Perceiving Musical Intervals: a test case for categorical perception

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Categorical perception is a process in which sounds that are along a continuous physical dimension are perceived as belonging to distinct categories. Previous studies performed with Western musicians have confirmed the hypothesis that musical intervals (the ratio between two musical tones) are perceived as categories, in a pattern similar to the categorical perception of speech phonemes. Most studies assessing categorical perception include categorical response delivery. The current study has two main goals. First, we designed a novel continuous report task, that does not include a categorical aspect in its response, thus minimizing possible bias. Second, we used this innovative task to examine the role of various factors in categorical perception, such as stimuli properties (higher or lower tones), perceptual traits (relative or perfect pitch), and cultural background (Western or Arabic).

The talk will present the novel method, together with data that represent the influence of different factors on the categorical perception. One of the most noticeable effects is the interaction between pitch height and interval size estimation, which have not been previously regarded in categorical perception studies. Investigating categorical perception in music cognition enables a generation of a relatively straightforward paradigm based on a size analogy familiar to musicians, and thus we expect to produce results that represent the auditory categorical perception phenomenon more accurately.