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Phenomenal Accent Patterns: A Computational Approach to Exploring the Application of Theoretical Frameworks from Music Theory to Linguistics

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In theories of musical rhythm, there is a distinction between phenomenal accent and metrical accent. Phenomenal accents require overt acoustic cues, such as an increased duration, frequency, or amplitude compared to surrounding sounds. Metrical accents, however, are part of an abstract organizational structure and do not require the presence of an acoustic contrast.

This project employs typological analysis within the framework of Optimality Theory to examine the feasibility of incorporating this distinction into theories of linguistic rhythm. In the analysis of both the patterns predicted by the optimality theoretical constructs and the patterns in attested, real-world data, the picture that emerges is one that identifies the mapping of a variety of phenomenal accent patterns to a smaller number of more general metrical accent patterns.

These comparisons opened into two routes of investigation—the first in the building of two computer programs to predict language typologies, and the second in a thorough examination of documents of language description to establish a typology of attested patterns with which to compare the predictions. When these routes are taken in conjunction, generalizations can be made about the relationships between the two types of patterns that allow us to account for the wide variety of attested patterns in mapping the phenomenal accent patterns to their related metrical accent patterns. This broader typological picture can inform future work on both metrical theory as well as comparative linguistics.