**Mixed ANOVA Homework**

DeCasper and Fifer conducted a study to investigate the extent to which newborn infants are able to discriminate their mother's voice from the voice of another woman, a process that could influence the formation of the mother-infant bond (DeCasper, A. J., & Fifer, W. P. [1980], Of human bonding: Newborns prefer their mothers' voice. *Science*, *208*, 1174-1176). The participants were 10 newborns younger than three days of age. Baseline measures of each infant's sucking activity on a nonnutritive nipple were obtained for 5 minutes. Of particular interest was the median interburst interval (IBI), defined as the elapsed time between the end of one burst of sucking and the beginning of the next. A burst was defined as a series of individual sucks separated from one another by no more than two seconds.

After baseline measures had been obtained, five infants were randomly assigned to a condition where IBIs greater than or equal to their individual baseline median would play a tape recording of their own mother's voice. Bursts terminating in intervals less than their baseline median played a recording of the voice of one of the other nine mothers. The other five infants were assigned to a reversed condition. For them, bursts shorter than their median played the mother's voice, and bursts longer than the median played the nonmaternal voice. Two measures were obtained for each infant: median IBI during baseline and median IBI over a 20-minute period with differential vocal feedback. The researchers' hypothesized that if infants recognized their mother's voice, then they would adapt their IBI (either make it longer or shorter) to produce the tape recording of her voice relative to baseline. The following data (IBIs in seconds) approximate the actual data obtained in the study.

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**Group 1 (Larger IBI Played Maternal Voice)**

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*Participant Baseline IBI Feedback IBI*

1 4.4 6.4

2 1.0 1.9

3 3.4 5.2

4 3.3 3.3

5 4.5 4.0

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**Group 2 (Smaller IBI Played Maternal Voice)**

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*Participant Baseline IBI Feedback IBI*

1 5.8 1.8

2 4.3 1.9

3 3.7 2.5

4 3.4 1.7

5 3.8 3.0

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**Write-up your conclusions adhering to the basics of APA-style. Short intro, methods, and results.**

* 1. **Introduction**: Remind the reader what the study’s goals or central questions are in words before plunging into the details of analysis.
  2. Tell the reader what kind of analysis was conducted: be sure to implicitly identify both the independent and dependent variables when describing analyses.
  3. **Method**: In the methods section carefully explain which follow up tests you will be doing:
     1. State which you are doing (planned, unplanned, simple effects, etc) and for which factors (main effects, interaction).
        1. Justify if you are correcting alpha/pvalue in any way (you are free to correct or not but you must defend your choice).
        2. Don’t forget to reference all r packages you are using and version numbers.
  4. Present the statistical results, using full sentences, reporting the test statistic, and using the correct formatting for an F-test. (*Effect size required for Main effects and interactions*)
  5. Report the follow up tests (*Effect sizes optional if struggle with the code*)
  6. Explain in plain English the direction of differences between significantly different groups --in other words, do not merely use the word “different,” instead be sure to use words such as “was higher than,” or “was lower than,” “less,” or “more”.
  7. Single-space *[APA is double, lets save the trees].*
  8. Create a figure and reference it in text.
  9. Give us the complete R script you used to generate the results.