

The Valins Effect in Music.

Influences of False Feedback on Aesthetic Appreciation, Emotional Involvement and Empathy

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Background

According to the Valins Effect, which states that the cognitive information provided by a false feedback leads to an interpretation of the alleged physical reaction as an emotion that must have been triggered by the stimulus, in this study such responses to music were investigated. The Valins Effect was already been found during a prior study (Roos & Mühlhans, 2018), but the research needed to be taken a few steps further to clarify the possibly confounding role of empathy.

Method

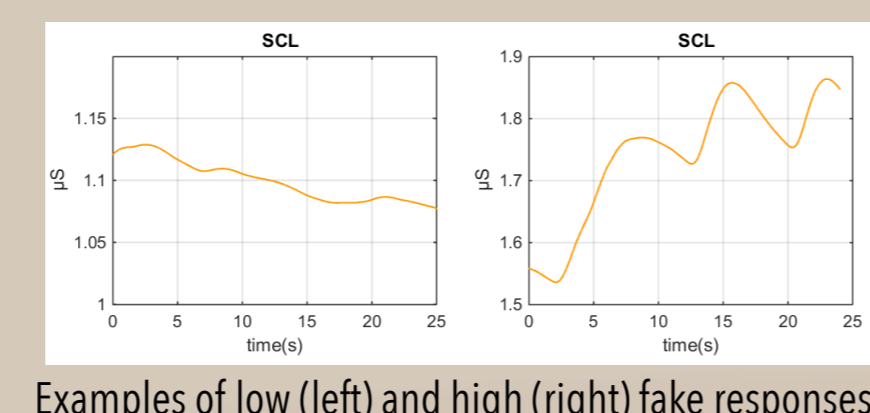
Subjects

Participants (N=52; students of various subjects at LMU; 19 male and 31 female; 16 to 67 years old, $M[\text{age}]=27.18$, $SD=7.29$) were randomly paired into two groups, both led to believe that their skin conductance responses were recorded during the experiment. They were told that ascending graphs indicate a high (positive or negative) arousal and strong intensity of emotion, while steady graphs indicate little emotional involvement. After having seen both neutral and strong SCR graphs during two test-stimuli, the experimental group received only pictures of strong skin conductance responses while the control group received pictures of neutral SCR graphs.

Stimuli

The stimulus sets consisted of 15 musical excerpts, each about 30 seconds in length, retrieved from movie scores and popular music pieces, which have proven to trigger strong positive respectively negative emotions. Then a forged skin conductance graph was displayed. For each stimulus the participants were asked to rate/describe:

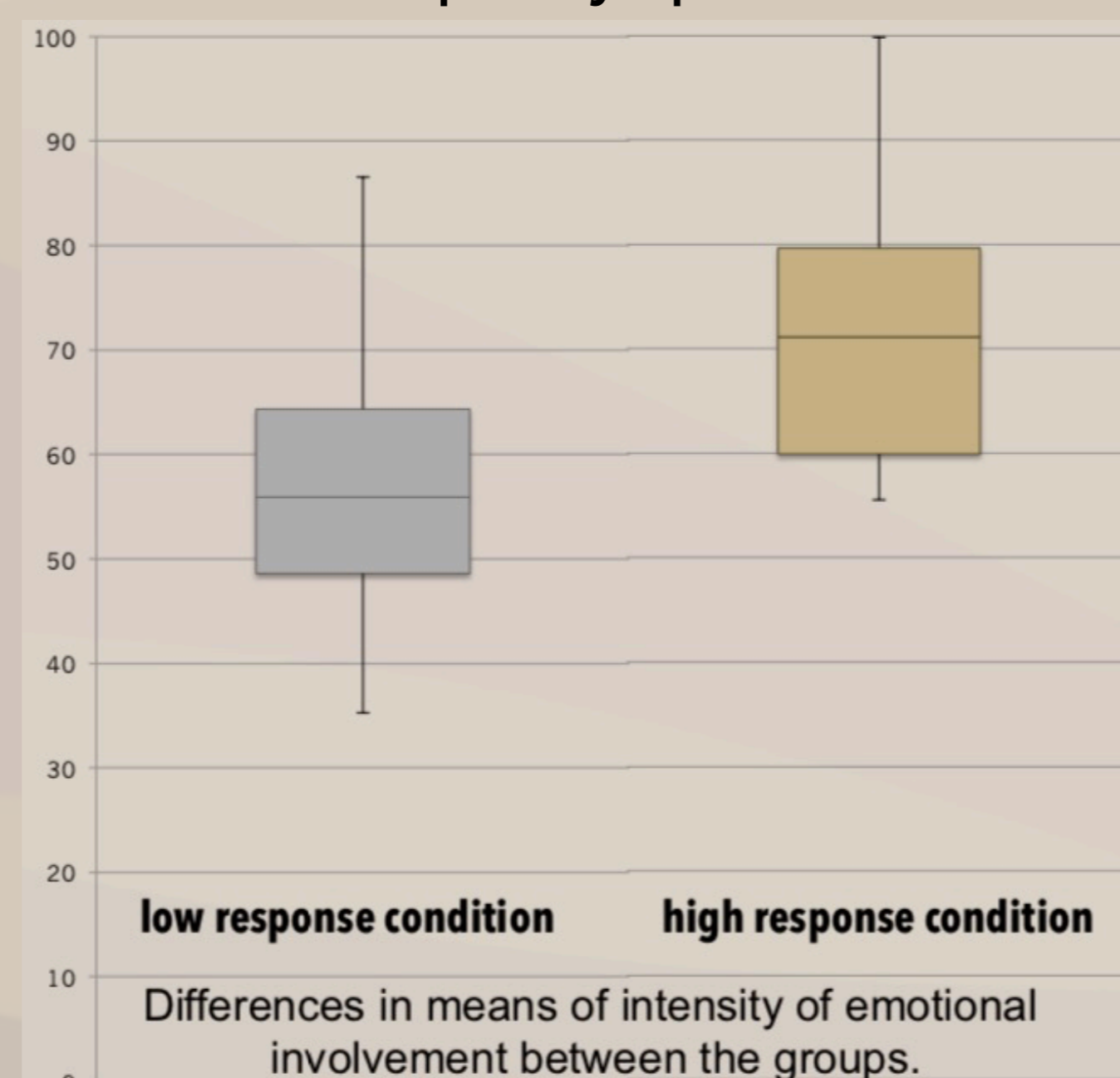
- ❖ the emotion that best described what they felt while listening
- ❖ the intensity of their emotional involvement with the music
- ❖ their familiarity with the presented stimulus
- ❖ their liking of the music
- ❖ whether they were picturing images in their heads while listening and
- ❖ their general aesthetic perception on various dimensions. Additionally, they were asked to answer an empathy questionnaire.



Examples of low (left) and high (right) fake responses.

Results

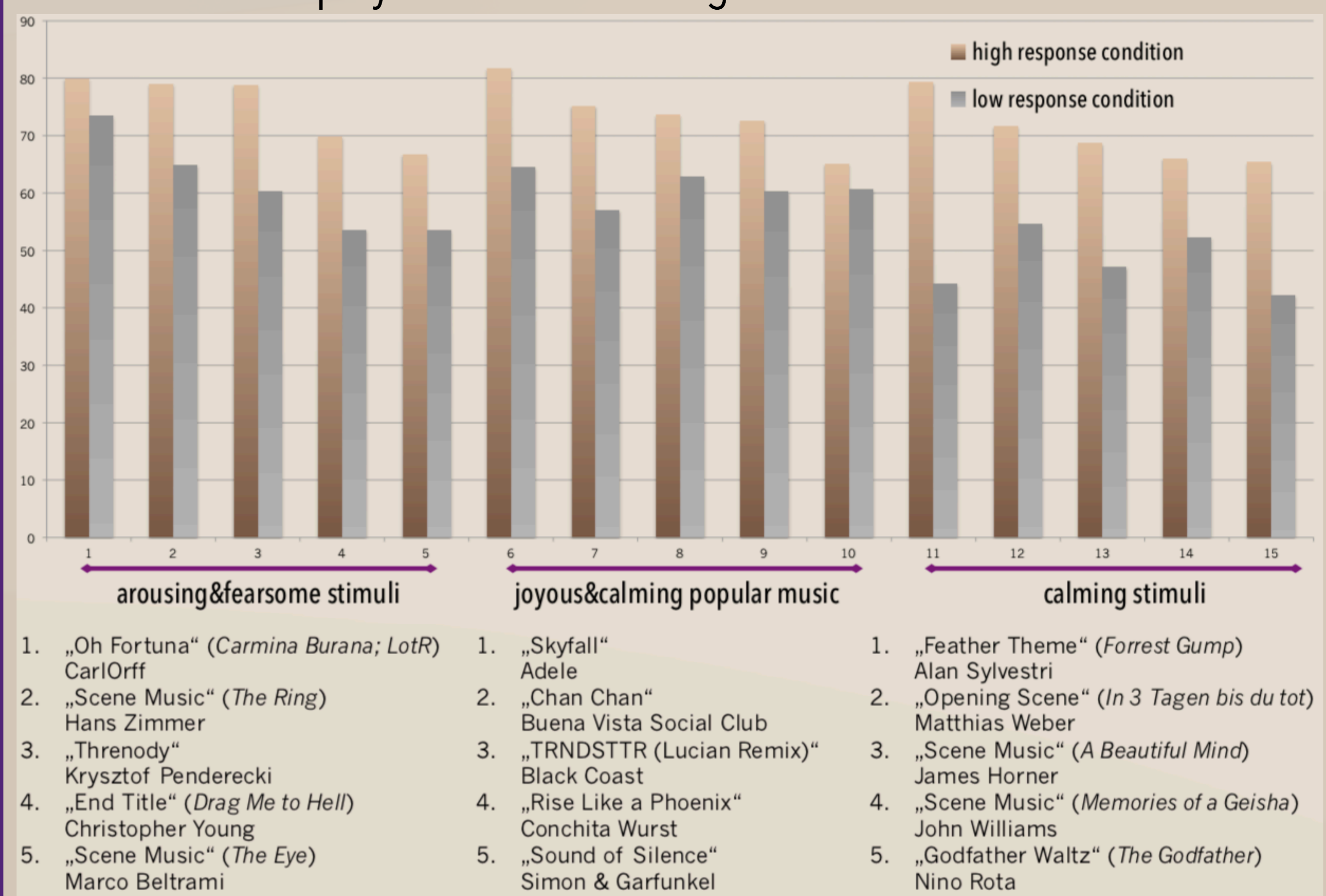
The Valins Effect could be observed in each of the 15 stimuli. A t -Test performed on overall means of intensity of emotional involvement showed significant differences ($t=-6.15$, $p<.001$).



Differences in means of intensity of emotional involvement between the groups.

Emotional Involvement

The mean intensity of emotional involvement for each stimulus in both conditions is displayed in the following chart.

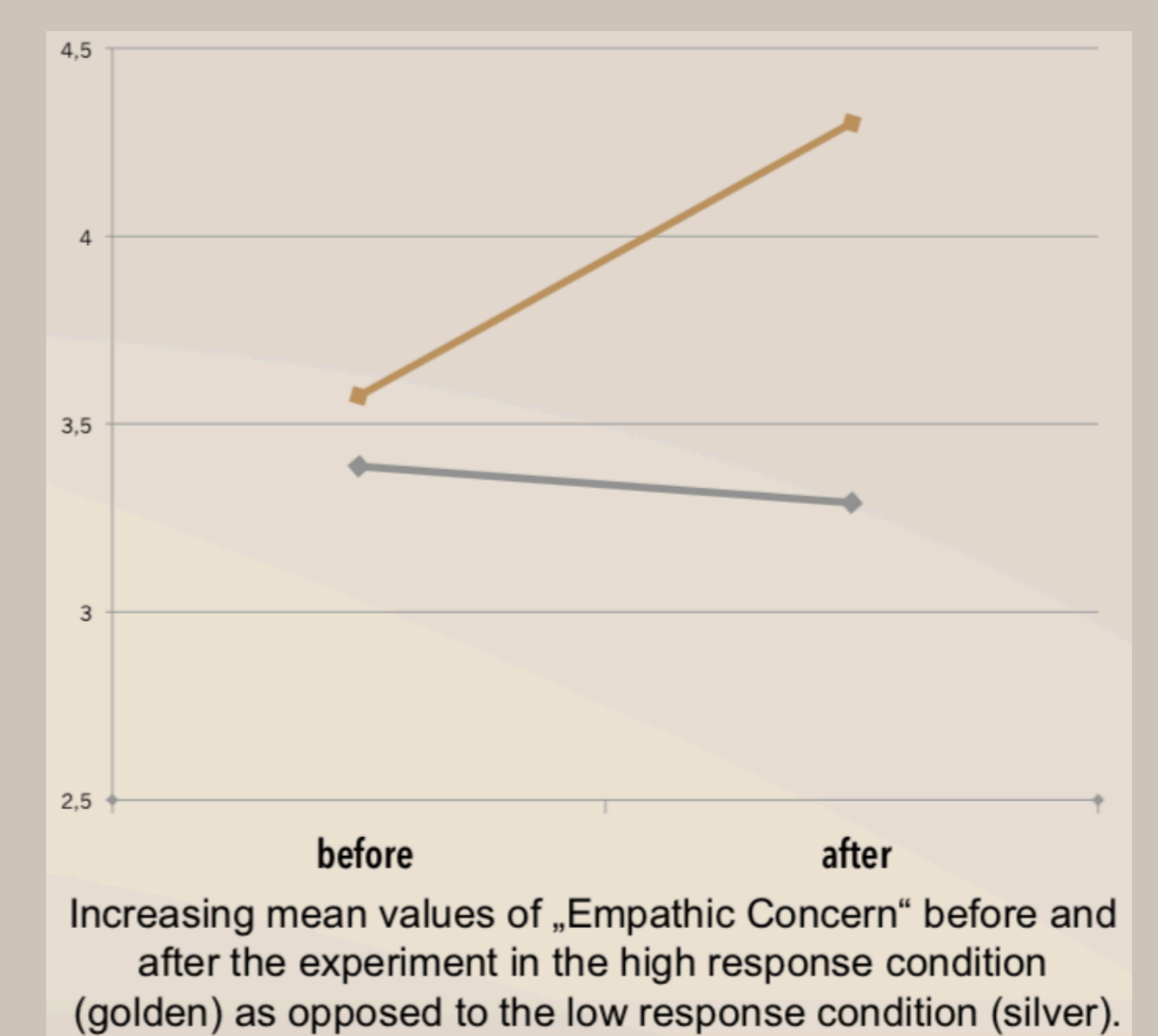


Feeling and Empathy

Participants in the high response condition reported having felt stronger bodily reactions to the music ($p=.007$).

The prior study showed significantly higher empathy scores for subjects in the high response condition, so the follow-up participants took one half of the questionnaire (IRI) at the beginning, the other half at the end of the experiment.

The t -Test shows a significant increase of „Empathic Concern“ in the high response condition ($p<0.001$), whereas the empathy score (for each dimension) slightly decreased in the low response condition during the experiment.



Increasing mean values of „Empathic Concern“ before and after the experiment in the high response condition (golden) as opposed to the low response condition (silver).

Discussion

The data indicate that false feedback of emotional reactions to music leads to higher perception of emotional involvement as well as higher perception of actual physical reactions and higher self-assessment of empathic abilities.

In the prior study, variances could already be explained by a confounding combination of familiarity and liking, which presumably led to a stronger opinion about the music, making the participants less likely to be influenced by the false feedback.

Discussion Points for Comparing Music and Language

- ❖ The experiment could be replicated using varieties of voices and speech patterns as stimuli (e. g. monotonous speech).
- ❖ Does a certain prosody trigger a higher emotional involvement with & empathic feedback from the conversation; can it be manipulated?

References

- Mühlhans, J. (2017). *The Hills have Ears - Identifikation, Induktion und Assoziation von Emotion in Filmmusik*. Poster session presented at "Musik und Bewegung" 33. Jahrestagung der Deutschen Gesellschaft für Musikpsychologie (DGM), Hamburg, Germany. ❖ Roos, M. (2018). *Motivationales Inventar zu ästhetischen Urteilen – 6 Dimensionen (MIAU-6D)*. ❖ Roos, M. & Mühlhans, J. (2018). *The Joy and Fear of Music. Influences of False Feedback on the Emotional and Aesthetic Perception of Music*. Poster session presented at ICMPC15/ESCOM10, Karl-Franzens-Universität Graz, 23.-28.07.2018. ❖ Valins, S. (1966). Cognitive effects of false heart-rate feedback. *Journal of Personality and Social Psychology*, 4, 400–408.