

A Death Rattle Hypothesis for minority rules
Beyond conceptual neatness in the weights vs. imperfections debate
Anton Karl Ingason
University of Iceland

Systematic inconsistencies in language can be attributed to **weights** that at production time are not meaningful outside of, and therefore scope-wise internal to, a variable grammar (e.g. Labov 1969) or to independently caused **imperfections** in the production of an underlyingly categorical grammar (e.g. Pinker 1984). The current proposal aims to draw out sharply different falsifiable predictions of the two approaches by focusing on grammar change in the special case where the context of a minority/subset rule is lost rather than (in weights terminology) its weight.

The weights approach can appeal to the regularity of structured quantitative relationships as a basis for its claim to conceptual neatness. The imperfections approach can claim that it is theoretically pleasant to propose categorical models and it can place the burden of explaining inconsistencies on a general theory of the (rest of the) brain. In the absence of a precise proposal for such a general theory of the brain, an admittedly unrealistic goal for the near future, there is ample room for both approaches to emphasize their strengths and play down their weaknesses, effectively reducing the debate to opposing opinions on what counts as conceptually neat. This is not an ideal way to make scientific progress.

To move beyond conceptual neatness as the primary metric of the virtue of the approach in question, we need sharply different falsifiable predictions of the contrastive theoretical proposals. Previous work in this spirit has focused on the need to account for regularity in gradual historical change from one grammar to another. Prominent examples include studies in the tradition of quantitative sociolinguistics and the Constant Rate Effect (Kroch 1989). Abstracting away from details of implementation and philosophy, such studies suggest that the rules/parameters of grammars are weighted at a grammatically conditioned level. The imperfectionist can however point to data where a stable production of a minority form persists throughout history without any apparent S-curve-like effects. These are more straightforwardly attributed to imperfections in performance than a dynamic of weights.

The current proposal aims to make use of a recent account of how weights result from language acquisition (Yang 2002) in an attempt to move beyond conceptual neatness as the primary metric of the virtue of the approach in question. Such a difference is provided by the case when the context of a minority rule is lost as demonstrated in (1).

(1) a) before change IF [+A, +B] THEN apply R_1 (weight≈1.00) ELSE IF [+A] THEN apply R_2 (weight≈1.00) ELSE apply $R_{default}$	b) during change IF [+A, +B] THEN apply R_1 (weight=0.30) ELSE IF [+A] THEN apply R_2 (weight≈1.00) ELSE apply $R_{default}$	c) death rattle phase IF [+A] THEN apply R_1 (weight=0.03) ELSE IF [+A] THEN apply R_2 (weight≈1.00) ELSE apply $R_{default}$
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In a weight-based account the minority pattern R_1 loses ground in context [+A, +B] between (1a) and (1b) due to loss of weight. When the [+A, +B] context is lost between (1b) and (1c) the remaining evidence for the dying minority pattern is reanalyzed as evidence for a low-weight rule in a more general fallback context, extending to all items in the general context [+A]. This happens because some speakers in the language community are still producing the results of the (1b) grammar. This death rattle effect is interesting since it superficially resembles hypercorrection but it is empirically distinct since the two contexts converge into the neutralized [+A] context so that the minority rule applies at exactly the same rate in its new expanded territory as it does in its former narrow context. It also uniquely predicts that the dying pattern might rebound and take over as the battleground of rule competition moves to the more general context as in (1c) or that the dynamics of acquisition might lead to stability where two competing forms coexist in the same context without either of them having an evolutionary advantage over the other, with important consequences for the tail of an S-curve.

The Death Rattle Hypothesis makes precise predictions about the development of oblique experiencer subjects in Icelandic where the context of accusative subjects is currently being lost (e.g. Ingason 2010). The predictions are borne out as confirmed in recent work by Erlingsdóttir (2010) where the acquisition of this pattern was studied in an elicited production experiment with 46 children, age 5-7. Erlingsdóttir's data provide a strong support for a weights-based analysis of this pattern in Icelandic, since the frequency of the production of accusatives vs. datives in her experiment is not significantly different in the formerly distinct contexts ($p=0.37$). The effect, which is unexpected in an imperfections-based approach, is straightforwardly predicted and explained given the Death Rattle Hypothesis.

References

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