HOW INTERESTING IS THIS TO YOU: RATING THE INTERESTINGNESS OF AUDITORY CLIPS

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Introduction

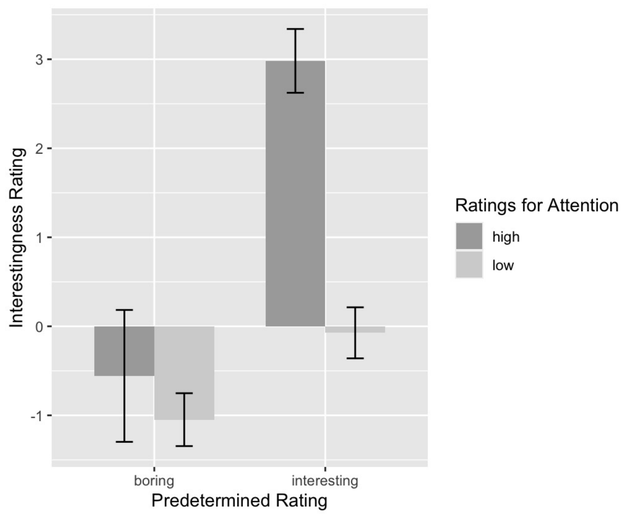
- Distracted driving is a leading cause of motor vehicle deaths. Novice drivers engage in distracting tasks more than experienced drivers (Dingus et al., 2016).
- In-vehicle infotainment systems, for example, can distract drivers through both visual and auditory channels.
- Drivers who engage in non-driving related tasks (NDRS) are slower to respond to breaking events than those who do not engage in NDRS, especially when such tasks are perceived interesting (Horrey et al., 2017).
- This study aims to characterize stimuli features of attention, entertainment, and difficulty.

Methods

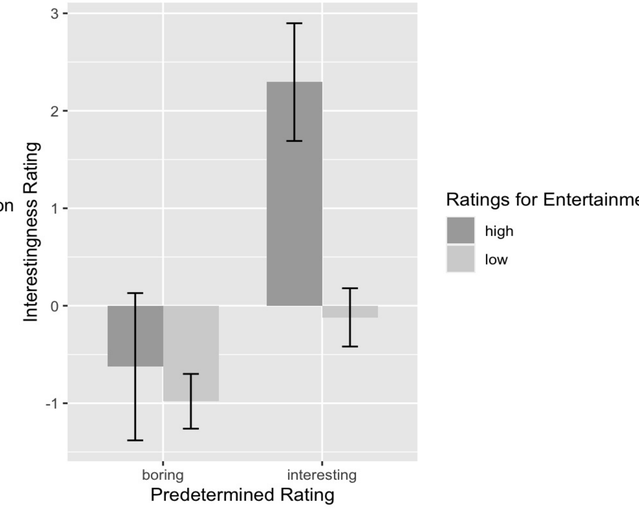
- 39 undergraduate students were asked to rate a set of 39 auditory stimuli, presented randomly, for their level of engagement on a slider from -7 (boring) to 7 (interesting) in Qualtrics.
- The stimuli are modified news sources that have been internally classified as boring or interesting
- After listening to each clip, the participant completed a questionnaire about the difficulty, enjoyment, and likelihood to attend to the stimuli.

Results (N = 39)

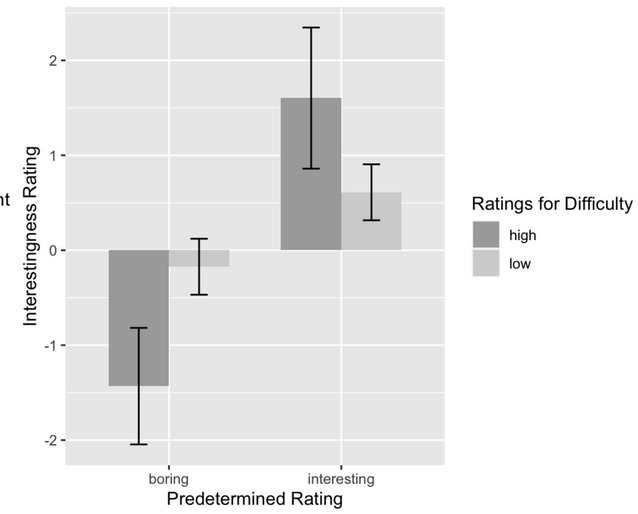
Attention



Entertainment



Difficulty



- The difference in rating between predetermined interesting audio clips (M = 2.27, SD = 2.51) and predetermined boring audio clips (M = -1.62, SD = 2.40) was significant, $t(38) = -10.091$; $p < .001$.
- This difference was especially significant when they reported clips as more entertaining and more likely to pay attention to.
- However, items that were predetermined boring were rated lower, especially when they were perceived as being more difficult to understand.
- The results show that participants' perception on how much attention each item requires, how entertaining it is, and how difficult it is can affect their interestingness ratings on audio clips.

Discussion

- It was found that the pre-selected highly interesting audio stimuli was rated as more interesting than pre-selected boring stimuli, validating the previous study in the current population.
- After performing exploratory analyses using multiple 2 x 2 repeated measures ANOVAs, we found different predictors of task engagement for the stimuli (likelihood to pay attention, entertainment, difficulty).
- Participant's ratings in this study can be used to predict the interestingness of auditory stimuli and a user's level of engagement with the stimuli.
- These results can provide design guidance to prevent in-vehicle tasks from being too distracting from the driving task.
- Further, this study helps us understand how drivers allocate attentional resources in response to not only task demands but also subjective characteristics of the stimuli such as engagement.

References

Dingus, T. A., Guo, F., Lee, S., Antin, J. F., Perez, M., Buchanan-King, M., & Hankey, J. (2016). Driver crash risk factors and prevalence evaluation using naturalistic driving data. *Proceedings of the National Academy of Sciences*, *113*(10), 2636-2641.

Horrey, W. J., Lesch, M. F., Garabet, A., Simmons, L., & Maikala, R. (2017). Distraction and task engagement: How interesting and boring information impact driving performance and subjective and physiological responses. *Applied ergonomics*, *58*, 342-348.