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## Global Faithfulness and Choice of Repair

A basic tenet of variationist research is that the "orderly heterogeneity" (Weinreich, Labov, & Herzog 1968) of language must have a place in linguistic theory. Recent work by Guy (1997) and Anttila (1997) has emphasized that both categorical and variable phenomena are conditioned by the same linguistic factors, and can be unified under Optimality Theory (OT): categorical processes result from strict ranking of constraints; variability results from variable ranking.

A relevant example from English is variable deletion of t/d, e.g. /lɪst/ → [lɪst]~[lɪs], and categorical epenthesis between coronal stops, e.g. /wert+d/ → [wertəd]. Guy and Boberg (1997) propose to unify them under an OCP analysis: the more features shared between the members of a cluster, the more likely it is that repair will occur. If the segments share all relevant features, epenthesis occurs; otherwise, the repair is variable deletion. However, this presents a serious problem for OT, where choice of repair results from the relative ranking of faithfulness constraints: MAX >> DEP ("deleting segments is worse than adding segments") results in epenthesis; DEP >> MAX ("adding segments is worse than deleting") results in deletion. Here we have two repairs, depending on how similar the adjacent segments are: total similarity implies MAX >> DEP, but partial similarity implies DEP >> MAX. This creates a ranking paradox which is not solvable via variable ranking, since the choice of repair crucially depends on the degree of segmental similarity.

To solve this problem, I propose a new type of constraint, Global Faithfulness. Traditional faithfulness constraints such as MAX act locally, ensuring that contrasts present in the underlying representation (UR) are recoverable from individual tokens. Yet speakers can produce several variants of a particular word, only some of which may preserve the underlying contrast: both [lɪst] and [lɪs] appear as tokens of the UR /lɪst/, but listeners know that /t/ is part of the UR because they have heard some tokens which do retain the final stop. Thus recoverability is not always a strict condition on every individual form, but can be fulfilled if underlying contrasts are present in at least some tokens. Such general recoverability is enforced by Global Faithfulness constraints, which assume that the candidate under consideration appears as one variant in a surface alternation with another, faithful form, and determine whether a given contrast is recoverable from this alternation. For example, if the deletion candidate [lɪs] alternates with the faithful form [lɪst], the underlying stop is recoverable, so the deletion repair will be allowed by Global Faithfulness. But deletion is ruled as a repair for forms such as \*[wertt]: if the deletion candidate [wert] were to alternate with faithful [wertt], the stop would not be recoverable. In this way, Global Faithfulness ensures that epenthesis is chosen, and solves the ranking paradox.

This account unites the categorical epenthesis and variable deletion facts, capturing Guy and Boberg's observation within an OT analysis. It also extends to quantitative facts by generating accurate output frequencies when embedded within a

Stochastic OT framework. Moreover, it makes crucial use of inherent variability in language, emphasizing the importance of variation for grammatical theory.

Keywords: optimality theory, phonology, categorical and variable processes

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