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Abstracts

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Edwin E. Gordon's Advanced Measures of Music Audiation: Are they measuring music aptitude or also short-term memory?

Friedrich Platz¹, Reinhard Kopiez², Anna Wolf², Andreas C. Lehmann³

¹University of Music and Performing Arts Stuttgart, Germany; ²Hanover University of Music, Drama and Media; ³University of Music, Würzburg; friedrich.platz@hmdk-stuttgart.de

Background

Several aptitude tests have been developed so far to measure “music audiation”, an innate capacity essential for music aptitude (Gordon, 1989). However, Schellenberg and Weiss (2013) posit that all audiation tests – including the Advanced Measures of Music Audiation (AMMA; Gordon, 1989) – show only low correlations among each other, although they purport to measure the same capacity. From the point of view of construct validity, these conflicting results might generally be explainable due to tests' low validities. Moreover, according to external validity, the AMMA are intended to solely measure audiation and not “memorization, or the discrimination of musically isolated pitches or durations” (Gordon, 1989, p. 16). Yet, the item construction of the AMMA corresponds basically to the one used by Seashore to measure tonal memory (Butsch & Fischer, 1966), except that the silent time between both melodies of an item was set to four seconds, which “were found to be optimal for a student to be able to audiate, but not to imitate or memorize” (Gordon, 1989, p. 19).

Aims

We wanted to conduct a study of discriminant validation comparing participants' performances on both tests to investigate whether an optimized, internally valid version of the AMMA (Platz et al., 2015) measures only music audiation or also tonal memory. Due to the similar item construction, we would expect a high correlation between participants' performances on both tests (H1) that however should indeed capture distinguishable latent traits as Gordon (1989) claimed (H0).

Methods

Following a concurrent validation design, N = 87 participants (M=16.17 yrs. [SD=2.5], 48 female) were tested in a session lasting no longer than 20 minutes performing both tests, the optimized version of the AMMA (Platz et al., 2015) and a short version of the tonal memory subscale of the Seashore test battery (Butsch & Fischer, 1966).

Results

A Bayesian correlation analysis was conducted using JASP (JASP Team, 2017). The results show a strong correlation between both measurements, corrected for attenuation (Median $r = .557$ [.415; .697]). Moreover, our data is 2.177E+12 times more likely under the alternative hypothesis of a positive correlation between both scores when compared to the null hypothesis as predicted by Gordon (1989).

Conclusions

We conclude that the AMMA also determine participants' (short-term) tonal memory instead of audiation only. Thus, participants' test scores on the AMMA can – at least partly explained – with tonal memory capacity.

References

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