



Behavioral and Brain Sciences

Article contents

- Abstract
- References

Pluralism provides the best chance for addressing big questions about music

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Elizabeth Hellmuth Margulis 

Commentary

Related commentaries

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Abstract

Studying a complex cultural phenomenon like music requires many kinds of expertise. Savage et al. adopt a pluralistic approach, considering multiple forms of evidence and perspectives from multiple fields. This commentary argues that a similar scholarly ecumenicism should be embraced by more studies of music and other cultural phenomena.

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Accounts of music's evolutionary origins have a history of ethnocentrism (Cross, 2003; Ochoa Gautier, 2014; Piilonen, 2019; Zon, 2017). They have tended to either overtly position Western classical music as the endpoint of a teleological process or to more tacitly essentialize it by assuming that Western classical music's key attributes define the broader category of “music” which the evolutionary theory seeks to explain. Systemic pressures within individual disciplines can exacerbate this problem. As an object of scholarship, music is squishy; its borders indistinct; its experience subjective; its forms highly variable. Unsurprisingly, it has long been the subject of humanistic inquiry. Science, of course, needs to quantify, operationalize, and measure. But, this process cannot succeed by pretending the squishiness does not exist; for real insights to emerge, quantification and measurements must build sensitively on the contours of actual musical characteristics and behaviors understood in the complexity of their cultural embedding.

Consider the psychometric tests for measuring musical ability devised by Carl Seashore in the early 1900s. One part involved playing pairs of chords that varied in consonance and asking participants which sounded better – Seashore couldn't imagine that enculturation modulates the relationship between sonority and perceived pleasantness (McDermott, Schultz, Undurraga, & Godoy, 2016). Or consider a recent paper which construed time series irreversibility (measured by examining pitch sequences in MIDI representations of melodies from Western classical music) as evidence for the existence of “musical narratives” that

influence music's "pleasantness" (González-Espinoza, Martínez-Mekler, & Lacasa, 2020). Fundamental to the paper's logic is the notion that membership in a corpus of Western classical music constitutes incontrovertible evidence of pleasantness, and the notion that sequences of melodic pitches can serve as a proxy for music's fundamental structure. A computational account is only as good as the data and assumptions that are fed into it; overconfidence in quantitative models at the expense of the underlying premises risks generating more "weapons of math destruction" (O'Neill, 2016). To produce musical inventories and statistical measures that are meaningful and capable of answering interesting questions requires expertise not just in psychometrics and statistics, but also in music information retrieval, music and human culture. When knowledge about a relevant subfield is missing, it's that much harder for a study to yield relevant, actionable results, and that much easier for a study to mislead and obfuscate.

Savage et al. expressly "combine cross-disciplinary evidence from archeology, anthropology, biology, musicology, psychology, and neuroscience" (abstract), a "pluralistic approach" that involves "experts from diverse disciplines to synthesize evidence into a single framework" (sect. 1, para. 7). This integration of expertise from different discipline positions allows them to resist the misleading, cartoon-cutout picture of music that can plague scientific inquiry around the subject. In many languages, music and dance are referenced by the same word and conceptualized as a single phenomenon (see Lewis, 2013). Savage et al.'s account acknowledges that dance "is a core part of music-making...

and not a separate domain,” building their account of music's evolutionary origins around components shared between music and dance, such as sound-action coupling, repetition, prediction, and synchronization. Conversely, accounts of music's origins that center pitch-based syntax and grammar-like structures, or the passive enjoyment of presentational music performed by professional musicians at the expense of participatory accounts (Turino, 2008) risk failing to explain the aspects of music that are most common in music around the world, and thus likelier to be fundamental to the category. Even worse, they risk positioning “Western musical culture ... at the top of a racist chain of excellence” (Piilonen, 2019).

When a paper tackles the evolutionary origins of music from the vantage point of a narrow disciplinary perspective, and without consideration for the troubled past of this line of research, it makes scientific progress all but impossible. It would be like trying to understand the evolution of language without domain knowledge in linguistics, or with the assumption that English constituted the sole language from which evidence should be drawn. Music and other products of human culture are no different. Intuitive notions of what music is or how it works are rarely a sufficient basis for the scientific study of it, especially given that decades of deep and nuanced study of the topic already exist in multiple disciplines. Science that does not consider the existing literature on their topic of interest risks making foundational errors that a colleague from across the university or an article on a nearby library shelf could have easily rectified.

Because Savage et al. embrace this idea and involve the

scholars and literature of multiple disciplines, they end up with conclusions that are resilient, and do not easily break down when considered in light of other evidence. For example, even though they do not consider Gabrielsson's (2011) study documenting people's peak musical experiences, Savage et al.'s claim about the importance of shared phenomenology, joint intentionality, and self-other merging is supported by the frequency with which descriptions of out-of-body sensations and imagined communion figure in the survey respondents' accounts of their most rewarding musical episodes.

Although the question of music's origins is not one that animates my own research, the fraught character of this line of study makes it a domain in which differences in fundamental approaches are especially apparent. Savage et al.'s paper demonstrates that incorporating expertise from multiple fields, although not sufficient, is necessary for any science that attempts to tackle big questions about cultural phenomena. The bar for quality science in this area should not be pretending away complexity in order to produce a paper that appears solid on the surface, but should rather involve acknowledging that complexity and developing new tools to understand it (Jacoby et al., 2020). The risk of continuing to do science about human culture with blinders on is not just producing faulty conclusions, but – especially given that this study is often covered by the popular press – actually risks doing harm in the real world, as in the case of Carl Seashore's tests of musicality and their relationship to eugenics (Devaney, 2019). Combining perspectives and knowledge from multiple fields is critical to answering

questions about human culture.

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Conflict of interest

None.

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