Phonologically Conditioned Allomorphy in the Morphology of Surmiran (Rumantsch)

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1. "Rhaeto-Rumantsch":

	Swiss Rumantsch			
Engadine	Central	Western	Dolomitic Ladin	Friulian
Puter	Surmiran	Sursilvan	Gardena	Friulian
Vallader	(Bergün)		Gadera	
(Val Müstair)	(Obervaz)		Fassa	
	Sutsilvan		Livinallongo	
			Ampezzo	

2. Six conjugational classes in Surmiran:

Inf.	Example	1pl. Pres.	1sg. Subj.	1sg Imprf.	1sg Fut.	1sg Cond.	PPpl.
-ar [-ar]	*cantar* 'sing'	-agn	-a	-ava	-aro	-ess	-o/ada
-er [-er]	*lascher* 'leave'	-agn	-a	-eva	-aro	-ess	-ea/eda
-ier [-iər]	*spitgier* 'expect'	-agn	-a	-iva	-aro	-ess	-ia/eida
-eir [-ɛjr]	*tameir* 'fear'	-agn	-a	-eva	-aro	-ess	-ia/eida
-er [-ər]	*tanscher* 'reach'	-agn	-a	-eva	-aro	-ess	-ia/eida
-eir [-ejr]	*parteir* 'depart'	-ign	-a	-iva	-iro	-iss	-ia/eida

3. *cantar* 'sing' (Pres. Indic.):

1sg	(ia) cant	[kant]
2sg	(te) cantas	[ˈkantəs]
3sg	(el) canta	[ˈkantə]
1pl	(nous) cantagn	[kənˈtaɲ]
2pl	(vous) cantez	[kənˈtɛʦ]
3pl	(els) cantan	[ˈkantən]

4. Some (of the many) irregular verbs:

	eir 'go'	*neir* 'come'	(*vu*)*leir* 'want'	*deir* 'say'	*star* 'stay, live'	*saveir* 'know'
1sg	vign	vign	vi	dei	stung	sa
2sg	vast	vignst	vot	deist	stast	sast
3sg	vo	vign	vot	dei	stat	so
1pl	giagn	nign	lagn	schagn	stagn	savagn
2pl	gez	niz	lez	schez	stez	savez
3pl	von	vignan	vottan	deian	stattan	son

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5. "Alternating" verbs:

	ludar 'praise'	*durmeir* 'sleep'	*lavar* 'get up'	*fittar* 'finish'
1sg	lod	dorm	lev	fet
2sg	lodas	dormas	levas	fettas
3sg	loda	dorma	leva	fetta
1pl	ludagn	durmign	lavagn	fittagn
2pl	ludez	durmiz	lavez	fittez
3pl	lodan	dorman	levan	fettan

6. Forms (apparently) based on the stem of the infinitive:

	ludar 'praise'	*durmeir* 'sleep'	*lavar* 'get up'	*fittar* 'finish'
1sg	loda	dorma	leva	fetta
2sg	lodas	dormas	levas	fettas
3sg	loda	dorma	leva	fetta
1pl	lodan	dorman	levan	fettan
2pl	lodas	dormas	levas	fettas
3pl	lodan	dorman	levan	fettan
2sg Imperative	loda!	dorma!	leva!	fetta!

7. Forms (apparently) based on the 1sg Present Indicative stem:

infinitive:	ludar	durmeir	lavar	fittar
1pl Pres.	ludagn	durmign	lavagn	fittagn
1sg Imperf.	ludeva	durmiva	laveva	fitteva
1sg Fut.	ludaro	durmiro	lavaro	fittaro
1sg Condit.	ludess	durmiss	lavess	fittess
2pl Imper.	lude!	durmi!	lave!	fitte!
Pres. Ppl.	ludond	durmond	lavond	fittond

8. "Fifth conjugation" verbs (infinitive in [–ər]): e.g. *discorrer* [dɪʃˈkorər] 'speak'; 1sg Present *discor*; 1pl Present *discurrign*

9. Conclusion: The choice of stem is not determined by Morphosyntactic features (as for genuinely suppletive irregular verbs). Instead, one stem is used when main stress falls on the desinence (as in 1pl, 2pl present indicative and the other forms in 6) while the other is used when main stress falls on the stem itself (as in 7).

10. Stress (approximately): Main stress falls on the penult if the rhyme of the final syllable consists of [ə], possibly followed by [r], [l] [n] or [s]. If the final syllable contains a full (non-ə) vowel, or ə followed by some other consonant, it takes the main stress.

11. Build a quantity-sensitive trochee at the right edge of the word.

12. Secondary stress falls on initial syllables separated by at least one syllable from the main stress; parts of compounds are stressed separately with main stress on the stress center of the final element. Other secondary stresses appear to be the result of cyclic word formation, although the principles at work have not yet been fully worked out.

13. Vowel reduction (approximately): Stressed syllables can contain a variety of vowels and diphthongs. Unstressed syllables contain only short [ə] (written *a* or *e*), [ɪ] (*i*) or [ʊ] (*u*). Could the stem alternation just be phonological vowel reduction?

14. Unstressed [ə] in a stem can alternate with any of several vowels:

Stressed V	Infinitive	3sg Pres. Indic.	gloss
[a]	*l[ə]var*	*lava*	'wash'
[aɪ̯]	*[ə]ntrar*	*aintra*	'enter'
[ɛ]	*t[ə]dlar*	*tedla*	'listen'
[e]	*l[ə]var*	*leva*	'get up'
[ɛɪ̯]	*p[ə]sar*	*peisa*	'weigh'
[eɪ̯]	*antsch[ə]dar*	*antscheida*	'start yeast'
[i]	*surv[ə]gneir*	*survign*	'receive'
[o]	*cl[ə]mar*	*cloma*	'call'

15. The same is true for unstressed stem i]:

Stressed V	Infinitive	3sg Pres. Indic	gloss
[a]	(*sa*) *tgil[ɪ]ttar*	*tgilatta*	'sit down (scornfully, as of a cat)'
[aɪ̯]	*spisg[ɪ]ntar*	*spisgiainta*	'feed'
[ɛ]	*p[ɪ]glier*	*peglia*	'take'
[e]	*ff[ɪ]mar*	*fema*	'smoke'
[eɪ̯]	*anv[ɪ]dar*	*anveida*	'invite'
[i]	*tg[ɪ]rar*	*tgira*	'guard'
[iə̯]	*s[ɪ]var*	*sieva*	'sweat'
[o]	*dum[ɪ]gnar*	*dumogna*	'dominate'

16. And also for unstressed stem [u]:

Stressed V	Infinitive	3sg Pres. Indic.	gloss
[a]	*v[ʊ]rdar*	*varda*	'watch'
[ɔ]	*d[ʊ]rmeir*	*dorma*	'sleep'
[o]	*cr[ʊ]dar*	*croda*	'fall'
[oː]	*p[ʊ]ssar*	*pôssa*	'rest'
[oɪ̯]	*l[ʊ]ier*	*loia*	'arrange'
[oʊ̯]	*ram[ʊ]rar*	*ramoura*	'roll, surge'
[u]	*p[ʊ]gnier*	*pugna*	'fight, box'

17. The data in 14, 15 and 16 also show that the correspondence between particular stressed vowels and their unstressed counterparts is non-unique. The same stressed vowel can correspond to more than one unstressed vowel (for [a] and [o], to all three). There is no stressed vowel whose unstressed correspondent is unique. Conclusion: **stem alternation cannot be reduced to the effects of a phonological rule of vowel reduction**.

18. Complex phonological developments over time (cf. Lutta 1923, pp. 120–136, Grisch 1939, pp. 76–94, Haiman & Benincà 1992, pp. 56–63), plus the influx of German words with vowels other than [ə, i, u] in unstressed syllables have made the original vowel reduction regularity opaque. Stem alternation is the morphologized remnant of that process.

19. In a number of verbs, *gn* ([ɲ]) or *ng* ([ŋ]) following the stressed vowel of the stressed alternant corresponds to *n* ([n]) in the unstressed alternant:

Infinitive	3sg Pres. Indic.	gloss
manar	*magna*	'lead'
cuschinar	*cuschigna*	'cook'
splanar	*splanga*	'plane'
amplunar	*amplunga*	'pile up'

20. Sometimes this is accompanied by vowel changes as well:

Infinitive	3sg Pres. Indic.	gloss
(*sa*) *sdanar*	(*sa*) *sdegna*	'shrink from doing s.t.'
(*s'*)*anclinar*	(*s'*)*anclegna*	'bend'
smarschanar	*smarschunga*	'loaf'

21. But the alternation is not predictable:

Infinitive	3sg Pres. Indic.	gloss
smanar	*smagna*	'swing'
anganar	*angiona*	'swindle'
scanar	*stgonal*/*scana*	'stab'

Again, originally phonological rules have become opaque, leaving a morphologized residue.

22. More complex alternation patterns:

Alternation	Infinitive	3sg Pres. Indic.	gloss
a–ə∼o–e	*flammager*	*flommegia*	'blaze'
e–ə∼ə–e	*declarar*	*daclera*	'declare'
i–i∼ə–e	*angivinar*	*angiavegna*	'solve'
i–i∼ə–e͡i	*misirar*	*maseira*	'measure'
i–i∼ə–i	*ghisignier*	*gasigna*	'taunt'
u–ə∼ə–o	*murmagner*	*marmogna*	'murmur'
u–ə∼ə–o͡i	*suarar*	*savoira*	'smell'
u–ə∼ə–u	*ruschanar*	*raschunga*	'speak'
u–∅∼ə–o͡u	*luvrar*	*lavoura*	'work'

23. Apparent metathesis (really V/∅ with subsequent epenthesis):

Infinitive	3sg Pres. Indic.	gloss
bargeir	*bragia*	'cry'
patarger	*patratga*	'think'
sgartar	*sgratta*	'scratch'
cresch[ə]r	1pl *carschagn*	'be brought up'
sgarmar	*sgroma*	'de-cream (milk)'
glisnarger	*glisnaregia*	'simulate'

24. A great many verbs in the 'productive' [-ar] and [-ejr] conjugations form their "stressed" stem with the extension *-esch*:

luschardar ([lužərˈdar]) 'strut':	1sg	luschardesch
	2sg	luschardeschas
	3sg	luschardescha
	1pl	luschardagn
	2pl	luschardez
	3pl	luschardeschan

As a result, of course, no vowel alternation occurs in these verbs.

25. Candidates for 3sg. pres. of *luschardar*: **luscharda*, **luscheirda*, **luschorda*, **laschurda*, **laschorda*, etc.

26. Verbs in *-esch* include many recent borrowings; verbs listed as alternating in Sonder & Grisch 1970 often appear in Signorell 1999 with *-esch*; when speakers cannot recall the correct alternation pattern for a given verb, they sometimes produce an *esch* form instead. Essentially, the *-esch* form is avoided when a correct alternation pattern is known.

27. Similar stem alternations appear in derivationally related forms:

ei̯∼ə	neiv	‘snow’	navada	‘much snow’
ei̯∼i	stgeir	‘dark (adj.)’	stgirantar	‘get dark’
ou̯∼u	pour	‘farmer’	puraglia	‘peasantry’
o∼u	fora	‘opening’	furela	‘entrance’
e∼i	fem	‘smoke’	fimera	‘dense smoke’

28. Typically, when a verb has “stressed” and “unstressed” stems, derivationally related forms will be built on one or the other, depending on where stress falls in the derived form.

ludar/loda ‘to praise’:			
(igl) lod	‘praise (n.)’	ludevel	‘praiseworthy’
clamar/cloma ‘to call’:			
(igl) clom	‘call (n.)’	(la) clamada	‘calling (n.)’
gartager/gartegia ‘to succeed’:			
(igl) gartetg	‘success’	malgartagea	‘ill brought up’
stimar/stema ‘attend to, value’:			
(la) stema	‘worth’	(la) stimadeira	‘valuation’

29. But in a significant number of forms, the “stressed” stem appears in a form where it does not take the stress.

ˈsfend[ər]/sfandagn	‘(to) split’	sfandia	‘cracked (adj)’	sfendibel	‘splittable’
durmeir/dorma	‘(to) sleep’	durmigliun	‘late riser’	dormulent	‘sleepy’
satger/setga	‘(to) dry [intr.]’	setg	‘dry (adj.)’	setgantar	‘(to) dry [trans.]’
acccumadar/ accumoda	‘adjust’	accumodabel	‘adjustable’	accumodamaint	‘adjustment’
accumpagner/ accumpogna	‘accompany’	accumpagneder	‘accompanist’	accumpognamaint	‘accompaniment’

These may result from cyclic application, with stem choice taking place on one cycle and further morphology (and alteration of stress pattern) taking place on a later cycle (cf. Kamprath 1987 for discussion of motivations for cyclic interaction in a closely related form of Rumantsch).

30. The “stressed” stem in *-esch* never shows up except in verbal inflection. Verbs that take *-esch* in the stem-stressed forms always use the “unstressed” stem as the base for derivation (e.g., *fixar*/*fixescha* ‘fix, harden’; *fix* ‘fast, unmovable’, *fixaziun* ‘fixation’).

31. dueir ‘must, should’

    (a) Present indicative: 1pl. *duagn*, 2pl. *duez*; all singular forms and 3pl replaced by forms of stueir (suppletive: *ia stò, te stast, el stò; els ston*)

    (b) Subjunctive: missing

    (c) Other tenses: Imperfect (*ia dueva*, etc.), Conditional (*ia duess*, etc.), Future (*ia duaro*, etc.); Gerund (*duond*), Passt participle (*duia, dueida*) all formed normally.

    Generalization: All and only the forms built on “unstressed” stem exist and are constructed in completely regular fashion.

32. All other verbs of the shape C_0*ueir* are either completely irregular (e.g., *stueir* ‘must, should’) or use the stem extension *-esch* in the stem-stressed forms (e.g. *cueir* ‘allow’; *flueir* ‘flow’; *prueir* ‘sprout’, etc.). No modal or other auxiliary verbs use *-esch*. But there is otherwise no difference in the inflection of such verbs and ordinary lexical verbs. Generalization: *Dueir* is defective in having no “stressed” stem, and no valid model on which one can be constructed.

33. Some conclusions:

    (a) Although the stem alternations in Surmiran (and other Rumantsch languages) have their origin in strictly phonological processes, those have become opaque, and are now lost as phonological rules.

    (b) The residual allomorphy, however, is governed by a strictly phonological condition: one stem or the other is chosen depending on the location of main stress in the output form.

    (c) Unlike some instances of phonologically conditioned allomorphy, this pattern affects most content words in the language, not just a small set such as a few affixes, or the 'mobile diphthongs' of Italian (van der Veer & Booij to appear).

    (d) Since it is stems, not affixes that alternate, a sub-categorization solution (Paster to appear; Bye 2007 to appear) does not seem appropriate.

    (e) On the other hand, an approach that treats stem choice as purely optimization based on phonological conditions (as in Kager 2007, Rubach & Booij 2001) could have trouble with the fact that the choice of the 'wrong' stem would in some cases result in a perfectly well-formed word (cf. *vurdar*/*vard*).

    (f) Views that supplement phonological constraints with a stipulated ranking of alternants (Bonet, Lloret & Mascaró 2007, Wolf to appear) may have trouble with the same issue, and all OT solutions will have to deal with the fact that the defectiveness of *dueir* appears to consist in its having only one stem (the unstressed one).

34. Analysis:

    (a) Distinguish [a] *vs.* [ə], [i] *vs.* [ɪ], [u] *vs.* [ʊ]. The first member of each pair only appears in stressed position, the second only in unstressed position.

    (b) Stems have two (listed) alternants. In one of these the last vowel is from the set [ə, ɪ, ʊ], and in the other the last vowel is a full vowel or diphthong.

    (c) The constraints that associate full vowels with stressed syllables and reduced vowels with unstressed ones also function to choose one stem or the other on the basis of the location of main stress.

    (d) In stems of the form /XσC$_0$VC$_0$/∼/XσC$_0$v̆C$_0$/ with no following suffix (e.g. [sʊˈter], *[ˈsutər], from *sutarar*/*sutera* 'bury'), either stem would be well formed in terms of the relation between vowel quality and stress. For these cases, the alternant with a full vowel in the final syllable must be given priority. This might be stipulated, or it might follow from some aspect of the prosody.

    (e) **Rightmost:** The primary stressed syllable is at the right edge of the Prosodic Word.

35. (a) *cantar* 'sing', 3sg *canta*; *chintar* 'calculate', 3sg *chinta*; *cuntschier* 'tinker', 3sg. *cuntscha*

    (b) {/kənt/, /kant/}; {/kɪnt/, /kint/}; and {/kʊnʧ/, /kunʧ/}

36. *pudeir* 'can, be able to':

1sg	ia poss
2sg	te post
3sg	el pò
1pl	nous pudagn
2pl	vous pudez
3pl	els pon

37. Stems: {/pɔs/, /pʊd/}
    Listed: 2sg, 3sg and 3pl Present Indicative (/pɔst/, /pɔ/, /pɔn/)

38. Verbs in *-esch* only have an "unstressed" stem. The morphology includes a rule
    /X/ $\longrightarrow$ /Xɛʃ/ $\left[{}_{+\overline{\text{VERB}}} \right]$
    whose application is always dispreferred (by higher ranking **Max** or **Dep**) *except* when it would result in a prosodically preferred form, by avoiding stress on an unstressable vowel.

39. Similarly, *dueir* only has a single stem (/dʊ/). Where stress would fall on this stem, the effectively synonymous verb *stueir* is substituted.

40. Apparently, the constraints associating Vowel quality with stress (or its absence) outrank something that requires forms from the same paradigm, as opposed to ones from a semantically similar one: **Faith(Lexicalization)**.

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