GDRI Phonological Theory Agora 2016
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PTA Dataset Workshop on Height Harmony
15 October 2016

The goal of the PTA Dataset Workshop is to promote discussion and theory-oriented debate in an original way.

The idea is to collect a dataset and to ask participants to resolve the specific problems that it poses.

We think that this unprecedented (in linguistics) workshop format is an interesting way to challenge phonologists working within different frameworks to talk about the same empirical problems and directly confront the successes and underpinnings of their formal analyses.

The topic of this first Dataset Workshop will be **height harmony in German**. This topic is specially interesting in order to confront representational- *versus* operational-based approaches, and to study the relation between diachrony and synchrony in phonology, and the phonology-morphosyntax interface.

We invite one-page abstracts proposing a solution to the dataset below. Section 4 highlights the puzzle posed by the data, which should be given a solution.

LET'S GET OUR HANDS DIRTY!

1. Wandel
IE e > Germ i
Called Wandel, Wechsel, e-raising, u-umlaut, i-umlaut
Diachronic description only describes what happens, i.e. e > i. Doing this produces the following rule:
IE e > Germ i / __C_0 {i, j, u} and before any other vowel if __NC_{hom}, NN

The complementary context where "nothing happens" is more instructive:
IE e > Germ e / __C_0 {a, o, e} except before __NC_{hom}, NN

In other words, the diachronic event is IE /e/ > Germ /i/, and there is a synchronic process in Germ. that lowers /i/ to e, i.e. height harmony.

(1)

	lat	ohg	
__i	medius	mitti	middle
__u	securus	sihhur	sure

__a	edere	eʒʒan	to eat, inf.
__u	edo	iʒʒu	to eat, 1sg
__i	edis	iʒʒis	to eat, 2sg
__NC		bindan	to bind, inf.
__NN		svimman	to swim, inf.

2. Breaking (Brechung)

Germ i, u > ohg e, o / __C$_0$ {a, o, e} except before NN, NC$_{hom}$

Synchronically in ohg, complementary distribution of i, u and e, o:

e, o / __C$_0$ {a, o, e} except before NN, NC$_{hom}$

i, e / elsewhere

(2a)

i-e

	ohg	Modern German (IPA)	
__C	nem-an	neem-ən	to take, inf.
	nim-u	neemə	to take, 1sg
	nim-is(t)	nim-st	to take, 2sg
	nim-it	nim-t	to take, 3sg
	nem-eem	neem-ən	to take, 1pl
	nem-et	neem-t	to take, 2pl
	nem-ant	neem-ən	to take, 3pl
__LC	helf-an	hɛlfən	to help, inf.
	hilf-u	hɛlfə	to help, 1sg
	hilf-is(t)	hilfst	to help, 2sg
__NC	bint-an	bind-ən	to bind, inf.
	bint-u	bind-ə	to bind, 1sg
	bint-is(t)	bind-əst	to bind, 2sg
	sing-an	ziŋ-ən	to sing, inf.
	sing-u	ziŋ-st	to sing, 1sg
	sing-is(t)	ziŋ-t	to sing, 2sg
__NN	rinn-an	ʁin-ən	to flow, inf.
	rinn-u	ʁin-ə	to flow, 1sg

	rinn-is(t)	ʁin-st	to flow, 2sg

(2b)

u-o

	ohg	Modern German (IPA)	
__C	zugun	tsoogən	to drag, Pret. 3pl
	gi-zog-an	gə-tsoogən	to drag, Part.
__LC	scul-un	soll-t-ən (> weak)	shall, Pret. 3pl
	scolt-a	soll-t-ə (> weak)	shall, Pret. 3sg
__NC	gi-bund-an	gə-bund-ən	to bind, Part.
	gi-sung-an	gə-zuŋ-ən	to sing, Part.
__NN	gi-runn-an	gə-rɔn-ən	to flow, Part.

Special situation for the diphthong eo
Reminiscent of Breaking:
Germ eo > ohg iu / __C_0 {i, u, j, w} or any vowel if followed by NC_{hom}
That is, the complementary set where "nothing happens" again produces the familiar pattern:
Germ eo > ohg eo / __C_0 {a,o,e} except before NN, NC_{hom}
==> synchronically in ohg, there is /iu/ that gets lowered in relevant contexts.
There is no such diphthong in Mod. German anymore, its representative is the monophthong ii in all cases.

(2c)

iu-eo

	ohg	Modern German (IPA)	
__C	zeoh-an	tsiiən	to drag, inf.
	ziuh-u	tsiiə	to drag, 1sg
	ziuh-is	tsiist	to drag, 2sg
	ziuh-it	tsiit	to drag, 3sg
	zeoh-emes	tsiiən	to drag, 1pl
	zeoh-et	tsiit	to drag, 2pl
	zeoh-ant	tsiiən	to drag, 3pl
	ziuh!	tsiiə	to drag, imperative

3. Modern German situation
1. in ohg all high-vowel suffixes produce height harmony (1sg, 2sg, 3sg), but in Mod. German

only 2sg and 3sg do.

2. C-initial suffixes (2sg st, 3sg t) are preceded by schwa only after NC (not after LC, NN).

3. alternating verbs are a closed class.

4. this class is shrinking: the alternation in infrequent verbs is levelled out: for *fechten* "swordplay", most people will do *ich fechte, du fechtest, er fechtet* although the "correct" forms are *ich fechte, du fichst, er ficht*. There is a prefixed version anfechten "to contest sth." where the i-form resists: *das ficht ihn nicht an* "he's not concerned by that" (*das fechtet ihn nicht an* will be difficult, although surely occurs).

5. conditioning contexts are destroyed and 100% unretrievable in Mod. German (there is no form of anything that shows the original vowel or the original geminate):

a) all suffixal vowels are schwa.

b) NN is not a geminate anymore. Note that this is reflected by the Mod. German participle forms (ge-ronn-en) which show an o (as if height harmony were still in place but there were no geminate anymore), unlike NC items (where NC is still in place today) that have the original u (ge-bund-en).

4. 2sg-3sg conundrum

In Mod. German there is something going on in 2sg and 3sg, a mystery to everybody.

1. the e-i alternation that occurs only in 2sg and 3sg is not the only alternation produced by these morphemes.

2. there is also a-e (ä=[ɛ]): *ich halte, du hält-st, et häl-t, wir halten*, etc. "to hold". This class of verbs is also closed.

3. the enigma is the following distribution:

For verbs whose stem ends in t

a) verbs that in 2/3sg have a vowel that is different from the one in 1sg (and the other forms) take "short" 3sg zero.

b) verbs that have the same stem vowel all through (no alternation) take "long" 3sg ət.

The same effect is visible on 2sg, this time for all verbs (not just for those whose stem ends in t)

a) verbs that in 2/3sg have a vowel that is different from the one in 1sg (and the other forms) take "short" 2sg st (without schwa).

b) verbs that have the same stem vowel all through (no alternation) take "long" 2sg əst.

(3)

 2/3sg conundrum

	alternating verbs		non-alternating verbs	
a-ɛ	halt-ən	to hold, inf.	falt-ən	to fold, inf.
	haltə	to hold, 1sg	faltə	to fold, 1sg
	hɛlt-st	to hold, 2g	falt-əst	to fold, 2sg
	hɛlt	to hold, 3sg.	falt-ət	to fold, 3sg

	halt-ən	to hold, 1pl	falt-ən	to fold, 1pl
	etc.			

i-e	gelt-ən	to be valid, inf.
	geltə	to be valid, 1sg
	gilt-st	to be valid, 2sg
	gilt	to be valid, 3sg
	gelt-ən	to be valid, 1pl
	etc.	

Sources:

Braune, Wilhelm & Hans Eggers 1987. Althochdeutsche Grammatik. 14th edition Tübingen: Niemeyer.

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Scheer, Tobias 1995. Halbechte Rektion in germanischem Wandel und althochdeutscher Brechung. Linguistische Berichte 160: 470-511. WEB.