The role of perception in paradigm leveling and beyond

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Part I:
Introduction

Preliminaries and preview of argument

My definition

Paradigm leveling:

A type of analogical innovation/change that consists **only** of the elimination or reduction of **stem** allomorphy.

(where ‘allomorphy’ is understood broadly to refer to any kind of alternation in the phonological shape of a stem)

Examples and non-examples

Total leveling:

sing–singing: /ŋ/–/ŋg/ → /ŋ/–/ŋ/

Partial leveling I:

*sp**ea**k–sp**a**ke–sp**o**ken* → *sp**ea**k–sp**o**ke–sp**o**ken*

Partial leveling II:

Old English: *frēo**s**an–fro**r**en* → free**z**e–fro**z**en

<u>NOT</u> leveling I:

*thr**o**w–thr**e**w* → *thr**o**w–thr**o**w**ed***

<u>NOT</u> (paradigm) leveling II:

*eye–eye**n*** → *eye–eye**s***, etc.

Possible mechanisms of paradigm leveling

Grammatical

Proportional equations (word-and-paradigm)

Allomorph replacement (item-and-arrangement)

Changes in abstract (morpho)phonological rules + ‘lexical restructuring’ (item-and-process)

Paradigmatic assimilation (‘output-output’ constraints)

Extra-grammatical
‘associative interference’

in production (‘contamination’)

in perception (akin to folk etymology)

On the grammatical side…

I assume a ‘proportional’ model of morphological productivity/innovation (Paul 1886) because:

1. allomorph-replacement approaches fail utterly with changes that result in the creation of new allomorphs (partial leveling, etc.).

2. A proportional model makes interesting, testable, and largely correct predictions about what kinds of innovations should and should not occur.

Preview of argument, 1

Most cases of paradigm leveling are readily amenable to a ‘proportional’ account – i.e. to being understood as analogical spread of an existing, non-alternating paradigmatic pattern

BUT:

There are some attested levelings for which no proportional account is available. (**Part I**)

Preview of argument, 2

There are also cases of other types of analogical change – including extension of stem alternations – for which no proportional account is available. (**Part II**)

➡This speaks against the need for a leveling-specific mechanism – related, e.g., to a universal preference for ‘paradigm uniformity’ – and calls us instead to look for a general, supplementary mechanism of analogical change.

Preview of argument, 3

I argue that a **perceptual** mechanism, responsible – in my view – for many cases of folk etymology, can also account well for many instances of non-proportional leveling and extension of stem alternations.

Finally, I consider the secondary role that this perceptual mechanism might play in some changes where a proportional account is available.

Part II

‘Non-proportional’ paradigm leveling

Example 1:
Partial leveling in a subclass of OE weak verbs

West Saxon Old English	INF	Early WS 1/3SG PST	Later WS 1/3SG PST
‘narrate’	reċċan	r**ea**hte →	r**e**hte
‘shake'	cweċċan	cw**ea**hte →	cw**e**hte
‘afflict'	dreċċan	dr**ea**hte →	dr**e**hte
‘moisten’	leċċan	l**ea**hte →	l**e**hte
‘stretch’	streċċan	str**ea**hte →	str**e**hte
‘cover'	þeċċan	þ**ea**hte →	þ**e**hte
‘awaken’	weċċan	w**ea**hte →	w**e**hte

Example 2:
Leveling in OE long-stem fem. consonant-stem nouns with retention of affixal idiosyncrasy

	Early OE	Later OE	proportional model(s)?
NOM/ACC	bōc	bōc	
GEN	bēċ	bōce	✓
DAT	bēċ	bōc	X

Example 3:
Leveling of suffix ablaut in Anc. Gk. *i*-stem nouns

		Homeric	Doric
SG	**NOM**	*pol**i**-s	pol**i**-s
	ACC	*pol**i**-n	pol**i**-n
	GEN	*pol**e**-os	pol**i**-os
	DAT	*pol**ē**-i	pol**i**-i
	VOC	*pol**i**	pol**i**
PL	**NOM**	*pol**e**-es/*pol**ē**-es	pol**i**-es
	ACC	*pol**e**-ns	pol**i**-ns
	GEN	*pol**e**-ōn	pol**i**-ōn
	DAT	*pol**e**-si	pol**i**-si

Example 4:
WGmc leveling of suffix ablaut in -tVr- nouns

SG	Gothic	OHG
NOM/ ACC	brōþ**ar**	broud**er**
GEN	brōþ**r**s	broud**er**
DAT	brōþ**r**	broud**er**

Example 5:
OE leveling of suffix ablaut in M *n*-stem nouns

SG	Gothic	OHG	OE
NOM	gum**a**	gom**o**	gum**a**
ACC	gum**a**n	gom**o**n, -**u**n	gum**a**n
GEN	gum**i**ns	gom**e**n, -**i**n	gum**a**n
DAT	gum**i**n	gom**e**n, -**i**n	gum**a**n

Example 6:
Leveling of *s*-–*þ*- alternation in OHG demonstrative

Proto-Germanic demonstrative

sg	M	N	F
N	***s**a	*þat	***s**ō, ***s**jō
G	*þes(a)	*þes(a)	*þezōz
D	*þemmo	*þemmo	*þezāi
A	*þan	*þat	*þō(m)

OHG demonstrative

sg	M	N	F
N	**d**ër	daʒ	**d**iu
G	dës	dës	dëra
D	dëmu, dëmo	dëmu, dëmo	dëru
A	dën	daʒ	dea, dia, (die)

PGmc 3sg personal pronoun

sg	M	N	F
N	*iz	*it	***s**i
G	*is(a)	*is(a)	*izōz
D	*immo	*immo	*izāi
A	*in	*it	*ijō(m)

OHG 3sg personal pronoun

sg	M	N	F
N	ër	iʒ	sǐ, **s**iu
G	ës (is)	es (ie)	ira
D	imu, imo	imu, imo	iru
A	inan, in	iʒ	**s**ia, (**s**ie)

Proportional model for innovation in **M** but in **F**:

Example 7:
Leveling of root-vowel alternation in Gothic 2SG pronoun

	PGmc	Gothic
NOM	*þu	þu
DAT	*þ**i**z	þ**u**s
ACC	*þ**i**k	þ**u**k

Example 8:
OHG leveling of Gmc onset alternation in 2PL pronoun

	PGmc	OHG
NOM	*jūz	ir
GEN	*izwara	iuwēr
DAT	*izwiz	iu
ACC	*iz (?)	iuwih

Part III

Other ‘non-proportional’ analogical changes

Example 1: Extension in German of *i–u–ü* root-vowel alternation to *wissen* ‘know’

	late MHG	modern German
INF	wi33en	wissen
3SG PST IND	w**i**ste	w**u**s(s)te
3SG PST SBJV	w**i**ste	w**ü**s(s)te

Example 2: Extension of PST-internal ablaut alternation to OHG *tuon* ‘do’

PST	pre-PGmc	OHG
1/3SG IND	*d**e**dē	t**ë**ta
1PL IND	*d**e**dum	t**ā**tum
3/3SG OPT	*d**e**dī-	t**ā**ti

Part IV

A perceptual mechanism to account for (some) non-proportional analogical changes

Paul on the mechanism of folk etymology

> It is entirely normal that people do not perceive the words that they hear exactly, in accordance with their sound components, but rather partially guess at them, usually supported by the meaning expected from the context. Naturally, people's guesses favor sound complexes that are already familiar to them, and in this way a meaningless part of a larger word can – already at the first hearing – be displaced by a similar sounding common word. (1886: 183, translation from Fertig 2015: 219)

Hyper- and hypocorrective phonological reanalysis in folk etymology

Supposed morphological relatedness to similar-sounding words sometimes biases listeners'/learners' phonological analysis of forms that they hear.

Hypocorrective folk etymology

- Example:
  (non-standard) *upmost* for *utmost*

  - Speakers with mental representation /ʌt-/ often produce [ʌp-] due to coarticulation

  - Association of the first element of the compound with the word ***up*** biases learners toward taking [ʌp-] at face value.

More hypocorrective examples

- coda-liquid deletion
  German *Seehund* ← *see**l**hund*
  French *cresson à la noix* ← *cresson o**r**lenois*

- consonant-cluster simplification:
  winfall ← *win**d**fall*

- lenition
  *land lo**v**er* ← *landlu**bb**er*
  *ten**d**erhooks* ← *ten**t**erhooks*
  German *Einö**d**e* ← MHG *einœ**t**e*

Hypercorrective folk etymology

- Example:
  sandblind for *samblind “half blind”

  - Listeners/learners know from parallel cases – cf. casual pronunciations of *sandbar*, *sandwich, etc.* – that the *m* in *samblind* could be due to a coarticulatory effect.

- Association of the first element with the word ***sand*** biases learners toward deciding they need to compensate for a coarticulatory effect in order to arrive at the correct phonological representation.

More hypercorrective examples (1)

- *h*-prothesis:
  h*angnail* ← *a(n)gnail* ‘painful nail’
  *liveli****h****ood* ← OE *līflād*
  German ***h****eischen* ← OHG *(****h****)eiscōn* ← Gmc. *aisk-*

- *t*-accretion:
  amongst, *against****t***, *(a)mids****t***, *betwix****t***
  German *eins****t***, *(un)längs****t***, *mittels****t***, *nebs****t***, *jetz****t***, *selbs****t***, *sons****t***, *(zu guter) Letz****t***

- consonant epenthesis:
  *worm****w****ood* ← OE *wermōd*
  German *Oh****n****macht* ‘unconsiousness’ ← *ōmacht*

More hypercorrective examples (2)

- voicing dissimilation:
  French benefits ← *fringe benefits*

- fortition
  French *agonir* ‘hurl insults’ ← *ahonir*

- *l*-devocalization’:
  non-standard *wheelbarre**l*** ← *wheelbarrow*

- front-vowel rounding
  German *Sündflut* ‘(biblical) deluge’ ← *Sintflut*

- full-vowel restoration
  English *-m**o**st* ← OE *-mest* (*outermost*, *northernmost*, *utmost*, etc.)

In many cases of folk etymology, presumed morphological relations among words bias listeners/ learners phonological analysis of the forms they hear.

The marginalization of folk etymology

“Possibly of greater amusement than significance in the development of languages are new formations which represent an irresponsible modification, such as Eng. *sirloin*. […] Somewhat scornfully, this process has been referred to as **folk etymology**.” (Lehmann 1962:187)

“It appears that willingness to ascribe a change to folk-etymology varies directly with the morphological complexity of the affected or resultant form and maybe also the risibility of the product. Funny forms are the best folk-etymologies,” (Coates 1987:326)

“F[olk] E[tymology] has certainly never been considered as throwing light on issues of morphological theory, […] often being treated as little more than a peripheral linguistic eccentricity.” (Maiden 2008:311)

Rejecting the marginalization of the perceptual mechanism behind (some) folk etymology

Hypothesis:

Actual morphological relations – together with the dominant morphophonological patterns of a system – often bias listeners'/learners' phonological analysis of heard forms in the same way that presumed relations do in folk etymology.

Consider again…

Example 5:
OE leveling of suffix ablaut in M *n*-stem nouns

SG	Gothic	OHG	OE
NOM	gum**a**	gom**o**	gum**a**
ACC	gum**a**n	gom**o**n, -**u**n	gum**a**n
GEN	gum**i**ns	gom**e**n, -**i**n	gum**a**n
DAT	gum**i**n	gom**e**n, -**i**n	gum**a**n

Example 6:
Leveling of *s*-–*þ*- alternation in OHG demonstrative

Proto-Germanic demonstrative

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N	***s**a	*þat	***s**ō, ***s**jō
G	*þes(a)	*þes(a)	*þezōz
D	*þemmo	*þemmo	*þezāi
A	*þan	*þat	*þō(m)

OHG demonstrative

sg	M	N	F
N	**d**ër	daʒ	**d**iu
G	dës	dës	dëra
D	dëmu, dëmo	dëmu, dëmo	dëru
A	dën	daʒ	dea, dia, (die)

Extension in German of *i–u–ü* root-vowel alternation to *wissen* ‘know’

	late MHG	modern German
INF	wi33en	wissen
3SG PST IND	w**i**ste	w**u**s(s)te
3SG PST SBJV	w**i**ste	w**ü**s(s)te

Part IV

The role of perception in proportional analogical change

A defining characteristic of purely proportional innovation:

The innovative form is completely independent of the old form; the old form is replaced rather than altered.

This kind of innovation is most likely when an innovator has no access to a mental representation of the old form.

Thus:
Any similarities between old and new forms that cannot easily be attributed to coincidence should prompt us to consider that there may (also) be a non-proportional mechanism at work.

Example 1:
Partial leveling of root-vowel alternation in PRS of German Class-IV/V strong verbs

	Early modern German	Present-day German
INF	leːsen	leːsen
2/3SG PRS IND	lĭst	liest (/liːst/)

Compare:

	No leveling	Reversal of leveling in standard	No open-syllable lengthening
INF	n**eh**men	g**e:**ben	h**e**lfen
2/3SG PRS IND	n**i**mmst	g**ie**bst~g**i**bst	h**i**lfst
2/3SG PRS IND	n**i**mmt	g**ie**bt~g**i**bt	h**i**lft

(Indirect) proportional model for **i:–e:** alternation?

If we want to say that

*l**e:**sen–l**ĭ**st* → *l**e:**sen–l**i:**st*

is a purely proportional change,

then it is inaccurate/misleading to characterize this change as “retention of the height alternation with leveling of the length alternation”.

Nothing about an old form can be “retained” in a purely proportional change; the apparent retention would have to be a coincidence.

Alternatively, we could posit that a non-proportional mechanism is (also) at work here:

Innovators are <u>not replacing an unfamiliar</u> traditional form, *lĭst*, with an analogical innovation ***liːst***

rather, they are <u>analyzing the very familiar</u> form *lĭst* as ***liːst***;

> (perhaps) attributing the perceived length difference between ***leːsen*** and *lĭst* to a low-level phonetic effect rather than to a distinctive length contrast (hypercorrection).

Example 2:
Partial leveling (root-final consonant alternation) in ‘sit’ in Nuremberg dialect

	Middle High German	Nuremberg dialect	Compare MHG ‘lie’:
INF	s**i**t**z**en	s**i**t**s**n	l**i**gen
PST PTC	ges**ë**3**3**en	gs**e**t**s**n	gel**ë**gen

Example 3:
Strong →irreg. weak changes in English verbs with root-rhyme *-i:p*

	OE 1/3SG PST	Mod. Eng. PST
creep	créap	crept
leap	hléop	leapt(~leaped)
sleep	slēp	slept
sweep (?)	(swéop)	swept
weep	wéop	wept

Conclusions (1)

Attested paradigm levelings and other analogical changes for which there is no proportional model show that solving proportional equations cannot be the whole story of leveling, etc.

Proportional models <u>are</u> available for the vast majority of changes, including paradigm levelings.

But wherever we are dealing with something other than straightforward **regularization**, I would argue that we should always consider the possibility that proportional equations are not the whole story.

Conclusions (2)

Important parts of the story that I have not touched on today, include “contamination” = “associative interference” in **production**.

Today, I have made a case for a particular **perceptual** mechanism, involving listener/learners’ phonological analysis of heard forms, and the ways in which that analysis is biased by morphologically related forms and the prevailing morphophonological patterns of a system.

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