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

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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
JASP Team (2017). JASP (Version 0.8.3) [Computer software].
Background

Songs are an ecological platform to enhance children's abilities and skills. Parents and educators use songs frequently to achieve cognitive, academic, sensory-motor, and cultural social skills (de l'Etoile, 2006). However, the contemporary media-oriented reality is changing the developmental and educational landscape. TV shows and mobile streaming have become a major part of preschoolers everyday experiences. Many broadcasting agencies claim they provide children with content which has both developmental and educational qualities, often described as ‘edutainment’, by which producers allude to the shows offering more than entertainment (i.e., contribute to cognitive abilities and academic skills) (Sulkin, & Brodsky, 2015). A majority of the shows directed at preschools integrate songs into the content since songs are seen as salient formal features that help attain children's attention to screen. Further, songs are features that boost children's reproduction of screen content. Though one may assume the creators and producers would use songs as a vehicle to reinforce pro-social and educational values through the use of developmentally appropriate musical and textual features, the characteristic features of songs in preschool TV shows has not yet been investigated. While previous studies have demonstrated that when the broadcasted content matches specific criteria preschool children can imitate, reproduce, and internalise the message they see on screen (Barr et al., 2009), we ask if the songs heard on popular preschool directed TV shows are meeting these demands? Namely, do the songs serve to widen developmental schema, or do they function solely as entertainment? Surprisingly, no research has yet addressed these questions.

Aims

The current study aimed to fill the above-mentioned gap by implementing song analysis of preschool children-directed TV shows broadcasted internationally.

Method

Three channels directed at preschool children were chosen as a source for songs analyses: Disney Junior, Nick JR, and HopTV! All three channels broadcast internationally and declare their commitment to produce and supply high quality screen content with developmental, educational, and social values. To map the songs appearing in the shows we employed measures to appraise the music and linguistic features of the soundscape (Soundscape Appraisal of Broadcast Shows), and the song materials were examined for age-appropriateness and developmental fitting using a criterion-based checklist (Sulkin Infant Song Inventory).

Results

Preliminary findings indicate that music and linguistic features are mainly employed as a strategy to entertain preschool viewers. For the most part, the use of songs is developmentally inappropriate, albeit the lyrics aim to deliver educational values.

Conclusions

The urge for cooperation between media content creators and music education specialists is warranted. Such collaboration will make screen viewing a more appropriate platform for early childhood development.

References

