Zurich German

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Zurich German belongs to the High Alemannic subgroup of Alemannic, a dialect group forming part of Upper German (cf. Wiesinger 1983: 835). It is the dialect spoken in the city and in most parts of the canton of Zurich. According to recent census data, the canton of Zurich (whose area roughly coincides with the areal extension of Zurich German) has somewhat more than 1.2 million inhabitants, but since immigration both from other German-speaking areas and from more remote linguistic backgrounds plays an important role for the largest city and the largest canton of Switzerland, the number of speakers of Zurich German is certainly lower.

The sociolinguistic setting of German-speaking Switzerland may be characterized as an instantiation of diglossia. Indeed, Swiss German was used by Ferguson (1959) as one of the four defining languages for his coining of this term. This setting encompasses a complementary distribution of dialect and standard language, the latter being used in formal situations, for example as a subject and language of instruction in schools (cf. Rash 1998). The standard variety of German used in Switzerland, usually referred to as 'Swiss High German' (SCHWEIZERHOCHDEUTSCH), is basically identical to the standard varieties used in Germany and Austria, but displays (among other features) a number of phonetic peculiarities that are due to dialectal interference. In addition, this variety also exhibits some features of spelling pronunciation (cf. Hove 2002: 134–136). The phonetic characteristics of Swiss High German will not be addressed in this contribution, which is concerned with the description of the Zurich dialect.

The speech in the recording is that of a 67-year-old male from the town of Meilen, some 15 kilometers south-west of the city of Zurich. It represents the dialect of an older, linguistically somewhat conservative generation, a fact of which the speaker is well aware. The audio samples were obtained in the following way: for the first recording session, the speaker had at his disposal a list of lexical items and short phrases, which he spontaneously placed into meaningful utterances. In the second session, he had to read out lexical items or short phrases placed in a carrier sentence.

Consonants

	Bilabial	Labio-dental	Alveolar	Post-alveolar	Palatal	Velar	Glottal
Plosive	p b̥		t d̥			k ɡ̊	
Affricate		p͡f	t͡s	t͡ʃ		k͡x	
Nasal	m		n			ŋ	
Trill			r				
Fricative		f ɣ	s z̥	ʃ ʒ̊		x ɣ̊	h
Approximant		ʋ			j		
Lateral approximant			l				

p	ˈhuːpə	'hoot' (v)	f	ˈofə	'open' (a)
b̥	ˈhuːb̥ə	'bonnet'	ɣ	ˈoɣə	'oven'
t	ˈlɒtə	'lath'	s	ˈhɒsə	'hate' (v)
d̥	ˈlɒd̥ə	'store'	z̥	ˈhɒz̥ə	'hares'
k	ˈhɒːkə	'hook' (n)	ʃ	ˈtuːʃə	'exchange' (v)
ɡ̊	ˈhɒːɡ̊ə	'fence in'	ʒ̊	ˈnuːʒ̊ə	'rummage' (v)
p͡f	ˈz̥oip͡fə	'soap'	x	ˈlɒxə	'laugh'
t͡s	ˈb̥ut͡sə	'clean' (v)	ɣ̊	ˈmɒɣ̊ə	'make'
t͡ʃ	ˈtæt͡ʃə	'clap' (v)	h	hɒnd̥	'hand'
k͡x	ˈhok͡xə	'sit'	l	ˈmɒːlə	'paint' (v)
m	ˈt͡sɒːmə	'tame' (pl.def)	r	ˈɣɒːrə	'drive' (v)
n	ˈt͡sɒːnə	'teethe'	ʋ	ʋɒnd̥	'wall'
ŋ	ˈt͡sɒŋə	'pliers'	j	jɒːr	'year'

The table of consonants displays only phonemes and does not contain allophones. For instance, the labiodental nasal [ɱ] occurs as a conditioned variant before a following labiodental. The uvular fricatives [χ] and [ʁ] appear as free variants of /x/ and /ɣ̊/, and there are several allophones of the phoneme /r/ – such as the alveolar tap [ɾ] and, more frequently, the uvular variants [ʀ], [ʁ], [ʁ̞] or [ʁ̥].

Words can begin with a vowel; i.e. in contrast to Standard German, initial vowels are not preceded by the glottal stop [ʔ], which occurs only marginally, for example, in the reinforced negation particle [ˈnœʔœ]/[ˈhœʔœ] 'nope'. Also in contrast to Standard German, unvoiced plosives before stressed vowels are not aspirated; rather, aspiration is lexically determined and typical of borrowed items, such as [pʰɒk͡x] 'parcel' or [tʰeː] 'tea'.

A striking structural feature of the Zurich German consonant system is that it completely lacks voiced obstruents; nevertheless, two series of homorganic obstruents are distinguished. Winteler (1876: 21) labeled the two series FORTIS and LENIS, using the Latin adjectives meaning 'strong' and 'soft', respectively. He pointed to articulatory strength (as well as to duration) as the phonetic correlate of the contrast. This terminology has been taken over by, among others, Sievers (1876: 65) and Dieth (1950: 174). Jakobson & Halle (1964: 99f.), quoting Winteler (1876), refer to the Swiss German consonantal pattern in order to illustrate tenseness and laxness with respect to consonants. Haas (1978: 311) proposes using the feature

[±long] instead of [±tense] to account for the phonological difference between fortes and lenes, arguing that duration is more easily detectable by instrumental analyses. Indeed, for Zurich German, Fulop (1994: 60) finds remarkable differences in closure duration between fortis and lenis stops. Similarly, Willi (1995: 263, 1996: 174) has shown that the segmental duration of intervocalic plosives is the relevant acoustic and perceptual cue that allows listeners to differentiate between the two series. For the closely related Thurgovian dialect, Kraehenmann (2001: 121–137, 2003: 102–168) has measured plosives and fricatives in other phonotactic contexts, and found that the underlying phonological distinction, which she views as an opposition between geminate and singleton consonants, 'correlates with phonetic sound duration' (Kraehenmann 2003: 166). In the present description, the terms 'fortis' and 'lenis' are employed in accordance with their traditional definition. Thus, the terms refer to two phonologically distinct series of homorganic obstruents that are both unvoiced, meaning that a feature other than [±voiced] is the phonetic correlate of the distinction; they are not used in line with a broader interpretation that has been proposed in more recent work (cf., for instance, Kohler 1984, Jessen 1998).

Many differing transcription conventions to represent the two series of obstruents are found in the literature. For instance, the minimal pair consisting of the words for 'store' (displaying an intervocalic lenis plosive) and 'lath' (displaying an intervocalic fortis plosive) could be transcribed in different ways, as is illustrated in the following table:

	1	2	3	4	5	6	7	8
Lenis	ˈlɒdə	ˈlɒdə	ˈlɒdə	ˈlɒd̥ə	ˈlɒd̥ə	ˈlɒd̥ə	ˈlɒtə	ˈlɒtə
Fortis	ˈlɒtə	ˈlɒtːə	ˈlɒttə	ˈlɒtə	ˈlɒtːə	ˈlɒttə	ˈlɒtːə	ˈlɒttə

Lenes can be transcribed by using the symbols that stand for voiced obstruents in the IPA system, with or without a diacritic indicating the unvoiced quality, but also by the symbols that stand for unvoiced obstruents in the IPA system. Fortes can be transcribed by the simple symbols that stand for unvoiced obstruents in the IPA system, but also by doubling the respective symbols or by adding [ː]. Note that there is some potential for confusion, since a single symbol rendering an unvoiced obstruent in the IPA system is used by some authors to transcribe a fortis consonant, whereas others use it for a lenis. The situation is further complicated by the fact that different systems may be used for different phonotactic contexts (for instance, intervocalic fortis plosives are often represented by a doubled symbol, but by a single symbol when in initial position). In addition, fricatives are often not represented according to the same conventions as plosives.

Most of the possible systems illustrated in the above table have been adopted by different scholars: Nübling & Schrambke (2004) use system 2, Moulton (1986) employs system 3, Willi (1995, 1996) adopts system 4, Dieth (1950) sways between systems 4, 5 and 6, while Kraehenmann (2003) opts for system 8. In the present description, we adopt system 4 in the broad transcription, but use system 5 in the narrow transcription.
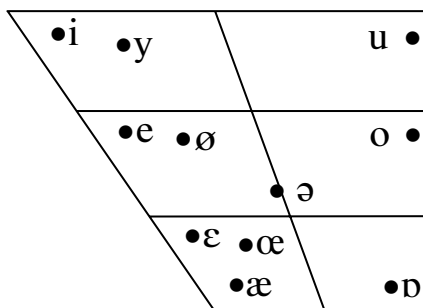
As regards the structure of the phoneme inventory, both the consonant chart and the word list show that the fortis–lenis contrast is regularly exploited for plosives and fricatives, whereas there is only a single series of affricates. Plosives occur as fortes and lenes in word-initial, word-internal and word-final position, whereas fricatives have a slightly more restricted phonotactic distribution: word-initially, they occur only as lenes (Dieth 1950: 360), but in both word-internal and word-final context, the fortis–lenis contrast is relevant (note, however, that /ʒ/ tends to occur only after long vowels, while /x/ only stands after short vowels).

There is no equivalent to the final devoicing process (AUSLAUTVERHÄRTUNG) of Standard German, since duration differences between fortis and lenis obstruents are preserved to a large extent in word-final position. In the closely-related Thurgovian dialect, contrast neutralization has been observed only phrase-internally (Kraehenmann 2003: 128).

With regard to fortis plosives and affricates, the core lexicon exhibits a structural asymmetry for velars: the phonemes /k/ and /k͡x/ appear mainly in word-internal and word-final contexts, as in [ˈhɒːkə] 'hook' (n), [ˈhɒk͡xə] 'to hack' and [ʒ̥næk] 'snail', [d̥ræk͡x] 'dirt'. Historically, this state of affairs is due to the fact that the initial Germanic *k- in High Alemannic (as opposed to most other High German dialects) was affected by the Old High German sound shift, originally giving rise to an initial velar affricate that was eventually simplified to a fricative, yielding, for instance, [ɣ̊ind̥] 'child' (cf. Standard German Kind). The phonemes /k/ and /k͡x/ may occur word-initially, but in native items only as instantiations of morphologically conditioned fortition, e.g. [k͡xæu̥ft] 'bought' as opposed to [ˈɣ̊æu̥fə] 'to buy' or [kɛː] 'given' as opposed to [ɡ̊ɛː] 'to give' (perceptually, the contrast is more salient in the prefixed forms [ˈɒːɡ̊ɛː] 'to state' as opposed to [ˈɒːkɛː] 'stated'). Morphologically underived word-initial [k] appears in French and English loanwords (e.g. [ˈkʊɒføːr] 'hairdresser', cf. French coiffeur, [kɒːr] 'coach' (n), cf. English car), while word-initial [k͡x] is typical of quite a number of loanwords from Standard German (e.g. [k͡xɒmp͡f] 'fight', cf. Standard German Kampf) and a few – presumably recent – borrowings from English, such as [k͡xuːl] 'cool (figurative sense)'.

The nasals /m/ and /n/ are allowed in all phonotactic contexts, but the velar nasal /ŋ/ does not occur in initial position (historically, this is due to the fact that /ŋ/, originally a conditioned variant of /n/ before /g/, became phonemicized after /g/ was dropped in these contexts). In intervocalic position, many Swiss German dialects have nasal geminates, whereas in traditional Zurich German, nasals are only short (e.g. [ˈhiməl] 'sky', [ˈb̥runə] 'well' (n), [ˈʒ̊tɒŋə] 'pole'). However, younger people tend to pronounce bilabial and velar nasals as long in this position, a phenomenon which seems to be particularly common before [ər] and [əl], e.g. [ˈhɒmːər] 'hammer', [ˈleŋːər] 'longer'; incidentally, the same differentiation may also apply to /l/, e.g. [ˈmylːər] 'miller'. This recent development may be due to influence from neighboring Swiss German dialects or may even be viewed as an instance of spelling pronunciation (many of the corresponding words are spelled with double consonant graphemes in Standard German, viz. Hammer, Müller, etc.). Note that our speaker produces rather short nasals in intervocalic position. By contrast, he lengthens /n/ in one realization of the word /ˈz̥unə/ → [z̥unː] 'sun' in order to compensate for the apocope of the unstressed vowel.

Vowels

i	ˈz̥ibə	'seven'	iː	ˈz̥iːbə	'sieve' (v)
e	ˈd̥enə	'these' (dat)	eː	ˈd̥eːnə	'stretch'
ɛ	hɛr	'mister'	ɛː	hɛːr	'from'
æ	ɡ̊æl	'isn't it?'	æː	ɡ̊æːl	'yellow'
y	ˈʋyli	'pen; foal'	yː	ˈʋyːli	'laziness'
ø	ˈb̥øɡ̊ə	'sheets (of paper)'	øː	ˈb̥øːkə	'fools'
œ	b̥lœf	'bluff' (n)	œː	ˈtœːrfə	'be allowed to'
u	b̥rux	'break' (n)	uː	b̥ruːɣ̊	'custom'
o	ˈholə	'fetch'	oː	ˈhoːlə	'hollow' (nom.sg.m.indef)
ɒ	ˈmɒnə	'men'	ɒː	ˈmɒːnə	'remind'
ə	ˈʒ̊ʋɛxə	'weaken'			

Zurich German has the eleven vowel qualities shown in the quadrilateral. In this analysis, the system distinguishes four degrees of height (close, close-mid, open-mid, open) and three series on the anterior vs. posterior axis (front, central, back). Additionally, lip-rounding is relevant for front vowels. In unstressed syllables, the core lexicon only contains [ə] and [i], as shown by the minimal pair [ˈʒ̊ʋɛxə] 'weaken' vs. [ˈʒ̊ʋɛxi] 'weakness'. Other unstressed vowels may appear in borrowings, e.g. [ˈb̥ɒmb̥us] 'bamboo', [ˈkɒb̥ɒre] 'cabaret', [ɣoˈrælə] 'trout', etc. The schwa vowel [ə] is restricted to unstressed syllables.

Traditionally, a further series of phonemes between the close and close-mid series is assumed, which would add /ɪ ʏ ʊ/ and /ɪː ʏː ʊː/ to the inventory. Vowel systems containing such a full additional series are attested in the most clear-cut way for the Toggenburg dialect, as has been shown by Moulton (1973). The area of Toggenburg immediately borders the south-east of the Zurich German territory, the so-called Zurich Highlands, for which Weber (1923: 43) presents data illustrating near-minimal pairs such as [ˈiɡ̊əl] 'hedgehog' vs. [ˈrɪɡ̊əl] 'bolt'. According to Keller (1961: 37, 39, 40, 41), minimal pairs such as [tyːr] 'expensive' vs. [tʏːr] 'dry' exist in the whole of the Zurich German territory with the exception of the north-eastern Winterthur area. However, the additional vowel series seems about to disappear, as is also noted in the popular account by Schobinger (2000: 118); as a matter of fact, our speaker does not produce it.

Phonetically, short [i y u] are only slightly lower than their long counterparts, as shown by the formant measurements in Schmid (2004: 110f.). For this reason, short and long high vowels are represented by the same symbols here, whereas in the narrow transcription the appropriate diacritic [˕] is used.

In stressed syllables, all vowel qualities are used for both short and long phonemes with the exception of short [œ], which has only a marginal status. According to Keller (1961: 36), this vowel can occur only as a long phoneme, but it is reported before /r/ and /x/ by Weber (1964: 29) in some native items. One such example, not mentioned by Weber (1964: 29), would be [ˈhœrˌd̥øp͡fəl] 'potato', pronounced [ˈhɛrˌd̥øp͡fəl] by many speakers. In addition, short [œ] exists in English borrowings as a substitute for [ʌ], e.g. [b̥lœf] 'bluff' (n).

The short vowels /e/ and /ɛ/ were originally in complementary distribution, with [ɛ] only occurring before /r/ and /x/, but, as Moulton (1960: 164f.) has convincingly argued for the dialect of the city of Zurich, phonemicization of /ɛ/ has taken place through analogy and borrowing. Note that the corresponding long vowels easily form minimal pairs, e.g. /heːr/ 'army' vs. /hɛːr/ 'from'.

Quantity turns out to be an essential feature of the Zurich German vowel system. For almost all vowel qualities, minimal pairs only differentiated by length can be found, as is illustrated by the word list above.

As to distributional patterns, it can be observed that there is a tendency for short vowels in monosyllabic nouns to be followed by a fortis obstruent, but in the (often monosyllabic) imperative singular form, lenis obstruents occur regularly after short vowels, e.g. [heb̥] 'hold!', [b̥iz̥ rui̯g] 'be quiet!'. After long vowels, both lenis and fortis obstruents appear (with the

exception of /x/, which only appears after short vowels), e.g. [z̥nɒːk] 'midge', [z̥lɒːg̊] 'stroke', [z̥lɒːf] 'sleep' (n), [z̥nuːɣ] 'breath'.

Phonetically, the vowel quantity contrast is implemented by clear duration differences: duration measurements yield an average V/Vː ratio of .56 for stressed vowels of the same timbre. On the other hand, there are only slight height differences between short and long high vowels, and the contact pattern between short/long vowels and the following consonants seems to be the same (Schmid 2004: 111–113).

The degree of lip rounding of the low back vowel may vary to some extent among individual speakers, leading to [ɑ] as a free variant of the phoneme /ɒ/. The articulation of the central vowel [ə] is somewhat advanced compared to its Standard German equivalent.

Diphthongs are formed with the non-syllabic vowels [i̯ u̯ ə̯] as second elements, as illustrated by the following list:

ei̯	ɣrei̯	'free'	iə̯	niə̯	'never'	æu̯	æu̯	'also'
æi̯	næi̯	'no'	yə̯	myə̯d	'tired'	ou̯	ʒou̯	'pig'
oi̯	noi̯	'new'	uə̯	g̊uə̯	'cow'			

Originally, two diphthongs containing a mid rounded vowel as their first and [i̯] as their second element – transcribed as [øɪ] and [œɪ] by Keller (1961: 36) – were distinguished; one near-minimal pair would be [nøi̯] 'new' vs. [hœi̯] 'hay' (cf. Keller 1961: 42, Weber 1964: 31f.). In present-day Zurich German (including the variety used by our speaker), they seem to have merged into a single diphthong, transcribed here as [oi̯]. In addition to the diphthongs illustrated in the above list, a diphthong [u̯i] marginally occurs in exclamations such as [p͡fu̯i] 'uhg!'.

Sandhi

Zurich German has a somewhat 'opaque' phonetic surface, which results from the application of three general types of sandhi processes: the first two concern patterns of consonantal contact, whereas the third aims at hiatus avoidance by means of consonant epenthesis.

Firstly, the fortis vs. lenis contrast yields four possible contact patterns between obstruents: fortis # fortis, fortis # lenis, lenis # fortis and lenis # lenis. In all four patterns, the opposition between fortis and lenis obstruents is neutralized, as illustrated by the following examples displaying plosive # plosive contact: /əz̥ hæt tiə̯r/ → [əz̥ hæ‿tiə̯r] 'there are animals around', /əz̥ hæt d̥iə̯b̥/ → [əz̥ hæ‿tiə̯b] 'there are thieves around', /d̥ə z̥æb̥ tɒːg̊/ → [d̥ə z̥æp tɒːg̊] 'that day', /heb̥ d̥i/ → [hep ti] 'hold tight!'. The phonetic result of this neutralization has sometimes been viewed as 'half fortis' (Moulton 1986: 386); in our description, it is represented by the fortis symbols. Note that, in allegro speech, the first plosive may be unreleased, e.g. [d̥ə z̥æp̚‿tɒːg̊], [ˈhep̚‿ti]. If two lenis plosives share their place of articulation, the result is a fortis plosive, e.g. /z̥æb̥ b̥ild̥/ → [z̥æ‿pild̥] 'that picture'. In the case of /d̥/, the place of articulation is assimilated altogether (see below). Fortition also occurs in the case of plosive # fricative contact, e.g. /g̊ib̥ z̥i/ → [g̊ip si] 'give her' (acc), /z̥æb̥ g̊ind̥/ → [z̥æp xind̥] 'that child'. If the place of articulation is shared, an affricate emerges as the result of the assimilation, e.g. /d̥iə̯ z̥æb̥ ɣræu̯/ → [d̥iə̯ z̥æ‿p͡fræu̯] 'that woman'.

Secondly, according to a general phonological process of Zurich German, alveolar plosives and nasals assimilate their place of articulation to following labials and velars. This assimilation occurs not only within morphemes, as in [ˈkuŋɣi] 'jam' (cf. French *confiture*, Standard German *Konfitüre*), but even more frequently over morpheme and word boundaries, giving rise to a wide variety of internal and external sandhi phenomena (cf. Moulton 1986: 388–390, Féry & Meier 1993: 1096–1100). Three types of assimilation to the following consonant can be distinguished, depending on whether the process affects word-final /n/ (or /t/), /d̥/ or the cluster /nd̥/.

In the case of /n/, the sandhi process only implies assimilation with regard to the place of articulation. This can be shown with the nominative-accusative case form of the masculine singular indefinite article /ən/ in combination with different nouns: /ən b̥æʊ̯m/ → [əm b̥æʊ̯m] 'a tree', /ən ɣlus/ → [əŋ ɣlus] 'a river', /ən tʊrm/ → [ən tʊrm] 'a tower', /ən g̊o͡pf/ → [əŋ g̊o͡pf] 'a head'. Similarly, /t/ assimilates its place of articulation to a following obstruent across morpheme (and word) boundaries, e.g. /ʋælt/ + /b̥əˈryə̯mt/ → [ˈʋælpə͜ˌryə̯mt] 'world famous', /ʋælt/ + /frømd̥/ → [ˈʋæl͜p͡frømd̥] 'unworldly'.

More interesting are the assimilation processes in connection with word-final /d̥/, which can be illustrated with the negation particle /nød̥/ 'not' (our speaker sometimes uses the more traditional form /nyd̥/): /nød̥ ˈb̥ouə̯/ → [nø͜ˈpouə̯] 'not to construct', /nød̥ ɣil/ → [nø͜p͡fil] 'not much', /nød̥ d̥ɒː/ → [nø͜tɒː] 'not here', /nød̥ ʒ̊øːn/ → [nø͜t͡ʃøːn] 'not beautiful', /nød̥ g̊ɒː/ → [nø͜kɒː] 'not to go', /nød̥ ɣ̊oː/ → [nø͜kxoː] 'not to come'. As is evident from these examples, the assimilation of the place of articulation is accompanied by the fortition of lenis consonants, leading either to the 'fusion' of two lenes into one fortis or to the affrication of the following fricative. Before word-initial /m/, the assimilated plosive may be unreleased or may even lead to the glottalization of the nasal in allegro speech, e.g. /nød̥ ˈmɒ̯ə̯/ → [nøp̚ˈmɒ̯ə̯] or [nø͜ʔmɒ̯ə̯] 'not to do'. Glottalization is also observed word-internally, e.g. /ˈordnər/ → [ˈorʔnər] 'folder'.

Assimilation of word-final nasal + plosive clusters appears in cases like /hɒnd̥/ + /b̥ɒlə/ → [ˈhɒmˌpɒlə] 'ball of the thumb', /mər ʑind̥ myə̯d̥/ → [mər ʑimp̚ˌmyə̯d̥] 'we are tired', /ʑɒnd̥/ + /ˈɣ̊ɒʃtə/ → [ˈʑɒŋˌk͡xɒʃtə] 'sandpit', /mər hænd̥ g̊ælt/ → [mər hæŋ͜kælt] 'we have money'. In this case, regressive assimilation affects both the plosive and the nasal of the consonant cluster.

In all of the examples seen so far, assimilation applies only regressively. Only with sibilants may assimilation apply both progressively and regressively, when an alveolar fricative is assimilated to a postalveolar fricative, e.g. /iʒ̊ ʑi ˈkɒŋə/ → [ˈiʃi ˈkɒŋə] 'has she gone', /hæʒ̊ ʑi kseː/ → [ˈhæʃi kseː] 'have you seen her/them', /iʑ ʒ̊los/ → [i͜ʃlos] 'into the castle' (cf. Weber 1964: 42). Progressive assimilation seems to occur exclusively in the combination of verb-final /ʃ/ followed by the third person singular feminine/third person plural pronoun /ʑi/ 'she/her, they/them'; it is not produced by our speaker in the utterance recorded.

Finally, turning to the third category of sandhi phenomena, one can observe that a hiatus is often avoided by an alveolar nasal introduced between two vowels at a word boundary. This process is particularly common if the first vowel is schwa in an inflected part of speech: /ˈnumərə æi̯ʑ/ → [ˈnumərən͜æi̯ʑ] 'number one', /ɒn ˈb̥od̥ə ˈɒb̥ə/ → [ɒm ˈb̥od̥ən͜ˈɒb̥ə] 'down to the floor' (cf. Moulton 1986: 390f., Nübling & Schrambke 2004: 293f., 300f.). In some cases, this linking /n/ may be analyzed as a remnant of an older form containing a final /n/, e.g. /b̥in͜i/ 'am I' vs. /iɣ̊ b̥i/ 'I am' (cf. Standard German *bin ich* 'am I' and *ich bin* 'I am'). However, an epenthetic nasal also appears in contexts in which historically there has never been an /n/, e.g. /ʋo i/ → [ʋon͜i] 'when I'. Moreover, /n/ epenthesis depends on morpho-syntactic factors: it takes place predominantly after certain parts of speech, as has been pointed out by Ortmann (1998: 58–65) for High Alemannic in general.

In some cases, a linking /r/ is introduced instead of /n/. This is particularly common with some forms of the definite article (e.g. /d̥ə ɒlt mɒː/ → [d̥ər ɒl͜ʔmɒː] 'the old man') and with the pronoun [mə] 'one, we' (e.g. [mə g̊ɒːt] 'one goes', but [mər͜iʃ ˈt͡sfrid̥ə] 'one is satisfied'; cf. Moulton 1986: 391). In these cases, /r/ may be seen as a remnant of an older form containing final /r/ (at least if we allow for mutual influencing of the pronouns corresponding to Standard German *wir* 'we' and *man* 'one').

Sentence phonetics and prosody

The sandhi phenomena, as well as the lack of generalized [ʔ] before morpheme-initial stressed vowels, indicate a fundamental property of Zurich German (and of Swiss German generally):
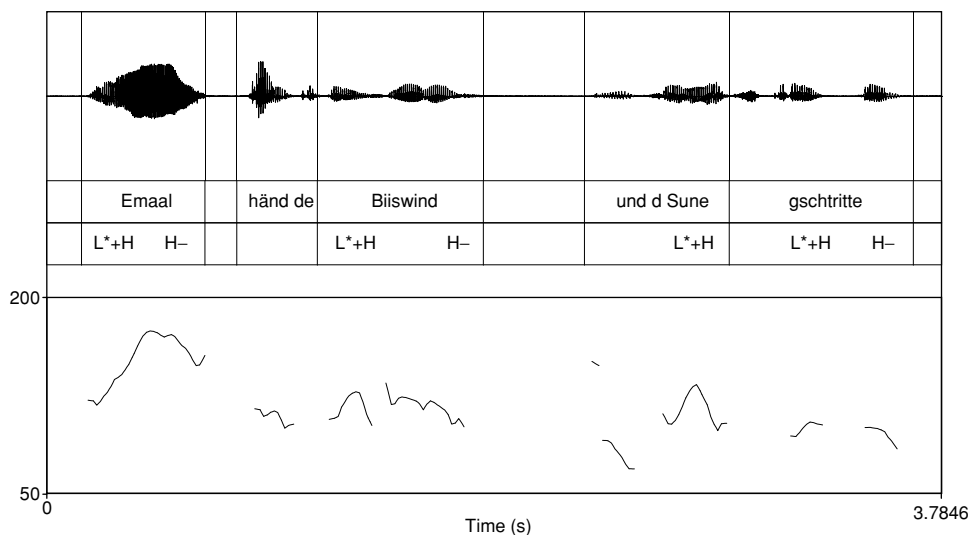
Figure 1 Low-rising pitch accents (from sentence 1 of the recorded passage).

post-lexical resyllabification regularly takes place (very much as in the Romance languages, but in contrast to Standard German), e.g. /min ˈuŋklə/ → [mi.ˈnuŋ.klə] 'my uncle'. In other words, neither word boundaries nor morpheme boundaries are phonologically relevant (cf. Moulton 1986: 385, Nübling & Schrambke 2004: 294).

As for lexical stress, Zurich German behaves in many respects like Standard German. In the core lexicon, word stress is basically assigned to the lexical root and is thus morphologically conditioned. In many cases, the root happens to be the first syllable, yielding a very high overall frequency of words stressed on the first syllable. Given this state of affairs, Zurich German also shows a preference for word-initial stress in loans and acronyms, e.g. [ˈhoʈel] 'hotel' or [ˈɛfɖeːpʰeː] 'FDP = Liberal Democratic Party'; in the corresponding words, Standard German has final stress. On the other hand, Zurich German displays final stress in some words where Standard German has initial stress, e.g. [moˈtoːr] 'motor'.

Owing to the morphological bias of stress assignment in native items, genuine prosodic regularities can be best observed in loan words. It seems to be the case that stress assignment is partially governed by syllable weight (cf. Kraehenmann 2003: 169–217 for the closely-related Thurgovian dialect), but there are some exceptions. For instance, [ˈlɒɓoːr] 'laboratory' displays initial stress although the final syllable is heavy, contrary to the above example [moˈtoːr] 'motor'.

Regrettably, not much is known about the intonation of Zurich German; Weber (1964: 52f.) offers at least some impressionistic observations. Still, evidence from the Bernese dialect (Fitzpatrick-Cole 1999) as well as from Swiss High German (Stock 2000, Ulbrich 2004) reveals some intonational patterns that are probably also typical of Zurich German. Compared to (northern) Standard German, Zurich German seems to display a larger overall F0 range with a greater number of pitch movements, the default pitch accent consisting of a low-rising contour, as illustrated by figure 1, which is the first clause of the recorded passage.

With regard to phrasing and timing, typical features of our speaker are a relatively strong lengthening of phrase-initial syllables, a pattern that also appears in a less clear-cut way in

phrase-final syllables, and a rather low speech rate (cf. Siebenhaar, Forst & Keller 2004: 232f.).

Transcription

Narrow transcription of recorded passage

d̥ə ˈb̥iːz̥ ʋi̥nd̥ ṷn ˌˈt͡sṵnə ‖

ə̍ˈmɒːl hæn ˌtə ˈb̥iːz̥ ʋi̥nd̥ ṷn ˌˈt͡sṵnə ˈkʃtri̥tːə | ʋɛːr ʋo ˈb̥æi̥ʔnə d̥ɒz̥ æχ tə ˈʃtɛrɣ̊ər z̥ei̥ɡ̊ ‖ d̥ɒ ɡ̥ṷnt ə ˌˈmːɒː d̥ət ˈhɛːʁ | ʋon ən ˈti̥k͡χə ˈmɒntl̩ ˈɒːkhɒ hæt̚ ‖ d̥o z̥i̥nt͡s ˈrœːtːi̥ɡ̊ ˈʋoːrd̥ə | d̥ɒs ˈtɛː d̥ə ˈʃtɛrɣ̊ər z̥ei̥ɡ̊ | ʋo d̥eː mɒː d̥əˈt͡sṵə̯ ˈb̥ri̥ŋi̥ | d̥ɒz̥ ər z̥i̥ ˌˈmːɒntl̩ ˈɒp̚ t͡si̥ə̯i̥ ‖ d̥ə ˈb̥iːz̥ʋi̥nd̥ | hæt ˈɒːɣɛ ˈb̥lɒːz̥ə z̥o ʋɛʃ ˌtɒz̥ ər hæ ˌˈk͡χønə | ˈɒb̥ər d̥ə ˈmɒː | hæ ˌʔnṵ d̥ə ˈmɒntl̩ ˈæŋər knɒː ‖ d̥o hæ ˌˈt͡sṵnə | ˈɒːɣɛ ˈʒ̊iːnə | ˈi̥mər ˈʋɛːrmər | b̥i̥s tə mɒː | d̥ə ˈmɒntl̩ ˈɒp̚ t͡soɡ̊ə hæt ‖ d̥o hæ ˌtə ˈb̥iːz̥ ʋi̥m ˌˈʔmøz̥ə ˈt͡sṵə̯ɡ̊ɛː | d̥ɒs t͡sṵn | ˈʃtɛrɣ̊ər z̥ei̥ɡ̊ ˈʋed̥ər ɛːʁ ‖

Broad transcription of recorded passage

d̥ə ˈb̥iːz̥ ʋind̥ und̥ d̥ ˈz̥unə ‖

ə̍ˈmɒl hænd̥ d̥ə ˈb̥iːz̥ ʋind̥ und̥ d̥ ˈz̥unə ˈkʃtritə | ʋɛːr ʋo ˈb̥æi̥d̥nə d̥ɒz̥ æxt d̥ə ˈʃtɛrɣ̊ər z̥ei̥ɡ̊ ‖ d̥ɒ ɡ̥̊unt ən mɒː d̥ətˈhɛːr | ʋo n ən ˈtik͡χə ˈmɒntəl ˈɒːkhɒ hæt ‖ d̥o z̥ind̥ z̥ ˈrœːtiɡ ˈʋoːrd̥ə | d̥ɒz̥ d̥eː d̥ə ˈʃtɛrɣ̊ər z̥ei̥ɡ̊ | ʋo d̥eː mɒː d̥əˈt͡sṵə ˈb̥ri̥ŋi̥ | d̥ɒz̥ ər z̥in ˈmɒntəl ˈɒb̥ t͡si̥ə̯i̥ ‖ d̥ə ˈb̥iːz̥ ʋind̥ hæt ˈɒːɣɛ ˈb̥lɒːz̥ə z̥o ˈɣɛʃt d̥ɒz̥ ər hæt ˈɣ̊ønə | ˈɒb̥ər d̥ə mɒː hæt nu d̥ə ˈmɒntəl ˈæŋər knɒː ‖ d̥o hæt d̥ ˈz̥unə ˈɒːɣɛ ˈʒ̊iːnə | ˈi̥mər ˈʋɛːrmər | b̥iz̥ d̥ə mɒː d̥ə ˈmɒntəl ˈɒb̥ t͡soɡ̊ə hæt ‖ d̥o hæt d̥ə ˈb̥iːz̥ ʋind̥ ˈmyɣ̊z̥ə ˈt͡sṵə̯ɡ̊ɛː | d̥ɒz̥ d̥ z̥un ˈʃtɛrɣ̊ər z̥ei̥ɡ̊ ˈʋed̥ər ɛːr ‖

Orthographic version

In the Swiss German diglossic situation, dialect is usually not written (if we disregard the special genre of dialect literature and some types of informal written texts in electronic communication such as e-mail, chat and SMS text messages, in which the use of written dialect is especially popular among the younger generation). There is no officially recognized standard orthography of Zurich (or Swiss) German. Our 'orthographic version' follows the proposals of Dieth & Schmid-Cadalbert (1986), as does the popular account by Schobinger (2004). The most important points to be aware of are: long vowels are rendered by doubling the respective vowel grapheme (thus, *e* = /e/, *ee* = /eː/); openness of vowels is rendered by the grave accent, thus, *e* = /e/, *è* = /ɛ/; schwa is represented by *e* (as in the Standard German orthography).

De Biiswind und d Sune
Emaal händ de Biiswind und d Sune gschtritte, wèèr vo bäidne das ächt de schtèrcher seig. Da chunt en Maa dethèèr, won en ticke Mantel aaghaa hät. Doo sind s ròòtig woorde, das dèè de schtèrcher seig, wo dèè Maa dezue bringi, das er sin Mantel abziei. De Biiswind hät aafè blaase so fescht das er hät chöne, aber de Maa hät nu de Mantel änger gnaa. Doo hät d Sune aafè schiine, imer wèèrmer, bis de Maa de Mantel abzoge hät. Doo hät de Biiswind müese zuegèè, das d Sun schtèrcher seig weder èèr.

Acknowledgements

References

DIETH, E. (1950). *Vademekum der Phonetik. Phonetische Grundlagen für das wissenschaftliche und praktische Studium der Sprachen. Unter Mitwirkung von Rudolf Brunner*. Bern: Francke.

DIETH, E. & SCHMID-CADALBERT, C. (1986). *Schwyzertütschi Dialäktschrift. Dieth-Schreibung* (2. Auflage. Bearbeitet und herausgegeben von Christian Schmid-Cadalbert). Aarau: Sauerländer.

FERGUSON, CH. F. (1959). Diglossia. *Word* **15**, 325–340.

FÉRY, C. & MEIER, C. (1993). Coronal assimilation and underspecification in Zurich German. *Linguistics* **31**, 1095–1109.

FITZPATRICK-COLE, J. (1999). The alpine intonation of Bern Swiss German. *Proceedings of the 14th International Congress of Phonetic Sciences*, 941–944. Berkeley: University of California.

FULOP, S. (1994). Acoustic correlates of the fortis/lenis contrast in Swiss German plosives. *Calgary Working Paper in Linguistics* **16**, 55–63.

HAAS, W. (1978). *Sprachwandel und Sprachgeographie. Untersuchungen zur Struktur der Dialektverschiedenheit am Beispiel der schweizerdeutschen Vokalsysteme*. Wiesbaden: Steiner.

HOVE, I. (2002). *Die Aussprache der Standardsprache in der deutschen Schweiz*. Tübingen: Niemeyer.

JAKOBSON, R. & HALLE, M. (1964). Tenseness and laxness. In Abercrombie, D. et al. (ed.), *To Honour Daniel Jones*, 96–101. London: Longmans.

JESSEN, M. (1998). *Phonetics and Phonology of Tense and Lax Obstruents in German*. Amsterdam: Benjamins.

KELLER, R. E. (1961). *German Dialects: Phonology and Morphology with Selected Texts*. Manchester: Manchester University Press.

KOHLER, K. (1984). Phonetic explanation in phonology: the feature fortis/lenis. *Phonetica* **41**, 150–174.

KRAEHENMANN, A. (2001). Swiss German stops: geminates all over the word. *Phonology* **18**, 109–145.

KRAEHENMANN, A. (2003). *Quantity and Prosodic Asymmetries in Alemannic: Synchronic and Diachronic Perspectives*. Berlin & New York: Mouton de Gruyter.

MOULTON, W. G. (1960). The short vowel systems of Northern Switzerland: a study in structural dialectology. *Word* **16**, 155–182.

MOULTON, W. G. (1973). Vowel systems with five heights. In Scholler, H. & Reidy, J. (eds.), *Lexicography and Dialect Geography: Festgabe for Hans Kurath*, 187–194. Wiesbaden: Steiner.

MOULTON, W. G. (1986). Sandhi in Swiss German dialects. In Andersen, H. (ed.), *Sandhi Phenomena in the Languages of Europe*, 385–392. Berlin & New York: de Gruyter.

NÜBLING, D. & SCHRAMBKE, R. (2004). Silben- vs. akzentsprachliche Züge in germanischen Sprachen und im Alemannischen. In Glaser, E. et al. (ed.), *Alemannisch im Sprachvergleich*, 281–320. Wiesbaden: Steiner.

ORTMANN, A. (1998). Consonant epenthesis: its distribution and phonological specification. In Kehrein, W. & Wiese, R. (eds.), *Phonology and Morphology of the Germanic Languages*, 51–76. Tübingen: Niemeyer.

RASH, F. (1998). *The German Language in Switzerland: Multilingualism, Diglossia and Variation*. Bern: Lang.

SCHMID, S. (2004). Zur Vokalquantität in der Mundart der Stadt Zürich. *Linguistik online* **20**, 93–116. <http://www.linguistik-online.de/20_04/schmid.html>.

Schobinger, V. (2000). *Säit me soo oder andersch? Dialäkt zum naaschlaa wien im wörterbuech*. Züri: Schobinger.

Schobinger, V. (2004). *Züritüütsch läsen und schriibe. Züritüütschi ortografii*. Züri: Schobinger.

Siebenhaar, B., Forst, M. & Keller, E. (2004). Prosody in Bernese and Zurich German: What the development of a dialectal speech synthesis system tells us about it. In Gilles, P. & Peters, J. (eds.), *Regional Variation in Intonation*, 219–238. Tübingen: Niemeyer.

Sievers, E. (1876). *Grundzüge der Lautphysiologie zur Einführung in das Studium der Lautlehre der indogermanischen Sprachen*. Leipzig: Breitkopf & Härtel.

Stock, E. (2000). Zur Intonation des Schweizerhochdeutschen. In Habermann, M., Müller, P. & Naumann, B. (eds.), *Wortschatz und Orthographie in Geschichte und Gegenwart. Festschrift für Horst Haider Munske zum 65. Geburtstag*, 299–314. Tübingen: Niemeyer.

Ulbrich, C. (2004). A comparative study of declarative intonation in Swiss and German standard varieties. In Gilles, P. & Peters, J. (eds.), *Regional Variation in Intonation*, 99–122. Tübingen: Niemeyer.

Weber, A. (1923). *Die Mundart des Zürcher Oberlandes*. Frauenfeld: Huber.

Weber, A. (1964). *Zürichdeutsche Grammatik. Ein Wegweiser zur guten Mundart. Unter Mitwirkung von Eugen Dieth*. Zürich: Rohr. [First edition 1948, second edition 1964, reprint 1987.]

Wiesinger, P. (1983). Die Einteilung der deutschen Dialekte. In Besch, W., Knoop, U., Putschke, W. & Wiegand, H. E. (eds.), *Dialektologie. Ein Handbuch zur deutschen und allgemeinen Dialektforschung*, 807–900. Berlin & New York: de Gruyter.

Willi, U. (1995). 'Lenis' und 'fortis' im Zürichdeutschen aus phonetischer Sicht. In Löffler, H. (ed.), *Alemannische Dialektforschung. Bilanz und Perspektiven*, 253–265. Tübingen & Basel: Francke.

Willi, U. (1996). *Die segmentale Dauer als phonetischer Parameter von 'fortis' und 'lenis' bei Plosiven im Zürichdeutschen. Eine akustische und perzeptorische Untersuchung*. Stuttgart: Steiner.

Winteler, J. (1876). *Die Kerenzer Mundart des Kantons Glarus in ihren Grundzügen dargestellt*. Leipzig: Winter.