Discreteness and continuity in language design and sound change

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One of the most fundamental design characteristics of human language is that a few meaningless gestures combine to form many words. Humboldt recognized this fundamental combinatoriality as language's way of making infinite use of finite means. But later it was recognized that language is only one of several self-diversifying natural systems in which a few particles combine to yield a limitless set of entities at a higher level (Abler 1989). In these systems, the fundamental units do not average or blend, but rather they combine as wholes into many rule-governed arrangements, since averaging and blending would limit the diversity exhibited by the higher level entities. But language is special among these self-diversifying systems in that averaging or blending of gestures does also occur as coarticulation (Abler, 1989). Language therefore involves a mixture of discrete combinatoriality and inter-unit averaging. Our goal in this work is to show that basic aspects of speech production are behind the mixture of continuous and discrete in language, in particular: the nature of how the tongue hydrostat deforms, the fact that the units are arranged over time, and the necessity of tongue movements being continuous in time. The result is a fundamental asymmetry between place and manner of articulation. Moreover, we argue that several types of asymmetries in sound change, first recognized in Labov's resolution of the neogrammarian controversy (Labov, 1981) also follow from this asymmetry.

Abler,W.(1989), 'On the particulate principle of self-diversifying systems'. *Journal of Social and Biological Structures, 12*: 1-13.

Labov, W. (1981). Resolving the Neogrammarian controversy. *Language, 57*: 267-308.