

Measuring the Perceptual Similarity of Middle-eastern Rhythms: a Cross-cultural Empirical Study

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A study done previously with a group of listeners at Harvard University, not familiar with traditional Middle Eastern music (Toussaint, Campbell, & Brown 2011) was replicated with subjects at New York University Abu Dhabi (United Arab Emirates), who were familiar with traditional Middle Eastern music. The experiment used nine Middle Eastern and Mediterranean rhythms consisting of two sounds, a low (*dum*) and a high-pitched (*tak*). The rhythms vary according to meter complexity, as well as the numbers of pulses, *dums*, *taks*, and onsets that they possess. The results of the two groups were compared with each other and with predictions made by the edit distance and a feature-based similarity measure that incorporated metrical, grouping, and structural information. The effects of grouping and meter on judgments of rhythm similarity were also compared. The main questions explored are whether: (1) the Harvard subjects judge the rhythms higher up on the similarity scale than their New York University Abu Dhabi counterparts, and (2) whether the judgments of the Harvard subjects depend on surface features such as rhythm length, the number of onsets, and the number of “*dum*” sounds present, rather than the underlying meter.

References

Toussaint, G. T., Campbell, M. & Brown, N. “Computational Models of Symbolic Rhythm Similarity: Correlation with Human Judgments,” *Analytical Approaches to World Music Journal*, Vol. 1, No. 2, 2011.