
OSS Open Syllable Shortening

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