

The Influence of Music on Psychological Power

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INTRODUCTION

- According to Biallasi et al. (2015) there was a significant effect of motivational music and arousal in the prefrontal cortex.
- Hsu, Huang, Hordgren, Rucker, and Galinsky (2015) found that high power music caused participants to complete more word fragments (P _ _ E R completed as P O W E R) as power words and wanted to take control of an imaginary situation. The same results were found when songs were shifted to lower pitches.
- Participants exposed to high power music should complete more word fragments as power words and are more likely to want to roll the die for themselves than those who were exposed to low power music.
- Participants exposed to songs shifted to lower pitches should complete more word fragments as power words and are more likely to want to roll the die for themselves than those who were exposed to songs shifted to higher pitches.

METHOD

- Participants:** 70 participants were used (55 female and 15 male) with an average age of 18.8
- Design:** Both independent variables were independent samples and participants were assigned to conditions using random block assignment
- IV# 1:** High power and low power music defined by Hsu et al. High power music- We Will Rock You (Queen), Get Ready for This (2 Unlimited), and In Da Club (50 Cent). Low power music- Because We Can (Fatboy Slim), Who Let the Dogs Out (Baha Men), and Big Poppa (Notorious B.I.G.).
- IV# 2:** Frequency shift- shifted down two semitones, as recorded, or shifted up two semitones
- DV# 1:** Number of words completed as power words. (e.g. P _ _ E R can be complete as either P A P E R or as P O W E R)
- DV# 2:** Have researcher or self roll a die for an imaginary situation if you could guess the value of the die the participant would win \$5
- Materials:** Songs, Audacity version 2.0.5. (software for shifting frequencies), word fragments, Interpersonal Personality Item Pool (IPIP), and sound pressure meter
- Procedure:** While music was playing, participants completed the IPIP at their own pace, then completed word fragments with a time restriction of one minute per word fragment. Then, participants were asked if they wanted the researcher or themselves to roll the die in order to receive an award. Participants were asked three questions about how they were feeling then asked their age and gender.

RESULTS

Power Word Fragments Completed

- The ANOVA revealed a main effect of the frequency shift of the music on the number of power word fragments completed, $F(1, 64) = 3.418$, $MS_{error} = 0.790$, partial $\eta^2 = .097$, $p = .039$, $\alpha = .05$, (see Figure 1).
- Tukey multiple comparisons failed to reveal a reliable difference in the number of word fragments completed as power word for the shifted lower and as recorded levels. Both had marginally statically significantly more power words than the shifted higher level ($p \leq .090$)
- The ANOVA failed to reveal a main effect of the power of the music (as defined by Hsu et al., 2015) on the number of power word fragments completed, $F(1, 64) = 0.046$, $MS_{error} = 0.790$, partial $\eta^2 = .046$, $p = .831$, (see Figure 2).
- The ANOVA failed to reveal an interaction of the power of the music and the frequency shift of the music, $F(1, 64) = 2.292$, $MS_{error} = 0.790$, partial $\eta^2 = .067$, $p = .109$.

Figure 1: Power Words Completed with Frequency Shift

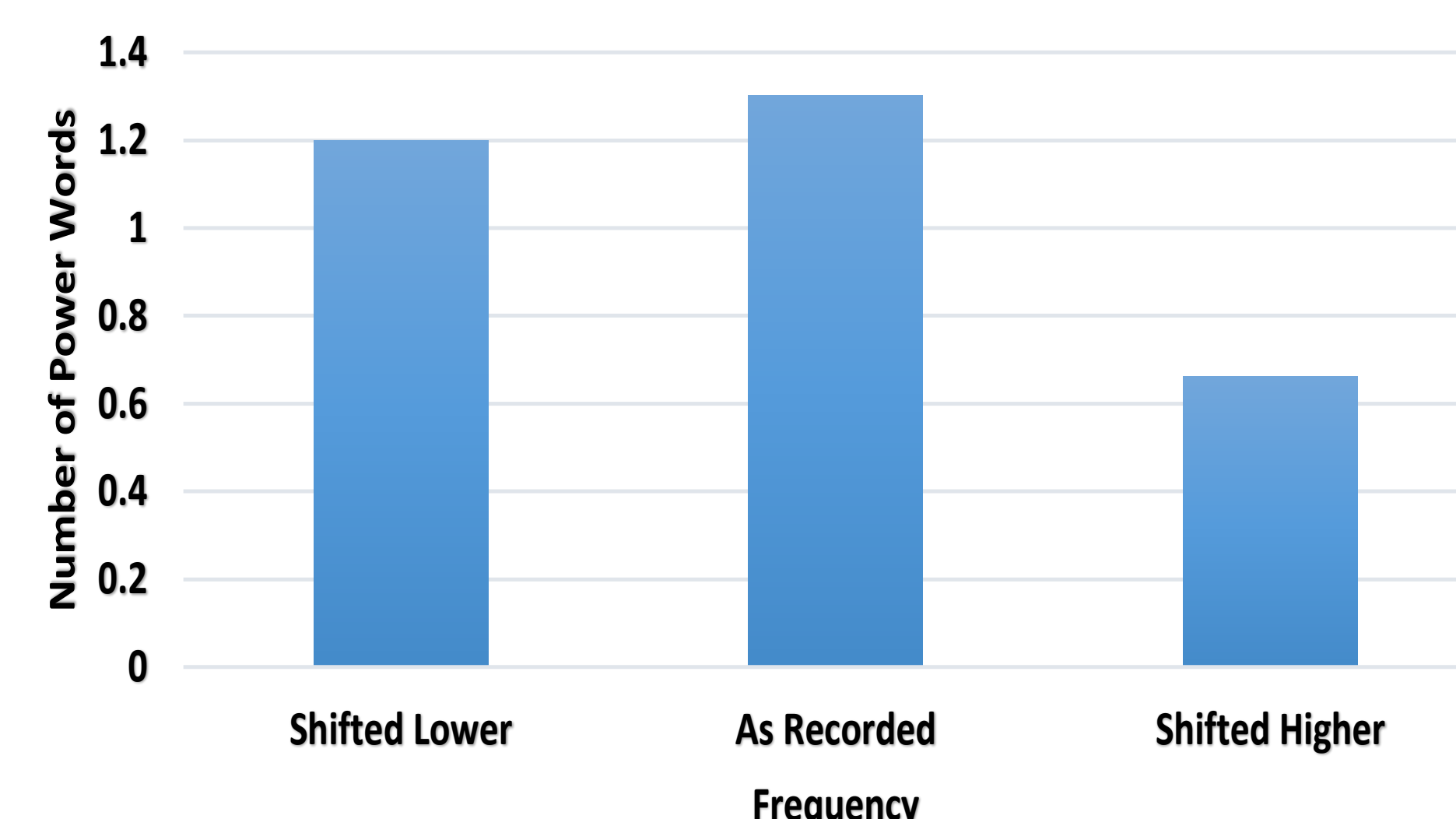
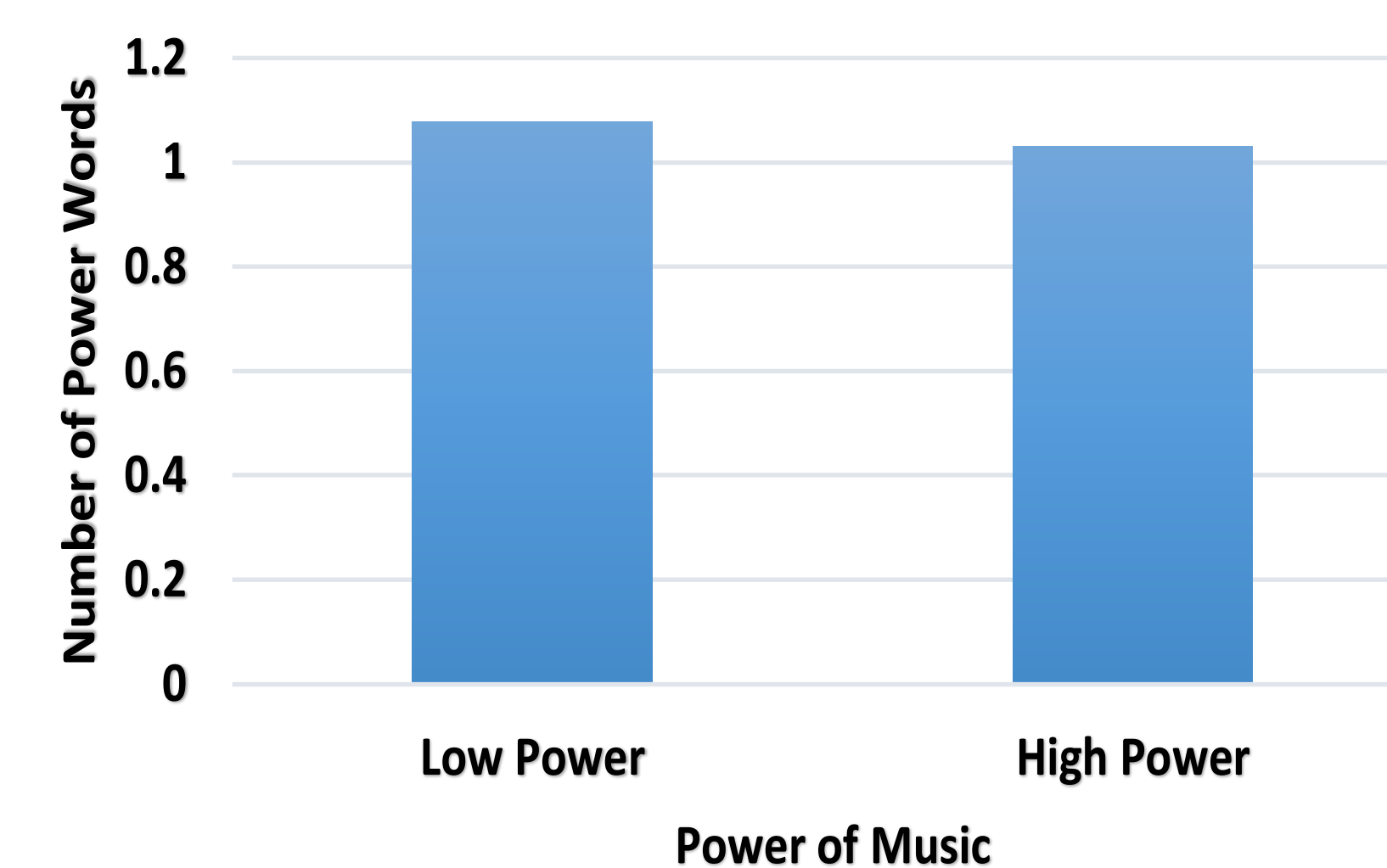


Figure 2: Power of Music and Power Words Completed



Rolling the Die

- Music power and the person who rolls the die are likely dependent, $\chi^2(1) = 5.799$, $p = .016$, Cramer's $V = .288$, (see Figure 3).
- There is insufficient evidence to suggest that the frequency of the music and who rolls the die are related, $\chi^2(1) = 0.588$, $p = .745$, Cramer's $V = .092$, (see Figure 4).

Figure 3: Rolling the Die According to Power

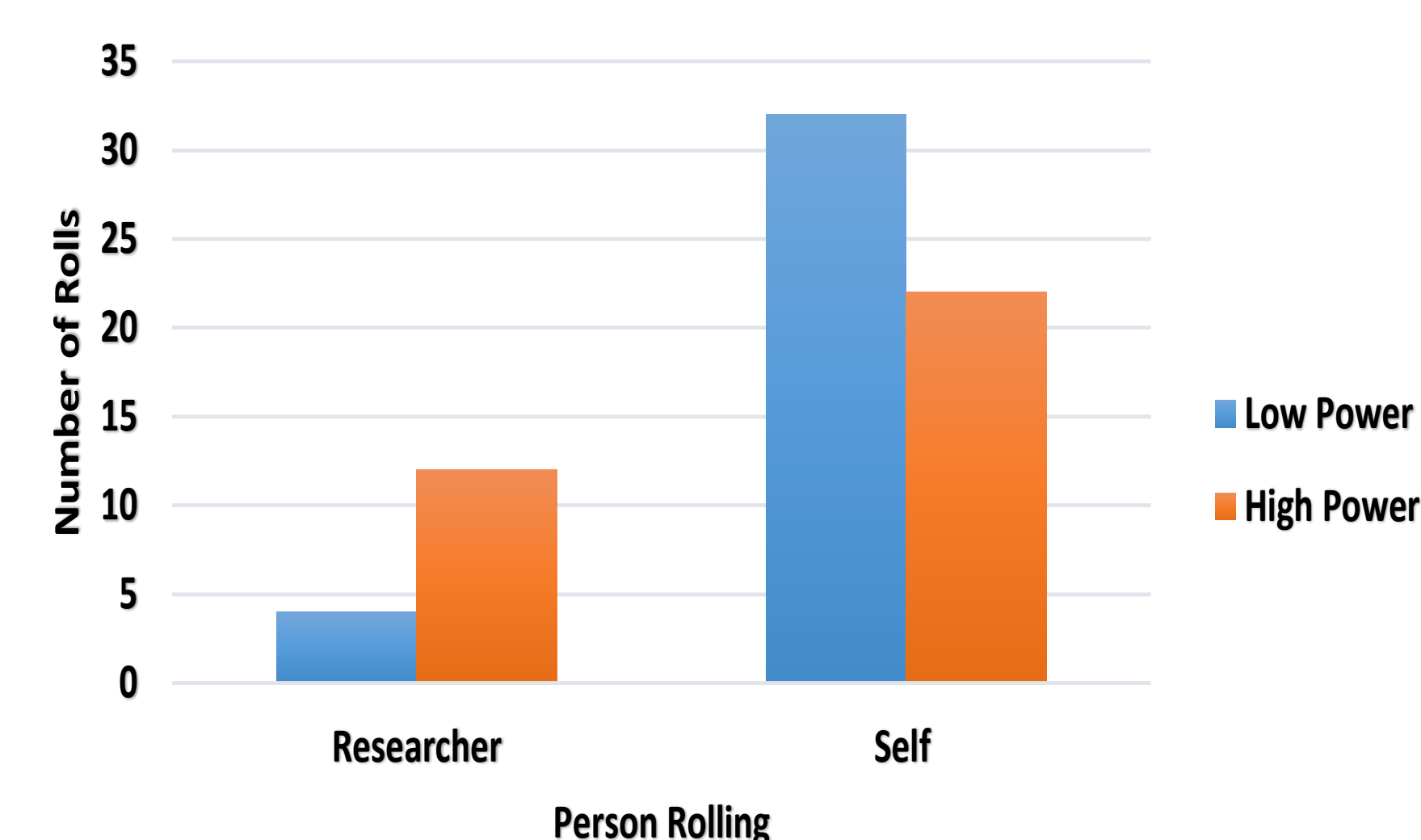
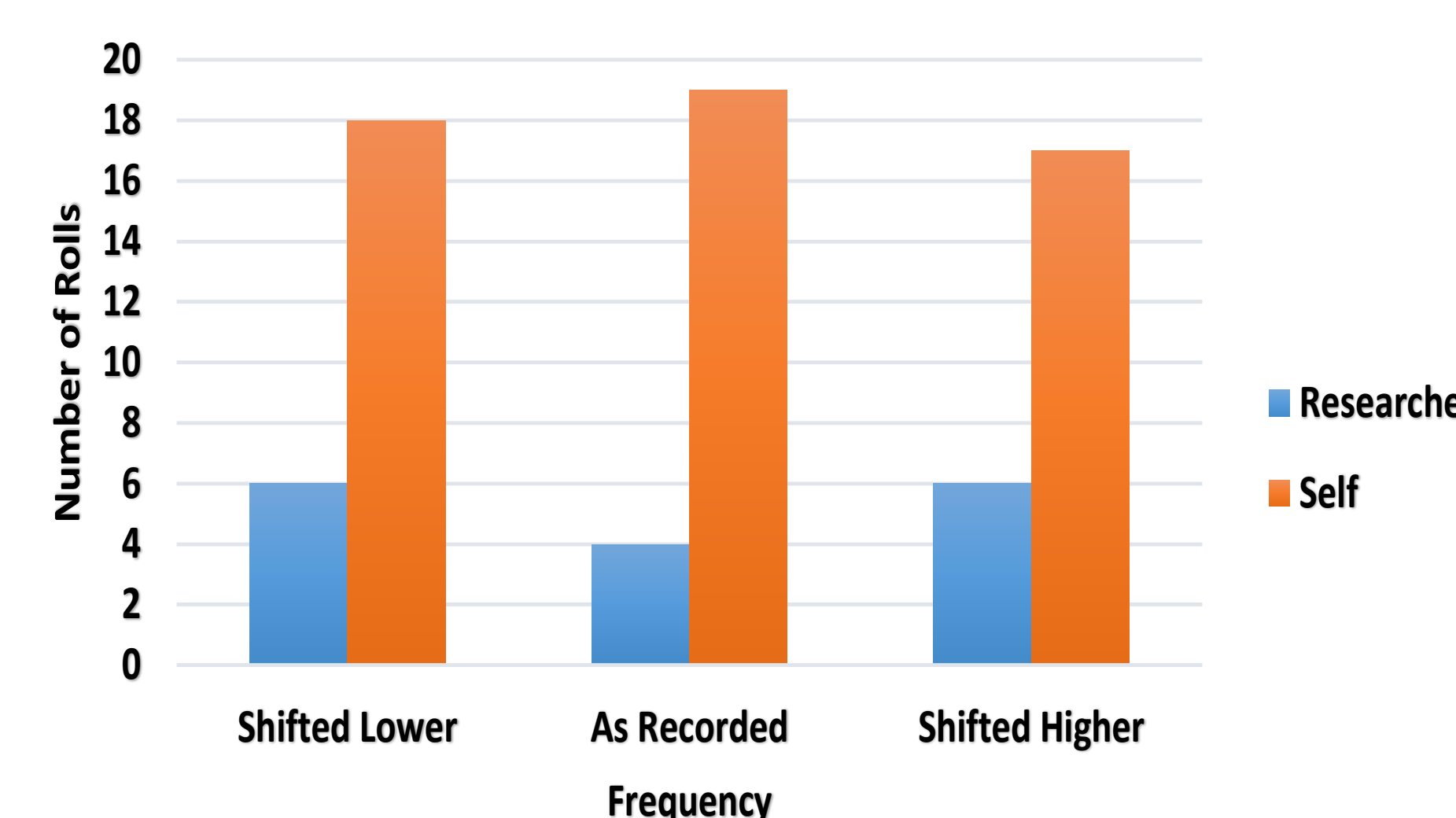


Figure 4: Rolling the Die with Change in Frequency



DISCUSSION

- The results were partially consistent with our predictions.
- The relationship between the frequency shift and number of power words completed was consistent with our predictions and what Hsu et al. (2015) found.
- Our results indicated a dependence between the power of the music and if the person wants to roll the die.
- However, this dependence is in the opposite direction of what was expected and what Hsu et al. found. Our results indicated that participants listening to low power music were more likely to roll the die themselves than people who listen to high power music.
- The analysis failed to reveal any other statistically significant findings, but Hsu et al. found significant results when doing the same tasks.
- This study is still ongoing, so results may still be subject to change. The number of participants run is less than half the number of participants run by Hsu et al.
- We lack evidence that music with high psychological power leads to an increase in abstract thinking.
- Future research needs to be conducted and one area that can be addressed is the physical effects of listening to high power music with low frequencies. This could be a task where a participant squeezes an object before and after listening music and measure an increase in strength.

REFERENCES

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- Hsu, D. Y., Huang, L., Nordgren, L. F., Rucker, D. D., & Galinsky, A. D. (2015). The music of power: Perceptual and behavioral consequences of powerful music. *Social Psychological and Personality Science*, 6, 75-83. <http://dx.doi.org/10.1177/1948550614542345>