

# On Regular Analogy, Analogical Sound Change, and Neogrammarian Theory

David Fertig, U. at Buffalo (SUNY)

fertig@buffalo.edu

GLAC 17

University of Texas - Austin

April 16, 2011

# Motivations for this talk

- An interest in:
- word-and-paradigm (=“proportional”) models of inflectional morphology (e.g. James Blevins 2004; Matthews 1991; Paul 1886)
- and (the [alleged] limits of) their ability to account for “analogical” change.

# The broader project:

- Examine claims of the inability of proportional theories to account for particular kinds of analogical change, e.g.:
- “[...] morphophonemic analogy operates with all the regularity of the neogrammarian’s sound change. It is for this reason that any theory which treats it as a change in lists of morphemes, and this includes the proportional model of analogy, cannot account for it.” (Kiparsky 1973:12)

# Hock's uneasiness with “sweeping” analogical change

- “[...] like sound change and unlike ordinary analogical change, developments like [word-final and syllable-final devoicing in German] appear to be quite sweeping, affecting all qualifying words at roughly the same time.” (1986:241)
- “[...] here as elsewhere, we need to ask ourselves why unlike traditional analogical developments this change should be regular, [...]” (1986:246)

# Hock's sweeping changes, I: "rule inversion"

- Intrusive-*r* in British English:
- the matter [əØ] was : the matter [ər] is  
the idea [əØ] was : X=the idea [ər] is

# Hock's sweeping changes, 2: "rule reordering" (into feeding order)

- Extension of German word-final devoicing to newly apocopated forms:

OHG		sg. N tag	sg. D tage
	FD	tak	---
pre-NHG		tāk	tāgə
	ə-loss	---	tāg
Expected	NHG	tāk	tāg
Attested	NHG	[tāk]	[tāk]

# (sweeping changes, 2b: “rule reordering” out of bleeding order)

- Analogical creation of a new front rounded vowel in Eastern Swiss German dialects

	bogə (sg.)	bogə (pl.)	bodə (sg.)	bodə (pl.)
umlaut	----	bögə (pl.)	----	bödə (pl.)
lowering	----	----	bɔdə (sg.)	-----
	bogə (sg.)	bögə (pl.)	bɔdə (sg.)	bödə (pl.)

	bogə (sg.)	bogə (pl.)	bodə (sg.)	bodə (pl.)
lowering	----	----	bɔdə (sg.)	<b>bɔdə (pl.)</b>
umlaut	----	bögə (pl.)	bɔdə (sg.)	<b>bædə (pl.)</b>
	bogə (sg.)	bögə (pl.)	bɔdə (sg.)	<b>bædə (pl.)</b>

# Hock's sweeping changes, 3: "rule loss"

- Loss of word-final devoicing following apocope in Southern German and Yiddish:

OHG		sg. N tag	sg. D tage
	FD	tak	---
pre-NHG		tāk	tāgə
	ə-loss	---	tāg
Expected	NHG	tōk	tōg
Attested	NHG	[tōg]	[tōg]



# Hock's sweeping changes, 4: “rule extension”

- Extension of German final devoicing from prepausal to word-final and syllable final positions
- [+obstr.]  $\longrightarrow$  [-voice] / \_\_\_\_##
- [+obstr.]  $\longrightarrow$  [-voice] / \_\_\_\_# (or / \_\_\_\_\$)

# Question 1:

- Is it true, as Hock claims, that:
- “[...] as is well known, the Neogrammarians regarded all analogical change as irregular, in contrast to sound change, [...]” (2003:442)

# Answer to question 1:

- No (at least not for Paul's *Prinzipien*).
- Neogrammarians emphasize that analogical change need not be regular, not that it can never be regular.
- Paul discusses many of Hock's examples of sweeping analogical change in the *Prinzipien*.

# Paul on “rule inversion”:

- “eine eigentlich nicht berechnigte umkehrung der proportionen” (1886:97)
- Paul’s examples include “intrusive” *n* in Alemannic and *r* in Bavarian; he adds English intrusive-*r* in later editions of the *Prinzipien*.

# Paul on “rule reordering” (I):

- (with “inversion”): “Wenn im spätmittelhochdeutschen nach abwerfung des auslautenden e aus *zæhe, geschæhe, hæhe* etc. *zæch, geschæch, hæch* entsteht, so liegt wol schwerlich ein lautlicher übergang des *h* in *ch* vor; die formen haben sich vielmehr der analogie des bereits vorher bestehenden wechsels *hōch — hōhes, geschehen — geschach* etc. gefügt.” (1886:98)

# Paul on “rule reordering” (2):

- that Paul recognized that “rule reordering” also occurs without inversion is clear:
- “Durch die wirksamkeit der etymologisch-lautlichen verhältnissgruppen werden im allgemeinen solche formen erzeugt, wie sie auch durch den zu grunde liegenden lautwandel hervorgebracht sein würden.” (1886:96)

# Question 2:

- Was Paul mistaken in his belief that proportional theory could handle regular, sweeping analogical change?

# Hock's 1986 account of “sweeping” analogy: rules

- “[...] for many well-attested analogical developments the generative, rule-oriented approach seems to provide a better explanation than the traditional, surface-oriented approach. For it provides an explanation for the fact that these changes, unlike other analogical developments, are regular and sweeping.” (1986:278)



# Hock 2003: some nostalgia for rules

- “the rule-based approach of traditional generative phonology makes it possible to explain [...] the broader and more significant issue that [“rule reordering”] as well as morphophonemic extensions [...] differ from ordinary analogical change by exhibiting the same regularity as sound change.” (2003:448)

# The irony (I):

- Early generative work (Kiparsky, King, Hock, etc.) did recognize a genuine weakness in Neogrammarian accounts of analogical change.

# The irony (2):

- Hock and others thought the weakness was that proportional theory lacks “synchronic rules”.

# The irony (3):

- Paul's proportional equations essentially are synchronic rules...
- ...and his stofflich-lautliche equations are precisely the kind of rules necessary to account for phenomena like “rule reordering”, “rule loss”, “rule inversion”, etc.
- i.e., they are productive rules of phonological alternation.

# The irony (4)

- Paul's account of analogical innovation is radically "synchronic":
- It considers analogical innovation exclusively from the perspective of the innovator who has not yet learned (or is temporarily unable to retrieve) the old form(s).

# The irony (5)

- The old forms and the relationship between the old and the new forms do not figure in any way in a proportional equation.
- And Paul insists that they should not be considered in a proper account of analogical innovation.

# The irony (6):

- The real weakness that the early generativists uncovered was...
- ...Paul's purely "synchronic" account of analogical change cannot be the whole story.

# Analogical change as loss

- If we:
  - back away from the “synchronic” perspective of the innovator
  - look at what happens to the grammar as it is transmitted to and reconstructed by new learners
- we see that analogical change is essentially loss (in transmission).



# But Paul's refusal...

- ...to look at analogical change from this diachronic perspective was not an oversight.
- The clean distinction between sound change and analogy depends on an account of analogical change in which the relationship between the old forms and the new forms is irrelevant.

# The early generativists realized...

- that the relationship between the old forms and the new forms sometimes DOES matter in analogical change.

# Types of loss

- In textbook caricatures of analogical change, what's lost is almost always a more-or-less isolated irregular form.
- Kiparsky calls attention to the (arguably much more interesting) cases where what's lost is:
  - itself a rule (“rule loss”)
  - a systematic exception to a rule (“rule reordering”)
  - a condition on the application of a rule (“rule extension/generalization/simplification”).

# Interim conclusions (I)

- Proportional theory can handle the synchronic side of sweeping analogical changes such as “rule loss”, “rule reordering” etc. just as well as any other theory of grammar.
- i.e. it can answer the question: How do speakers’ productive grammars replace the things that get lost in transmission?

# Interim conclusions (II)

- The early generativists (and Hock 1986) are right that the relationship between the old and new forms sometimes does matter in analogical change.
- But the valid points that they make have nothing to do with proportional theory itself.

# Hock's 2003 account of sweeping analogy: domains (I)

- “The point is that these extensions are not motivated simply by the morphological and semantic relationships between individual words, but by general features of phonological structure.” (2003:448)

# Hock's 2003 account of sweeping analogy: domains (2)

- “[...] sound change [...], morphophonemic extension and rule reordering or extension, the entire range of analogical changes [...] constitute points in a continuum of changes which may be considered analogical in a larger sense, in that they extend linguistic patterns.  
The differences in behavior between these changes, in terms of (potential) regularity or systematicity, are a consequence of the differences in *domain* in which they can apply. The broader or more general the domain of applicability, the greater the regularity or systematicity.” (2003:455)

# Hock's 2003 account of sweeping analogy: domains (3)

- “[...] Neogrammarian sound change is most likely to be regular because its applicability is not constrained by non-phonetic/non-phonological information [...].

Analogical changes which minimally involve non-phonetic/non-phonological information, such as Brit. Engl. *r*-insertion [...] or German “reordering” of final devoicing [...] likewise tend to be regular.” (2003:455)



# Hock's 2003 account of sweeping analogy: domains (4)

- “Four-part analogy and leveling have a chance to apply to large classes of candidates [...]. They are therefore relatively systematic, but not usually as regular as sound change. Other analogical changes tend to be applicable only to individual words (recomposition and folk etymology), [...]. As a consequence, they are quite sporadic.” (2003:456)

# Assessing Hock's 2003 domains-based account

- 1. An old problem: phonological vs. morphological analogical change.
- 2. gradually homing in on the substantive question.

# Phonological vs. morphological analogy:

- A persistent myth: That proportional theory may work fine for analogical change in morphology but can't deal with analogical change involving phonological alternations.

# Debunking the myth

- Paul posits “material-phonetic proportional groups” (1886:87) specifically to deal with analogical extension and leveling of phonologically conditioned stem alternations (“Lautwechsel”).
- The theoretical issues regarding the appropriateness of the proportional model are essentially the same for phonological and morphological analogy.

# The substantive question

- How is it possible for a whole systematic, productive pattern to get lost in the normal transmission of language to new learners?

# Can proportional theory...

- ...answer the substantive question?
- -Of course not. It's a diachronic question.
- No synchronic theory of grammar can tell us why certain things get lost in transmission (while others don't.)
- But we can model this loss just as well in proportional theory as in rule-based generative theory (or OT, etc.)

# Accounting for loss

- Accounting for loss of individual forms is easy: **low type and/or token frequency,**
- and does not require any reference to the old forms themselves or to the relationship between the old and new forms.

# Low frequency...

- can't account for the loss of pervasive productive patterns (of morphology or of phonological alternation).
- This is where the real problem for Neogrammarian theory arises,
- but it has nothing to do with the proportional theory of grammar.



# We can only account...

- for the loss of these productive patterns by acknowledging that the old forms and the relationship between the old and new forms does sometimes matter in analogical change.
- Is there anyplace where Paul does acknowledge this?

# Leveling of vowel quantity alternations

- in the present tense of German verbs:
- *lebe - lebst - lebt; trage - trägst - trägt*
- vs.
- *nehme - nimmst - nimmt*
- “Die ursache, warum diese verba der die quantität betreffenden ausgleichung besser widerstand geleistet haben als die andern, haben wir gewiss in der gleichzeitigen verschiedenheit der qualität zu suchen.” (1886:166)

# Paul on (unintentional) folk etymology

- “Für die erklärung des vorganges werden wir zunächst zu berücksichtigen haben, dass man ganz gewöhnlich die worte und sätze die man hört, ihren lautbestandteilen nach nicht vollkommen exact percipiert, sondern teilweise errät, gewöhnlich durch den nach dem zusammenhange erwarteten sinn unterstützt. Dabei rät man natürlich auf lautcomplexe, die einem schon geläufig sind [...]” (1886:183)

# What does folk etymology have to do...

- ...with sweeping analogical change?
- The standard view that attributes analogical innovation to innovators' ignorance of (or momentary failure to retrieve) the old forms is:
  - impossible for non-proportional innovations like folk etymology.
  - implausible for sweeping losses of entire systematic patterns.

# Paul acknowledges...

- that phonetic/perceptual factors interact with analogical factors **only when** the nature of the change forces him to do so.
- But is it conceivable that these factors would not play a role in many “proportional” analogical changes as well?

# Kiparsky on “distance from the old form”:

- “let us assume that the likelihood of an innovation being adopted at a given point of the system is [...] inversely proportional to its saliency, as measured by its distance from the old form, [...]” (Kiparsky 1992:59)

# Conclusions (I)

- Regular/sweeping analogical changes DO call the strict dichotomy between sound change and analogy into question.
- But NOT because they are regular and sweeping.

# Conclusions (2)

- What we need is not a continuum of types of change reflecting different degrees of regularity/sweepingness,
- but rather: 1) a recognition that many (most?) changes in the phonological make-up of words involve an interaction of phonetic and analogical factors; and 2) a serious effort to investigate the different types and degrees of interaction that occur.



## Selected references (1):

Becker, Thomas (1990). *Analogie und morphologische Theorie*, (Studien zur Theoretischen Linguistik 11). Munich: Fink.

Blevins, James P. 2004. "Inflection Classes and Economy." *Explorations in Nominal Inflection*, ed. by Gereon Müller, Lutz Gunkel, and Gisela Zifonun, 41-85. New York: de Gruyter.

Blevins, James P. and Juliette Blevins, eds. 2009. *Analogy in Grammar: Form and Acquisition*. Oxford: Oxford University Press.

Garrett, Andrew and Juliette Blevins. 2009. 'Analogical Morphophonology'. *The Nature of the Word Studies in Honor of Paul Kiparsky*, ed. by Kristin Hanson and Sharon Inkelas, 527-545. Cambridge, MA: MIT Press.

Hale, Mark and Charles Reiss. 2008. *The Phonological Enterprise*. Oxford: Oxford University Press.

Hock, Hans Henrich. 1986. *Principles of Historical Linguistics*. Berlin: Mouton de Gruyter.

## Selected references (2):

Hock, Hans Henrich. 2003. 'Analogical Change.' *The Handbook of Historical Linguistics*, ed. by Brian D. Joseph and Richard D. Janda, 441-460.

Kiparsky, Paul. 1973. 'Phonological Representations.' *Three Dimensions of Linguistic Theory*, ed. by O. Fujimura, 1-136. Tokyo: TEC Co.

Kiparsky, Paul (1992). 'Analogy', *International Encyclopedia of Linguistics*, vol. 1, ed. by William Bright, 56-61. New York: Oxford Univ. Press.

Lahiri, Aditi. 2000b. Introduction. *Analogy, Levelling, Markedness*, ed. by Aditi Lahiri, 1-14. Berlin: Mouton de Gruyter.

Paul, Hermann. 1886. *Principien der Sprachgeschichte*, 2nd ed. Halle: Niemeyer.

Wurzel, Wolfgang Ullrich (1984). *Flexionsmorphologie und Natürlichkeit*, (*studia grammatica* 21). Berlin: Akademie-Verlag.