Review: MP-2020-0005 --- The attraction of pre-dominant chords (Brown & Tan)

In this manuscript, Brown and Tan explore a variety of factors that influence ratings of "attraction" between 31 different pre-dominant chords and the dominant chord. Overall, I think the research question is interesting, and that the experiment is well-executed. I would like to see substantial revising of the predictions and analyses before I would be comfortable recommending publication.

My primary issue with this manuscript is the lack of a clear connection from literature to predictions to analyses.

On P7-8, the authors "predicted that the chromatic pre-dominants shown in Table 2 would be perceived as the most attracted to the dominant, followed by diatonic pre-dominants, then bridge chords, and finally non pre-dominants, and that this differentiation would be more pronounced as training in classical music, and particularly music theory, increased." It is not clear from the preceding material what the rationale for these hypotheses are, and therefore it is unclear how to interpret the results based on an analysis of chord type and musical training. This reasoning needs to be made explicit for the reader.

When the authors additionally present five acoustic/tonal factors that are predicted to affect attraction ratings, these are better rationalized, but without a consideration for how they might interact with the previous chord categories or musicianship.

This lack of clarity follows the reader into the results section, where it's not clear why some factors are tested via ANCOVA, and others are tested via regression. Separate regressions are performed for each participant group, which is indicative of the untested assumption that these regression predictors will interact in some way with participant group.

I would suggest that the authors clarify their predictions in the introduction, and that they take a mixed-effects regression approach to run an omnibus test of all of their predictors on their dependent variable (attraction). Such an approach would provide a relatively assumption free test about the main effects and interactions that should be further explored.

Minor comments follow.

Introduction

P5 line 51: "We also examine five acoustic and tonal factors that potentially shape this experience." --- This is not expanded on until P8; consider avoiding mentioning it until then to avoid reader confusion.

P7 line 20: “Despite these seminal studies, no study has systematically tested the perceived relationship of two tonal functions that are not tonic." --- Bharucha & Krumhansl’s (1983) multidimensional scaling experiment might be relevant here

Methods

P12 --- Musicianship: Does it make sense to treat these as groups, when the GMSI gives continuous measures for various facets? I’d be interested to see the min/max for training for each group; it seems likely they’d overlap quite a lot.

P13 Procedure --- Were any catch trials employed to make sure participants were paying attention, especially for the Prolific sample?

--- “Participants were forced to respond to both questions before moving on to the next trial” I assume that one of the questions is the attraction rating; what is the second?

Results

P14, line 17 --- “no significant effect of phase” --- does “phase” refer to Block? Please choose consistent terminology. What are the two factors in the ANOVA? If “two-factor” refers to the two levels of the block factor, this should be referred to as a one-way ANOVA. Would you expect there to be interactions between phase/block and the other variables? If so, this variable should be assessed in the omnibus statistical test that follows.

P15 Line 17 “between-subjects effects of Participant Group, musical training, musical theory training…” --- these predictors are all related. Please report correlations between predictors. Clarifying your predictions earlier in the manuscript would help to clarify the analysis approach.

P17-18 --- Scale degree pairing analysis: Please provide more background for this. Why do this? Why predict what you predicted? Slightly more explanation would be helpful too, to help readers (especially those who not music theory experts) understand that those pre-dominant chords contain those scale degrees.

P18, line 17: “Yet, the listening strategy used by the junior/senior music majors was not always accurate.” --- Not sure if “accurate” is an appropriate term here. Consider “disagrees with music theoretic descriptions”?

Discussion

P19 line 15 “Whereas previous research has asserted that listeners with varying degrees of musical training judge the tension of chords similarly to one another (Krumhansl, 1996), our study finds that musical training does make a difference for

perceived attraction.” --- the methods/operationalization of variables between the two studies are quite different (real music vs. controlled chords, tension vs. attraction, etc.). This comparison deserves more explanation. What do you think the difference is between tension and attraction? Is there one, or is the difference between the studies more methodological?

P20 Corpus analysis --- please move this to results section

P26 line 15 --- re: Bach chorales, do you have any evidence of this from the genre analysis, i.e., an interaction between musical training and classical listening?

line 36 --- “skew” is inappropriate here, try “influenced” or “affected”? How would unequal group sizes affect the results, exactly?

FIGURES AND TABLES

Some of these are blurry- please check resolution

Table 3: Please provide the entire table of values, either in the paper, in supplementary material, or on a repository like Open Science Framework.

Figure 5 is very difficult to understand. Restructuring analyses around clearer predictions might help clarify which figures would best illustrate the results.