Bermúdez-Otero. 2017. Rule inversion, rule generalization, and the life cycle. Online comment on 'Rule scattering and vowel length in Northern Romance' by Pavel Iosad (*Papers in Historical Phonology* 1). 27 November 2017.

RULE INVERSION, RULE GENERALIZATION, AND THE LIFE CYCLE

(27 November 2017)

Many thanks, Pavel! Your paper is an exemplary case study in amphichronic explanation. You conclusively demonstrate that Loporcaro's (2015) approach to vowel length in Northern Romance fails to capture synchronically active phonological generalizations, notably the fact that Friulian forbids non-alternating paradigms of the type exemplified by Milanese ['gøb] ~ ['gøba]. As you rightly conclude, this requires us to acknowledge that, in a clear instance of rule scattering, the lexicalization of Late Latin open syllable lengthening left behind a synchronically active rule in the grammar of Friulian. Your demonstration that this rule applies at the stem level, as predicted by the life cycle, is incredibly satisfying (pp. 11-12).

I think you are also absolutely right in arguing that the long vowels created by Late Latin open syllable lengthening were lexicalized in Western Lombard too, and that they are now synchronically targeted by a process of shortening. However, I would not describe this synchronic shortening rule as a product of rule inversion. This is because the shortening rule of Western Lombard did not arise through the reanalysis of alternations created by open syllable lengthening. Rather, shortening presumably came into being through the phonologization and stabilization of an independent rhythmic effect, probably related to the Iambic/Trochaic Law (Hayes 1985). In contrast with this, genuine cases of rule inversion involve the reanalysis (via input restructuring) of the alternations created by a phonological process that is already in the middle of its life cycle.

The rise of *r*-intrusion in English non-rhotic dialects provides a good example. According to the account set out in Bermúdez-Otero (2011: §7), the first step in this development was the stabilization of *r*-deletion as a categorical processes applying in the coda at the phrase level: this gave rise to external sandhi alternations like *manner* [mænə‖] ~ *manner is* [mænərɪz]. As a result, the underlying contrast between words ending in /ər/, like *manner*, and words ending in /ə/, like *Anna*, was neutralized in preconsonantal and prepausal position. However, because final schwas had undergone apocope in Middle English, words like *Anna* were by this time very rare, whereas words like *manner* represented the majority pattern. This caused *r*-less phrase-level outputs like [PL ænə‖] to be reanalysed as deriving via deletion from *r*-ful word-level representations, i.e. from [$_{\text{WL}}$ ænər], just as [$_{\text{PL}}$ mænə‖] derived by deletion from [$_{\text{WL}}$ mænər].

In turn, the effect of this restructuring of the input to the phrase level was to progressively remove all schwa-final words from the output of the word level. The eventual result was a word-level phonotactic ban on final schwas, enforced through the insertion of [r].

As you can see, *r*-insertion did not start out as an automatic phonetic effect and did not go through the stages of phonologization and stabilization. Rather, it was brought into being by a mechanism of restructuring that targeted the input to phrase-level *r*-deletion. In this sense, one could think of this instance of rule inversion as 'domain narrowing with a twist'. And, interestingly, it involved rule scattering too, since *r*-deletion remained active in the phrase-level phonology.

This example answers a question raised by Patrick in his earlier comment. Patrick asks how rule inversion fits into the life cycle of phonological processes. In particular, he wonders whether inverted rules begin their life at the bottom of the grammar, like other processes. The answer is definitely 'no'. This is because, unlike other phonological patterns, inverted rules come into being through the restructuring of the input to a process that is already in the middle of its own life cycle.

If this account of rule inversion is broadly correct, it raises a much more challenging question: namely, why is rule generalization so different from rule inversion? Why do the new rules created by rule generalization start out at the bottom of the grammar, as per the normal life cycle (Bermúdez-Otero 2015: §22.3.1)? I think we are far from having a complete answer to this question, but at least one of the pieces of the puzzle is already in place. We can confidently assert that the newer, more general rule does not just come into being through the reanalysis of the pattern created by the older, more specific rule. More precisely, rule generalization must involve more than the mere in situ simplification of an already existing rule, driven by some top-down mechanism favouring less complex generalizations. While a top-down bias for simplicity may indeed play a role in rule generalization, it cannot be the whole story. I am thus driven to reassert the following hypothesis: "Rule generalization is plausibly ultimately rooted in the scalar nature of the physical and physiological effects that initiate sound change" (Bermúdez-Otero 2015: 393).

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