

## Cross-Cultural Music Similarity and Indian Music Evaluation Experiment

### A. Purpose of this experiment

Modern tools for evaluating similarity between songs have given us various tools for music recommendation, analysis and cataloging. However many of these tools are optimized for western music, and perform poorly on non-western samples of music. One of the main reasons for this is that there is a lack of human annotated data on non-western music for algorithms to base their results on. In this experiment we gather evaluations of non-western music from musicians and non-musicians to help understand how we listen to music, and perceive similarity. We present three different similarity collection methods: pairwise, triplet and song-wise evaluations on a cross-cultural music dataset. We then look more specifically at evaluations of indian popular music from Indian raters. Our aim is to look at patterns of evaluation that arise between musicians of different regions, musicians and non-musicians and raters from different countries. We hope that the results of this experiment can help us better understand how culture affects our inherent biases, how we listen to music unfamiliar to us and how to improve current algorithms in capturing human perception.

### B. Methods

Part 1 of this experiment is an evaluation of cross-cultural music similarity. We ask participants to evaluate 5 songs by first presenting them in pairs, then in triplets and finally evaluating them on 13 different musical features. The terminology of these 13 features are explained with audio examples before the song-wise evaluation starts.

Part 2 of the experiment is a more in-depth analysis of indian popular music along 17 features. These include the 13 features in the previous part, with a few added criteria on instrumentation. Finally, we end with a questionnaire on musical experience and exposure to non-western music.

The full experiment is estimated to take one hour, though this may vary from person to person.

### C. Usage of personal data

The acquired data and personal information will not be used for any purpose other than research purposes. All data collected is anonymized. We collect data on gender, native tongue, musical experience, musical preferences and exposure to world music. This data is anonymized and identified using a participant ID provided to us by the participant. Personal information will be kept confidential when presenting research through specialized academic societies, academic journals, research groups, etc. We take all possible measures to store data and do not leak it to third parties. This stored personal data will be destroyed no later than 10 years after

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the study is completed. Since the acquired data is handled anonymously, it is not possible for the experimenter / survey operator to identify from which individual the acquired data is.

### D. Rights of the participants

It is up to the participant to decide whether or not to cooperate with this research. If the participant does not agree to take part in this study, they will not incur any penalties or disadvantages. The participant can also revoke consent at any time, without any disadvantages. If the participant wants to stop the experiment, they can do so at any time. If the experiment is stopped prematurely, the data (paper media / electronic file) and analysis results obtained before the cancellation will be discarded and will not be used for further research. However, please note that this data cannot be destroyed if there are published analysis results at the time of the cancellation request.

### E. Costs and Compensation

There is no cost for this experiment. Participants will be compensated JPY 1,050 per hour for their time. If the experiment takes less than an hour, they will be compensated the full fee. Participants who withdraw their name from participation, choose to stop the experiment prematurely will also be compensated for their time with the full participation fee. After the experiment is published, if participants request for it, they will have full access to an electronic copy of the paper and access to the anonymized data from the experiment.

### F. Intellectual property rights

Depending on the progress of research, intellectual property rights such as those pertaining to patents may arise, but the attribution of intellectual property rights is determined in consultation with researchers, Keio University, or collaborators outside Keio University. It does not belong to the data provider.

### G. Contact information for Inquiries and requests

If you feel that the rights of those who participate in this research are not being protected, or if you would like opinions or information other than from the person in charge, please contact us at the following contact information.

SFC Office of General Affairs  
Research Ethics Committee  
Keio University, Shonan Fujisawa Campus  
5322, Endo, Fujisawa City, Kanagawa Prefecture  
Japan. 252-0882

## Experiment Consent Form

Please sign the relevant section of the attached sheet after understanding the document and the explanation given by the observer. Thank you for your understanding and cooperation.

For any further inquiries please contact:

Experiment / Survey Implementer  
Graduate School of Media and Governance.  
Keio University, Japan

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