

The Impact of Environmental Factors on Memory Recall

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ABSTRACT

The purpose of this study was to examine whether a person's personality may interact with the type of background music present while taking a memory recall test. To determine this interaction, participants identified either as a morning-type or evening-type person in addition to completing a short memory task. The memory task involved viewing 25 different words and then recalling as many as they could while also listening to either slow- or fast-paced background music. Results showed no significant interaction between personality and background music, suggesting these factors did not affect their memory recall scores.

INTRODUCTION

- People tend to tolerate stress and dedicate more of their time to stressful thinking while listening to pleasant music (Perlovsky et al., 2013).
- According to Nguyen and Grahm (2017), people recalled more words when listening to low arousal music than when listening to high arousal music.
- Barner et al. (2019) showed participants with a morning preference performed better, Natale et al. (2002) discussed that there was quicker response to each task for morning-type people.
- Morning-type people performed better on various variable measures when participants tested at their preferred time of day (Bennett et al., 2008)

HYPOTHESES

There will be a significant interaction between a person's personality type and the type of background music present while taking a memory recall test, such that participants who are morning-type people will score highest on memory recall with the presence of fast-paced background music, whereas participants who are evening-type people will score highest on memory recall with the presence of low-paced background music.

METHOD



Participants

- 58 participants who were undergraduate students enrolled in psychology courses and adults known to the researcher
- 18-51 years of age ($M = 29.93$, $SD = 11.22$)
- 10 males (17%) and 48 females (83%)
- 27% White, 52% Hispanic or Latino, 7% Black or African American, 7% Asian or Pacific Islander, 7% Other (Middle Eastern)
- 26 individuals in the slow-paced background music condition and 32 individuals in the fast-paced background music condition

Materials

- Informed Consent form
- 25 randomly selected words by the researcher
- Background music only including simple beats (*Samo* by Ayzon)
 - Identical clip of music for both conditions; either slowed down or sped up
- Time preference question assessing personality type: "early bird" (morning-type) or "night owl" (evening-type)
- Demographic questionnaire



Procedure

- Participants accessed materials online
- 25 words shown for 15 seconds to memorize
- Participants were randomly assigned to hear either fast-paced or slow-paced background music while they recalled the words (30 sec.)
- They identified as either morning-type or evening-type and provided demographic information

RESULTS

- Results did not support the hypotheses
- A two-way ANOVA was used to assess any interaction between personality type and background music.
- No significant main effects or interaction

DISCUSSION

- The results showed no significant main effects or interaction between a person's personality type and the pace of background music while completing the memory recall test.
- 14 participants were removed before analyzing the data due to no reports of any recalled words making it unknown to the researcher what condition they were in.
- Before running a two-way ANOVA to analyse the data, only participants who successfully heard the background music while recalling the words and who correctly rated the pace of the music were selected.
- Due to the small sample size, there was an insufficient amount of power to determine a significant interaction between a person's personality type and the background music.
- Future research should obtain a larger sample size and create a more distinct difference for the pace of the background music.

REFERENCES ARE AVAILABLE UPON REQUEST

Please contact Mariah Hernandez for more information at mariahhernandez@callutheran.edu.