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The Science-Music Borderlands

Reckoning with the Past and Imagining the Future

Edited by: Elizabeth H. Margulis, Psyche Loui, Deirdre Loughridge

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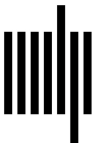
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IV Beyond Musicians and Nonmusicians

Volume Editors

Comparisons between musicians and nonmusicians are ubiquitous in the scientific literature on music. On the one hand, comparisons of their cognitive functions validate that persistent, lifelong engagement with music can shape the brain and mind. For example, classic findings in music psychology have revealed that musically trained individuals, such as those who started formal instrumental training at a young age or those who have had six or more years of musical training (Zhang et al., 2018), show superior encoding of speech sounds (Wong et al., 2007). Findings like these have spurred theoretical developments related to the similarities and differences between music and speech (Patel, 2011) and prompted the more general claim that “music is a resource that tones the brain for auditory fitness” (Kraus & Chandrasekaran, 2010, p. 599). On the other hand, the bifurcation of people into the categories “musicians” and “nonmusicians” relies on assumptions about the experiences and abilities that constitute proof of musicality, which may reflect researchers’ cultural biases and be poorly suited to the competencies or phenomena they hope to illuminate. As Ilari and Habibi note in chapter 17, “a combination of training, occupation, self-identification, and music skills seems to be the defining feature of the musician in human behavior studies. . . . But, as many would argue, the term *nonmusician* is an oxymoron. . . . Aside from misrepresenting human potential, the term *nonmusician* devalues skills that are inherent to being musical, such as the ability to listen to and be moved by music, and it is also detrimental to identity construction and musical participation.”

The reliance on a dichotomy between musicians and nonmusicians and the misunderstandings that accrue as a consequence exemplify the need for an interdisciplinary dialogue. Thus, this section of the book can be read as an extended case study of the issues and challenges raised elsewhere in the volume. By scrutinizing the musician-nonmusician dichotomy from multiple perspectives, the chapters in this section identify the specific issues at stake and chart a concrete path forward, bringing the book’s more theoretical claims into vivid relief.

The prevalence of experimental designs that compare musicians and nonmusicians extends a tradition in psychological science that operationalizes large and elusive constructs by dividing them into levels of independent variables to enable rigorous study. In the case of musicality, this has resulted in discrete levels of variables that can be linked to measurable outcomes, such as cognitive and brain measures. Psychometricians continue to grapple with the challenge of devising statistically valid measures of individual differences in areas such as intelligence testing (e.g., the journal *Intelligence*), and others have moved to characterize individual differences in constructs that may be even more elusive, such as creativity (e.g., *Creativity Research Journal*). The concept of measurable differences in musicality falls somewhere along the continuum between clearly defined and elusive: it dates back to earlier notions of genius and/or talent and, troublingly, back to phrenologists (Fowler & Fowler, 1850) who applied the notion of “scientific proofs of musical genius” to constructs such as singing ability (Manning, 2015). Contemporary research continues to examine the source of giftedness, as exemplified by historiometric approaches (Simonton, 2005; Gardner, 1997) and empirical studies on topics such as childhood precociousness (Winner, 2000). One branch of music neuroscience is devoted to unusual types of musical abilities, such as absolute pitch, synesthesia, exceptional memory (Ericsson & Chase, 1982), musical savantism (Miller, 1987), and musicophilia (Sacks, 2010). Other branches of music neuroscience focus on deficits in musical ability, such as the deficits in pitch perception found in congenital amusia and the lack of appreciation for music found in musical anhedonia.

Modern measures of talent or “musical sophistication,” such as the Ollen Musical Sophistication Scale (Ollen, 2006) or the Goldsmiths Musical Sophistication Index (Müllensiefen et al., 2014), are widely used in music psychology and neuroscience to capture demographic characteristics related to musical experience that might affect a study’s results. Given the time constraints involved in many experiments, contemporary efforts in music psychology actually strive to reduce these measures further, in one case down to a single item for capturing individual differences in musicality (Zhang & Schubert, 2019).

This continuous refinement of tools to measure individual differences in musical behaviors, as part of a more general effort to quantify individual differences in ability, often proceeds without recognition of its problematic history and potential. For example, the history of intelligence testing reveals that this enterprise has played a major role in sustaining systemic racism. Croizet argues that “standardized testing, from its inception, has constituted an institutionalized arrangement aimed at expropriating resources from dominated groups to maintain dominant groups’ privileges.” (2011, p. 770). In addition to reckoning with the legacies of harm done by researchers whose

work has been influential and even revered in their fields, a historical perspective allows a critical examination of the extent to which tools once used to foster inequity can be reconceptualized and repurposed for other ends.

Most operationalizations of the categories musician and nonmusician rely on heavily Westernized notions of musical training, defining *musician* as someone who has had a certain number of years of formal training. This underscores the need for culturally informed as well as cross-cultural research, where the goal is to understand the full spectrum of human experience as evolution, variation, and adaptation in their cultural context, rather than prioritizing statistical power in large and homogeneous sample sizes (Clancy & Davis, 2019).

This section begins with a historical perspective (Cowan's chapter 16), examines the current conundrum within music science (Ilari and Habibi's chapter 17) and best practices in research (Savage et al., chapter 18), and ends with a call for the exploration of new and fertile research areas (Feld et al., chapter 19). Cowan examines the historical context of the seemingly democratizing claim that "the musical mind is the normal mind," advanced by music psychology's founding figure Carl Seashore, together with "scientific" measurements of musicality and their utility for the social engineering envisioned by the American eugenics movement in which Seashore took part. Ilari and Habibi review the literature on musicians and nonmusicians, articulate its problems, and suggest avenues for future research. Savage and colleagues recommend best practices for cross-cultural research in music studies moving forward, with an emphasis on sustainable practices for collaborations. Finally, in an interview with the editors, Feld calls for a reintegration of cognitive approaches with grounded investigations in ethnography and speculates about how to motivate research in music studies that cuts across both disciplinary and cultural boundaries to enrich our understanding of musical skills and experiences.

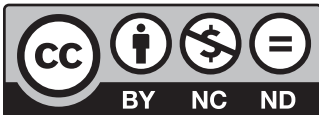
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