How does cognitive load affect the appearance of involuntary musical imagery (INMI)? Inducing earworms in the lab

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Involuntary musical imagery (INMI, or earworms) is a term referring to the ubiquitous experience of a repetitive musical snippet coming to the mind unbidden and persisting in an uncontrolled manner. Studies to date provide contradictory reports regarding the role of concurrent cognitive load in this phenomenon: some support that INMI appears more during low cognitive load while others suggest the opposite. In the present study this question was addressed by gradually increasing the cognitive load. One hundred and sixty people watched two film trailers with popular soundtracks (one lyrical and one instrumental) and completed a "film appraisal questionnaire". Next they engaged in one of four 5-minute tasks representing gradually increasing cognitive load. Finally they completed a "mind activity questionnaire" specifically designed for implicit INMI sampling. After 24 hours the same questionnaire was completed again online. INMI induction rate at baseline was 65% and decreased as cognitive load increased. The lyrical music was experienced more as INMI and there was a recency effect for the last song presented. In the 24-hour follow up study, 20.4% of people reported INMI. This new implicit, single blind paradigm has shed light on the effects of increasing cognitive load on INMI appearance and has provided us with important methodological insights for future INMI studies.

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