Reproduced Report: For 5-Month-Old Infants, Melodies Are Social

Ana Lakshin[1]

[1] Brooklyn College

Author Note

Psychology Department of Brooklyn College. Psych 7709

Correspondence concerning this article should be addressed to Ana Lakshin, 2900
Bedford Ave, Brooklyn, NY 11210. E-mail: Ana.Lakshin09@bcmail.brooklyn.cuny.edu

Abstract

Using Mehr et. al (2016)'s original data the following will be a reproduction of the first experiment's analyses. The study used 5 month old infants, two songs differing in familiarity and two unfamiliar singers to determine if familiarity with a song will result in longer looking times at the unfamiliar singer. It was found that infants gazed at the unfamiliar person singing a familiar song longer than at the new person singing an unfamiliar song.

Keywords: music, social cognition, reproduced report, memory

Word count: X

Reproduced Report: For 5-Month-Old Infants, Melodies Are Social

Methods

Participants

There were 38 full-term infants and their parents from the greater Boston area. ## Procedure Parents learned to sing one of two new songs. They sang one of the songs to their infants on a regular basis. After 1 to 2 weeks of song exposure, the infants returned to the lab for a selective-attention test. During the baseline trial of the test, two unfamiliar individuals silently smiled at the infant for a brief period of time after which each individual sang one of the two songs. After one sang the familiar and the other sang the unfamiliar song, the two would again silently smile and gaze at the infant.

Data analysis

We used R (Version 3.5.2; R Core Team, 2019) and the R-packages *data.table* (Version 1.12.0; Dowle & Srinivasan, 2019), *dplyr* (Version 0.8.0.1; Wickham, François, Henry, & Müller, 2019), *ggplot2* (Version 3.1.0; Wickham, 2016), *ggsignif* (Version 0.5.0; Ahlmann-Eltze, 2019), *papaja* (Version 0.1.0.9842; Aust & Barth, 2018), *pwr* (Champely, 2018), *rmarkdown* (Version 1.11; Xie, Allaire, & Grolemund, 2018), and *shiny* (Version 1.3.0; Chang, Cheng, Allaire, Xie, & McPherson, 2019) for all our analyses.

Results

In the baseline condition, there was no difference in gazes to either singer. The mean looking time of the familiar song's singer was 52.11% (SD = 0.18) which was not significantly different from chance according to the one sample T-Test $t(31) = 0.67$, $p = .505$.

The familiarization stage was unsuccessfully replicated. Original results claim the duration of gazing at the singer of the familiar song had a mean of 15.6 s with a standard deviation of 5.07. Reproduced mean was 0.46 with standard deviation of 0.15. For duration of gazing at singers of the unfamiliar song, the original study reported a mean of 15.3 s and standard deviation 5.10. Reproduced mean was 0.47 with standard deviation of 0.13.

During test phase, the infants looked at the silently smiling singer of the familiar song significantly more than chance (M= 0.59, SD = 0.18) $t(31) = 2.96$, $p = .006$.

Also, during test phase the proportion of time during which the infants gazed at the singer of the familiar song was greater than the duration during baseline ($t(31) = -2.42$, $p = .022$)'.

```
## Warning in wilcox.test.default(c(0.4371257, 0.4125326, 0.754491,
## 0.4388778, : cannot compute exact p-value with ties
```

```
## Warning in wilcox.test.default(c(0.4371257, 0.4125326, 0.754491,
## 0.4388778, : cannot compute exact p-value with ties
```
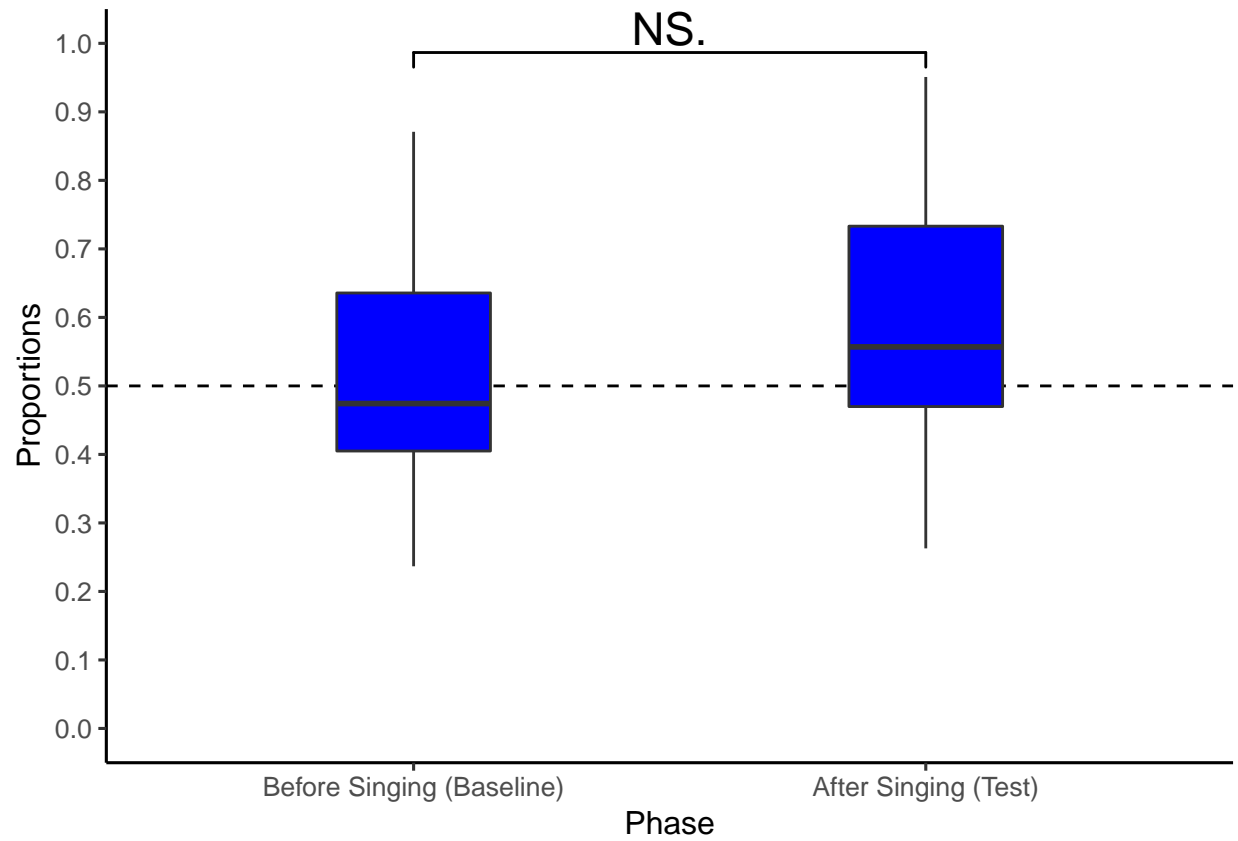
Figure 1
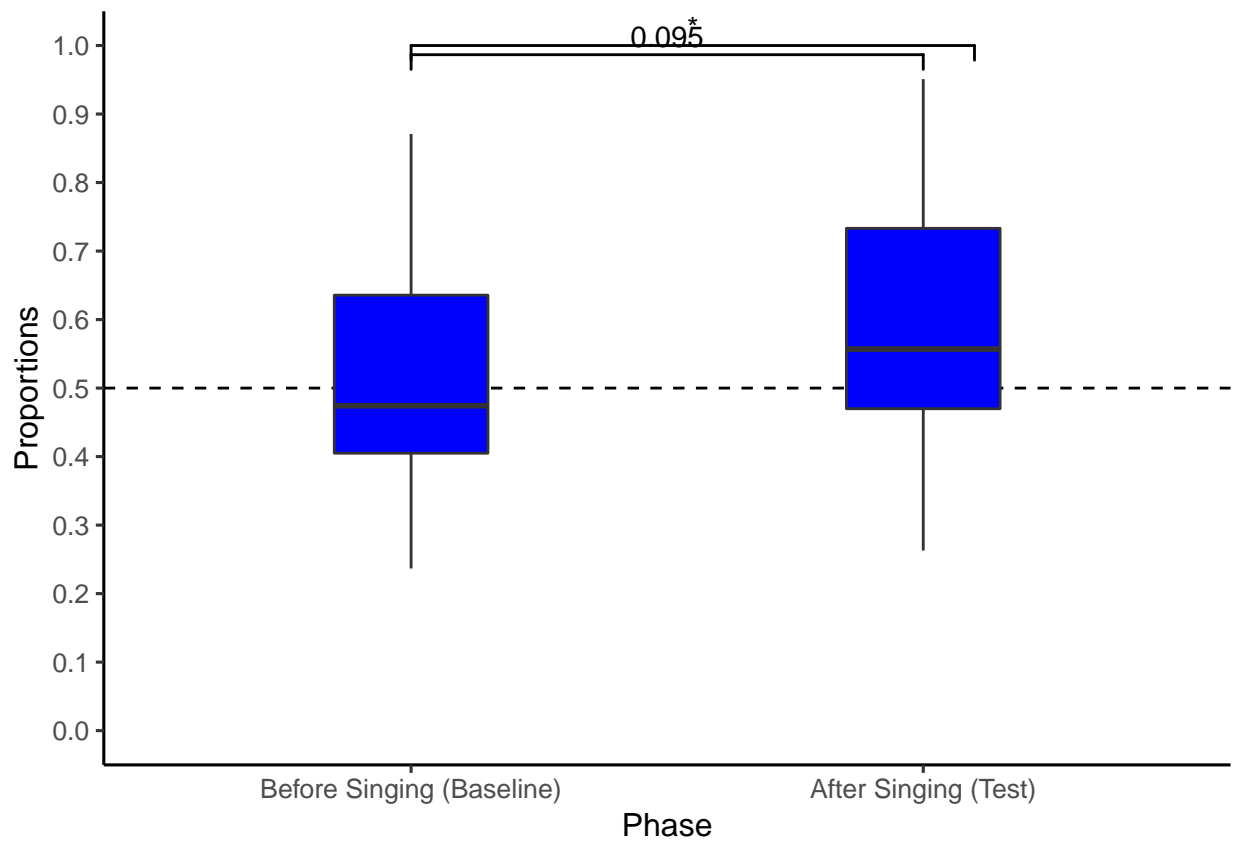
\# Discussion Re-analysis was successful for baseline and test phase. It was not successful for familiarization phase and for display of significance on graph. Also, something is wrong with the bibliography file
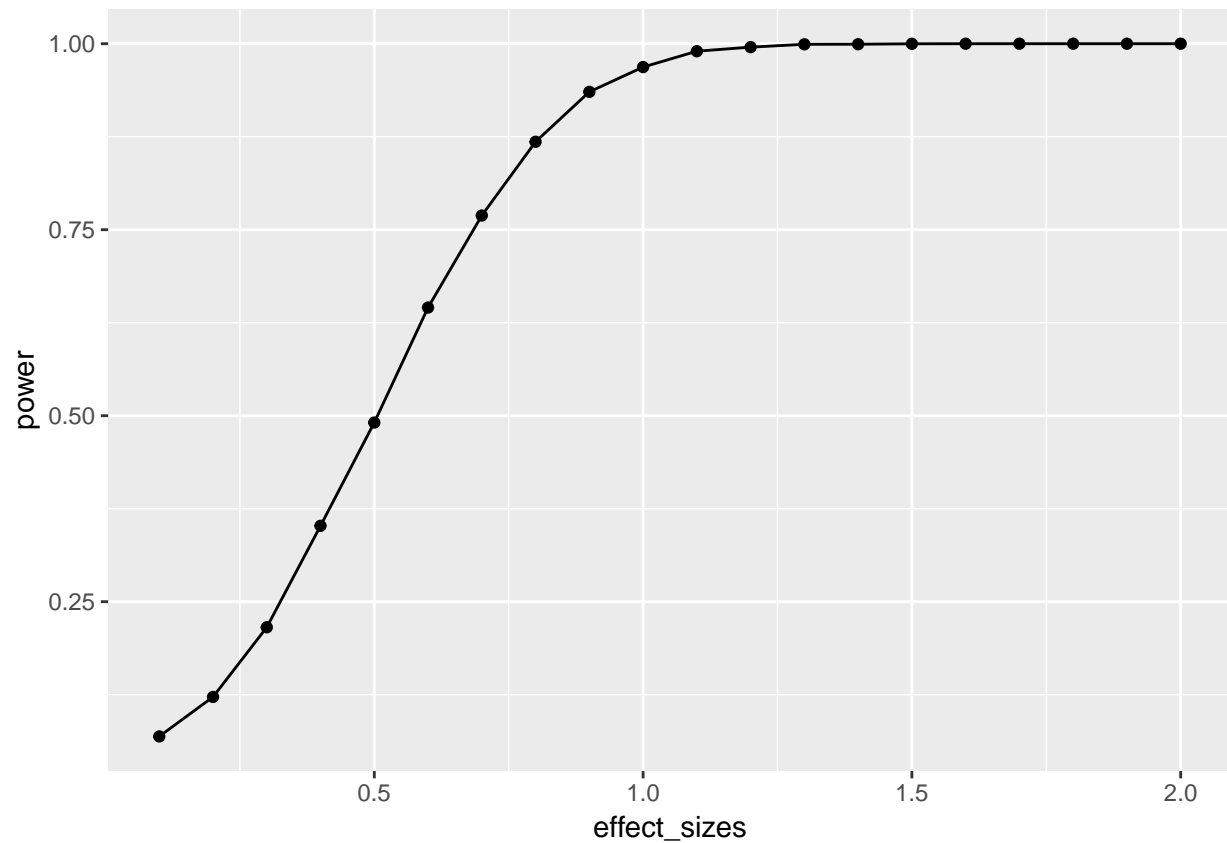
Simulation-Based Power Analysis

Figure 2

References

Ahlmann-Eltze, C. (2019). *Ggsignif: Significance brackets for 'ggplot2'.* Retrieved from
https://CRAN.R-project.org/package=ggsignif

Aust, F., & Barth, M. (2018). *papaja: Create APA manuscripts with R Markdown.*
Retrieved from https://github.com/crsh/papaja

Champely, S. (2018). *Pwr: Basic functions for power analysis.* Retrieved from
https://CRAN.R-project.org/package=pwr

Chang, W., Cheng, J., Allaire, J., Xie, Y., & McPherson, J. (2019). *Shiny: Web application
framework for r.* Retrieved from https://CRAN.R-project.org/package=shiny

Dowle, M., & Srinivasan, A. (2019). *Data.table: Extension of 'data.frame'.* Retrieved from
https://CRAN.R-project.org/package=data.table

R Core Team. (2019). *R: A language and environment for statistical computing.* Vienna,
Austria: R Foundation for Statistical Computing. Retrieved from
https://www.R-project.org/

Wickham, H. (2016). *Ggplot2: Elegant graphics for data analysis.* Springer-Verlag New York.
Retrieved from https://ggplot2.tidyverse.org

Wickham, H., François, R., Henry, L., & Müller, K. (2019). *Dplyr: A grammar of data
manipulation.* Retrieved from https://CRAN.R-project.org/package=dplyr

Xie, Y., Allaire, J., & Grolemund, G. (2018). *R markdown: The definitive guide.* Boca
Raton, Florida: Chapman; Hall/CRC. Retrieved from
https://bookdown.org/yihui/rmarkdown