

Ear, Mind, or Brain? Reflections on Musical Similarity

Discussions of musical similarity—what it is and how it can be assessed—run rampant in the real world as well as the academic one. Efforts to define musical similarity have roved over several disciplines, as the pertinence of the question surfaces at will in diverse quarters. The quest for a simple method of assessing musical similarity has been pursued in both the academic and the commercial worlds but with highly diverse methods and with little success. In our own research into the development of digital tools for musical evaluation and query, we have recurrently encountered two problems. Either the “matches” are too numerous to be useful or they offer a promising statistical result that not convincing to listeners. Are we failing to formulate the right questions? Or are we misinterpreting the machine-driven answers?

Musical similarity is pursued in a multitude of ways. It can fail in just as many. The associated task of assigning objects to categories is notoriously prone to subjective divergence and boundary ambiguity. Some of the same difficulties confront efforts to define musical similarity. In the world of music streaming, rapid growth in recommendation services has sometimes disclosed approaches without academic credentials that work well in limited contexts, while others that are well founded may be unproductive in practical use. How can it be that listeners accept as “similar” pieces that are akin only in timbre or “mood”?

Recent involvements with the music-copyright community have brought into high relief the contrast between the academic rubrics of harmony, melody, and rhythm as stepping stones on the path to assessment of similarity vs the popular-music emphasis on timbre, tempo, and dynamics. Legal discussions are in great turmoil partly because no distinction between music as written and music as heard is made. Poor judgments have papered over this lapse with large awards to those found to be “in the right”—by one route or the other. Yet some rationales considered to be legally persuasive are, from an academic perspective, nonsensical. Musical similarity is full of conundrums and ambiguities, but the legal search for push-button assessments that some lawyers foresee seems destined to remain thwarted.

What makes practical aspects of this pursuit intellectually compelling is the parallel pursuit of what audio engineers like to call “ground truth”—what subjects say musical similarity is. From that quarter there is compelling evidence that inter-subject correlation of opinion in controlled research musical similarity is disturbingly low. In fact, consensus among subjects is lower than statistical methods would suggest. This should encourage us to delve more deeply into the underlying issues, particularly with a view towards interjecting more discoveries from the fields of music perception and cognition into the discourse.

No one can doubt that paradoxes and conundrums will continue to accompany those who undertake serious research on musical similarity. While this area of research is rich in challenges, it is singularly rewarding in its applicability both to practical situations and to imponderable questions of musical identity and meaning.