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The *PRiORS* framework (standing for *Perceptual Regimes Of Repetitive Sound*) provides a path to modeling main effects in auditory perception, focusing on the temporal integration of events at different timescales. In this talk, I will demonstrate how PRiORS can help in shedding new light on old problems in linguistics, with emphasis on the notion of the syllable. Specifically, I suggest that sonority—the abstract segmental quality linguists use to characterize syllables—is most adequately modeled in terms of periodic energy in the acoustic signal, as a measure of pitch intelligibility in perception (essentially assuming that syllables evolved to be the system's pitch-bearing units). Finally, I will present an acoustic toolbox that builds on the idea that sonority is a measure of pitch intelligibility in order to study prosody and intonation systems with continuous acoustic primitives. *ProPer* stands for *Prosodic analysis with Periodic energy* and it presents an open-source workflow of Praat and R codes for enriched data visualization and robust quantification of intonation-related aspects such as prominence, speech rate and F0 shape.