

The role of stable states and systems in sound change: a simulation-based study
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There are a number of common patterns in the historical evolution of sound systems, such as the frequent occurrence of certain types of sound change, or the inhibition of changes under certain conditions. These common patterns are often explained by referring to universal pressures, such as physiological and psychoacoustic constraints on speech, or a tendency to maintain lexical contrasts. Approaches relying on such explanations face the so-called actuation problem: it is not clear why universal pressures only lead to changes in some languages, but not in others. This paper argues that the actuation problem can be avoided by looking at the evolution of sound systems under multiple pressures, instead of focusing on isolated sound categories in a vacuum. I will use computational simulations to show that sound systems evolve towards stable states in adaptive landscapes defined by a range of external factors. The locations of such stable states are determined partly by universal pressures (e.g. phonetic biases), creating common pathways of change, and partly by language-specific factors (e.g. frequency distributions in the lexicon), which lead to cross-linguistic variation. As it will be shown, this approach can account both for stability and change.