

## Title

Music as a trait in evolutionary theory: A musicological perspective

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## Abstract

While it can be straightforward to define the features of physical traits, complex cultural categories tend to elude widely accepted definitions that transcend cultural and historical context. Addressing papers by Mehr et al. and Savage et al., which both aim to explain music as an evolved trait, we discuss fundamental problems that arise from their conceptualizations of music.

## Main text

When evolutionary theory seeks to describe traits as function-driven adaptations, it is fundamental to correctly identify a trait and define its main features, in order to specify its ultimate functions. For complex and variable cultural phenomena such as “music,” this is far from being obvious and strongly dependent on the cultural concepts researchers bring to their study. Across cultures, no common concept of “music/musicality” exists – there is no directly observable, uncontroversial set of identifying features allowing demarcation between practices variously identified as heightened speech, chant and song, and also between dance, gesture and music. Our comment, therefore, targets the conceptualization of the trait in question from an (ethno)musicological perspective.

The two target articles define the trait in question differently, reflecting contrasting Western concepts of music, conventionally addressed as presentational (in Mehr et al.) versus participatory (in Savage et al.) (Nettl, 1921; Bessler 1926/2011; 1959; Small, 1998; Turino 2008). Mehr et al. define music primarily as auditory communication, thus excluding cross-modal aspects of music perception involving vision and proprioception (Phillips-Silver & Trainor, 2005; Vuoskoski et al. 2014, 2016). This focus weakens their account of group coalition signaling, since the closest modern equivalent – ceremonial cultural performance – fully integrates auditory aspects (music, speech, sound) with gesture (procession, dance,

theatre), and material culture (ornamentation, objects) into a unified mode of display (Schechner 2013; Brown & Dissayanake 2018). On a basic level, rhythmic entrainment as an indicator of coalition quality already goes beyond auditory communication as it involves multimodally complex sensorimotor-synchronization (Phillips-Silver & Keller 2012), the intra-group effects of which are as prominent as its signaling function. In comparison, Savage et al. apply a more multimodal and action/experience-based understanding, which prioritizes intra-group effects over representational communication across groups.

Neither of the author groups substantiate their reasons for preferring one concept of music over the other, and alternative definitions are not considered. This raises the fundamental question of how one can arrive at a description of the relevant trait as the basis of an evolutionary argument. A primordial form of music is clearly no longer observable. Consequently, one has to rely on existing or documented historical forms of music to draw reasoned inferences from, and test evolutionary hypotheses on, with the evident risk of circularity. A method that suggests itself would involve identifying the most prominent features and functions of music-related behaviors around the globe, relying on musicological research. However, efforts towards this have not led to a clear-cut definition (Nettl 2000; Simon, Riethmüller & Hüschen 2016). Furthermore, the results of such a method still depend on prior criteria for inclusion and exclusion, as well as weighting. Authors from both groups have made noteworthy earlier contributions to such comparative endeavours, and both groups use references to existing music to support one argument or reject another. Yet, Savage et al. do this in a more consistent and explicit manner, listing a number of concrete musical design features regarding rhythm, dance, melody, harmony, and structure, which they associate with a number of universal functions in an attempt to find a common denominator. Mehr et al., in contrast, grant the status of ultimate function to only one out of many equally common functions – credible signaling. The selective evidence referred to by Mehr et al. works rather as an illustration than as a demonstration. For example, when they reject the mating quality hypothesis, their concept of music as auditory communication leads them to focus exclusively on songs and the gender distribution of performers (of Western popular music in the last 100 years), but prevents them from considering musical mating-related practices that involve dance (Garfinkel 2018, Hanna 2010).

We suggest that any evolutionary scenario should target the set of most commonly observable forms and functions of music-related behaviors. For instance, solitary musicking and musicking for mood regulation and/or pleasure are extremely common and historically observable forms of music-related behavior that are not predicted by any of the proposed evolutionary explanations. Examples of such behavior include playing or singing for oneself (Killick 2006), and listening to music alone (Herbert 2011). Mehr et al. do not acknowledge the existence of these forms of musicking, while Savage et al. view them as byproducts of social bonding. This may indeed be the case. But equally, considering the widespread existence of solo musicking behaviors, a counter-proposal would be that music-like practices evolved for achieving homeostasis of emotions, feelings and associated body states (Habibi and Damasio 2014), and that other functions, such as social bonding, are supported by that.

Finally, seeking to account for the evolution of a human trait places a heavier burden on the concept of “music” than is usually the case, when less is at stake with use of the term. We propose that the search for the evolution of “music” is flawed because music is a contemporary concept of European heritage without direct equivalent in many other cultures and eras. While musicologists can certainly point to practices around the world they believe to be similar to what they understand as music, this does not make such practices “music” – at most, it makes them “music-like”. It is, therefore, unclear whether “music” is really the evolutionary trait needing to be explained. Two alternatives are possible; the first would be to identify a more inclusive and neutral trait such as “multimodal performance,” involving sound and movement, communicative signalling and participatory experience; the second would be to focus explicitly on narrower traits addressed by the target papers, such as rhythm/entrainment and tonality/melody, without claiming they represent the core of an

erroneously universalised notion of music. This involves accepting that what is now commonly considered music may be understood as a composition of diverse behaviors, only recently subsumed under a unified concept in modern discourse. With this in mind, a more plausible approach would be to follow those who argue that what is termed music today is one result of various human socio-cultural inventions (Patel 2018) that form a multi-stranded, non-linear history (Tomlinson 2018), which cannot be accounted for by any single (however broadly conceived) adaptivity-based evolutionary explanation.

## Funding statement:

This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

## Conflicts of Interest:

None

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