

Stable Variation and the Role of Continuous Factor Groups: A Meta-Analysis  
Shayna Gardiner & Naomi Nagy – University of Toronto

Language change necessitates variation – no language change can happen without it – but the reverse is not always true: sometimes a variable remains stable over time. To better diagnose change vs. stable variation, we must clarify their differences. This is critical for cases of variables that may change very slowly over long time periods, where an Apparent Time approach may not reveal clues to a change in progress. Wallenberg and Fruehwald (2013) propose that a key difference between stable variables and change in progress is the type of factor constraining each. Language change is the default when two variants are in competition – but constraining factors that exist along a continuum will block language change, keeping the variable stable (*ibid.*). In other words, all stable variables should be constrained by at least one continuous factor, while no change in progress should be constrained by any continuous factors. Additional discrete factors governing stable variables should have no effect on the variable's trajectory: only one continuous factor is needed to stop change.

The Wallenberg-Fruehwald hypothesis is supported by their analysis of three dependent variables. We provide a more stringent test by analyzing 31 dependent variables examined in articles published in *Language Variation and Change*. All relevant articles in volumes 22-27, spanning the years 2010-2015, the period during which Rbrul (Johnson 2015) and its capacity for testing continuous factors has emerged as a common tool, were examined. We coded each dependent variable reported for each article as 'stable' or 'changing,' according to the authors' reports. We coded constraining each variable as 'continuous' or 'discrete.' Of the 23 'changing' variables analyzed, none was reported to be constrained by continuous factors; of the 8 'stable' variables analyzed, only one was found *not* to be associated with any factors that could be treated as continuous (in the one exception, no possible continuous factors were tested). This significant distinction (determined by Fisher's Exact Test,  $p < 0.01$ ) provides additional support for the Wallenberg-Fruehwald hypothesis, suggesting that the presence of a significant continuous factor is a useful diagnosis of a variable's stability.

The factor style is also considered in light of its role in both stable variation and changes in progress. Style is normally coded as discrete since that trend was set in Labov (1972), but Wallenberg & Fruehwald (2013) suggest that style be treated as continuous factor (cf. Biber 1995), thereby making it usable for testing their hypothesis – and it *is* a significant factor in one of the stable variable studies included in this analysis (Evans Wagner 2012). However, this variable was also constrained by following phonological segment, which is easily modelled along a sonority continuum, and style also constrained several of the change variables (Johnston et al. 2015, Mesthrie, 2012). It is therefore unlikely that style is the continuous factor that promotes stability. Indeed, we find that for all stable variables, the potentially continuous factor is linguistic rather than social. Consequently, we conclude that future work in this direction should focus on non-stylistic, internal factors.

## References

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