

# Commentary: Epistemological conflicts in research on the evolution of music

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In review

## Specialty Chief Editor Lorenza S Colzato rejected this Manuscript ×

### Reason:

The content of this manuscript does not meet the standards of rigor required by the journal to be considered for publication.

### Comment:

Objective errors in the methods, applications, or interpretations were identified in this manuscript that prevent further consideration.

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### *Conflict of interest statement*

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest

### *Author contribution statement*

single-author submission

### *Keywords*

Humanities, Sciences, epistemology, Philosophy, culture, methods, History, Anthropology, Bias, Consciousness

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## **Further information**

The following text was a critical response to Leonid Perlovsky's *Frontiers* research topic entitled "Evolution of music": <https://www.frontiersin.org/research-topics/5224/the-evolution-of-music>. The contribution was rejected without review. The author received no justification for rejection apart from the above few lines.

Perlovsky's description of the research topic begins with questions about consonance/dissonance and diatonicism that ethnomusicologists will immediately identify as ethnocentric:

- Is perception of consonance/dissonance a universal that has stayed intact from Homo Heidelbergensis?
- Is perception of diatonic music representative of all music's varieties? If not, what are its alternatives?
- If consonance/dissonance mechanism is universal, what exactly do children acquire in their harmonic hearing throughout childhood?
- What is the biological explanation for dissonant music in genres associated with pleasure/relaxation (i.e. sutartine)? How can the same listener consider the same interval as "dissonant" in one music style, while "consonant" in another? Is there a typology of implementing consonance/dissonance mechanism in different cultures?

Concepts of consonance and dissonance are unknown in many musical cultures, many of which do not use diatonic scales, or anything similar. These musics are not inferior, as the text suggests. In fact, they may be even more interesting than Western music for questions about music's origin.

The rejection refers to "standards of rigor" and "objective errors". Those are positivist scientific criteria, but the research topic intrinsically involves the humanities. This is not a trivial observation: relativism belongs to the foundations of humanities epistemology. Those scientists who read these lines and are not sure about the meaning or relevance of "positivism", "relativism", or "epistemology" are kindly asked to look up the literature.

## 1 **Commentary: Epistemological conflicts in research on the evolution of music**

2 Snow (1963) observed that humanities scholars and scientists know almost nothing about  
3 each other's academic foundations. Humanities scholars have little idea of Newtonian  
4 physics or differential equations. Scientists may never have read "great literature" or  
5 misunderstood the nature and role of subjectivity and context in humanities research. In  
6 music, scientists may know little about, say, "bourgeois individualism" or "bourgeois  
7 subjectivity", while humanities scholars may be unacquainted with simple psychological and  
8 neuroscientific methods.

9 Although intermediate fields such as social sciences and science studies have emerged since  
10 Snow, the humanities-sciences conflict is as strong as ever (Cohen, 2001). Then and now,  
11 when faced with challenges to their expertise, colleagues may react defensively, implying  
12 that the approach of the "other side" is misleading or fundamentally incorrect—which  
13 reinforces the separation.

14 Research on particular topics tends to gravitate toward one side of the other. For example,  
15 the origin of music is usually considered a scientific question. The book by Wallin, Merker  
16 and Brown (2001) does include contributions from ethnomusicology and historical  
17 musicology, but they are treated as subsidiary. In fact, we need humanities disciplines to  
18 develop a clear, general concept of what "music" is before trying to explain its origins. That  
19 meaning depends on the temporal and geographical context of the speaker; we must  
20 therefore include contrasting traditions from different places (geographic regions) and times  
21 (historic and prehistoric periods) in our definition.

22 The concept of "musical authenticity" that we take for granted in "high cultures" (Schippers,  
23 2006) is driven by political, social, cultural, and religious forces. In many languages (e.g., in  
24 Australia or Africa) there is not even a word for "music" (Gourlay, 1084); people talk about  
25 singing (or melody) and dancing (or rhythm), which do not necessarily belong together. Such  
26 questions are best understood against a background of humanities scholarship.

27 Historically, significant changes in the meaning of "music" occurred in all geographical  
28 regions. Confining our discussion to Europe, the ancient Pythagoreans connected music to  
29 the motion of the planets, which in turn were connected to the human soul. In the middle  
30 ages, music was a divine product, intended for divine communication. In the 19th century,  
31 music expressed deep, intimate, wild yearnings. In modern psychology, music comprises  
32 patterns of sound and movement that evoke emotional responses (Juslin & Sloboda, 2011).

33 The Frontiers call for papers ("About this research topic") on "Evolution of Music" has a  
34 scientific, western bias. The word "music" seems to refer primarily to the Western classical  
35 tradition; it is presented as a natural phenomenon that can be explained objectively by  
36 observation and modeling.

37 But Western music is not intrinsically superior (e.g. Becker, 1986). First, there is no cross-  
38 cultural criterion or measure of aesthetic quality for music (or any other art form). Second,  
39 for many centuries Europe had more political power (weapons, ships) than other continents,  
40 leading to a persistent western cultural hegemony and bias (Agawu, 2014). That alone can  
41 explain any belief in Western cultural superiority.

1 Sciences are not necessarily better placed than humanities to explain the origin of music.  
2 The text “About this research topic” correctly lists relevant disciplines such as “anthropology,  
3 biology, psychology, ethnomusicology, acoustics, and physiology of perception of music”,  
4 but omits philosophy, and continues as if anthropology and ethnomusicology were  
5 secondary.

6  
7 Both humanities scholars and scientists can fall into the trap of regarding their side of the  
8 divide as fundamentally more important. But no widely accepted criterion for such a  
9 judgment exists. Rather, different scholarly or scientific questions require different methods  
10 and approaches. If both humanities and sciences are relevant for a given question, both  
11 should be considered, and the results synergized (Harden & Thomas, 2005).

12 The western scientific bias of Perlovsky’s project is reflected by his first question: “Is  
13 perception of consonance/dissonance a universal that has stayed intact from Homo  
14 Heidelbergensis?” The musical idea of “consonance and dissonance” emerged in the past  
15 millennium of western culture; a scientific question about it must be similarly constrained  
16 (Parncutt & Hair, 2011).

17 The reference to Homo Heidelbergensis is also problematic from a humanities perspective.  
18 This species died out some 200 000 years ago, but behaviors suggesting the existence of  
19 “human culture” only began in the past 100 000 years. In a humanities approach, “human  
20 culture” involves reflective language, art, music, and ritual, as well as learned, culture-  
21 specific rules of social interaction. It also involves such “human universals” as “myths,  
22 legends, daily routines, rules, concepts of luck and precedent, body adornment, and the use  
23 and production of tools” (Brown, 2004, p. 47). The oldest archeological artifact that might  
24 have been a musical instrument is 35 000 years old (Conard, Malina, & Münzel, 2009). Homo  
25 Heidelbergensis is much older; the evidence that they buried their dead (Carbonel &  
26 Mosquera, 2006) is tentative, and if their auditory sensitivity was similar to modern humans  
27 (Martinez et al., 2013), it may have evolved in response to environmental constraints  
28 (survival) rather than social (reproduction). The physiological prerequisite for a behavior  
29 (here, “music”) may exist without the behavior itself existing (Fitch, 2006).

30 The second question in the list is even more problematic: “Is perception of diatonic music  
31 representative of all music’s varieties?” If a diatonic scale has five whole tones and two  
32 semitones per octave, this question excludes a lot of music, including Indonesian slendro and  
33 pelog scales, Arabic quartertones, and much ancient music (Franklin, 2002). The word “all” in  
34 the question suggests that the author is searching for musical universals—an idea that in any  
35 case is doubted or rejected by ethnomusicologists (Nettl, 2000).

36

37 The third question—“If consonance/dissonance mechanism is universal, what exactly do  
38 children acquire in their harmonic hearing throughout childhood?”—is problematic for  
39 another reason. In a scientific context, the expression “consonance/dissonance mechanism”  
40 alludes to a clear operational definition of “cognitive mechanism”. But the mind-body  
41 problem is perhaps intrinsically insoluble (McGinn, 1989). Hard-nosed, skeptical scientists  
42 agree that we do not know, and may never know exactly, how neurophysiology is related to

1 information and subjective experience. The ultimate origin of musical experience may  
2 instead lie in environmental learning and interaction rather than the brain (Gibson & Pick,  
3 2000).

4 In summary, successful research on the origin of music may require constructive  
5 collaboration between humanities and sciences. Due to its scientific orientation (bias),  
6 Frontiers may not be the most appropriate platform for such a project.

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