The Influence of Cognitive Load on the Repeated Recording Illusion

Fee Forberich[1], Noah Mba[1], Marcel Rindt[1], Paula Saalwächter[1], Lilian Tösmann[1], Ava Kiai[2]

[1]*Department of Psychology, Goethe Universität, Frankfurt am Main*

[2]*Department of Biology, Goethe Universität, Frankfurt am Main*

EXPRA Team 6 Winter 2021-2022

GOETHE UNIVERSITÄT FRANKFURT AM MAIN

Backround

The current study is a modified **replication of the repeated recording illusion** by Anglada-Tort & Müllensiefen (2017).

In the repeated recording illusion, participants think they listen to different musical stimuli even though they are identical.

Prestige suggestions, familiarity and working memory load are known to influence the evaluation of musical performances.

Research Questions:

- Does working memory load influence the occurrence of the repeated recording illusion?
- Does explicit information influence liking judgments?

Materials

Online Experiment (PsychoPy & Pavlovia)

- 96 participants (70 female, 26 male)
- Age: *mean* = 22.90, *SD* = 6.19

Stimuli:

- Rock: Beatles - *Devil in her Heart* (2 mins 48 sec)
- Classical: Anton Bruckner - *Symphony No. 4 "Die Romantische"* (last 2 mins 48 sec)

Working memory load (WM) - between subjects:

- Holding 8 randomized consonants in memory and recalling them after the end of a trial

Explicit information:

- Neutral text (baseline), low & high prestige text

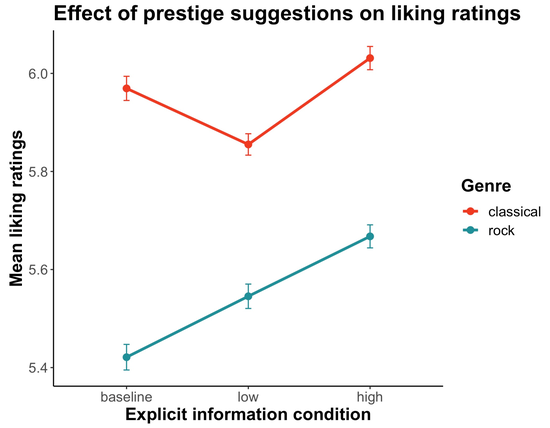
Liking rating:

- Likert scale (7 levels: "gar nicht" → "sehr gut") for 4 questions (expressiveness, interpretation, timing/rhythm, tone quality)

Falling for illusion:

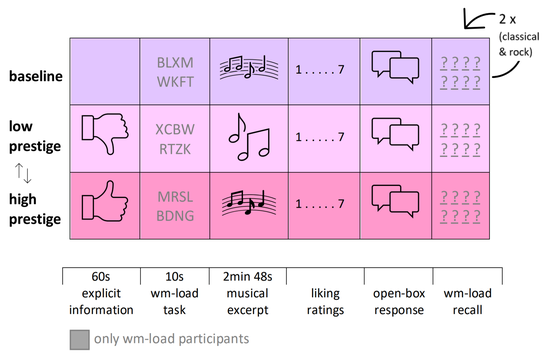
- Open-text box responses indicating differences between performances were considered as falling for illusion

Results – Liking Ratings (1/2)



The musical excerpts preceded by high prestige suggestion were liked better than those preceded by the low prestige suggestion in the classical (Est = 1.15, SE = 0.30, z = 3.85 p < .001) and in the rock condition (Est = 0.68, SE = 0.27, z = 2.484, p < .05).

Method

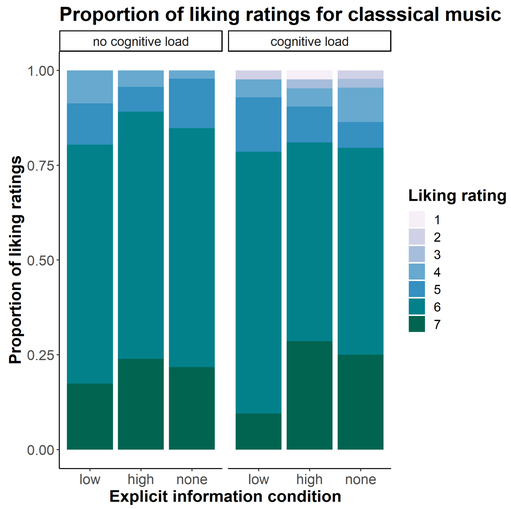


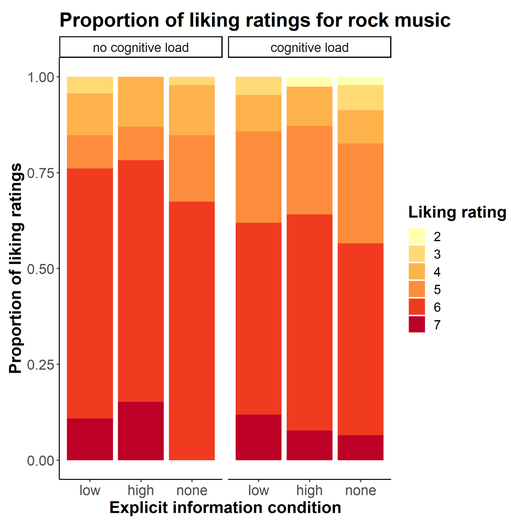
Data analysis:

- Mean liking ratings were analyzed using two ordinal logistic regressions (classical, rock)
- Falling for the illusion analyzed using two Chi-Square ($\chi 2$) tests (genre, WM)

Results – Liking Ratings (2/2)

The liking ratings were not affected by working memory load for classical (Est = -0.33, SE = 0.88, z = -0.38, p = 0.71) or rock condition (Est = -0.78, SE = 0.88, z = -0.88, p = 0.38).





Results – Repeated Recording Illusion

The experiment was **successful at replicating the repeated recording illusion** in 47.9% of all trials (see Table 1). There was **no effect of cognitive load condition** on the rate at which participants fell for the repeated recording illusion ($\chi^2(1) = 0.01$, p = 0.91). We also found no effect of genre on the illusion ($\chi^2(1) = 1.73$, p = 0.19).

Did participants fall for the repeated recording illusion?	Yes	%	No	%
Total	89	47.85	97	52.15
Rock music	40	42.55	54	57.45
Classical music	49	53.26	43	46.74
Cognitive load group	46	46.94	52	53.06
No cognitive load group	43	43.88	45	45.92

Conclusions

- We could replicate the finding that explicit information has an effect on liking ratings of musical stimuli
- Contrary to our hypothesis, the rate with which participants fell for the repeated recording illusion was not modulated by a cognitive load task
- We were partially successful at replicating the repeated recording illusion reported by Anglada-Tort & Müllensiefen (2017)
- The smaller magnitude of the observed effect might be explained by our inclusion of a baseline condition, which might have increased the salience of intrinsic properties of the musical pieces.

Contact

Fee Forberich: feeforberich@stud.uni-frankfurt.de

Noah Mba: noahmba@stud.uni-frankfurt.de

Marcel Rindt: marcelrindt@stud.uni-frankfurt.de

Paula Saalwächter: paulasaalwaechter@stud.uni-frankfurt.de

Lilian Tösmann: s0275523@stud.uni-frankfurt.de

References

Anglada-Tort, M., & Müllensiefen, D. (2017). The Repeated Recording IllusionThe Effects of Extrinsic and Individual Difference Factors on Musical Judgments. *Music Perception*, *35*(1), 94–117. https://doi.org/10.1525/mp.2017.35.1.94

Mullennix, J. W., Pilot, K. M., Steeves, T. A., & Burns, J. C. (2018). The effects of cognitive load on judgments of titled visual art. *Psychology of Aesthetics, Creativity, and the Arts*, *12*(2), 166.