

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

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ABSTRACT

Modern technological environments integrate multiple devices, competing for limited attentional resources of users. This study aimed to validate the auditory stimuli used in Horrey et al. (2017) with a college student population and examine the psychological structure of task engagement. Thirty-nine students listened to thirty-nine auditory stimuli used in Horrey et al. (2017) for their level of engagement. Participants rated how interesting they found the material on a slider from -7 (boring) to 7 (interesting) while listening to each clip. Participants also rated levels of difficulty, entertainment, and likelihood to attend to each clip. Participants who rated high on difficulty, entertainment, and attention also rated higher interestingness scores than those with low ratings, suggesting that these as important constituents of perceived interestingness of the auditory clips. Results indicate complexity of the psychological structure of task engagement and importance of controlling these factors in auditory stimuli to manipulate engagement.

1. INTRODUCTION

Distracted driving is a leading cause of motor vehicle deaths. Secondary tasks or activities, particularly the use of electronic devices, are responsible for many vehicular crashes each year (Dingus et al., 2016). An in-vehicle infotainment system, for example, can distract drivers through both visual and auditory channels potentially increasing their crash risk.

Novice drivers engage in distracting tasks more often than experienced drivers. Young novice drivers are also less likely to employ good safety practices and fail to understand the danger in doing so when in near-accident situations (McKnight & McKnight, 2003). It has been shown that 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), indicating criticality of task engagement for road safety in drivers.

The current study aimed to validate the previously used auditory stimuli with a college student population and examine the psychological structure of task engagement. We predicted that the college students would rank the pre-selected interesting stimuli as more interesting than the pre-selected boring stimuli. We further explored how stimulus features such as attention, entertainment, and difficulty of the auditory clips relate to subjective interestingness.

2. METHODS

Thirty-nine undergraduate students (19-43 years, $M = 27.26$, $SD = 7.04$) participated in an online study. Participants rated a set of 39 auditory stimuli that were used in Horrey et. al. (2017), in a random order. The stimuli are modified news sources that have been internally classified as boring ($n = 18$, $M = 26.78$ sec, $SD = 5.73$) or interesting ($n = 21$, $M = 26.33$ sec, $SD = 6.42$). The participants were asked to rate each

clip on a slider from -7 (*boring*) to 7 (*interesting*) in Qualtrics. After listening to each clip, the participant also completed a questionnaire regarding the difficulty, enjoyment, and likelihood to attend to the stimuli on a 7-point Likert scale, used in the Horrey et. al. (2017) study. The questions participants included, “If you heard this news passage, how likely is it you would pay attention to it?” (attention), “How entertaining did you find this news story?” (entertainment) and “How difficult was this news story to understand?” (difficulty).

3. RESULTS

A series of 2 x 2 repeated measures ANOVAs with pre-determined groups (interesting vs. boring) and levels of attention, entertainment, or difficulty (median-split high vs. low) were conducted on interestingness scores. Participants reported significantly higher interestingness ratings when listening to interesting audio clips ($M = 2.27$, $SD = 2.51$) than when listening to boring audio clips ($M = -1.62$, $SD = 2.40$) [$t(38) = -10.09$, $p < .001$, $d = -1.59$]. The difference was especially pronounced when they reported clips as more entertaining [$F(1, 38) = 27.70$, $p < .001$, $\eta_G^2 = .09$] and more likely to pay attention to [$F(1, 38) = 41.61$, $p < .001$, $\eta_G^2 = .17$]. Note also that items that were predetermined boring were rated lower, especially when they were perceived as being more difficult to understand [$F(1, 38) = 26.54$, $p < .001$, $\eta_G^2 = .11$].

4. DISCUSSION

We found that the predetermined highly interesting audio stimuli was in fact rated as more interesting than predetermined boring stimuli, validating the audio clips using the current undergraduate student population and supporting our hypothesis.

Participants who rated predetermined interesting stimuli high for attention and entertainment were more likely to rate it high on interestingness rating. Further, participants who rated boring stimuli high for difficulty were more likely to rate it lower on interestingness rating. However, participants who rated interesting stimuli high for difficulty were more likely to rate it higher on interestingness rating, which contradicts the finding in Horrey et. al. (2017), where participants rated more interesting material as less difficult.

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. For example, auditory stimuli that are rated as more entertaining and attentive are likely to be more interesting than stimuli rated low on entertainment and attention. These results can provide auditory stimuli that allow researchers study the effect of task engagement on driving performance. Future study could use the stimuli to understand how drivers allocate attentional resources in response to not only task demands but also concurrent auditory stimuli with varying levels of interestingness.

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