

The role of replication studies and meta-analyses in the search of verified knowledge

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ABSTRACT

Background

In the natural sciences the replication of important findings plays a central role in the creation of verified knowledge. For example, when Fleischmann, Pons & Hawkins (1989) reported their sensational finding of “cold fusion”, the scientific community of physicists replicated their study within 6 weeks and could falsify the authors' results. However, in the discipline of psychology there is only one attempt for a systematic reproduction of published studies (see the website of the Reproducibility project, <http://http://openscienceframework.org/project/shvrbV8uSkHewsfd4/wiki> and the “Project Progress and Results Spreadsheet”). In music psychology, this self-evident tradition of replication studies plays only a minor role.

Aims

I will argue that replication studies have two important functions: (a) as a “best practice” mechanism of academic self-control which is necessary to prevent the publication of premature results; (b) as a reliable way for the production and integration of verified knowledge which is important for the advancement of every scientific discipline.

Main Contribution

Comparisons of selected replications with original studies will demonstrate that the design of replications is a creative research strategy. Replication studies discussed will come from topics such as “music cognition”, “open earedness” (e.g., Kopiez & Lehmann, 2008), or “neuroscience of music” (e.g., Kopiez, Galley & Lehmann, 2010). It will be made clear that the strategy of replication and slight enhancement of a study are innovative strategies which enable us to go beyond the scope of the original paper. In a last step I will show the high power of meta-analysis in the production of verified knowledge. This important method for the uncovering of reliable effects by means of data aggregation from single studies should be extended in the field of empirical music research (see Platz & Kopiez, in press).

Implications

One consequence of the replication approach will be the future need for an online repository of already conducted replication studies. This idea will be discussed in the symposium.

Keywords

Research methods - epistemology - validity - meta analysis.

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