A preregistered replication of the auditory deviant effect: Robust evidence for short-term memory disruption

Raoul Bell, Jan Philipp Röer, Laura Mieth, Axel Buchner

Results

Auditory distraction

A 3 x 2 x 8 repeated-measures MANOVA with distractor condition (steady state, auditory deviant, changing state), session (Session 1, Session 2), and serial position (1-8) as independent variables and serial-recall performance as dependent variable revealed a main effect of distractor condition, $F(2,271) = 75.07$, $p < .01$, $\eta_p^2 = .36$. Helmert-contrasts showed that performance in the steady state control condition was better than in the other two conditions, $F(1,272) = 102.53$, $p < .01$, $\eta_p^2 = .27$. Furthermore, performance was worse in the changing-state condition in comparison to the auditory deviant condition, $F(1,272) = 63.36$, $p < .01$, $\eta_p^2 = .19$. All of the effects are in the expected direction.

Changing state effect

In the first supplementary 2 x 2 x 8 repeated-measures MANOVA, with distractor condition (steady state, changing state), session (Session 1, Session 2), and serial position (1-8) as independent variables and serial-recall performance as dependent variable, the main effect of distractor condition was significant, $F(1,272) = 147.80$, $p < .01$, $\eta_p^2 = .35$, representing evidence for a changing-state effect.

Auditory deviant effect

In a second supplementary 2 x 2 x 8 repeated-measures MANOVA with distractor condition (steady state, auditory deviant), session (Session 1, Session 2), and serial position (1- 8) as independent variables and serial-recall performance as dependent variable, the main effect of distractor condition was significant, $F(1,272) = 30.02$, $p < .01$, $\eta_p^2 = .10$, representing evidence for an auditory deviant effect.