

**Title:****Perception of pitch and time in music****Description:**

Music is defined by pitch (how high or low a note is) and time (when a note occurs and how long it lasts). However much of the research on music perception has focused on one or the other dimension, rather than how they combine. The research that does exist has been largely contradictory, with some researchers suggesting that the dimensions are independent (not affecting one another), and others claiming that pitch and time are interactive (inextricably linked). This research has focused on how the surface information and deeper structure in both pitch and time contribute to melodic similarity. Pitch surface was defined as contour – the shape of ups and downs in a melody, whereas pitch structure was the musical key, or tonality. Time surface was the rhythmic pattern (the series of long and short notes), and time structure was the metre (or beat – the regular pulse in music). This research manipulated all of these factors independently in melody pairs and had listeners rate how similar they were.

In Experiment 1, 34 participants (varied musical training) rated the perceived similarity of melody pairs transposed to new starting pitches. Rhythm was the largest contributor to perceived similarity, then contour, metre, and tonality. Experiment 2 used the same melodies but varied the tempo within a pair, and added 3 chords at the beginning, which oriented the listener to the starting pitch and speed before the melody began. Now contour was the strongest influence on similarity ratings, followed by tonality, and then rhythm; metre was not significant. Overall, surface features influenced perceived similarity more than structural, but both had observable effects. The primary theoretical advances in melodic similarity research are that (a) the relative emphasis on pitch and temporal factors is flexible; (b) pitch and time functioned independently when factorially manipulated, regardless of which dimension is more influential; and (c) interactions between surface and structural information were unreliable and never occurred between dimensions.

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