Commentary on Watanabe and Takeda (2023)

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ABSTRACT: The interesting study by Watanabe and Takeda (2023) found a significant association between musical affinity and physiological characteristics of piano students. However, several issues limit the reliability of their work and make a sensitive interpretation of their results rather premature. This commentary discusses three main limitations of the study and suggests possible solutions to be implemented in future research.

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WATANABE and Takeda (2023) investigated the association between musical affinity and physiological characteristics of piano students. The study was greatly inspired by the classification of piano composers by Kobayashi (2019), who identified a link between compositional styles and physiological aspects of performing and teaching music. A second major reference was the Four-Stance Theory by Hiroto (2014), from which the authors took a self-administered test to measure stance type. Thus, pianists were divided into groups according to the location of their center of gravity on the anteroposterior and mediolateral axes. Their affinity for specific composers was assessed by asking them to indicate the composer they preferred, and whose music they felt most comfortable playing and easiest to understand. The results showed a significant association between stance types and musical affinity. For instance, pianists whose center of gravity was located towards the toe and the inner side of the feet were more likely to prefer composers such as Beethoven and Debussy to Bach and Ravel. Overall, this is an interesting work. The study design is straightforward, the statistical analyses are appropriate, and the results are surely original. I particularly praise the integrity of the authors who meticulously listed the limitations of their work and commented on the effects that these might have had on the results. However, I think there are three main points for readers to consider.

First, numerous publications have already investigated the relationship between pianists' performance skills and the biomechanical characteristics of their hands and trunks (i.e., Ackermann et al., 2014; Goebl & Palmer, 2013; Lee, 2010). Watanabe and Takeda (2023) brought this idea to the extremes, associating technical, intellectual, and emotional affinities with specific composers to stance parameters such as the position of the center of gravity. Although this sounds fascinating, the contextual distance between these variables also opens the possibility of detecting spurious relationships, especially with small sample sizes and low statistical power. In addition, the study does not provide a principled and convincing explanation for such a far association. For instance, how can stance types enhance or impair the ability to play certain pieces of music? Do performance abilities necessarily affect the degree to which performers understand and enjoy music?

A second limitation of the study is the dependence on Kobayashi's (2019) classification of piano composers, used by the authors to link stance type and pianists' music affinity. This work has not been published but it was presented during a lecture. Therefore, it is not accessible to the readers. Very little information is provided regarding the criteria used by Kobayashi (2019) to categorize musical composers and to determine the ideal technical approach for performing their compositions. Moreover, as the literature on aesthetic judgments in music reports low levels of interrater agreement (i.e., Passarotto et al., 2023; Thompson & Williamon, 2003), it is not difficult to find points of disagreement with Kobayashi's (2019) ideas. For instance, why composers who lived in the same historical period, geographical area, and cultural environments such as Debussy and Ravel were classified as opposite in style? Are Ravel's works closer related to Bach's than Debussy's compositions in terms of style and playing technique despite being composed for different musical instruments? This is what Kobayashi (2019) suggests, and the results presented by Watanabe and Takeda (2023) inherit the arguable reliability of this classification method. This limitation could be overcome by having Kobayashi's (2019) work validated by a cohort of music experts.

Third, stance type was assessed based on six physical exercises developed by Hiroto (2014). Despite several publications evidencing the effectiveness of the Four-Stance Theory in enhancing performance quality in sports performed in standing posture, according to the authors, only three studies have explored its use in the domain of music. Among these, only a conference paper is written in English, and it does not mention Hiroto's (2014) work directly. Therefore, the generalizability of the Four-Stance Theory in music should not be taken for granted. For example, Hiroto's (2014) exercises may not be appropriate for assessing the position of the center of gravity in a seated position, which is peculiar to pianists. To overcome these limitations, future studies should consider objective anthropometric parameters measured through more robust and established assessment devices and protocols (i.e., Ackermann et al., 2014; Ohlendorf et al., 2017).

In conclusion, the development of teaching methods that also consider students' physiological characteristics is certainly important. In this sense, Watanabe and Takeda (2023) carried out an original and innovative study. Nevertheless, a series of reliability issues make a sensitive interpretation of their findings rather premature. Future works should aim to replicate these results and overcome the issues raised in this commentary and by the authors themselves.

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NOTES

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