The development of an assessment for notation-evoked sound imagery (NESI)

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The successful transformation of music from the written score to being played with accurate movements and to its being heard lies at the heart of skilled musicianship. To enable future research on the development of musicians, the processes of this transformation have to be investigated more thoroughly. The aim of this study is to further develop a rapid assessment instrument to observe the transformation from the written score to the imagery of sounding music: namely, the concept of notation-evoked sound imagery (NESI), which follows the notion of notational audiation.

Referring to Brodsky et al. (2008), we have developed and validated n=26 sets of stimuli consisting of a theme melody, a correct variation and an incorrect variation (“lure”) of this particular theme. In this procedure, participants (music students and musicians, N=43) read the theme, try to imagine the sound, hear a correct or incorrect variation and decide whether the heard variation is based on the seen theme. These stimuli have been examined in Pre-study 1 and, by the means of signal detection theory, analysed with regards to their item characteristics (Sensitivity/Easiness d’: M=1.30, SD=0.84. Bias c: M=0.07, SD=0.45). In the upcoming Pre-study 2, both easier and more difficult items are being generated and will be tested in spring 2016. Several control variables will be included based on the preliminary results from the first study.

On the basis of these pretested items, a test instrument will be developed to measure the extent to which musicians are able to imagine the sound represented by a written score (inner hearing). As many musical skills (e.g., sight-reading, playing by ear…) rely on the fast and accurate switching between sounding music and the written score, assessments will both facilitate research in analytical hearing and mental representations of music and uncover the role of the musical ear for musicians of all skill levels.