

# Commentary on Lee & Zaryab

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**ABSTRACT:** The study by Lee & Zaryab (2022) investigated whether listening to high-groove music affects how heterosexual observers rate the attractiveness of people from the opposite sex. They found a very small positive effect of high-groove music on the male observers, but no effect on females. In my commentary, I argue for a more conservative interpretation of the results than the one offered by the authors.

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LEE & Zaryab (2022) investigated whether listening to drum patterns of different grooviness affects how heterosexual respondents (both male and female) rate the attractiveness of members of the opposite sex shown on photographs in a simulated dating situation. In my commentary, I would like to focus on aspects of the data analysis and of the interpretation of results that I consider to be problematic.

Following Marin et al. (2017), authors investigated to what extent the attractiveness ratings depended on both the gender of the participant and the groove ratings of the musical stimuli. They applied two strategies to analyse the data from 84 participants (3024 observations):

- (1) One analysis used groove ratings ( $p = .768$ ), participants' gender ( $p = .351$ ) and the groove ratings  $\times$  gender interaction ( $p = .199$ ) as predictors for the attractiveness ratings in a linear mixed-effects model (LME) with 3024 observations from 84 participants. In this model, none of the effects was significant at the  $\alpha = .05$  significance level.
- (2) For the second analysis, the data was split into gender groups (41 female, 43 male), and analysed with two separate LMEs depending from the groove ratings as single linear predictor. There was no significant effect of grooviness on women's attractiveness ratings ( $p = .711$ ), but men's ratings were greater when listening to high-groove music, compared to low-groove music ( $p = .030$ ).

In my opinion, only the first analysis strategy provides legitimate results, because the interaction term explicitly tests whether males and females respond differently to the grooviness of the stimuli. The authors decided to interpret the results of the second analysis instead, and it is not difficult to understand why: the analysis of the male subsample is the only model in which the grooviness variable is a significant ( $p = .030$ ) predictor for the attractiveness ratings and thus supportive of the study's main hypothesis that groovy music increases the perceived attractiveness of a potential date. The first analysis strategy, on the other hand, yields a null result, which is arguably a disappointing result to report after all the effort that went into the preparation of the study.

In many cases, a null result leads to rejection from journals, regardless of the quality of the research in terms of design and execution. This type of rejection is the main cause of publication bias, one of the major plagues of empirical research (De Long & Lang, 1992; Stanley, 2005). However, *Empirical Musicology Review* is an ideal platform to present the result of a study as it is, even if it is a null result: the editors make their decision about publication/non-publication before the paper is discussed by external reviewers/commenters. This has the advantage that, after this decision is reached, authors, reviewers, and editors can collaborate in the most open and straightforward way to make the paper the best and most honest account of the study results without the risk of the paper being rejected.

In my eyes, it is unfortunate that authors decided to stick with the split-sample models of analysis (2). As a consequence of this choice, they need to carefully hedge their statements in order not to explicitly claim that there was a difference between females and males. Yet, such a difference is implicitly assumed in



the title of the paper, in its abstract, and throughout the Discussion section. This potentially misleads inattentive readers into believing that there was a manifest difference between males and females. Also, the effect of the groove ratings in the male sample is so tiny that the authors have a difficult time arguing for any practical relevance of this effect. Finally, the authors seek theoretical arguments in the Discussion section in order to justify the effect found in the male sample as genuine. This puts the cart before the horse: in the empirical sciences, statistical inference is used to investigate the merit of theory-based hypotheses, not the other way around.

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### NOTES

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