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► **To cite this version:**

Sabrina Bendjaballah. l-vocalisation in Upper Austrian German. Florian Breit; Yoshida Yuko; Connor Youngberg. Elements, Government and Licensing: Developments in Phonology, UCL Press, pp.30-45, 2023, 10.14324/111.9781800085282 . halshs-03915078

HAL Id: halshs-03915078

<https://shs.hal.science/halshs-03915078>

Submitted on 9 Nov 2023

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Chapter Title: On hedgehogs and gold in Bavarian: l-vocalisation in Upper Austrian German
Chapter Author(s): Sabrina Bendjaballah

Book Title: Elements, Government, and Licensing
Book Subtitle: Developments in phonology
Book Editor(s): Florian Breit, Yuko Yoshida, Connor Youngberg
Published by: UCL Press. (2023)
Stable URL: <https://www.jstor.org/stable/jj.332955.9>

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On hedgehogs and gold in Bavarian: /l-vocalisation in Upper Austrian German

Sabrina Bendjaballah

Introduction

Liquids are known for their peculiar behaviour crosslinguistically and the question of their internal structure has been much debated in the literature.^{1,2} In this context, /l-vocalisation in Bavarian has been discussed in different frameworks (for example, Kranzmayer 1956; Rennison 1978; Wiesinger 1990; Kühnhammer 2004; Djabbari et al. 2010; Kaye and Pöchtrager 2015; Noelliste 2017). This phenomenon refers to the fact that post-vocalic /l in Standard German does not correspond to post-vocalic /l in various Bavarian languages, for example, Upper Austrian German [goid] ‘gold’ versus Standard German *Gold*.

This phenomenon however does not exclusively obtain in post-vocalic context: it is also observed in post-consonantal context, for example, Upper Austrian German [y:gr] ‘hedgehog’ versus Standard German *Igel*. This fact has largely been ignored in the literature. My aim in this chapter is twofold. First, I propose an analysis of the phenomenon in post-consonantal context. More specifically, applying an Element Theory analysis (Kaye et al. (KLV) 1985, 1990; Charette 1991; Backley 2011) to data from a particular Bavarian language (Weyer Bavarian, Oberösterreich, Austria), I show that the processes in post-consonantal and in post-vocalic context can be unified. Second, I examine the implications of the analysis on the status of /l-vocalisation as a synchronically active phonological process in Bavarian. The analysis will attempt to disentangle the intricacies of the behaviour of [l] and [U], which have been beautifully handled in Turkic languages by Charette and Göksel (1996).

The three sections that follow present the data, the analysis, and then evaluate the implications of the analysis and conclude the chapter, respectively.

Data

Introduction

l-lenition³ regularly takes place in coda position and results in [w] crosslinguistically. The process is reported both synchronically and diachronically. The probably most widely discussed languages are English dialects, for example, *milk* realised in London English as [mɪrwk]. However this type of *l*-lenition is attested in many genetically unrelated languages; see, for example, Omani Mehri (Semitic, Modern South Arabian): [jəluːbəd] versus [jəwβéːd] /jəlbéːd/, √lbd ‘hit’ IPF.3ms versus SBJ.3ms (Bendjaballah and Tifrit 2018). *l* > [j] is less common, but it is also attested in various languages; see, for example, Standard Taqbaylit Berber [ali] versus Ouadhia Taqbaylit Berber [aji] ‘climb’ (Bedar and Quellec 2020).

l thus presents an affinity both with [I] and [U]. The question arises as to whether these elements combine in the internal structure of *l*, or whether *l* has either [U] (for example, Omani Mehri), or [I] (for example, Ouadhia Berber). Backley (2011, 178) supposes that [U] and [I] ‘do not easily combine’ and proposes that laterals are composed either of [A] and [U], or of [A] and [I].⁴

It has long been noticed that the surface realisations of coda *l* in Bavarian involve both [I] and [U], as seen respectively in /gold/ [goid] ‘gold’, and /ɛlf/ [œːf] ‘eleven’ (for recent analyses in an Element Theory framework, cf. Djabbari et al. 2010; Bendjaballah 2012). However, the existence of the phenomenon as a synchronically active phonological process has been challenged in Kaye and Pöchtrager (2015), who argue that the surface realisations reflect the underlying representations: there is no /l/ in examples such as [goid] ‘gold’ and [œːf] ‘eleven’, and therefore no *l*-lenition.

Vowels

In the literature, the discussion of *l*-lenition in Bavarian focuses on the interaction of coda /l/ with its preceding nucleus. Two subsets must be distinguished depending on the identity of this nucleus. The first column in (1) exemplifies the phenomenon after a back vowel. The second column gives a related form where /l/, being in an onset position, surfaces as such, thus establishing its presence at the underlying level in the examples of the first column:

(1)	coda /l/		onset /l/	
	/u/	[ʃuːɪ]	‘school’	[ʃuləbue] ‘schoolboy’
	/o/	[ʁoɪn]	‘roll’.INF	[ʁoːləd] ‘roll’.COND
	/ɔ/	[fɔɪn]	‘fall’.INF	[fɔːləd] ‘fall’.COND

(2), below, exemplifies the phenomenon after a front vowel. As in (1), the second column provides related forms where /l/ surfaces. The underlying identity of the vowels in the forms in the first column of (2) is a matter of debate: Is it identical to the surface (y, œ, ø), or does it have the identity that can be seen in the corresponding Standard German forms (i, e, ε)? The stem-vowel is identical in the forms with and without [l]. This casts doubt on the assumption of /i, e, ε/. However, additional data support an analysis in terms of rounding triggered by /l/. For this reason, I assume rounding of /i, e, ε/ to [y, œ, ø] for the time being, and will come back to this issue below.

(2)	coda /l/		onset /l/		Standard German	
	[y] /i/	[ʒby:n]	‘play’.INF	[ʒby:lɛd]	‘play’.COND	<i>spielen</i>
	[œ] /e/	[mœ:]	‘flour’	[mœ:l(ɡ)]	‘tasting like flour’	<i>Mehl</i>
	[ø] /ε/	[fø:n]	‘peel’.INF	[fø:lɛd]	‘peel’.COND	<i>schälen</i>

The following distributional generalisation can be established:

- (3) If the vowel preceding coda /l/ contains
- a. |U|, but not |I| /l/ surfaces as [ɫ]
 - b. |I|, but not |U| /l/ does not surface, and the preceding vowel is rounded.⁵

Diphthongs

l-lenition after diphthongs is less often discussed, if at all. As illustrated in (4a), the off-glide preceding /l/ is neither [ɪ] nor [ʊ], but [ɥ]. (4b) illustrates the fact that [aɥ] never surfaces if the consonant following the off-glide is not /l/. Following Kaye and Lowenstamm (1984), and many others, I assume that the internal structure of glides consists of |U| [w], |I| [j] and a combination thereof |U.I| [ɥ]. An off-glide preceding /l/ is always realised as |U.I| [ɥ].

(4)	infinitive	conditional		Standard German
a.	dɛfaɥn	dɛfaɥlɛd	‘rot’	<i>verfaulen</i>
	daɥn	daɥlɛd	‘divide’	<i>teilen</i>
	faɥn	faɥlɛd	‘file, grate’	<i>feilen</i>
b.	ɕaɥm	ɕaɥbɛd	‘rub’	<i>reiben</i>
	sauffa	sauffɛd	‘booze’	<i>saufen</i>
	sauɥ	sauɥɛd	‘suck’	<i>saugen</i>

Consonants

The question of the interaction of /l/ with a preceding consonant is remarkably absent, or at best marginal, in the literature on /-vocalisation in Bavarian.⁶

The realisation of /l/ after a consonant depends on the identity of the consonant, exactly as was the case post-vocally. The distributional facts are summarised in (5) and illustrated in (6) and (7). As shown in the second column of (6), if a vowel-initial suffix is added, /l/ surfaces as such. I take this to establish its existence in the underlying representation of the lexical items under consideration.

- (5) If the consonant preceding /l/ is
- a labial or a velar ($\neq \gamma$) /l/ surfaces as [ɫ]
 - a dental-alveolar ($\neq n, d$) /l/ surfaces as [l]
- (6)
- | | infinitive | conditional | |
|-------------|---|---|---|
| a. labial__ | [auf dy:βɫn]
[ɔ: dauflɫn]
[ãõ hymmɫn] | [auf dyβɫəd]
[ɔ: daufləd]
[ãõ hymɫəd] | ‘fix, make stick’
‘throw a fit’
‘praise to the skies’ |
| b. velar__ | [ku:gɫn] | [ku:gɫəd] | ‘roll’ |
| | noun | adjective | |
| | [bu:gɫ] | [bu:gɫəd] | ‘back’, ‘bumpy’ |
- (7) dental-alveolar__
- | | |
|----------|-------------------|
| [fuxdɫn] | ‘gesticulate’.INF |
| [muʃɫ] | ‘mussel’ |
| [ʃnitsɫ] | ‘escalope’ |

/n, d, γ/ must be excluded in (5) because they trigger additional phenomena: n+l is realised as [ndɫ]; the acoustic realisation of {γ, d}+l requires a detailed phonetic analysis. In this chapter, I will transcribe the resulting segment as L and leave the question of its exact realisation for further research.⁷

Finally, the realisation of /l/ after palatals cannot be tested, since Upper Austrian German does not have underlying palatal obstruents: [ç] is the realisation of an underlying velar. /l/ preceded by [ç] behaves as expected: it surfaces as [ɫ], for example, [syççɫ] ‘sickle’. The only context after palatal is thus after an off-glide, cf. (4).

The affinity between labials and velars has often been noted in Element Theory, and it has been ascribed to the presence of |U| in both

classes of consonants. (See for example, Backley 2011, 81ff.: ‘this [...] supports the idea that velars and labials are phonologically related [...] this relation is based on the presence of a shared |U| element’.) Assuming in addition that the only consonant with |I| in Upper Austrian German is [ɪ], we conclude that

- (8) If the consonant preceding /l/
- a. contains |U| but not |I| /l/ surfaces as [ɪ]
 - b. contains neither |U| nor |I| /l/ surfaces as [ʌ]

Note that (8) is not sensitive to the morphological status of /l/: it applies exactly in the same way in cases where /l/ has affixal status, as illustrated in (9). Diminutive *-l* is realised as [ɪ] after labials and velars, and as [ʌ] after dental-alveolars.

(9)		base	<i>l</i>-diminutive	
	labial__	[ko:pʃ]	[køppʃɪ]	‘head’
	velar__	[duɐx]	[dyɐççɪ]	‘cloth’
	dental-alveolar__	[hẽ:n]	[hẽ:ndʌ]	‘hen’

Action at a distance

/l/ also interacts with a segment located at a distance. The facts are exemplified in (10). The forms in the first column are /l/-final nouns; the forms in the second column are diminutives, that are built by suffixation of *-erl*. As noted above, I transcribe the surface realisation of /l/ as [L] while the exact phonetic character remains to be determined.

(10)	stem-vowel		<i>l</i>-final noun	<i>erl</i>-diminutive	
a.	y ~ i	labial__	[d̥y:βɪ]	[d̥i:βɛL]	‘dowel, bump’
		velar__	[ɣ:ɡɪ]	[i:ɡɛL]	‘hedgehog’
b.	ø ~ e	labial__	[ʒdømbbɪ]	[ʒdɛmbbɛL]	‘stamp’
		velar__	[dø:ɡɪ]	[dɛ:ɡɛL]	‘container’
c. ⁸	o	labial__	[knø:fi]	[knɔ:fɛL]	‘garlic’
		velar__	[fō:ɡɪ]	[fō:ɡɛL]	‘bird’
	u	labial__	[ʒd̥u:mmɪ]	[ʒd̥u:mmɛL]	‘short cylinder’
		velar__	[ku:ɡɪ]	[ku:ɡɛL]	‘ball’

The internal structures of the vowels are summed up in (11): the vowel in the *l*-final noun systematically contains an additional |U|. (If the vowel

contains |U|, this addition is not reflected on the surface, and no alternation is observed.)

(11)	VC-<i>l</i> (noun)		VC-<i>ɐ</i>L (diminutive)	
	y	U.I	i	I
	ø, œ	A.U.I	e, ε	A.I
		o	A.U	
		u	U	

I propose to interpret these facts as follows:

- (12) a. *ɐ*L-diminutives make it possible to recover the underlying quality of the stem-vowel.
 b. Final /l/ triggers rounding (+|U|) of the stem-vowel.

In order to establish (12), we must first exclude the outside interference of an independent, morphologically conditioned, phenomenon: Umlaut. Umlaut in Upper Austrian German obeys (13):

(13) |U| → |I|

As seen above, Upper Austrian German has two diminutive suffixes: *-l* and *-ɐ*L. *-l* is not productive and is used in a closed class of lexicalised items; *-ɐ*L is more productive. Diminutive *-l* always triggers Umlaut:

(14)		base	<i>l</i>-diminutive	
a.	/u/ → i / _ <i>I</i> _{DIM}	[vuɛft]	[viɛft]	‘sausage’
		[haʊs]	[haɪs]	‘house’
	/o/ → e / _ <i>I</i> _{DIM}	[ʁo:s]	[ʁɛss]	‘horse’
b.	i — i	[kind]	[kind]	‘child’
	e — e	[hɛ:n]	[hɛ:nd]	‘hen’

Now note in (10) that *l*-final nouns always build their diminutives via suffixation of *-ɐ*L to the nominal base without final /l/. The fact that final /l/ is systematically absent in the diminutive suggests that it functions as a (class marker) suffix: *l* has affixal status in *l*-final nouns. The question thus arises as to whether it triggers Umlaut. Such is not the case in (15). Diminutive *-l* triggers Umlaut while class marker *-l* does not.

(15) **stem-vowel** ***l*-final noun** **Umlaut**

	+ U	U → I
/i/	[y]	[i]
/u/	[u]	
/e, ε/	[ø, œ]	[e]
/o/	[o]	

Diminutive *-eL* triggers Umlaut for some roots, only (16a versus 16b).⁹

(16)

	base	<i>eL</i>-diminutive	
a. /u/ → i / <i>-eL_{DIM}</i>	[dʁumm]	[dʁimmɐL]	‘large lump’
/o/ → e / <i>-eL_{DIM}</i>	[kœb]	[keɐ̯βɐL]	‘basket’
b. u — u	[hund]	[hundɐL]	‘dog’
o — o	[bo:t]	[bo:tɐL]	‘boat’
c. i — i	[fi:ç]	[fi:çɐL]	‘animal’
e — e	[ve:g]	[ve:gaL]	‘path’

The question is whether [i], [e] in the diminutives in (10a,b) result from Umlaut. If yes, the underlying identity of the corresponding stem-vowels is /u/, /o/ respectively. This leads to the pattern in (17): the underlying vowel of a word like *dy:βɪ* ‘dowel’ is /u/, and final /l/ adds |I| to this vowel. [i] in the corresponding diminutive (*di:βɐL*) results from Umlaut. By contrast, in a word like *ku:grɪ* ‘ball’, final /l/ does not add |I|, and the corresponding diminutive does not undergo Umlaut.

(17)

	<i>l</i>-final N	<i>eL</i>-diminutive			
/u/	y (+ I)	i (+Uml)	[dy:βɪ]	[di:βɐL]	alternating
/o/	ø (+ I)	e (+Uml)	[dø:grɪ]	[de:grɐL]	
/u/		u	[ku:grɪ]	[ku:grɐL]	non-alternating
/o/		o	[fɔ:grɪ]	[fɔ:grɐL]	

We are faced with a choice between the following options: either we maintain a unified behaviour of final /l/ (/l/ always has the same effect on a given vowel quality), or we maintain a unified behaviour of roots (certain roots always alternate, others never alternate, and this feature has to be specified in the lexical entry of the root). I adopt the first option: the effect of /l/ is a regular, predictable, phonological process, and the diminutive makes it possible to recover the underlying identity of the stem-vowel. Under the second option, underlying /u, o/ in words like *dy:βɪ*, *dø:grɪ* would never be recoverable from any form in the language.

I conclude that [i], [e] in the diminutives in (10a,b) do not result from Umlaut, but are the underlying stem-vowels. Diminutives make it possible to filter out the effect of final /l/ on the stem-vowel and reveal the underlying vowel quality. The non-diminutive forms reveal the effect of /l/ on this underlying vowel: rounding.¹⁰

Conclusions

/l/ has both a local effect, and a distance effect:

(18) **Local effect:**

- a. After a segment (C/V) that contains |U| but not |I|, /l/ surfaces as [ɪ]
- b. After a segment (C/V) that contains |I| but not |U|, /l/ does not surface, and triggers rounding.

(19) **Distance effect:**

In V(:)Cl#, if C contains |U|, /l/ surfaces as [ɪ], and triggers rounding of V.

Analysis

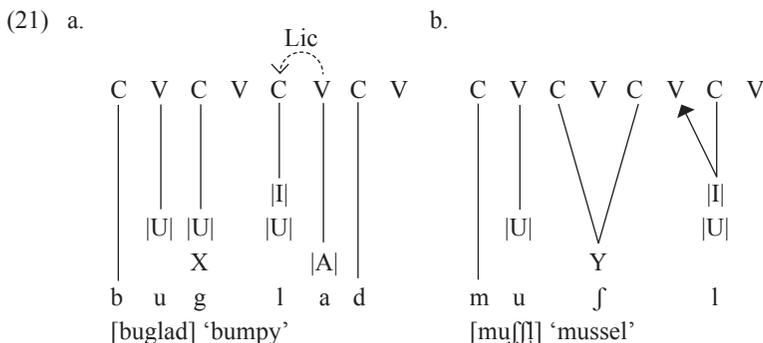
The representations to follow will be cast in the CV-framework of Government Phonology (Lowenstamm 1996). (20) provides a summary of the empirical generalisations the analysis has to account for.

(20) **Generalisations:**

- a. /l-lenition takes place ⇒
 - /l/ is not licensed by its nucleus.
 - the immediately preceding segment contains either |I|, or |U|.
- b. If this segment contains |U| but not |I|, /l/ surfaces as [ɪ], and triggers rounding to its left, up to V₁ in a V₁Cl sequence.
- c. If this segment contains |I| but not |U|, /l/ does not surface, and triggers rounding of the immediately preceding segment.

(20a) pertains to the conditions under which /l-lenition takes place. If /l/ is followed by its nucleus, it is licensed, no matter what the internal structure of the preceding segment is (21a). If /l/ is not licensed by a nucleus with vocalic content, lenition is triggered (in the spirit of Harris 1994).¹¹ The presence of |I| and |U| in the preceding segment conditions the realisation of /l/. I take this to indicate that /l/ contains at least |I| and |U| (cf. Djabbari et al. 2010 for a similar

assumption), and that *l*-lenition involves dissimilation: if /l/ shares part of its internal structure with the preceding segment, *l*-lenition obtains. If /l/ does not share part of its internal structure with the preceding segment, it is realised as [l̥] (21b).

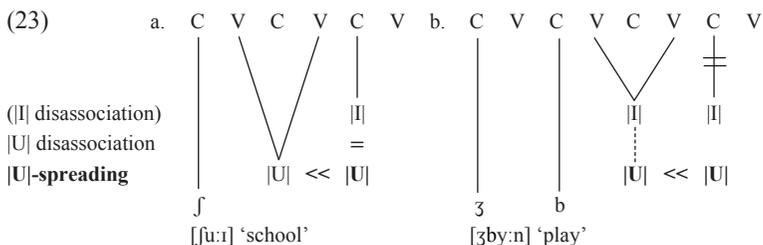


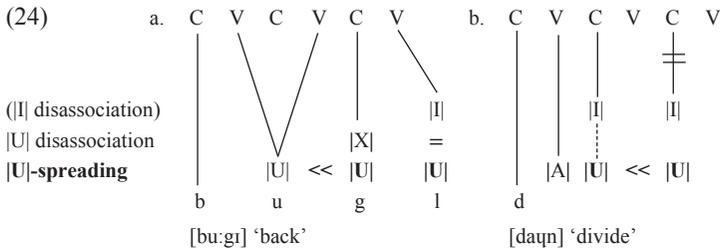
(X and Y represent any other element in the internal structure of C.)

Let us now consider (20b–c). *l*-lenition is a partial (20b) or total (20c) disassociation of the internal structure of /l/. Which part is disassociated depends on the identity of the segment immediately preceding /l/:¹²

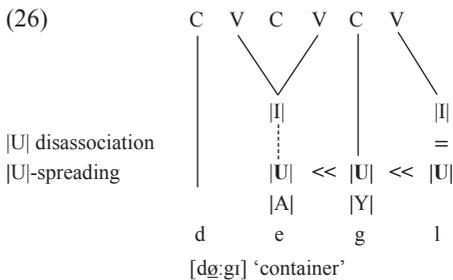
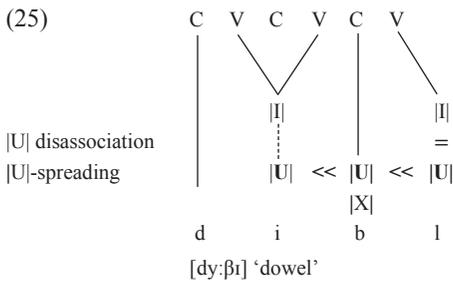
- (22) a. If the preceding segment contains [I], [I] is disassociated and disappears altogether. Otherwise, [I] remains associated.
 b. [U] is always disassociated and spreads to the left.

The configurations after vowel and consonant are represented in (23) and (24) respectively. (23/24a) show that if the preceding segment contains [U], only [I] remains associated. I assume [U] to disassociate from C and spread to the left, even though [U]-spreading is not visible since the preceding segment contains [U]. (23/24b) illustrate the situation after a segment containing [I], namely [I] is disassociated, and [U] spreads to the left. [U]-spreading is visible on the surface.





Finally, the configurations where |U| spreads at a distance are represented in (25). Note that for this process to take place, the intervening segment must contain |U|. This supports an analysis in terms of spreading rather than harmony.



According to this analysis:

- |I| must be disassociated if preceded by |I|. I take this to result from an OCP/dissimilation effect. (For a different instantiation of liquid dissimilation in Bavarian, see Hall 2009.)
- |U| behaves uniformly: it must always disassociate, and spread as far as it can to the left. Note the peculiarity of |A|, that resists rounding in the first part of the diphthong in (24b).¹³

Dissimilation does not apply between labials/velars and preceding |U|-vowels, as can be seen, for example, in [bu:ɡɪ] ‘back’. Neither does it

apply between *j* and preceding |I|-vowels, for example, [ʃjɪssŋ]¹⁴ ‘shoot’. Getting back to Backley’s observation that |I| and |U| do not easily combine, I propose that the dissimilation of *l* should be ascribed to this ‘difficulty in combining’: Upper Austrian German shows that in a language where |I| and |U| combine within a segment, this segment is unstable, and its internal structure is subject to disassociation. Note that in Upper Austrian German, *l*-lenition does not imply loss of elemental content altogether. Rather, the information on the internal structure of /l/ is recoverable from the context.

Conclusion: a phonological process?

We are now in a position to evaluate the status of *l*-lenition in Upper Austrian German: is it a synchronically active phonological process?

The problem

Recall that the absence of vowel-alternation in pairs like [mœ:] ‘flour’, [mœ:lig] ‘tasting like flour’ casts doubt on the assumption of underlying /l/ in this type of forms: do we need to posit underlying /e:l/ in [mœ:], or is /œ:/ the underlying vowel? Kaye and Pöchtrager (2015) argue in favour of this second option. They state that both rounding of the preceding vowel and ‘the case of intrusive *l*’ are not phonological: ‘*schnell* [ʃnœ:] ‘fast’ / *schneller* [ʃnœlɐ] ‘faster’ are different lexical entries [...] and thus not derived from each other’. I do not question the fact that *schnell* and *schneller* are two lexical entries – all forms are lexical entries, even if they are productively derived from another form. However, this does not mean that we must get rid of phonology entirely, and that the underlying representations are identical with the surface realisations of the lexical entries under consideration.

The argument

The behaviour of /l/ after a consonant reveals two salient facts that suggest that the issue should be revisited, and that a phonological analysis should not be discarded. First, the realisations of /l/ obey the same generalisations post-consonantly and post-vocally. Second, /l/ triggers a stem-vowel alternation at a distance, whose pattern is identical with the one observed locally in (post-vocalic) coda position. The fact that the processes after vowel, after consonant, and at a distance obey the same regularity supports the analysis of *l*-lenition as a phonologically active phenomenon. A lexicalist view seems to miss this parallelism.

In addition, the process applies irrespectively of the morphological status of /l/: diminutive *-l* and class marker *-l* behave on a par with respect to the realisation of /l/ and rounding (crucially, not with respect to Umlaut). I take this fact to indicate that *l*-lenition is a phonological process.

Finally, Kaye and Pöchtrager (2015) note that ‘Crucially no kind of suffixation would help to recover the correct UR, acquisition is only possible if child knows the standard’. *ɐL*-diminutives systematically reveal the underlying identity of the stem-vowel. The child does not need to know Standard German to decide on the identity of the stem-vowel: s/he knows that [dɔ:gr] ‘container’ alternates with [dɛ:grɐL] ‘small container’, and that [dʏ:βr] ‘dowel, bump’ alternates with [dʏ:βɐL] ‘small dowel, bump’. One can hypothesise that s/he will learn this rule quite early since diminutives are particularly widespread in baby talk.

Notes

1. This chapter is dedicated to Monik Charette whose inspired work on vowel harmony, elements, and licensing has shaped phonological thinking in and beyond the Government Phonology framework. I thank Connor Youngberg for inviting me to contribute to this book, and for valuable comments on this chapter.
2. Abbreviations: INF = infinitive, COND = conditional, DIM = diminutive, IPF = imperfective, SBJ = subjunctive, N = noun, ADJ = adjective.
3. In this chapter I use ‘*l*-lenition’ instead of ‘*l*-vocalisation’: as will become apparent, /l/ does not always surface as a vowel in the data under discussion.
4. See Kaye et al. (1985, 308) and subsequent work for the marked character of the combination of [l] and [ʊ].
5. Upper Austrian German does have [a], for example, [ba:m] ‘tree’. Interestingly the only [a] sequences I could find appear in loanwords, for example, [a:l] ‘eel’. Upper Austrian German [l] thus seems to be incompatible with preceding |A|. I get back to this observation in Note 8.
6. Djabbari et al. (2010) note that ‘there also exists a vocalic variant of syllabic /l/ which occurs after labial consonants.’ However, they do not go into more detail concerning the distribution and the phonological effects of this ‘vocalic variant.’
7. See, for example, Kranzmayer (1956, 124), Hall (2009), and Noelliste (2017, 167) for the realisation of this segment in different Bavarian languages.
8. *ɔ* ~ *a* alternations are also observed in (i). However, they cannot straightforwardly be analysed as /a/ being rounded to [ɔ] in the context of /l/, because they also obtain in the absence of /l/ (ii).

	<i>noun</i>	<i>diminutive</i>	
(i) <i>l</i> -final	[gɔ:βr]	[ga:βɐL]	‘fork’
	[ɔpfi]	[apfɐL]	‘apple’
(ii) not <i>l</i> -final	[hɔ:z]	[ha:zɐL]	‘rabbit’
	[bɔ:x]	[baxɐL]	‘stream’

These alternations involve additional complications related to the status of |A| in Upper Austrian German. Standard German [a] and [al] regularly correspond to Upper Austrian German [ɔ] and [ɔl], for example, [dax] versus [dɔx] ‘roof’, [bal] versus [bɔl] ‘ball’. However, Upper Austrian German does have [a], for example, [ba:m] ‘tree’. It thus seems to be the case that Upper Austrian German [l] is incompatible with preceding |A|. In addition, |A| resists the process of rounding at a distance triggered by /l/: daʊn, *dɔʊn ‘divide’.INF, kãʊm / kãmpɪ,*kãmpɪ ‘comb’ / ‘comb’.DIM. Clearly, more research on the status of |A| in Upper Austrian German is needed. For various cross-linguistic generalisations on |A|, cf. Pöchtrager (2006).

9. In addition, both suffixes sometimes trigger stem-vowel shortening. This alternation is outside the scope of this chapter. For details and an analysis in terms of Lowenstamm (2008), cf. Bendjaballah (2008).
10. If rounding is a phonologically active rule, it should not be restricted to *l*-final nouns: it should apply irrespectively of the morphological status of /l/, and we expect it to take place in (lexicalised) *l*-diminutives, too. Given the context during which this chapter was written, I could not conduct fieldwork and test this prediction. For a recent discussion of ‘vowel dissimilation’ in Bavarian, see, for example, Noelliste (2017, 146ff.).
11. On licensing conditions, see among many others Harris (1990), Charette (1991), Cyran (2010).
12. See Charette and Göksel (1996) for the analysis of various harmony processes in Turkic languages where [l] and [ʉ] are involved in an asymmetrical fashion.
13. See also Note 8.
14. Some native speakers perceive [j] as a lower back vowel in this form, and would transcribe it as [ɤ]. This is probably related to the peculiar status of [A] in Upper Austrian German, and its resistance to rounding, cf. Note 8.

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